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Welcome to the latest issue of *Fly Times*! Although it seems disingenuous to call this the "April" issue (being published in June), for the sake of continuity I leave it as such! As usual, I thank everyone for sending in such interesting articles, although submissions came a little later than usual! In any case, 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 for the next issue. *Fly Times* offers a great forum to report on your research activities and to make requests for taxa being studied, as well as to report interesting observations about flies, to discuss new and improved methods, to advertise opportunities for dipterists, to report on or announce meetings relevant to the community, etc., with all the associated digital images you wish to provide. This is also a great place to report on your interesting (and hopefully fruitful) collecting activities! Really anything fly-related is considered. And of course, thanks very much to Chris Borkent for again assembling the list of Diptera citations since the last *Fly Times*!

The electronic version of the *Fly Times* continues to be hosted on the North American Dipterists Society website at http://www.nadsdiptera.org/News/FlyTimes/Flyhome.htm. For this issue, I want to again thank all the contributors for sending me so many great articles! Feel free to share your opinions or provide ideas on how to improve the newsletter. Also note, the *Directory of North American Dipterists* is constantly being updated. Please check your current entry and send all corrections (or new entries) to Jim O'Hara – see the form for this on the last page.

Issue No. 53 of the *Fly Times* will appear next October. 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 2014 – don't worry – I'll send a reminder! And articles after 10 October are OK too!

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Issue 52, available online 10 June 2014

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NEWS

Progress Report on the Zurquí All Diptera Biodiversity Inventory (ZADBI) in Costa Rica

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Our ZADBI project continues to unfold. The last sampling at Zurquí, Tapantí National Park and Las Alturas took place in October, 2013 and all that remains (!!!) is to complete sorting and mounting of the material and for all specimens to be identified before the end of this three year project in September, 2015. Overall, we are well on track, with sorting of all Zurquí and over half of the Tapantí samples completed. Elena Ulate and Annia Picado are busy slide mounting these sorted specimens (Fig. 1) and Wendy Porras (Fig. 2), Elvia Zumbado (Fig. 3) and Carolina Avila continue to sort the remaining samples, are mounting specimens onto pins, and ensuring all is in the database. In March, Brian and Art spent a few days in Costa Rica with our wonderful crew (Fig. 4), sorting out further logistical challenges and having fruitful meetings with staff at INBio.

Figure 1. Elena Ulate sorting specimens to slide mount.

Figure 2. Wendy Porras at the computer.

Figure 3. Elvia Zumbado sorting specimens to family.

Our collaborators have received one or two further batches of samples. We now have 71 families represented at Zurquí and collaborators have indicated the presence of 1,209 species, based on 5,364 specimens examined from the first set of samples taken during our project. Most striking is the remarkable report on the Cecidomyiidae from Matthias and Catrin Jaschhof who have discovered 538 species, based on 2,200 specimens! You can read more about their discoveries at the blog on our website: www.tropicalflies.net.

The Jaschhof's have a manuscript in press with Zootaxa describing one of the new genera of cecids as "Zadbimyia", with 19 new species from our site. We suspect that some other groups will also be reporting high levels of diversity and that the current score of 1,209 species will rise substantially once collaborators receive all their material and study their species.

In the last *Fly Times* we reported on the Diptera Blitz held in August, 2013. We were fortunate to have a skilled filmmaker, Edgar Chamoro from the LA County Museum, with us to make a record of the event and to provide an overview of our entire project. You can view the result at: https://www.youtube.com/watch?v=aNIKmObRGuw.

The coming months will see further curation of material, focusing on completing the material from Zurquí and getting those specimens to our collaborators. Then follows select material from Tapanti National Park and Las Alturas.

Figure 4. The ZADBI team, left to right: Art Borkent, Wendy Porras, Elena Ulate, Carolina Avila, Annia Picado, Elvia Zumbado, Brian Brown.

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Nocturnal flight of *Poecilominettia slossonae* (Lauxaniidae) and *Stiphrosoma lucipetum* (Anthomyzidae) on Lower Sugarloaf Key, Monroe County, Florida, USA

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The Florida Keys are a chain of islands along the eastern and southern tip of the Florida peninsula. Sugarloaf Key in the Florida Keys is a large, U-shaped island. The westernmost arm of the island is known as Lower Sugarloaf Key. The island is partly developed for residential housing and partly remains in a natural state. Mosquitoes (Diptera: Culicidae) are very common on the island and can cause severe annoyance to residents. A study of mosquito flight behavior was conducted on Lower Sugarloaf Key, Florida, from July 2012 to July 2013, in order to determine what species were present and when they were flying. Although the study focused on Culicidae, species in other dipteran families were analyzed as well, due to their numbers and visual appeal to the investigator. Results pertaining to Culicidae will be published elsewhere.

Methods. A looped roadway was chosen for study. The road encircles a tidal basin that is subject to flooding by tidal action. The roadway is located in prime mosquito habitat. The soils along the roadway are mostly poorly drained and subject to flooding. The two plant communities along the road are tropical hammocks and mangrove swamps (Hurt et al. 1995). The high marsh area of the mangrove swamp supports black mangrove (*Avicennia germinans* (L.) L.), saltwort (*Batis maritima* L.), and glassworts (*Salicornia* spp.) (Bidlingmayer & Haeger 1985).

A truck trap was used to collect insects (Bidlingmayer 1966). The truck trap was driven at a speed of 24 km/h and the loop was completed in 15 min. During each 15 minute loop, insects were collected into a fine mesh bag marked with a unique number. After each run the bag was changed and the bag containing insects was placed into a plastic cooler with dry ice. Sixteen runs were made between July 2012 and July 2013. Twelve runs started pre-sunset and continued until about midnight. Two runs started about midnight and continued until after sunrise. Two other runs were all night runs, starting before sunset and continuing until after sunrise. The morning after the truck runs, mesh bags were taken to the laboratory and the contents sorted and identified. Due to time constraints, data for Lauxaniidae and Anthomyzidae were compiled for only six dates in 2013: 19 May, 2 June, 18 June, 29 June, 23 July, and 30 August.

Lauxaniidae. A small black-spotted yellow fly was seen in a number of collections. In total, sixty-five specimens were collected and then specimens were sent to experts for identification. They were identified as *Poecilominettia slossonae* (Coquillett). This species is known from southern Florida and Puerto Rico and previously has been placed in the genera *Sapromyza* and *Minettia* (Coquillett 1898, Johnson 1913, Curran 1920, Shewell 1965, Gaimari & Silva 2010). Lower Sugarloaf Key is a new locality record for this species. Voucher specimens have been deposited into the California Department of Food and Agriculture, Sacramento.

Poecilominettia slossonae specimens were collected more commonly around sunset and sunrise than in the middle of the night (Figure 1). Other species of Lauxaniidae are known to have bimodal, dawn

and dusk flight patterns, as do many Drosophilidae (Lewis & Taylor 1964). However, it is possible that the primary flight period of *P. slossonae* is diurnal. Daylight collections would have to be made to determine if this is so. The Lauxaniidae are a small family of Diptera with about 150 species known in the New World and about 1500 worldwide (Miller 1977a, Shewell 1987). Adults are slow fliers usually found in vegetation near water, although some species can be found in meadows and cultivated fields (Shewell 1965, Párvu 2001, Greve 2009). Lauxaniid flies have been taken in light traps (Frost 1964, 1975; Greve 2000), in Malaise traps (Miller 1977b), in traps baited with fermenting syrup and fruit (Dvořáková 2008), and in baited traps set for Sarcophagidae and Tephritidae (Shewell 1965, Thomas 2003). They have also been reared from a number of larval habitats (Miller 1977b). Their numbers fluctuate from year to year and from week to week within the same year (Greve & Kobro 2004). They can be very common locally and can occur in large numbers (Whittaker 1952). Some species may serve as vectors of plant pathogens and as pollinators (Lemon 1992, Kato et al. 1995). *Poecilominettia* spp. have been reared from birds' nests (Miller 1977b, Miller & Foote 1976). Adults of some *Poecilominettia* species known to feed on phylloplane fungi (Broadhead 1989). Adults occasionally are taken as prey by sphecid wasps (Miller & Kurciewczki 1976). Knowledge of this family is poor and rudimentary, despite their being common flies in temperate and tropical areas (Merz 2011).

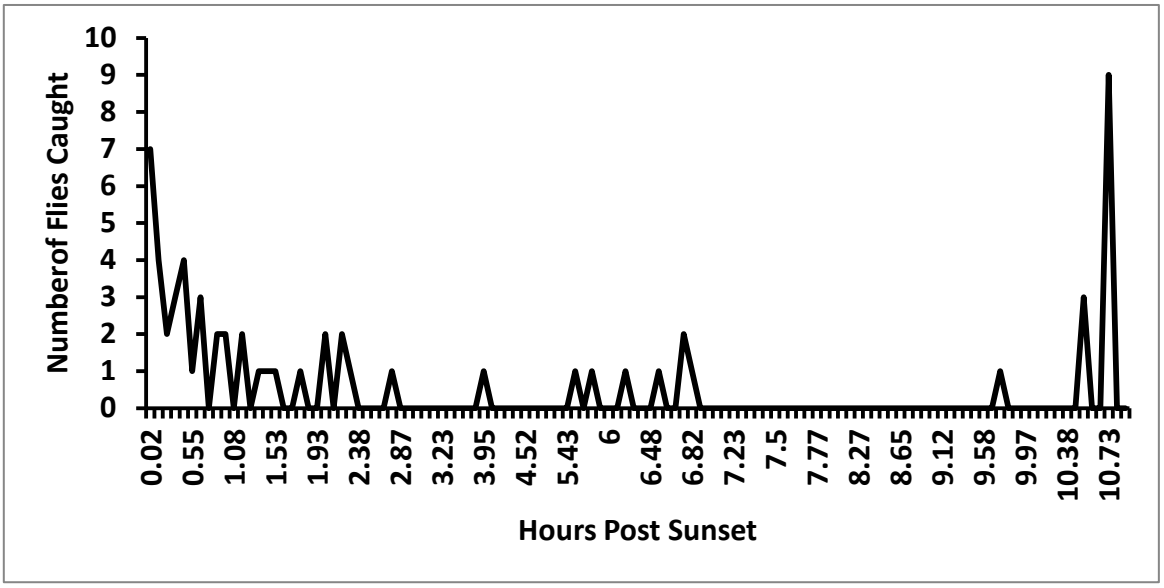

Figure 1. Flight period of *Poecilominettia slossonae* relative to sunset on Lower Sugarloaf Key, Florida, USA.

Anthomyzidae. A small brown fly, at times very abundant in collections, was identified as *Stiphrosoma lucipetum* Rohaček & Barber. One hundred seventy four individual flies were collected. European *Stiphrosoma* species are known from wet habitats with abundant grasses, sedges, or rushes (Rohaček, 1996). *Stiphrosoma lucipetum* is known from The Bahamas, Belize, Costa Rica, Cuba, and the following Florida counties: Collier, Indian River, Lee, Monroe, and Sarasota; Monroe County records include Big Pine Key, Key Largo, and Plantation Key (Rohaček & Barber, 2005). Lower Sugarloaf Key is a new locality record; voucher specimens have been deposited into the California State Collection of Arthropods, Sacramento. Rohaček & Barber (2005) state that this species appears to be associated with mangrove habitats, and that definitely is the case here. This species is known to be attracted to lights based on label data from institutional collections (Rohaček & Barber, 2005). Flight of *S. lucipetum* was interesting in that most of the specimens (131) were collected on one night,

19th May 2013. On that night the moon was in the first quarter (63% illumination). There was a high temperature of 30° C, a low of 25.6° C, the dew point was 21.7° C, and winds were ESE at 16.1 km/h with a maximum wind velocity of 24.1 km/h. Six weeks later, on 29 June 2013, only six specimens were collected and on that day the moon was in the last quarter with 58% illumination. The high temperature was 31.1° C, the low was 26.7° C, the dew point 23.9° C, and winds were from the S at 11.3 km/h, with maximum winds of 21 km/h. The rest of the specimens were collected in small numbers on different days. Whether this represents a peak emergence time, an anomaly, or some other aspect of the life history of *S. lucipetum* is unknown. Only a more focused study of this species will answer this question.

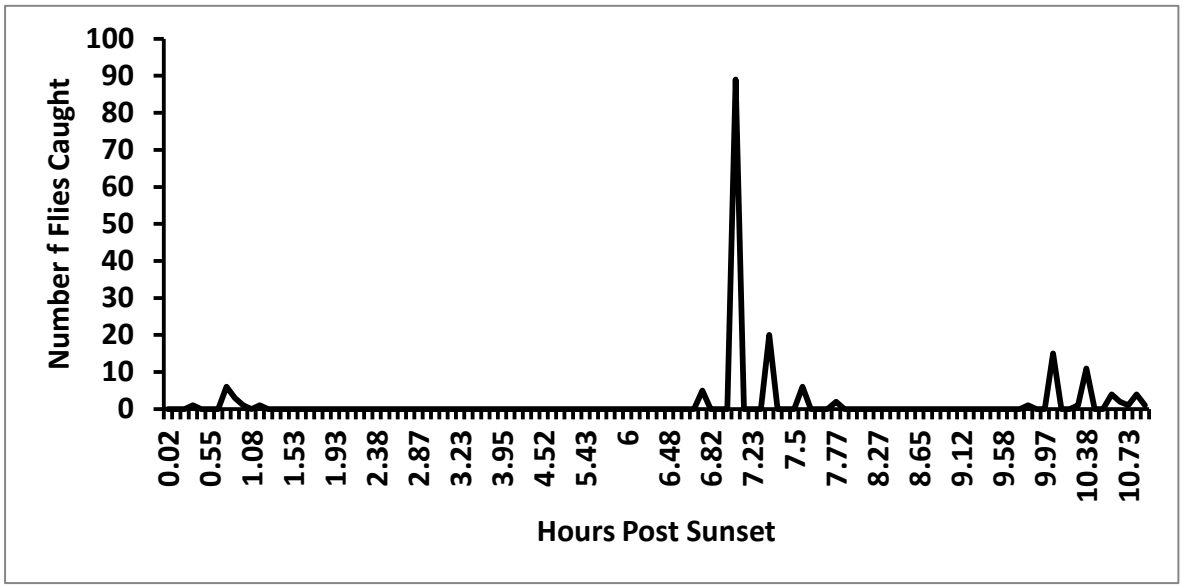

Figure 2. Flight period of *Stiphrosoma lucipetum* relative to sunset on Lower Sugarloaf Key, Florida, USA.

Acknowledgment. I thank Alessandra Rung and Steve Gaimari of the California Department of Agriculture for identifying the Anthomyzidae and Lauxaniidae, and Kevin Barber of Natural Resources Canada for helpful comments on the manuscript.

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Chilean Diptera: inquiry about (residue) trap samples with Dolichopodidae

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In January 2013, together with my wife Anja, I embarked upon a survey in Central Chile, where we focused on the invertebrate faunas of one particular habitat type (life zone), the Valdivian temperate rain forest. We sampled near Ñuble Reserva Nacional, in the Las Trancas Valley and within Conguillío Parque Nacional (PN)(Figure 1), Puyehue PN and Alerce Andino PN and visited (and collected in) several other sites. We were very fortunate to have Dr Elizabeth Arias (Figure 2) at our side (either in the flesh or over the cell phone) during our entire trip. Next to Dolichopodidae, I also extracted several other invertebrate taxa from the samples which were disseminated earlier this year to colleagues in Belgium and (mainly) abroad. Some of you received part of this harvest. A first account of the results of this survey will be presented in the Symposium Diptera Biodiversity Surveys at the 8th ICD in Potsdam (10-15 August 2014).

Figure 1. Volcan Llaima within Conguillío Parque Nacional

The initial aim of the survey was whether a Latitudinal Diversity Gradient (LDG) could also be found in invertebrates. Unfortunately, early in the survey it became clear that some aspects of the field experiment itself would not allow to give a reliable answer to this research question. Another goal of mine was to see for myself how abundant Chilean Achalcinae were and where they occurred (this subfamily is quite elusive in the Neotropics but pan traps produce sometimes good yields at higher altitudes). We succeeded in gathering truly interesting information on this topic.

We ultimately got acquainted with a considerable part of the Chilean dolichopodid fauna, which proved hugely different from that of other Neotropical countries (Ecuador, Colombia, Costa Rica, Panama). I estimate the country's dolichopodid species richness lower than that in the above mentioned countries, which should make it possible to treat most of the fauna in one('s) lifetime. Moreover, decent identification keys together with accurate pictures and descriptions could disclose this family to other (Chilean) entomologists, that might in turn add new records and species over time.

So my idea is to treat the different genera one at the time and, ultimately, produce a practical guide to the Chilean dolichopodid fauna. In order to get a proper idea of this fauna, I need as much material as possible. Over the past decades I have been accumulating samples of Chilean Dolichopodidae kindly provided to me by a number of people, which I am very grateful: Dan Bickel (Achalcinae), Elizabeth Arias, Michael Irwin, Brian Brown, and Chantal Martens. Most of the samples were collected with Malaise traps, fogging or by sweep netting. In many cases, I sorted the flies myself from either residue samples or original samples. Some weeks ago, I accomplished the examination of all samples (with over 10.000 specimens of over 150 species).

Figure 2. Anja De Braekeleer (left) and Elizabeth Arias (right) at Cabaña Don Guillermo (Las Trancas Valley)

As most of the samples originated from the Andean region in Central Chile, I am currently looking out for more material. I guess there must still be trap or fogging samples out there, perhaps almost forgotten or nearly dried out (not necessarily). I would be very much interested to pull out Dolichopodidae from these samples, either residue or complete, and return the samples to the owner. Of course, dried, mounted specimens are very welcome as well, but if they are part of a museum collection, I prefer to examine them on the spot.

So if you might be on top of that kind of samples, and you would like to get rid of the dolichopodid fraction in them, please, send them to the address above. Who knows, they might perhaps contain a species with your name? Thanks in advance.

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Initial attempts at putting females in their place with WIPs

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This is just a short note to alert readers to a potentially new character set to investigate and also one that may allow association of non-descript females with sexually dimorphic males.

Those of us who attended the 7th International Congress of Dipterology in Costa Rica were amazed and delighted at the poster display by Jostein Kjaerandsen depicting many stunning, rainbow-colored Diptera wings on a black background. These colors were the result of Wing Interference Patterns (WIPs) and the findings of his team were published in Shevtsova *et al*. (2011). In the short amount of time since then, a number of entomologists have begun to look at these WIPs in their own groups (e.g., Buffington, 2012; Buffington & Sandler, 2011; Hansson & Shevtsova, 2012; Kangasniemi, 2012; Mitroiu, 2013; Mottern & Heraty, 2014; Shevtsova & Hansson, 2011; Simon, 2013).

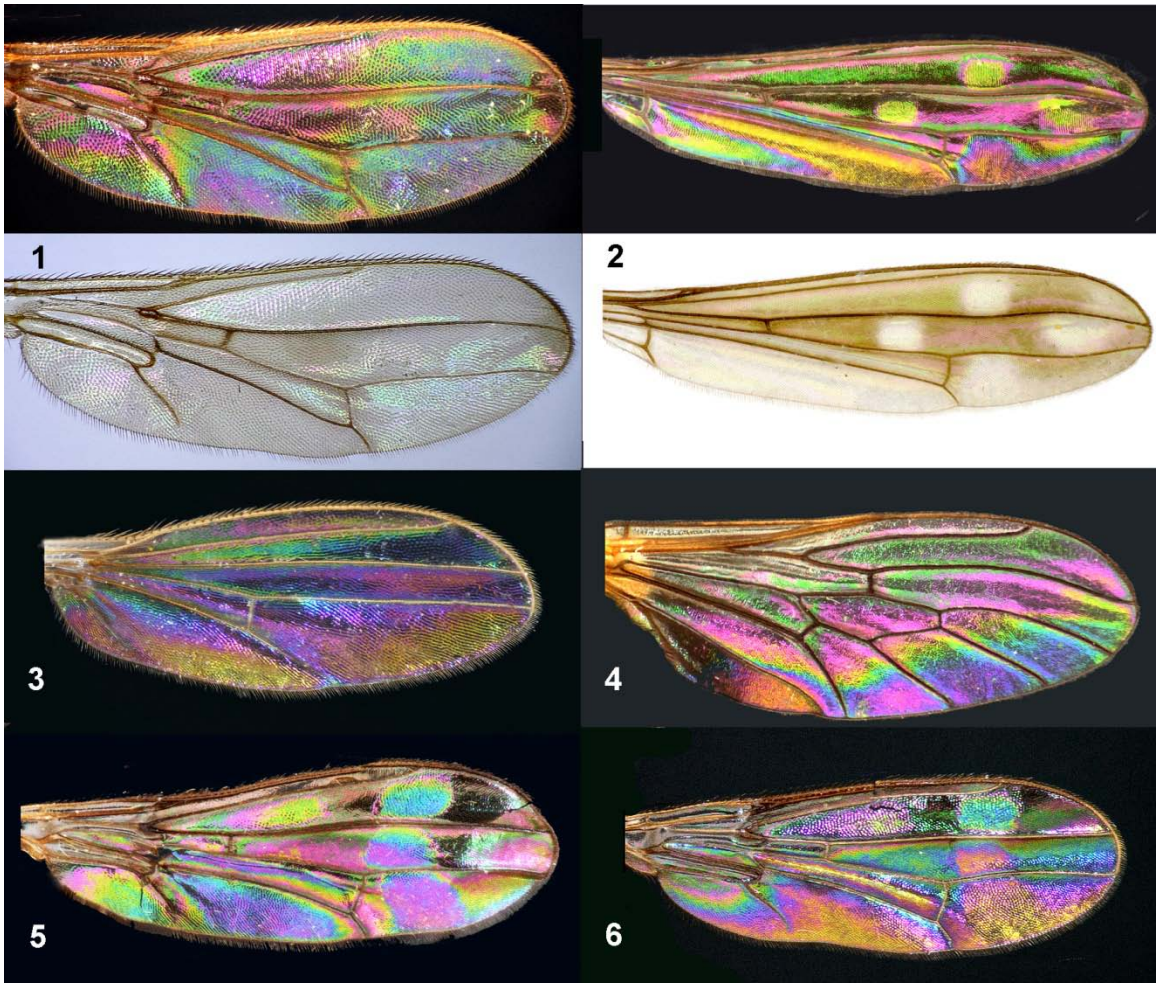
The inherent beauty of these multi-colored patterns was incredible, but the potential as another suite of characters to investigate intrigued me; most of all since, if males and females exhibited such patterns and if those patterns were the same, then years of frustration would be over for entomologists who previously could never associate non-descript females with males, the latter of which had all the conspicuous external characters that characterized species in a particular genus.

I thus began an examination of wings of various flies to see if there was any value in using this system to associate males and those nondescript females of genera where only males could be separated confidently without dissection. Females of those genera would normally be relegated to “sp.” within a genus simply because they all “looked alike” externally. [Sometimes even dissection of females proved futile since the internal genitalic structures might not show any differences.] I suspect there are many reading this who have drawers of unidentified females for this very reason.

I began with some species of the mega-diverse dolichipodid *Campsicnemus* in Hawai‘i (over 170 described species — virtually all based on males) and tried a few species. The results were less than spectacular but still promising. Species of Hawaiian *Campsicnemus* do not exhibit a wide array of patterns but there was some potential in grouping species within species-groups and, in some cases, there was actual association of females with males (these were most successful within the *C. fumipennis* group; recently revised in Evenhuis 2013). There was, however, some variation and I’m still determining what or why that is. Out of, say, 10 wings of males of the same species from the same collecting event, 2 may show a completely different pattern than the other 8. A re-check of the morphological characters showed no differences.

More promising results were found among species of the Old World acalyptrate genus *Strongylophthalmyia*. Distinct patterns were found in all species photographed and males and females showed exactly the same pattern with little or no discernable variation. The same potential was found in photographing the WIPs of the mythicomyiid genus *Platypygus*. Here again were a wide array of specific-specific patterns that appeared stable among the specimens within a species; and females could be associated with males. In contrast, two other mythicomyiid genera, *Empidideicus* and

Glabellula, showed a great deal of variation within species (looking at conspecific males only) and as such, there was little utility for WIPs as a species-specific character.



Figures 1–6. Diptera wings showing wing interference patterns (WIPs).
1. *Strongylophthalmyia*, n. sp. from Sabah (Strongylophthalmyiidae) (collected by Steve Gaimari and Martin Hauser); top, showing WIP, bottom, normal lighting and backdrop. **2**. Undetermined micropezid from the Philippines; top showing WIP, bottom, normal lighting and backdrop. **3**. *Campsicnemus leucostoma*, Hawai‘i (Dolichopodidae). **4**. *Platypygus ridibundus*, Turkey (Mythicomyiidae). **5**. *Strongylophthalmyia caliginosa*, Japan (Strongylophthalmyiidae). **6**. *Strongylophthalmyia angusticollis*, Burma (Strongylophthalmyiidae).

These are just early results of a very preliminary study, but I thought it might be useful to let others know of the potential and they can investigate further their own groups to see if these WIPs are stable and useful or if they are too variable to use.

Not all flies exhibit this phenomenon. Larger muscoids and many orthorrhaphous flies do not display any WIPS, which are dependent on a specific wing structure to allow for the light reflections to exhibit these patterns. However, small brachycerous flies (including acalyptrates) and many Nematocera seem to abound in possibilities for investigation.

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Index to *Catalogue of Palaearctic Diptera* (1984–1993) (vols. 1-13) available

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An index to all thirteen volumes of the *Catalogue of Palaearctic Diptera* ([mostly] by Soós & Papp, eds., 1984–1993) was initially planned as volume 14 but, as I indicated in my paper giving the dates of all the volumes (Evenhuis 2008), this volume was never published. It has been over twenty years since the publication of the last volume and I could not wait for an index to be published, so I created one myself for personal use by scanning the index of each of the 13 volumes, entering all 13 indexes into a large spreadsheet, adding volume numbers to pages for each taxon, verifying spelling after OCR-ing, and alphabetizing the whole thing into one final index of 60,501 names in 380 pages (4MB).

In the hopes that it may prove useful to others, I am making the index available to anyone who wants a copy. The caveats are (1) that it is an “unofficial” index, since the Hungarian Museum may still wish to publish the official version; and (2) it is a “working copy”, in that errors from OCRing may still be found, although it has gone through proof-reading by a few colleagues as well as myself. If any corrections are found, please forward them to me and I will incorporate them and keep the latest

version up-to-date at the link below with notations of version number and date. The pdf of the index can be downloaded using the following link:
http://hbs.bishopmuseum.org/dipterists/resources/PALCATindex.pdf

One of the more interesting metrics one can do when indexing all the volumes is the finding numbers of eponyms for dipterists. It should be no surprise that for a Palaearctic series of catalogs, the most frequent name in species eponyms is Stackelberg (105 names). It was also the second most frequent species epithet used (the winner there was *apicale/apicalis* with 123).

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Collecting Flies on Skunk Cabbage in Maryland

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Our winter in Maryland this year lasted into Mid-April. It has been near freezing or below from January through March. It was too cold, we thought, to go rooting around in the woods until finally, the weekend of April 11th, it was nearly 80 degrees and I suggested to my wife that we check out the skunk cabbage to see if it was still flowering so that maybe we could find some flies that are attracted to its lovely odor. I was a little suspicious that we were too late, that the blooms would have already dug their way out of the snow and ice a few days or weeks ago.

We packed up the collecting gear and hiked out towards the nearby woods and wetlands. We found a large stand of skunk cabbage in the leaf stage and a lot of flowers peeking out from under the young leaves. Most of them were quite dry already. It seems the temperature in the forest went from freezing to 80 in a very short time so everything was nearly dried out by the time we got out there.

We sampled dozens of cabbage plants by placing the net over the plant and tenting the net bag so that any Diptera visiting the flowers and leaves would come up into the net. Surprisingly few plants, however, had any insects at all on them.

We did manage to take a series of chloropids that upon examination under the scope turned out to be two species of *Elachiptera* and one specimen of a shiny blue muscid which seems to be a *Eudasyphora*.

We didn't collect a whole lot of flies but we sure had a good time enjoying the very late spring day and the strange looks of others enjoying the paths near our house!

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HISTORICAL DIPTEROLOGY

Joseph-Philippe de Clairville and Schellenberg's (1803) "deux amateurs"

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Introduction

In 1803, the Zürich book publishers Orell, Füssly et Compagnie printed a 95-page book with 42 hand-colored plates (in French "*Genres des mouches*"; and German "*Gattungen der Fliegen*") with the title page indicating that the famous Winterthur artist Johann Rudolph Schellenberg was responsible for the plates. But the title also said that "*deux amateurs*"/ "*zwey Liebhaber*" were responsible the explanations of the plates. The names of the two "amateurs" remained unknown to bibliographers for many years and common practice was, despite the clear evidence in the title that two amateurs were responsible for the textual matter, to list the work under Schellenberg alone (e.g., Hagen 1863; Horn & Schenkling 1929; Nissen 1969; Evenhuis 1997).

The full titles of the book are as follows:

> *Genres des mouches diptères représentées en XLII. planches projetées et dessinées par Mr. J.R. Schellenberg, et expliquées par deux amateurs de l'entomologie. Gattungen der Fliegen in XLII. Kupfertafeln entworfen und gezeichnet von J.R. Schellenberg, und erklärt durch zwey Liebhaber der Insektenkunde*.

It wasn't until I read Izya Kerzhner's (2008) paper on authorship and the ICZN *Code* that I realized that authorship of the work had been incorrectly cited. He outlined the case for Schellenberg being responsible for the plates and the two anonymous amateurs being responsible for the text, and stated that the entire work should as a result be given authorship as "Schellenberg & Anonymii". Any new names found only on the plates would have authorship as "Schellenberg *in* Schellenberg & Anonymii" and any new names found only in the text would have the authorship as "Anonymii *in* Schellenberg & Anonymii".

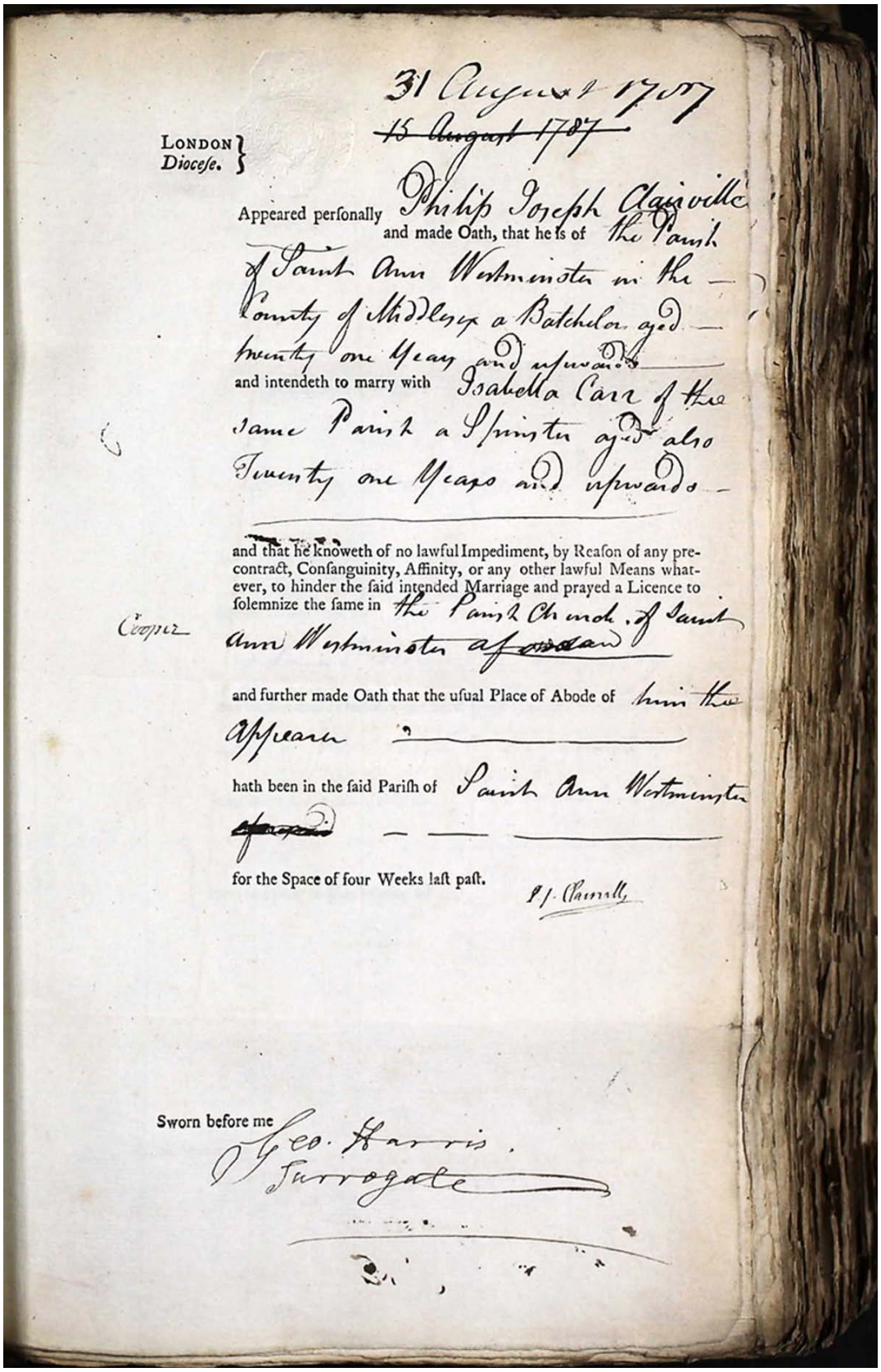
But who were these so-called "*deux amateurs*" and why did they not want to have their names associated with this work? It did not take long to find that a few Swiss historians (e.g., Geilinger 1932; Balmer 1980; Thanner 1987; Schmutz 1987) determined that Joseph Philippe de Clairville was one of the authors (based primarily on Clairville's and his colleagues' correspondence) so I began to find out a bit more on this fellow. Fortunately, Swiss biographers had done much of the legwork and a wealth of information concerning Clairville and his long-time friend Johann Rudolf Schellenberg (1740–1806) (Fig. 1) exists in correspondence to colleagues. Many of the letters are to Clairville's close colleague, Deacon Luzius Pol (1754–1828), an amateur Swiss naturalist interested primarily in botany and entomology, but one on whom Clairville leaned heavily to provide translations of German texts and corrections to his manuscripts (Thanner 1987). A number of events concerning Clairville described below derive from those letters to Pol, some 45 of which reside in the Staatsarchiv Graubünden in Chur, Switzerland (Jenny 1974).

Figure 1 (left). Johann Rudolf Schellenberg (1740–1806). **Figure 2 (right)**. Joseph-Philippe de Clairville (1742–1830)

Early years of Clairville

Joseph Philippe de Clairville (1742–1830) (Fig. 2) is a bit of a mystery man. What is factually known of him seems only to originate from events after he arrived in Winterthur, Switzerland. Clairville is thought to have been born in France (possibly Paris or nearby), schooled in Montpellier as a medical doctor, and moved to Winterthur in 1782 where he spent most of the rest of his life, dying there on 31 July 1830. The only records that biographers have been able to uncover about his pre-Swiss life were from his death certificate in 1830 that have him listed as 88 years old; and from letters to and from Clairville and his colleagues. His French birth cannot be confirmed nor could his sojourn in Montpellier. Interestingly, Wilson (1835) in the "Entomology" entry for the 7th edition of the *Encyclopedia Britannica* said "it is understood he is apparently English-born" but moved to Switzerland. Evidence for his birth in England could not be found in this study either.

Compounding the mystery of his birthplace and even his real name, there is a marriage document (Fig. 3) that has Clairville's name (with an Anglicized "Philip Joseph Clairville"; given names reversed and no "de") dating from 31 August 1787 when he married a well-to-do English spinster, Isabella Carr (1730–1815) in London. On that document, he gave his place of residence as the Parish of Saint Ann, Westminster, in the County of Middlesex, and his age is listed as "twenty-one years and upward". Both were marrying rather late in age for that time (he at 45 and she at 57).



31 August 1707
~~15 August 1707~~

LONDON }
Diocese. }

Appeared personally Philip Joseph Clairville and made Oath, that he is of the Parish of Saint Ann Westminster in the County of Middlesex a Batchelor aged twenty one Years and upwards and intendeth to marry with Isabella Carr of the same Parish a Spinster aged also Twenty one Years and upwards

and that he knoweth of no lawful Impediment, by Reason of any pre-contract, Consanguinity, Affinity, or any other lawful Means whatever, to hinder the said intended Marriage and prayed a Licence to solemnize the same in the Parish Church of Saint Ann Westminster aforesaid

Cooper

and further made Oath that the usual Place of Abode of him the Appearer

hath been in the said Parish of Saint Ann Westminster ~~aforesaid~~

for the Space of four Weeks last past.

P. J. Clairville

Sworn before me
Geo. Harris.
Surrogate

Figure 3. Marriage certificate of the London marriage of Clairville and Isabella Carr.

Another tantalizing piece of evidence relating to Clairville's London marriage is from the probate hearing of Isabella Carr's brother, Robert Carr. The existing documents, giving details of the hearing which took place on 15 August 1787 (the documents are in the Durham County Archives in the UK), lists the presence of a Philip Joseph Clairville and his "wife" Isabella Carr "late of Montreuil, France" [a suburb of Paris], but this was two weeks before the marriage in London took place.

Thanner (1987) discussed another document, a letter by Johann Sebastian von Clais (1742–1809) of Winterthur, at one time the salt mining director in Bex, Switzerland, where Clairville apparently first moved. The letter gives an account of Clairville's early life, stating that he was a French Huguenot and studied medicine at Montpellier. He married a wealthy Englishwoman, Isabella Carr, in order to obtain financial independence, abandon his medical practice, and to be able to devote his time to his passion for natural history. The two purchased some land and settled in the French-speaking town of Bex in central Switzerland in 1780 but eventually made their way to the more northerly German-speaking town of Winterthur, where they remained for the rest of their lives.

Another letter—from Wolfgang Dietrich Sulzer (Chancellor of Winterthur) to the Swiss painter and poet Salomon Gessner on 5 September 1782—has Sulzer introducing Clairville to Gessner and asking if Clairville can stay with Gessner for a day while he is in Zürich. In the letter, Sulzer describes Clairville as a Frenchman from Montpellier and that he and his English wife have made their home in Switzerland (Geilfus 1866). Fuchs (1988) specifically put the two in Bex in January 1780 and staying at the house of Franz Samuel Wild, the commissioner of salt mines there at the time.

These two letters and Fuchs's research give evidence that before the 1780s Clairville had already resided for some time in France (Montpellier and Montreuil) and was, at least by 1780, already married to Isabella Carr. It could be that possibly the French marriage was not recognized in England and that they therefore had to re-marry in order for him to have title to property discussed in the Robert Carr probate hearing in 1787.

Whatever the truth of his mysterious early history, documentation abounds after 1787 in the form of diaries and correspondence verifying his activities in Switzerland. Clairville began publishing on natural history soon after he arrived in Switzerland with his first few works dealing primarily with botanical subjects, all anonymously [e.g., Clairville (1791–1794) *Plantes et arbustes d'agrément*; the authorship was clarified as Clairville by Usteri (1797)]. After his arrival in Winterthur, Clairville made the acquaintance of Schellenberg and often used his illustrating talents in his works. The plates for the *Plantes et arbustes* were contributed by Schellenberg and a decades-long collaboration between the two ensued.

Clairville's publications and associations with natural history colleagues in Switzerland brought him immediate renown and he was highly regarded in scientific circles; and Fabricius in his posthumously published autobiography (Fabricius 1819) even made mention of visiting Clairville and his wife in Winterthur during his 1794 journey to Switzerland.

But all was not always peaceful in Switzerland. Napoleon's troops invaded Switzerland in October 1797 and Clairville was forced to escape across the border to nearby Bavaria. While in exile, he was still able to publish and he finished an anonymous work on entomology, teaming up with Schellenberg to produce in 1798 the first volume of Swiss entomology entitled "*Entomologie Helvétique*". Schellenberg provided the artwork and is assumed to have provided the German text, and Clairville translated it into French. By February 1803, Switzerland was still under French occupation and Clairville had moved to Immendingen (ca. 50 km from Winterthur) to be as close as possible to

Switzerland and to keep an eye on happenings there. It was here that Clairville began working on the *Genres des Mouches*.

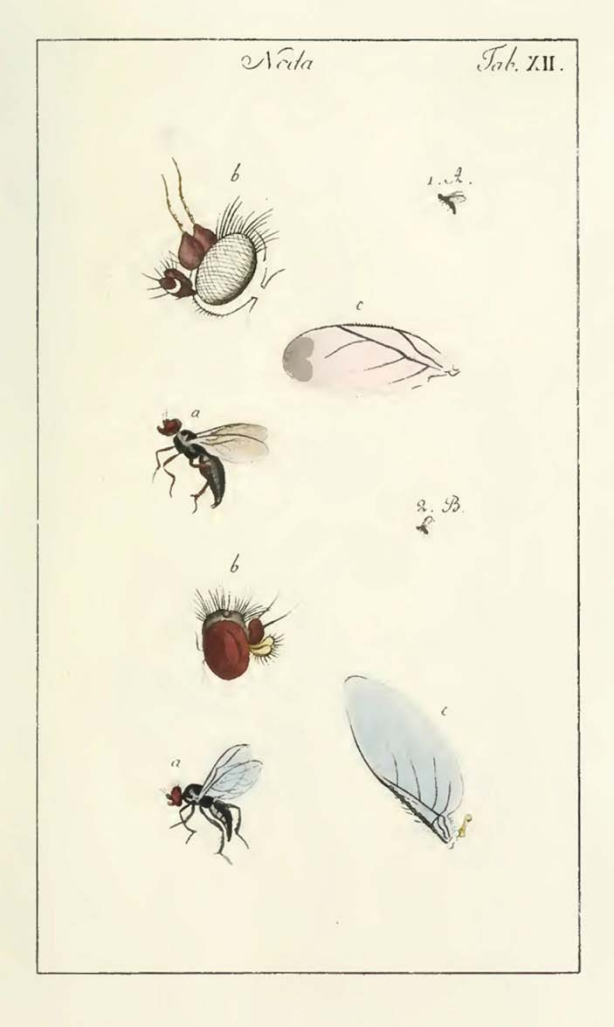
Genres des Mouches

While in Immendingen in southern Bavaria near the Swiss border, Clairville was able to work with Schellenberg on a small booklet with the shortened titles *Genres des Mouches/Gattungen der Fliegen*. As with the *Entomologie Helvétique*, Schellenberg again provided the plates but the text was not his. This can be seen in some of the wording given by the authors of the text when they are trying to decipher the illustrations that Schellenberg gave to them to be described. For example, Schellenberg illustrated plate XII (reproduced here as Fig. 4) with the genus labeled as *Noda* and it depicts two phorid flies [a little over 10 years later Latreille (1818: 606) synonymized *Noda* under *Phora*]. However, the text for plate XII (on page 16) has the page heading as the genus "*Ceroplatus*" and the first line of text states: "Les mouches figurées sur cette planche nous paroissent analogues à celle qui est nommée CEROPLATUS TIPULOIDES", implying that the text authors were trying to identify as best they could the flies depicted on that plate by Schellenberg. They stated that the characters in the illustration seemed to fit the description of *Keroplatus* (and they followed the spelling of the genus by Fabricius as "*Ceroplatus*") (see Fig. 5 for a reproduction of that text page). Without ever seeing a *Keroplatus*, the authors of the text obviously took a wild guess based only on vague characters given by Fabricius for the only known species of the genus. The introduction gives further evidence that Schellenberg was not an author of the text since it indicates the authors were working in isolation and did not have their original papers in order to make comparisons. This makes sense since Clairville was indeed working in isolation (in Immendigen, southern Germany, and away from his library in Winterthur). Clairville did have at least two Fabrician works with him, however: *Entomologica Systematica* (Vol. 4) (1794) and the recently published *Supplementa Entomologica* (1798). They were the only works cited in the text. The single Panzer citation listed was taken from Fabricius (1798).

In addition to having to make educated guesses about the identities of the Schellenberg illustrations, Clairville was not always in agreement with the names that Schellenberg proposed. He thus proposed names that in some cases differed from the names of taxa Schellenberg had labeled on the plates. The plates had already been engraved, so it was too late to redo them. Instead, Clairville wrote the text to exemplify better his ideas of Diptera classification and to propose names he preferred (e.g., for Schellenberg's *Mira mucora*, Clairville proposed instead *Mira macrocera*, saying Schellenberg's name *mucora* "made no sense"). This explains many of the discrepancies in names that exist between text and plates (see Table 1 for a list of these names).

Table 1. Discrepancies between plates and text in Schellenberg & Anonymii (1803).

Plate	Name on Plate	Name in text	Text pages
2, fig. 2	Thereva subcoleoptera	Thereva hemiptera	48, 49
3, fig. 3	Musca lateralis	Musca compressa	62, 63
5, fig. 1	Musca flava	Musca fimetaria	62, 63
8, fig. 2	Syrphus putescens	Syrphus pellucens	52, 53
10, fig. 1	Syrphus conospeus	Syrphus laetus	52, 53
12	Noda	Ceroplatus niger	16, 17
14	Mira mucora	Mira macrocera	68, 69
16	Mulio dentipes	Mulio sphegeus	46, 47



16

CEROPLATUS. *Suppl. Ent. syst. p.* 550.

PL. XII.

Les mouches figurées sur cette planche nous paroissent analogues à celle qui est nommée CEROPLATUS TIPULOIDES, dans les mémoires de la société d'histoire naturelle de Paris, et dont FABRICIUS a admis le genre sans en donner les caractères. Les antennes courtes, les palpes gros et ovales sous les antennes, l'habitus tipuloide; tout concorde. Quant à l'identité spécifique nous ne pouvons la décider d'une manière plus positive. A en juger par les couleurs de l'enluminure nous devons être pour la négative; les deux figures y étant entièrement noires et sans point aux ailes. La différence de leurs grandeurs nous fait présumer que ce sont celles du mâle et de la femelle, d'autant plus que les deux individus ont été pris ensemble sur un mur au mois de mars.

EXPLICATION DES FIGURES.

Pl. XII. Fig. 1. *A.* CEROPLATUS NIGER (fem.) de grandeur naturelle.
a. le même grossi.
b. la tête grossie avec les antennes et les palpes corniformes.
c. aile grossie.
Fig. 2. *B.* CEROPLATUS NIGER (masc.) de grandeur naturelle.
b. la tête grossie.
c. aile grossie.

Figure 4 (left). Plate XII of *Genres des Mouches* depicting the genus *Noda*. **Figure 5 (right)**. Text page 16 of *Genres des Mouches* dealing with the description of the insects on Plate XII, but describing them as species of "*Ceroplatus*".

If Clairville was working in isolation as he indicated, then how did he obtain the plates from Schellenberg and how did the text get back to Schellenberg or the publisher in Zürich? Since logic might indicate that it would prove dangerous and foolish to risk smuggling plates to a refugee across the border and to smuggle plates and text back across the other way, it seems more probable that Schellenberg had completed these plates before Clairville fled to Germany. Clairville returned to Switzerland in late 1803 and the publisher in Zürich was able to print the work before the end of the year. Moreover, Schellenberg was not in contact with Clairville and, due to a lack of commissions from publishers for insect paintings, was forced to leave Winterthur for a few months in late 1800 to find work in Bern where he made handkerchief designs and watercolors of fruits and cereals (Thanner 1987). Thus, there was probably not much interchange of correspondence between the two during this time and Clairville had the publisher print the booklet as soon as he got back to Switzerland, maybe even without informing Schellenberg.

Return to Switzerland

After returning to Winterthur in late 1803, Clairville continued his natural history publications, but still maintained anonymous authorship of his works. The first of these was a completion of Rousseau's "*Le botaniste sans maître …*" (Clairville 1805) where he used the pseudonym "M. de C. [Monsieur de Clairville]" The second volume of *Entomologie Helvétique* was also in progress, but Schellenberg was now ill with gout and, after several strokes eventually died in August 1806, with his friend Clairville nearby (Thanner 1987). Schellenberg had made the illustrations, but Clairville employed two engravers, Schellenberg's son, Ulrich Schellenberg, and Franz Hegui, to complete the necessary illustrations and the finished work came out some time in late 1806.

With his close-friend in entomological publishing gone, Clairville went back to publishing botanical works (e.g., Clairville 1811; the title page of which identifies him as the author of *Entomologie Helvétique*). His wife Isabella died in 1815 and Clairville soon wedded another English-born woman, this time the much younger Emely Norman (47 years younger than Clairville). In his memoirs, the botanist de Candolle said of Clairville, whom he saw in late July 1830, only a few days before Clairville died:

> "Il [Clairville] *était retiré dans une jolie campagne, avec une jeune et jolie femme Anglaise qui malgré son grand âge l'avait épousé, ce dont il semblait très-fier et très-heureux"*[Clairville had retired to the beautiful countryside with a pretty young English woman who, despite his great age, had married him, of which he seemed very proud and very happy] (Candolle 1862: 358).

One of his last endeavors, the *Manuel de l'amateur des oiseaux de volière* (Clairville 1825), was a French translation of *Naturgeschichte der Stubenvögel* (Bechstein, 1795). In addition, Walckenaer (1839) listed an unpublished geographical manuscript of Clairville on the ancient routes of the Winterthur region, so his interests were indeed varied. Clairville died in Winterthur on 31 July 1830, only a week after de Candolle saw him as happy and proud with his young wife. His private library was bequeathed to the Stadtsbibliothek in Winterthur, his herbarium is in the University of Zürich, and his beetles are in the Naturhistorisches Museum in Basel.

A note on anonymous authorship

Publishing anonymously was not infrequent in the Francophone countries of Europe and especially during the French Revolution. Either no author at all was given on the title page or sometimes a first initial and/or asterisks (e.g., M. de. C., C***; Comte de M***, etc.). Many of these authors were aristocrats or royalists and (during the French Revolution) desired to keep their names from becoming public for fear of retribution by the citizenry or the National Assembly. Clairville might have been a royalist or a member of the nobility (the "de" usually indicating an ennobled title) or he simply did not want to be known to creditors or for other reasons altogether. But there had to be some political reason for his wanting to evade Napoleon's troops when they came though Switzerland. Other colleagues such as Roemer, Sulzer, and Schellenberg in Winterthur and nearby Swiss towns remained in Switzerland during the battles and resulting occupation. Clairville even wrote to Sir Joseph Banks from Erlangen, Germany, in 1800 explaining that he had had to abandon all his books and belongings when the French invaded (Dawson 1958) and was hoping to get a good reference from Banks to support a potential posting as Director of the natural history cabinet of the King of Hanover. But apparently Banks was not aware of who this writer was and needed some assistance from the botanist Rev. Paul Martyn, who informed him of Clairville's works (publishing anonymously can definitely have its negative consequences!).

Clairville was the author of a number of anonymous works on Swiss natural history and it is thus no surprise that he was discovered through his correspondence with colleagues as having been one of the two anonymous "amateurs" of Schellenberg & Anonymii's (1803) work.

Authorship of new taxa in the 1803 work

Clairville has definitively been identified in a number of works as the primary author of the French text of the *Genres des mouches*. However, as to who the second anonymous author was (responsible for the German text), all the evidence points to Clairville's close friend, Deacon Luzius Pol. The correspondence of Schellenberg, Clairville and Pol makes no mention of anyone else who might have had a hand in translating the French into German; and Pol was already known to have helped Clairville in the past with this task.

In any case, neither Clairville, Pol (nor anyone else who has been previously, or will be subsequently, identified as having been responsible for the French and/or German text) can be considered authors of the new names made available in the 1803 work. According to the ICZN *Code*, external evidence cannot be used to determine authorship, so the authorship formula must be as Kerzhner (2008) has indicated: all names only on the plates (e.g., *Noda*) are "Schellenberg *in* Schellenberg & Anonymii, 1803"; all names only in the text and not on the plates (e.g., *Thereva hemiptera*) are "Anonymii *in* Schellenberg & Anonymii, 1803"; and those names both in the text and plates (e.g., *Cona* and *Mira*) are "Schellenberg & Anonymii, 1803".

Acknowledgments

Peter Nagel and Ruth Kirmser of the University of Basel, Switzerland, are thanked for helping me obtain biographical literature on Clairville. Adrian Pont kindly reviewed the manuscript. Chris Thompson stoked my initial interest in the "*deux amateurs*" many years ago when he showed me his copy of the 1803 work and explained the mystery of the two unnamed writers. Thanks for that, Chris; this one is for you.

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MEETING NEWS

8th International Congress of Dipterology
www.icd8.org
10-15 August, 2014, Potsdam, Germany

Editor's Note – I'm sure many of you are anxiously awaiting August for this most excellent of meetings! No report was submitted for the upcoming Congress, but you can visit the website, or see the previous issues of *Fly Times* for extensive information.

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8th International Symposium on Syrphidae
www.iss8.zfmk.de
4-8 June, 2015, Monschau, Germany

Ximo Mengual and Björn Rulik, ISS8 Organizing Committee

Zoologisches Forschungsmuseum Alexander Koenig
Adenauerallee 160, D-53113, Bonn, Germany; x.mengual@zfmk.de

We cordially invite you to attend the 8th International Symposium on Syrphidae (ISS8). In this occasion, the ISS8 will take place in the heart of Europe, in the historic town of Monschau (Germany) from 4th to 8th of June 2015. This symposium focused on Flower flies promotes the engagement that stimulates new research collaborations and the delight of sharing experiences on Syrphidae.

Location
Monschau preserves the magic of the old German cities with many half-timbered houses and narrow streets, which have remained nearly unchanged for 300 years. Located in the middle of the Eifel region of western Germany, in the narrow valley of the Rur River, the city of Monschau offers nature and culture and it is a popular destination for tourists.

The symposium will be held in the Carat Hotel with its pleasant and distinguished atmosphere. All the sessions and accommodation will be in the Carat Hotel, for which the organizers have a special price.

Transportation
Monschau is literally in the middle of the continental Europe, bordering with Belgium and not fare away from Luxembourg. Due to its privileged location, there are many ways to get there.

If you come by car, you only have to follow your GPS system and use the Catar Hotel address:

Laufenstraße 82
52156 Monschau
Germany

If you fly, you should know that the nearest major airport is Maastricht Aachen Airport (MST / EHBK). This airport has international flights from Maastricht (Netherlands) and is 84 km from the center of Monschau (Germany). Another major airport is Cologne-Bonn Airport (CGN / EDDK), which has international and domestic flights from Cologne, and is 101 km from Monschau.

Transport from Zoologisches Forschungsmuseum Alexander Koenig (ZFMK), in Bonn (Germany) to Monschau and vice versa will be organized. This transport will leave on June 4th from Bonn and will come back to Bonn on 8th June. Bonn city is easy to reach by train from Cologne-Bonn Airport or from Düsseldorf International Airport (DUS / EDDL). Please visit the website of the Deutsche Bahn for further details: http://www.deutschebahn.com/en/start.html

Registration
Registration fee will be estimated based on the available funds. Further details will be posted soon. At this time, we ask you to complete and return the 'interest form' to receive further information about the ISS8 and to assist us in planning ahead for the symposium. This is very important for us to plan better the symposium and to raise funds, which will help students and colleagues to come, as well as to have a lower registration fee.

Preliminary Program
The scientific program will include different sessions on: Faunistics and Biogeography; Systematics and Phylogenetics; Biology and Ecology; Accelerated Biodiversity Assessment and Conservation; and Integrated Pest Management and Biocontrol. Below you can find a preliminary schedule of the ISS8.

Day / Time	**Thursday June 4th**	**Friday June 5th**	**Saturday June 6th**	**Sunday June 7th**	**Monday June 8th**
8:30 - 9:00		Opening	Opening	Opening	Excursion
9:00 - 12:30		Symposium	Symposium	Symposium	
12:30 - 13:30		Lunch	Lunch	Lunch	
14:00 - 17:00	Arrival	Symposium	Symposium	Symposium	
17:00 - 19:00	Registration				
19:30 - 21:30	Welcome Dinner		Banquet		

Excursion
On Monday June 8th 2015, and after we leave Monschau, we will organize a field excursion most probably to the Eifel National Park (http://www.nationalpark-eifel.de/go/eifel/german.html). Further details (excursion fee and final places) will be posted soon.

Important dates
Until July 31st 2014: Registration of interest
Autumn 2014: Open Registration
June 4th - 7th 2015: Symposium ISS8
June 8th 2015: Field excursion

For questions or suggestions you can reach us at: syrphidae8@gmail.com
All this information and more is available at www.iss8.zfmk.de

We invite you to attend the ISS8 and contribute to the scientific program by presenting your research. Come and meet colleagues, get informed, exchange ideas, and have fun! We look forward to meeting you all in Monschau.

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Diptera on ICE?

Gail E. Kampmeier*

Illinois Natural History Survey, Prairie Research Institute, University of Illinois
1816 South Oak Street, Champaign, IL 61820; gkamp@illinois.edu

The Entomological Society of America will be hosting the International Congress of Entomology (ICE) in Orlando, Florida, 25-30 September 2016 http://ice2016orlando.org/. It has been over 25 years since the ICE was hosted in North America and it will have been 40 years since the U.S. last hosted the Congress. The theme for the upcoming meeting is *Entomology without Borders.*

What does this mean to the Diptera community? With such a diverse group of insects and people studying them, we have the opportunity have a major impact on the Scientific Program by

- Nominating one of the daily plenary speakers (nominations due 1 October, 2014)
- Organizing a symposium related to one of 30 identified scientific sections* (deadline 2 March 2015)
- Hosting an event or function (submission site open Sept. 2014; deadline 29 Feb. 2016)
- Submitting a 15-minute scientific paper or poster** (submission site open Nov. 2014; deadline 1 February 2016) related to 30 identified scientific sections

The *Fly Times*, FaceBook's Diptera group, Diptera.info, and numerous other blogs introduce us to one another remotely and the upcoming 2014 International Congress of Dipterology will provide many with the pleasure of meeting in person. Please consider taking advantage of one or more of the options above to highlight the amazing diversity of this group of insects and the connections among those who study them. If you have further questions, please contact me at gkamp@illinois.edu.

*I am a Section Convener for 5. Biodiversity, Biogeography and Conservation Biology, but Diptera are also important in many other Sections. These Sections do not correspond to those found in the Entomological Society of America.

**Note that regardless of submission type, all presenters are limited to a single presentation at the ICE.

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OPPORTUNITIES

Postdoctoral Fellowship Opportunity
Australian Biological Resources Study - Stratiomyidae

David K. Yeates

Director, Australian National Insect Collection, CSIRO Ecosystem Sciences
& Adjunct Professor, The Australian National University, Australia; David.yeates@csiro.au

Norm Woodley and I would like to announce a 3-year, Australian Biological Resources Study (ABRS) postdoctoral fellowship to study the relationships and generic classification of the Australian Stratiomyiidae. The successful candidate will be based in the Australian National Insect Collection, Canberra. The position includes a salary of $78,000 plus retirement benefits and 4 weeks leave a year. The successful candidate will be highly motivated and have a PhD in entomology and experience in molecular and morphological insect systematics. The postdoctoral fellowship includes field work and travel to major institutions in the USA and Europe. Potential applicants should contact David Yeates.

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Traveling near Riverside, California? Come visit the museum!

John Hash

Department of Entomology University of California
900 University Ave, Riverside, CA, USA 92521; jhash001@ucr.edu

Next time you visit Southern California or Arizona, plan to spend a few days in the UCR Entomology Research Museum collection. Friends of the Entomology Research Museum (FERM) is offering Visiting Curator Awards (up to $750) to help offset travel costs related to working in our collection. We have significant holdings in Tachinidae, Anthomyiidae, Sarcophagidae, and Syrphidae that want attention, but would be equally happy to

invite someone to spend time working through our copious, unsorted Schizophora. For more information on FERM and how to apply, please visit http://entmuseum.ucr.edu or https://entmuseum.ucr.edu/visiting_scholars.htm.You can also contact John Hash (FERM President) or Doug Yanega (FERM Secretary, dyanega@ucr.edu) if you have any further questions.

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DIPTERA ARE AMAZING!

Thank you very much to Bob Parks for sending this excellent photograph for your viewing pleasure! This is the asilid *Efferia rapax* (Osten Sacken) feeding on Reakirt's Blue, *Echinargus isola* (Reakirt). Bob photographed this scene at Garden Canyon, Huachuca Mountains, Fort Huachuca, Sierra Vista, Arizona. I encourage others to send their Diptera photographs for inclusion in this section!

BOOKS AND PUBLICATIONS

As usual this round up of recent literature includes many excellent papers on the taxonomy, ecology and phylogeny of our favorite two-winged study subjects. There are also papers on: new ways of tying down flies; Diptera as tropical bioindicators; using cigarette butts to control mosquitoes; mimicry and survival in syrphids; biographies of several famous dipterists; the role of Diptera in Great Ape diet; deafness in sarcophagids; identifying people from mosquito bloodmeals; a number of ultrastructure and detailed morphological studies; the effects of plant diversity on Diptera; and footage of a ceratopogonid feeding on a mosquito. We hope that some of them prove interesting.

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

Enjoy!

Acurio, A., Rafael, V., Cespedes, D. and Ruiz, A. 2013. Description of a new spotted-thorax *Drosophila* (Diptera: Drosophilidae) species and its evolutionary relationships inferred by a cladistic analysis of morphological traits. Annals of the Entomological Society of America **106(6)**: 695-705. doi:10.1603/an13028.

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Ament, D.C. 2014. Taxonomic revision of the genus *Chaetocnemistoptera* Borgmeier (Diptera: Phoridae), with the description of five new species. Zootaxa **3753(4)**: 301-322.

Ament, D.C., Freiria, G.A., da Rocha, L.C., del Lama, M.A. and Garofalo, C.A. 2014. A scientific note on the first records of *Melaloncha* Brues, 1904 (Diptera: Phoridae) parasitizing Euglossini and Centridini bees. Apidologie **45(2)**: 266-268. doi:10.1007/s13592-013-0246-1.

Amorim, D.D. and Oliveira, S.S. 2013. Types of Neotropical Mycetophilidae (Diptera) at the Natural History Museum collection, London. Zootaxa **3726(1)**: 1-119.

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Autio, O., Salmela, J. and Suhonen, J. 2013. Species richness and rarity of crane flies (Diptera, Tipuloidea) in a boreal mire. Journal of Insect Conservation **17(6)**: 1125-1136.

Awad, A.A., Ali, N.A. and Mohamed, H.O. 2014. Ultrastructure of the antennal sensillae of male and female peach fruit fly, *Bactrocera zonata*. Journal of Insect Science **14**.

Bachtold, A. and Del-Claro, K. 2013. Predatory behavior of *Pseudodorus clavatus* (Diptera, Syrphidae) on aphids tended by ants. Revista Brasileira De Entomologia **57(4)**: 437-439. doi:10.1590/s0085-56262013005000030.

Baldacchino, F., Porciani, A., Bernard, C. and Jay-Robert, P. 2014. Spatial and temporal distribution of Tabanidae in the Pyrenees Mountains: the influence of altitude and landscape structure. Bulletin of Entomological Research **104(1)**: 1-11. doi:10.1017/s0007485313000254.

Bartak, M., Plant, A. and Kubik, S. 2013. Species of *Bicellaria* (Diptera: Hybotidae) from Asia. Zootaxa **3710(3)**: 233-256.

Batista-da-Silva, J.A. 2014. Effect of lunar phases, tides, and wind speed on the abundance of Diptera Calliphoridae in a mangrove swamp. Neotropical Entomology **43(1)**: 48-52. doi:10.1007/s13744-013-0181-x.

Behura Susanta, K., Singh, B.K. and Severson, D.W. 2013. Antagonistic relationships between intron content and codon usage bias of genes in three mosquito species: functional and evolutionary implications. Evolutionary Applications **6(7)**: 1079-1089.

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Biasi, C., Tonin, A.M., Restello, R.M. and Hepp, L.U. 2013. The colonisation of leaf litter by Chironomidae (Diptera): The influence of chemical quality and exposure duration in a subtropical stream. Limnologica **43(6)**: 427-433. doi:10.1016/j.limno.2013.01.006.

Blosser, E.M., Nishimura, N. and Lounibos, L.P. 2013. Testing developmental plasticity in aquatic larvae of *Corethrella appendiculata* (Diptera: Corethrellidae). Annals of the Entomological Society of America **106(6)**: 810-817.

Bopp, D., Saccone, G. and Beye, M. 2014. Sex determination in insects: Variations on a common theme. Sexual Development **8(1-3)**: 20-28. doi:10.1159/000356458.

Boucher, S. and Nishida, K. 2014. Description and biology of two new species of Neotropical *Liriomyza* Mik (Diptera, Agromyzidae), mining leaves of *Bocconia* (Papaveraceae). Zookeys **369**: 79-97.

Boucher, S. and Wheeler, T.A. 2014. Neotropical Agromyzidae (Diptera) of the Mission Geodesique de l'Equateur: Becker (1920) revisited. Zootaxa **3779(2)**: 157-176.

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Briggs, D.E.G. 2013. A mosquito's last supper reminds us not to underestimate the fossil record. Proceedings of the National Academy of Sciences of the United States of America **110(46)**: 18353-18354. doi:10.1073/pnas.1319306110.

Brodin, Y., Ejdung, G., Strandberg, J. and Lyrholm, T. 2013. Improving environmental and biodiversity monitoring in the Baltic Sea using DNA barcoding of Chironomidae (Diptera). Molecular Ecology Resources **13(6)**: 996-1004.

Cabrini, I., Grella, M.D., Andrade, C.F.S. and Thyssen, P.J. 2013. Richness and composition of Calliphoridae in an Atlantic Forest fragment: implication for the use of dipteran species as bioindicators. Biodiversity and Conservation **22(11)**: 2635-2643. doi:10.1007/s10531-013-0545-x.

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Carrejo, N., Diaz, A.E. and Woodley, N.E. 2013. A new species of *Lixophaga* Townsend (Diptera: Tachinidae) from Colombia, a parasitoid of *Neoleucinodes elegantalis* (Guenee) (Lepidoptera: Crambidae). Zootaxa **3737(1)**: 68-76.

Carvalho, F.S., de Sousa, J.R.P. and Esposito, M.C. 2014. New species and new records of *Dexosarcophaga* Townsend (Diptera: Sarcophagidae) from Brazil with a key to species of the subgenus *Bezzisca*. Neotropical Entomology **43(1)**: 63-67. doi:10.1007/s13744-013-0178-5.

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Da Silva, F.L., Fonseca-Gessner, A.A. and Ekrem, T. 2014. A taxonomic revision of genus *Labrundinia* Fittkau, 1962 (Diptera: Chironomidae: Tanypodinae). Zootaxa **3769(1)**: 1-185.

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