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**Editor-in-Chief** Stephen D. Gaimari

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## OFFICE ADDRESS

North American Dipterists Society  
P.O. Box 231113  
Sacramento, California, 95823, USA

## EMAIL ADDRESS

[sgaimari@dipterists.org](mailto:sgaimari@dipterists.org)

## WEBSITES

[https://dipterists.org/fly\\_times.html](https://dipterists.org/fly_times.html)  
<http://www.nadsdiptera.org/News/FlyTimes/Flyhome.htm>

## HOSTING

*Fly Times* is a publication of the North American Dipterists Society. All issues are hosted on the webpages of the Society, at both the new website <https://dipterists.org> and the longstanding website <http://nadsdiptera.org>. The new website is fully hosted by the Society, with webmaster Steve Gaimari. The latter website, with Jim O'Hara as webmaster, is kindly hosted by the University of Guelph through arrangement with Steve Marshall.

## DISTRIBUTION

*Fly Times* is simultaneously distributed in PDF and printed format twice yearly, with spring and fall issues.

## SCOPE

*Fly Times* accepts submissions on all aspects of dipterology, providing a forum to report on original research, ongoing projects, Diptera survey activities and collecting trips, interesting observations about flies, new and improved methods, to discuss the Diptera holdings in various institutions, to make specimen requests, to advertise opportunities for dipterists, to report on or announce meetings or events relevant to the community, to announce new publications and websites, to examine the historical aspects of dipterology and Diptera literature, to honor our recently deceased colleagues, and anything else fly-related that you can think of. And of course with all the images you wish to provide.

## INSTRUCTIONS TO AUTHORS

Although not a peer-reviewed journal, all submissions are carefully considered by the editor before acceptance. We encourage submissions from dipterists worldwide on a wide variety of topics that will be of general interest to other dipterists, and hope that this will be an attractive medium for students through retirees to showcase their activities.

The requirements for submission are simple. Please send me a single-spaced text file (.rtf or .doc preferred) along with separate image files (.jpg or .png preferred).

Following are some specific do's and don't's, bearing in mind that consistency among manuscripts is important:

- 1) *Do not* embed images into the text file (but *do* indicate in the text file approximately where each image should be placed).
- 2) *Do* submit image files of a reasonable size (no more than about 1MB per image file).
- 3) *Do not* use embedded styles (e.g., the various heading styles, small caps, paragraph spacing, etc.). *Do* limit styles to italics, bold, and (if you must) underline, and single-spaced.
- 4) *Do not* use different fonts, different font-sizes, or different colored fonts as headings. *Do* use Times New Roman, 11.5 point, black.

The approximate deadlines for submission are the middle of May and the middle of November, although this is flexible up to the time of publication (which will generally be early June (spring issue) and early December (fall issue). For larger manuscripts your submissions may be considered for inclusion in the *Fly Times Supplement* series.

Please submit manuscripts to the editor at:

[sgaimari@gmail.com](mailto:sgaimari@gmail.com)  
and cc [sgaimari@dipterists.com](mailto:sgaimari@dipterists.com)

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**The North American Dipterists Society** is a 501(c)(3) nonprofit organization, incorporated in the state of California on 27 November 2019. We are an international society of dipterists and Diptera-enthusiasts, serving the needs of the worldwide dipterist community.

*Our Mission is to advance the scientific study, understanding and appreciation of the insect order Diptera, or true flies. To accomplish this, we aim to foster communication, cooperation, and collaboration among dipterists, and to promote the dissemination and exchange of scientific and popular knowledge concerning dipterology.*



As an **international society**, there are no boundaries, and our core activities are geared towards all dipterists, not a subset. We aim to provide a common stage for all people interested in flies, a place where our community can closely interact. Among our core activities, we produce Society publications such as this one (as well as the *Fly Times Supplement* and *Myia*), facilitate or organize Society and other Diptera-related meetings and events, provide grants and awards in support of dipterological activities and achievements, perform outreach activities and provide educational resources to those who need them, and maintain an organizational website, an online Directory of World Dipterists, a Diptera mailing list server, and social media presence. In these efforts, we as a group can make our society as successful as we want!

**From the Editor** – Welcome to the latest issue of *Fly Times*! This issue is yet again brought to you during the Covid-19 pandemic, hopefully as the worst of it winds down, but with many of us still cooped up at home. Hopefully soon most of us can return to some semblance of normal, to visit and work in insect collections worldwide, or to undertake collecting expeditions to lots of interesting places. With our need to have face-to-face interactions with our colleagues, I am hopeful that meetings will start up again, along with collection visits, and we will all have a chance to see each other again soon! It seems we are on the right track with the vaccines being produced, and hoping their distribution will get to all of us in due course! As is usual, I am impressed with the variety of excellent submissions, and I hope they are enjoyable to the readers! And as seems to be the norm, I am right at the edge of this being a true spring issue. Another two days and it would have been summer! Please consider writing an article for the next issue, which is slated for fall (not winter!) of this year. And for larger works, please consider the *Fly Times Supplement* series, which can be found at [https://dipterists.org/fly\\_times\\_supplement.html](https://dipterists.org/fly_times_supplement.html).

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## NEWS

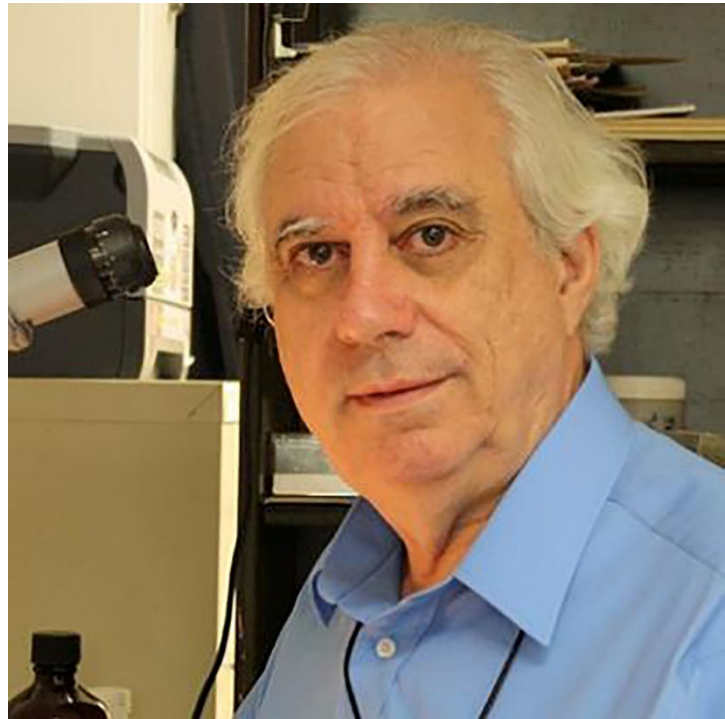
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### **A rambling remembrance of Frederic Christian [Chris] Thompson (1944–2021), entomologist, nomenclaturist, birder, bibliographer, etc. and so forth**

Neal L. Evenhuis

J. Linsley Gressitt Center for Research in Entomology, Bishop Museum,  
Honolulu, Hawai'i 978917-2704, USA; [neale@bishopmuseum.org](mailto:neale@bishopmuseum.org)

Last February we lost another of the big ones. The last few years have taken their toll on Diptera taxonomy by the passing of some of the Mt. Rushmore-ish greats of their generation: Monty Wood, Amnon Freidberg, Laszlo Papp, Knut Rognes, Mike Ackland, Oleg Negrobov, Harold Robinson, and many others. And now, we have lost Chris Thompson. Chris had a profound impact on many of us dipterists. He may have seemingly had a rough exterior, but deep down he was a softy and was generous to a fault with donations of funds, his time, and boundless energy to help others. His envisioning the use of computers in databasing, collection and name management, and bioinformatics was well before the term “bioinformatics” was ever coined—many have him to thank for thinking so far ahead in that



regard. His love of computers, programming, and databasing rivaled only his love of syrphids. So much so that he took night courses in the early 1980s in order to learn how to program. I remember those days when I stayed with him during visits to the USNM where he would go out to attend night courses right after dinner. I wouldn't see him until the next morning when we went into the museum together. Mike Peters, who wrote a brief dedication to Chris in the Fernald Club Yearbook in 1992 said he took so many courses, he could have qualified for a degree in computer engineering.

Chris was born on 24 April 1944 in Boston, Massachusetts (but lived most of his pre-college life in nearby Wellesley). His father was in the paper and plastics packaging business and his mother was assistant to the Dean at Harvard Divinity School (she wanted him to apply to Harvard so she could drive him to school; but Chris declined that potential embarrassment and went to the University of Massachusetts (UMass) instead). Chris had an early interest in the outdoors, and birds especially. While in high school, he and his brother Paul were councilors at Camp Mowglis in New Hampshire, a summer youth camp on Newfound Lake. He was a member of the Wellesley High School Science Club and even won honorable mention at the school's Science Fair in 1960 while a sophomore.



**Figure 1.** 1962, Wellesley High School graduation. **Figure 2.** 1968, University of Massachusetts with C.P. Alexander and Nelson Papavero. **Figure 3.** 1966, Chris on Malden Island during the Pacific Ocean Biological Survey Project (note the hazard symbol on the vat. Malden was where three thermonuclear devices were detonated by the British just 10 years earlier). **Figure 4.** 1971, PVC Chris Thompson at Ft. Meade, Maryland. **Figure 5.** 1994, Road trip! Setting off to the Guelph ICD. Left to right: Manuel Zumbado, Neal Evenhuis, Chris, Anatoly Barkalov. **Figure 6.** 2006, Fukuoka ICD. Left to right: Neal Evenhuis, Dan Bickel, Chris.

College took him a bit further west in Massachusetts to UMass at Amherst, where he majored in entomology, getting both his B.S. and PhD there. Charles P. Alexander was there at the time but could not be an official member of his PhD committee as he had retired in 1959. Still, his signature was affixed to Chris's thesis, even if in an unofficial capacity. A subsequent letter of support by Alexander to a prospective employer indicated that Chris had indeed made a positive impression on him while a student there.

In between his Bachelor's degree (1966) and PhD (1969), Chris was part of the Smithsonian's Pacific Ocean Biological Survey Project (POBSP), which took him half way around the world to survey birds and their ectoparasites in some of the tiniest islands and atolls scattered around the vast Pacific Ocean. And shortly after getting his PhD (and no longer having a student deferment) he was politely asked by the Selective Service System to put in his required two years in the military; and he did, as a medical entomologist at Ft. Meade, Maryland, where he identified mosquitoes collected in Vietnam by other medical entomologists during the Vietnam War. Ft. Meade was also where he met Betty Jean Lacy. The two would get married a short time later (when he had secured employment at the American Museum of Natural History for a two-year fellowship).

After his AMNH stint, Chris got a job with the U.S. Department of Agriculture, as a research entomologist in the Systematic Entomology Laboratory located at the Smithsonian. He got the job in 1974 and stayed there until his retirement in 2008. As soon as he was employed, Chris was asked by his supervisor, Lloyd Knutson, to come up with a three-year research plan, and studying Neotropical syrphids was listed as his top priority. Although he dabbled in a few other families in his 56-year publishing career, syrphids would be his life-long interest. He published more than 80 papers on them during his career with the USDA and continued on studying them even after retirement. In mid-May, I went to Florida to help Betty sort his paper and computer files and loans. His unfinished manuscripts were in the dozens (maybe close to 100). It seemed that every genus had a separate folder with a sheet of paper inside with a template "A new species of \_\_\_\_\_ from \_\_\_\_\_ (Diptera: Syrphidae)" and "send proofs to F.C. Thompson" at his Ponte Vedra, Florida address. And there were the larger folders with "Conspectus of \_\_\_\_\_ in the \_\_\_\_\_ Region". Chris was indeed ambitious and had many irons in the fire, as it were. Unfortunately, he could not achieve all his aspirations. Many of the larger works were put to the side and the papers he published as sole author the last few years were short notes describing one or two species or discussing a new synonym or new distribution record, with most of these appearing in the *Entomologist's Monthly Magazine*. The reason, I found out from Chris, as to his choice of journals was based on whether or not he could get a hard copy reprint of his paper. Despite his advocacy of using computers for everything, he still liked having a physical copy of his own papers as well as those from others.

His older brother Paul, whom I met while in Florida last May, remarked how ironic it was that Chris was so far ahead of the times in his advocacy of computerization and databasing, yet he refused to update his CPU or his software: He backed up most files on 3.5 inch floppies and printed out everything that was on his computer. I mean everything. Had I known, I would have invested in computer paper stocks and made a bundle over the last few years as I'm sure he had a corner on the market. There was a scanner, but it had no flash drive or any way to save the scans to a computer (you could only make hard copies). He also used a very old version of WordPerfect for his word processing — he despised Microsoft.

With learning of that context, it is now even more amazing to me how he was able to create and maintain for so many years the legacy that will outlive him (the *Systema Dipterorum*). He turned over management to Thomas Pape and myself in the summer of 2018 and I soon realized how much

of a time investment was needed in order to keep up with the literature AND clean up the data to ensure accuracy. Staying with him during the 1980s and 1990s during my visits to the USNM, I saw his daily routine of heading to the computer straight after dinner and just banging away at entering new data or researching the literature to solve a problem. Our nightly discussions on nomenclature and cataloguing Diptera were inevitably intertwined with his working on the database.

Another of his legacies was his largesse in helping others by helping fund trips to meetings and setting up various other “funds” to give out small grants and other financial aid. Among the many things he was largely or solely responsible for include setting up the Thomas Say Award (of the Entomological Society of America), the Charles P. Alexander Award (North American Dipterists Society), and the S.W. Williston Fund (Smithsonian). He also generously donated to help publication of a number of large projects on Diptera, too many to list.

He was an innovator; and with such a creative and forward-thinking mind was responsible for setting up many far-reaching projects: one such would evolve to be the Biodiversity Heritage Library (BHL): by having the Smithsonian Libraries digitize and be the first to post online an entomological book (Sturm’s 1796 *Verzeichniss*). He helped organize the first Bio-Blitz (in Washington, D.C. in 1996). He was a founding member of the Willi Hennig Society; he was in on the discussions around the creation of Species 2000 and the Catalogue of Life; and with a small grant from the James Smithson Society, developed some of the first “Species Pages” for the web (later to be adopted as a key feature of E.O. Wilson’s Encyclopedia of Life).

But it was not “all work and no play” for Chris. Betty and he were world travelers. Large wall maps abounded in the Thompson household with pushpins denoting all the places they had been. Chris had told me long ago of his work on the POBSP and his visits to many of the islands that dotted the central and southern Pacific. His birding “genes” not only helped him with the bird survey but kicked into high gear when he decided to make a life-list of Pacific Islands and vowed to visit them all. Those island he visited on the POBSP were checked off first and it was just a few dozen or so that remained for him to see and “tick the box”. By 2019, he had only two islands in the Hawaiian Island chain left to see: Ni‘ihau and Kure. Up until the last few years, Ni‘ihau was only accessible to native Hawaiians (even the governor had to be invited if wanting to visit). Now, there was a small beach where tour helicopters could land for a short lunch and walk-around and then back on -- just so you could “get the T-shirt”, as it were (for Chris it was a long-desired empty box that needed a check mark). He had planned on coming out to see me and take that chopper tour to see that island; but then the pandemic hit and his plans came to a halt. A few emails to me during 2020 were optimistic that things would settle down and he would still come out. But in late 2020, he was diagnosed with pancreatic cancer and in January 2021 was hospitalized. He passed away in early February 2021. His dream of finishing up the Hawaiian Islands checklist was lost. But Betty said she would finish off those last few places he wanted to visit. You see, like Chris, Betty is resourceful, determined, strong-willed, etc. and so forth...

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**A long-overdue “re-discovery” of *Oreoleptis torrenticola***

Greg Courtney

(with significant contributions by Robert Wisseman,  
*Aquatic Biology Associates, Inc., Corvallis, Oregon*)

Department of Entomology, Iowa State University,  
Ames, Iowa, 50011, USA; (515-294-4017); [gwcourt@iastate.edu](mailto:gwcourt@iastate.edu)

Having attempted several times during the past decade to “re-collect” *Oreoleptis torrenticola* Zloty, Sinclair & Pritchard, and given that my last observations of a live larva was long before these flies even had a name, a recent trip to Oregon was an unexpected and pleasant surprise.

I’m fairly certain my last collection of *Oreoleptis* larvae (a couple dozen specimens?) was at (South) Ram River, Alberta in 1988, when I was still a graduate student at the University of Alberta. A year earlier I had discovered a healthy population of the then-unnamed fly when I was searching for blepharicerids, specifically *Bibiocephala grandis* Osten Sacken. I was perplexed to find these “tabanoid” larvae beneath many of the same rocks that harbored *Bibiocephala* on the exposed upper surfaces. At the time of my Ram River collections, there was considerable interest in locating adults, which was deemed essential to determining the familial identity of these larvae (most Dipterists were in either the “Athericidae” or “Tabanidae” camp). This also prompted my (unsuccessful) attempt to rear numerous larvae. After completing my dissertation on another torrenticolous fly (Deuterophlebiidae) in 1989 and moving away from Edmonton (and western North America), I focused on other projects and more-or-less forgot about these mystery “tabanoid” larvae. Then in 1998, Jack Zloty, University of Calgary, contacted me because he was keen to sort out the identity of these unusual larvae, and was aware I had collected them at several locations in western North America. I strongly encouraged Jack to sample Ram River at the Forestry Trunk Road in western Alberta. Jack’s subsequent visits to Ram River ultimately proved successful, as he was able to find larvae and pupae, and to rear adults. This was the basis for the description and (finally!) naming of this unusual fly as not just a new genus and species, *Oreoleptis torrenticola*, but a new monotypic family (Zloty et al. 2005). Ram River is the type locality.

Fast-forward to the early 20-teens, and my interest in *Oreoleptis* was rekindled by a collaborative project with Steve Marshall, Guelph University, and a goal to photograph live specimens of all families of aquatic insects. I was somewhat embarrassed that one of the few families I had not photographed was a “torrenticolous” dipteran, and my images of dead specimens were (in my opinion) unacceptable for publication (although we would need to use one in Courtney & Marshall 2019). My search to find and photograph live *Oreoleptis* took me to several sites in western North America where I or others had collected them (usually singletons) previously. After failing to locate additional specimens at any of these sites, I decided to venture back to Ram River. Multiple attempts during 2012-2014 were unfortunately met with either snowstorms or heavy rain (and high water). Finally, in 2015, one of my summer field trips included Alberta, and I was able to return to Ram River. Although earlier in the year than might have been ideal (August, whereas most of my previous collections were late fall or early spring), river levels and habitat seemed perfect (Figs. 1–2). However, my optimism waned after an hour of kick sampling came up empty (i.e., LOTS of aquatic insects but NO *Oreoleptis*). This would prompt yet another pause in my search for *Oreoleptis*.

This holding pattern might have persisted if not for the Covid-19 pandemic and its impact on visiting my parents in Oregon. After nearly 2 years without seeing them and a chance to surprise my father

on his 90<sup>th</sup> birthday (and because all of us were fully vaccinated!), I scheduled a mid-April, 2021 visit to Oregon. Per usual, the trip would also provide a good opportunity for some field work, especially with river levels lower than normal for April. In addition to the “usual” destinations around Corvallis (e.g., Mary’s Peak), I decided to re-initiate the *Oreoleptis* search. I had collected a singleton larva many years ago in the South Santiam River and heard of at least one “Aquatic Entomology” student from Oregon State University having also collected a specimen from the South Santiam. Consequently, I convinced Bob Wisseman, a good friend, colleague, and caddisfly expert, to accompany me up the South Santiam on April 17<sup>th</sup>. Although we intended to sample more generally for aquatic insects, our primary target (or at least mine!) was *Oreoleptis*.

The weather on April 17<sup>th</sup> was perfect, unseasonably warm (mid-20°s C) and sunny. Our first stop was the South Santiam River near House Rock, which is about as far upriver one can drive before the river branches into its various major tributaries. Although recent warm temperatures had led to a bit of snowmelt upstream and a slight uptick in river levels, the South Santiam was still flowing below normal, clear, and cool (5°C). On arrival, our plan was to set up an assembly-line protocol: I would don the hip waders, keep taking kick samples, and periodically dump the contents in one of three white pans, which Bob would peruse for interesting critters. The first several kick samples yielded a diverse assemblage of aquatic insects, including several interesting mayflies (e.g., *Drunella doddsi* (Needham), *D. grandis* (Eaton), *Epeorus grandis* (McDunnough)), stoneflies (e.g., *Calineuria californica* (Banks), *Paraperla frontalis* (Banks), *Skwala curvata* (Hanson)), fishflies (*Orohermes crepusculus* (Chandler)), caddisflies (e.g., *Glossosoma* Curtis, *Neophylax rickeri* Milne, *Rhyacophila hyalinata* Banks species-group), and even a few Diptera (e.g., *Agathon comstocki* (Kellogg), *Atherix pachypus* Bigot). Unfortunately, no *Oreoleptis*. We then moved upstream of a large gravel bar, where there was another good riffle (Fig. 3). The first few kick samples again contained lots of insects but no *Oreoleptis*. Just as I was about to give up, Bob spotted a single, small larva in one of the samples. Initially I thought it might be just another *Atherix* or perhaps a small *Dicranota* Zetterstedt, but when it started to move across the pan (i.e., extend those remarkable, elongate prolegs), it was obviously an *Oreoleptis*. That particular kick sample would yield an additional two *Oreoleptis* larvae, and subsequent samples would add nearly a dozen more. Overall, we examined kick samples from a variety of depths ( $\approx 0.1$ -0.5 m) and a range of mainstream current velocities ( $\approx 0.1$ -1.5 m/s). However, as was the case at Ram River, nearly all *Oreoleptis* were collected from riffles with mainstream velocities of  $\approx 1.0$ -1.5 m/s and coarse substrates (cobble and small boulders) that often had blepharicerid larvae (albeit *Agathon* rather than *Bibiocephala*) on the current-exposed upper surfaces.

After having collected more than a dozen larvae, Bob and I decided to return promptly to Corvallis, so I could attempt to photograph live specimens under more controlled conditions. All larvae survived the trip back, where I was able to stage specimens in a small aquarium that held natural substrates. The first couple rounds of imaging were frustrating because larvae were exceptionally active and would quickly burrow into the gravel, resulting in numerous “fuzzy” images, or images with the head having just retreated into the gravel. The ability of larvae to squeeze through tight interstitial spaces and their tenacity at holding onto bits of gravel and small rocks was quite remarkable. Zloty et al. (2005) also commented on their extreme flexibility and resistance to damage during sampling. Because of their tolerance to being prodded, poked and squeezed, I was eventually less careful about handling larvae in the aquarium (i.e., moving them to where they were visible and might sit still for a few seconds). This ultimately led to the capture of a few images I considered “acceptable” (e.g., Figs. 4–6).



Figures 1–2, [South] Ram River near Forestry Trunk Road, Alberta (17 August 2015); Figure 3, South Santiam River near House Rock, Oregon (17 April 2021); Figures 4–6, Live *Oreoleptis torrenticola* larvae from South Santiam River, Oregon.

Despite more than 30 years since my earlier collections and nearly two decades since *Oreoleptis* was described, our knowledge about this unusual fly remains poor. We now know it is more widespread than previously thought, with larval records including not just western Canada (British and Alberta), but several states in the Pacific Northwest (Montana, Idaho, Washington and Oregon), and even two locations in northern California. Although relatively widespread in western North America, the larvae of these flies are rarely found in abundance, and the only adult records are from the original type series. My hope is that our recent collection of larvae in Oregon may lead to discovery of additional populations and, perhaps more importantly, the collection of more adult specimens. Both could provide valuable insights into the biology of these unusual torrenticolous flies.

### **Acknowledgements**

I thank the following individuals and organizations for providing additional *Oreoleptis* records from western North America: Jonathan Lee, Eureka, CA; Jason Pappani, Idaho Department of Environmental Quality; Doug Post, California Department of Fish & Wildlife; Austin (Brady) Richards, California State University – Chico; Brad Sinclair, Canadian National Collection of Insects; Jeff Webb, Rhithron Associates Inc.; Robert Wisseman, Aquatic Biology Associates, Inc. (all 2021, personal communications); and the Western Center for Monitoring & Assessment of Freshwater Ecosystems (<https://mapit.namc.usu.edu>, checked May 1 2021).

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## On probably the oldest color illustrations of crane flies (Tipulidae)

Pjotr Oosterbroek\* & Ronald Sluys

Naturalis Biodiversity Center, Leiden, The Netherlands;

\*corresponding author, [p.oosterbroek@chello.nl](mailto:p.oosterbroek@chello.nl); <https://ccw.naturalis.nl/>

Between 1596 and 1610, Anselmus de Boodt (1550-1632) from Belgium drew up a very rich series of watercolors of all kinds of plants and animals. He was assigned to prepare this “Historia Naturalis” by emperor Rudolph II. The humanist and artist Anselmus was the personal physician of this Holy Roman emperor, who was seated in Prague and has become famous for his interest in arts, science and nature.

Unfortunately, Rudolph II died before the project was finished and Anselmus went back home to Brugge. Not having been paid, he took the watercolors with him. They remained in the family for about two centuries, found a new owner and around the year 2000 were acquired by the art-historian and manuscript trader Heribert Tenschert. After a serious period of research, Tenschert put the watercolors on auction in 2017. They were bought by a Dutch art collector who then gave them in permanent loan to the Rijksmuseum in Amsterdam (for further reading on Anselmus we recommend Maselis et al. 1989).

The collection of 12 albums includes no less than 750 watercolors, most of them of very good quality, beauty and color, some of them even humoristic, such as The Ostrich (see downloads at <https://www.rijksmuseum.nl/nl/pers/persberichten/topstuk-tefaf-naar-rijksmuseum>). Many of the watercolors are about insects (also among the downloads), including a series of crane flies. A very good example of this is the plate of a flowering Daisy with at the bottom a male of *Ctenophora pectinicornis*, a rather common European Ctenophorinae, recognizable among others by the feathered nature of the male antennae, as is shown on the watercolor (Fig. 1).

Many of the plates are available from the website of the Rijksmuseum, under <https://www.rijksmuseum.nl/nl/mijn/verzamelingen/2672293--jesse-ephraim/insects/objecten#/RP-T-BR-2017-1-6-75,4>. One of them is showing ten Tipulidae, some of which are easy to identify, such as the well-known European species *Ctenophora festiva* (male), *Ctenophora pectinicornis* (male), *Nephrotoma crocata* (female), *Nephrotoma submaculosa* (male), *Tipula maxima* (female) and *Tanyptera atrata* (female, depicting the very characteristic saber-shaped ovipositor, Fig. 2).

The watercolors by Anselmus de Boodt from around the turn of the seventeenth century are most probably the oldest illustrations of crane flies. Thereby, having been produced around 400 years ago, it is truly remarkable that several of them can be identified to the species level.

Detailed drawings of Tipulidae were published only about 140 later, such as by Réaumur (1740), of male and female Tipulidae in general, in copula, a female ovipositing, mouthparts, antennae, male and female genitalia. His drawings were in such detail that Réaumur concluded: “Toutes ces pieces ensemble mettent le mâle en état de bien tenir le derrière de la femelle.” Another example is De Geer (1773) with very accurate drawings of the larva and pupa of *Phalacrocer replicata*, a Cylindrotomidae. Then, a further half of a century later, Schummel is the first to publish line-drawings of genitalia as inclusive part of his species descriptions, of Limoniidae in 1829 and of Tipulidae in 1833. Finally, a whole series of precise anatomical illustrations of various Diptera including Tipulidae, was presented in Dufour (1851).

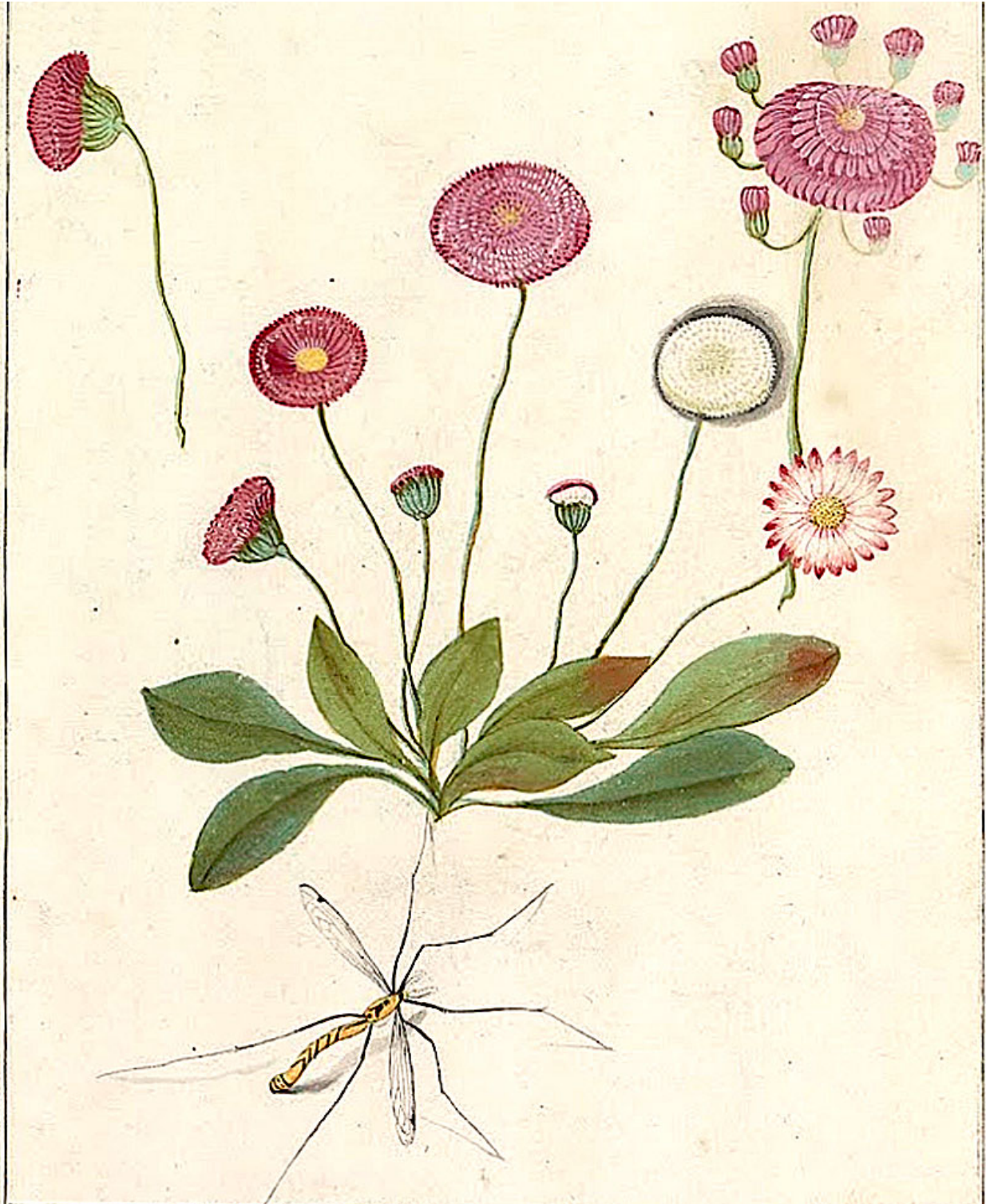


Figure 1. A flowering daisy with a male of *Ctenophora pectinicornis*.

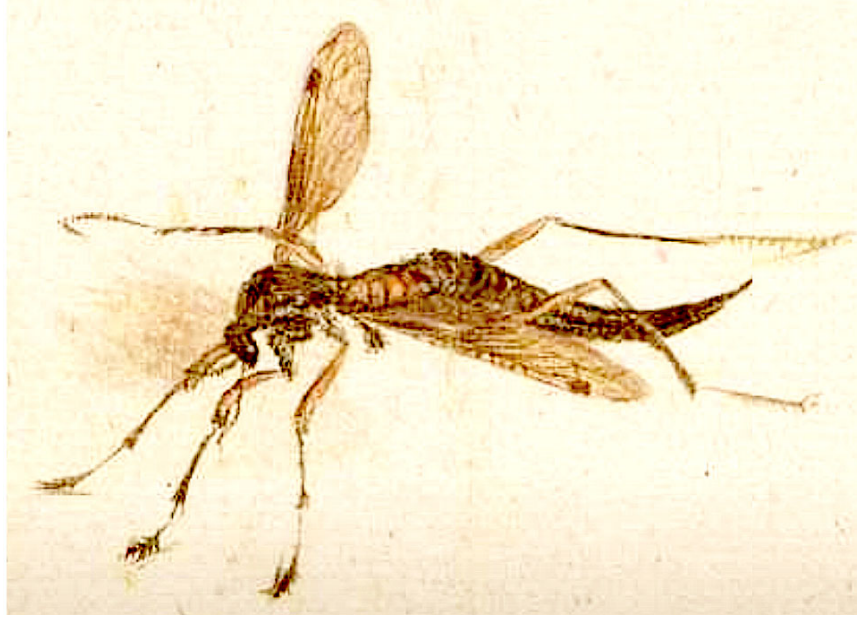


Figure 2. A female *Tanyptera atrata*.

### Acknowledgements

The authors would like to thank Herman de Jong (Naturalis Biodiversity Center, Leiden) for his valuable comments.

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**Diptera on stamps: (1) Asilidae**

Jens-Hermann Stuke

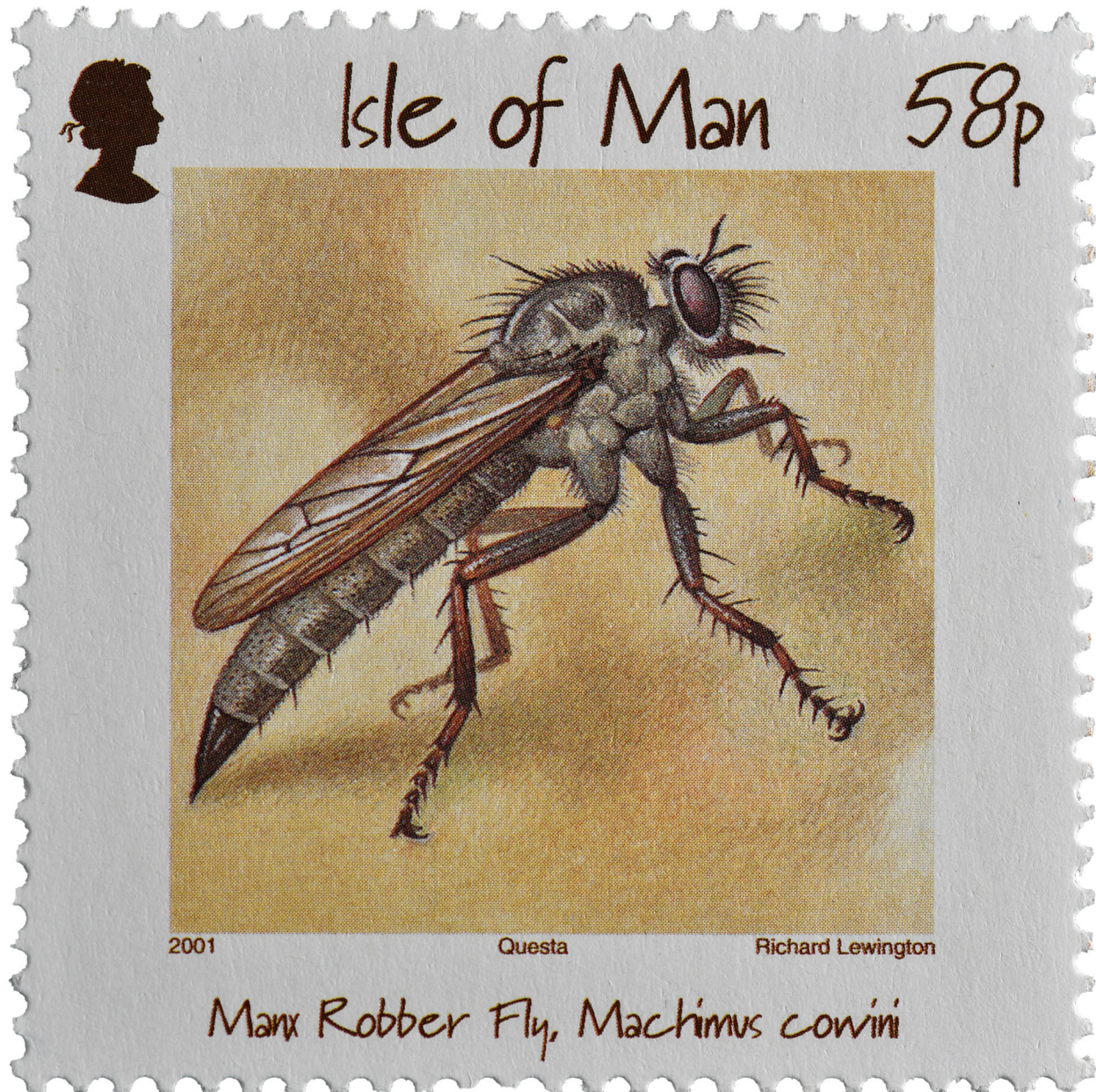
Roter Weg 22, 26789 Leer, Germany, [jstuke@zfn.uni-bremen.de](mailto:jstuke@zfn.uni-bremen.de)

For some while I have been collecting postage stamps which show Diptera. In no particular order I would like to present some of the stamps showing Diptera that I am aware of, sorted by taxon. These include only those official stamps which could be bought in the post offices of the issuing country and could lawfully be used for posting letters. Only stamps listed in the major catalogues are included: errors, private stamps, local stamps, illegal stamps or stamps printed specially for collectors are not considered or illustrated. Similarly, variations of a given stamp, such as imperforated issues, souvenir sheets and different editions etc, are also excluded and where several different versions of a stamp exist which are otherwise almost identical, differing only in shape of perforation, stamp value, watermark, year of issue or colour of overprint etc, these are shown only once even though they would be considered distinct by the philatelist. For each stamp I have provided the country and year of issue, title of stamp, title of stamp series (where available/relevant), face value, Michel number and stamp number (the latter both copied from <https://colnect.com/>).

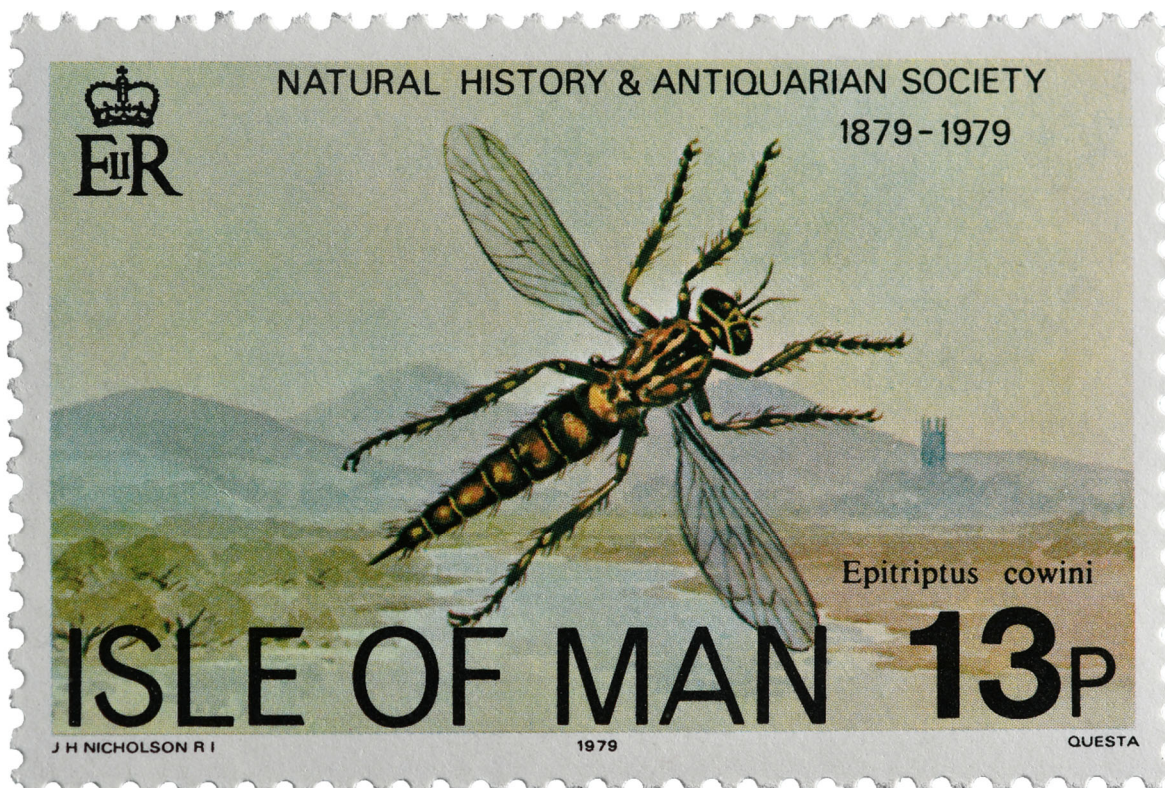


**Asilidae indet. – Botswana 2019:** Robber fly [Insects], 5 Botswana pula. – Michel: BW 1105; stamp number: -.

Asilidae is the first taxon to be presented here. Besides medically important and disease-transmitting Diptera families such as Culicidae or Glossinidae, Asilidae are the family most frequently found on postage stamps after Syrphidae and Muscidae. Asilids are large, conspicuous flies (Michel BW 1105, TD 695, NA-SW 606) and are therefore frequently depicted on postage stamps. *Machimus cowinii* (HOBBY, 1946) is a regional speciality with a localised distribution - when the stamps were issued, this species was still considered endemic to the Isle of Man (Michel IM 141, IM 909). Beneficial insects are often shown on stamps (MG 1768A), whilst Michel ZM 1476 shows an asilid as prey of the beautiful Boehm's bee-eater. Diptera are also sometimes used simply as a decoration, for example Michel GN 2529.



*Machimus cowinii* (HOBBY, 1946) – Britain [Isle of Man] 2001: Manx Robber Fly, *Machimus cowinii* [Insects], 58 Manx penny. – Michel: IM 909; stamp number: IM 898.



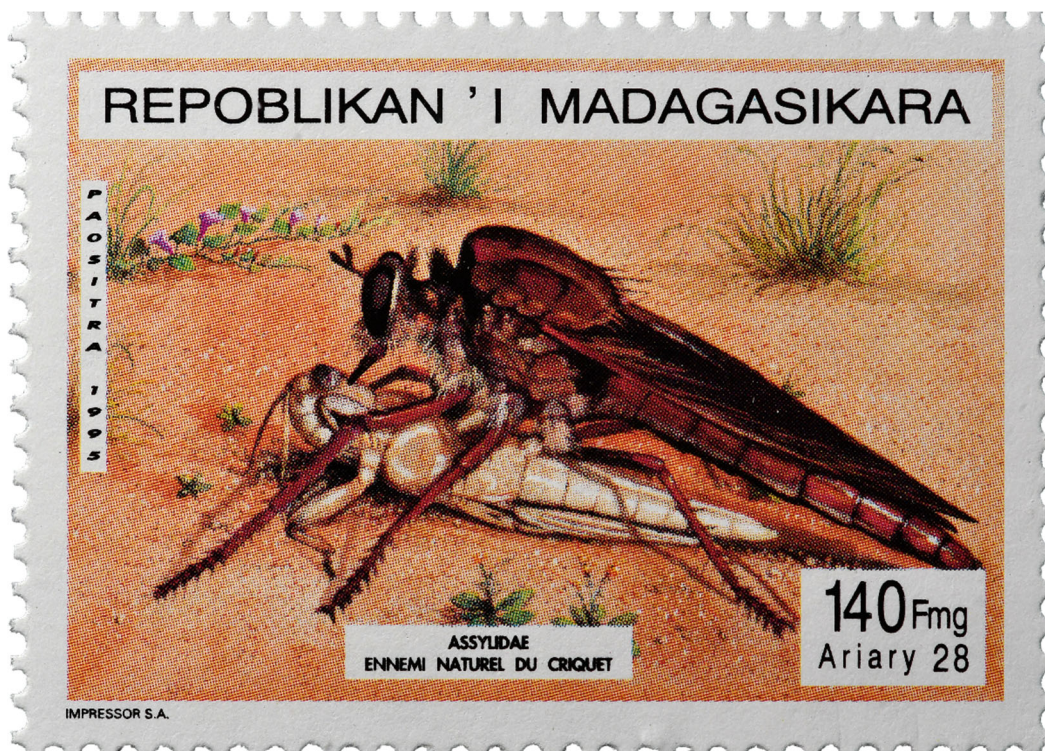
*Machimus cowinii* (Hobby, 1946) – Britain [Isle of Man] 1979: *Epitriptus cowinii* [National History & Antiquarian Society 1879-1979], 13 Manx penny. – Michel: IM 141; stamp number: IM 145.



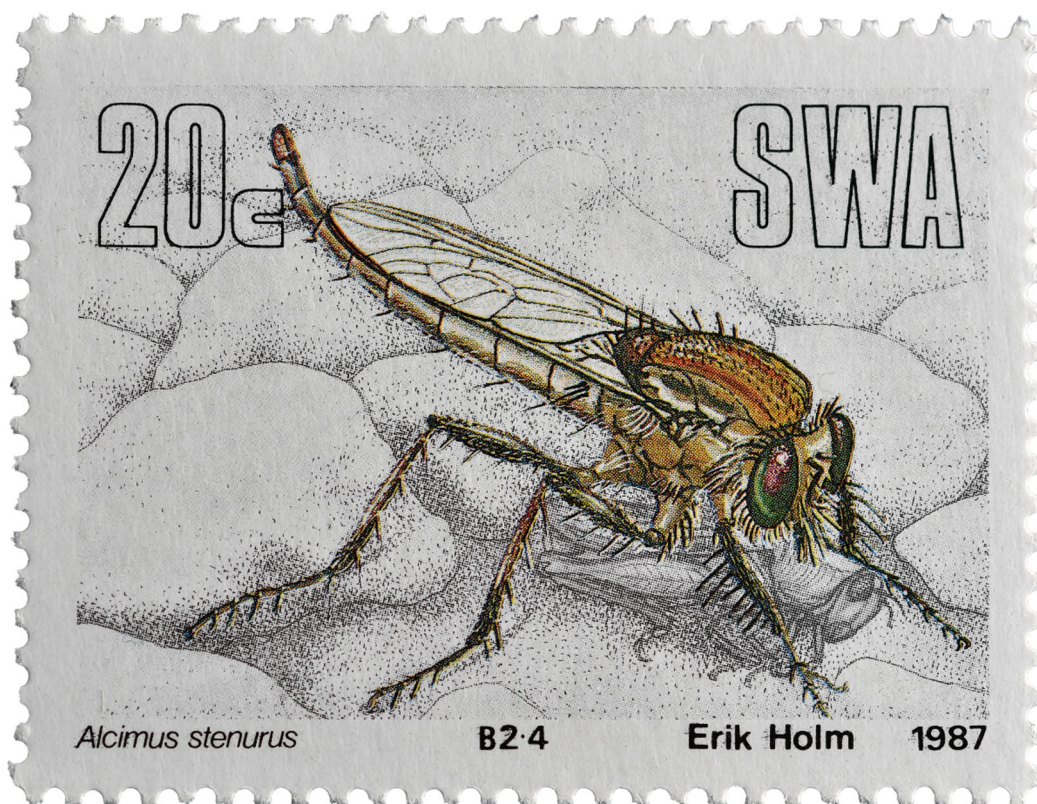
Asilidae indet. – Guinea 1999: *Lactarius porninsis* [Mushrooms], 300 Guinean franc. – Michel: GN 2529; stamp number: GN 1558.



*Hyperechia bomboides* (LOEW, 1851) – Chad 1974: Diptere, *Hyperechia bomboides* [Insects], 40 Central African CFA franc. – Michel: TD 695; stamp number: TD 297.



*Microstylum* spec. – Madagascar 1995: Assylidae, ennemi naturel du criquet, 140 Malagasy franc. – Michel: MG 1768A; stamp number: MG 1299.



*Alcimidae stenurus* LOEW, 1858 – Namibia [South West Africa] 1987: *Alcimidae stenurus* [Useful insects], 20 South African cent. – Michel: NA-SW 606; stamp number: NA-SW 583.



**Asilidae indet. – Zambia 2003:** Boehm's bee eater *Merops boehmi*, 1800 Zambian kwacha. – Michel: ZM 1476; stamp number: ZM 1030.

### Acknowledgements

Fritz Geller-Grimm (Frankfurt) and Jason Londt (Pietermaritzburg) identified some of the Asilidae shown. David Clements checked the manuscript. Any comments concerning either the identification of the Diptera shown or references to overlooked stamps would be very welcome!

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## A historical look at the web presence of the North American Dipterists Society

Stephen D. Gaimari<sup>1</sup> and James E. O'Hara<sup>2</sup>

<sup>1</sup> Plant Pest Diagnostics Branch, California Department of Food & Agriculture,  
3294 Meadowview Road, Sacramento, California 95832, USA; [sgaimari@dipterists.org](mailto:sgaimari@dipterists.org)

<sup>2</sup> Diptera Unit, Canadian National Collection of Insects, Agriculture and Agri-Food Canada,  
K.W. Neatby Building, 960 Carling Avenue, Ottawa, Ontario, K1A 0C6, Canada; [james.ohara@canada.ca](mailto:james.ohara@canada.ca)

The North American Dipterists Society (NADS) was an informal society from its inception in the late 1980's to late 2019. In November of 2019, the Society was incorporated in the US state of California, and the Society applied for and was granted status as a US tax-exempt, non-profit 501(c)(3) organization. While preparing the application for non-profit status with the US Internal Revenue Service, Steve realized that a US-based website would be needed for the newly incorporated Society if the IRS was going to take the application seriously. After discussions between Steve and Jim (webmaster of the long-held <http://www.nadsdiptera.org>), Steve got started on the website with the purchase of the fortunately-available domain <https://dipterists.org>. Before discussing that experience, we will first lay out a little history of the web presence for the Society. Much of this history was fortunately saved by the Internet Archive (<https://archive.org>), which has been building a digital library of internet sites since 1996, and making these archives available for free via their Wayback Machine (<https://archive.org/web/>).

### Early history

In the early years, there was no dedicated web presence for news and resources about North American Diptera. (At the time, although the internet existed, the “web” was really not a thing yet. It was several years before anyone had a real “web presence”.) During the late 1980s, dipterists began to get organized. They held the First International Congress of Dipterology in Budapest in August 1986, and that same year the first issue of the international newsletter *The Flyer* was distributed (compiled by Neal Evenhuis, Wayne Mathis and Chris Thompson). Many dipterists congregated again during the 18th International Congress of Entomology in Vancouver in July 1988, and it was there that *Fly Times* began to take shape. As recalled by Steve Marshall in the second issue (April 1989: 11, <https://dipterists.org/assets/PDF/flytimes002.pdf>): “Brian [Brown], Art Borkent, Jeff Cumming and I agreed that a North American newsletter was necessary. Brian and I guaranteed regular support and input, Art agreed to take on the big job of putting it all together, and Jeff agreed to handle the duplication and mailing.” The first submission form for the Directory of North American Dipterists occupied the last page of issue 2 of *Fly Times*, and the first iteration of the Directory was distributed in hard copy with issue 3. The Directory was fulfilling one of 11 goals set out for *Fly Times* on the first page of the inaugural issue (October 1988, <https://dipterists.org/assets/PDF/flytimes001.pdf>): “to develop a checklist of all Dipterists with their addresses and interests, which will [be] printed from time to time”. Updated versions of the Directory were distributed with *Fly Times* yearly at first and then became intermittent.

The concept of NADS as a real, albeit informal, society was reinforced during the first field meeting, held at the Archbold Biological Station, Lake Placid, Florida, in April 1989 (organized by Steve Marshall, Chris Thompson and Mark Deyrup). Fenja Brodo later published a report of the meeting in the third issue of *Fly Times* (October 1989: 3), noting almost in passing a decision that would guide the society for the next 30 years: “After very little discussion it was agreed that we remain an informal society and not elect a president, secretary, and so forth”.

The first online presence of NADS did not happen until late 1996, beginning with the hosting of the Directory of North American Dipterists on the Entomology website of Agriculture and Agri-Food (AAFC) of the Government of Canada. The earliest available view of the Entomology homepage, which contained a link to the Directory, is archived at:

[https://web.archive.org/web/19961214101826/http://res.agr.ca/ecorc/program2/ento\\_e.htm](https://web.archive.org/web/19961214101826/http://res.agr.ca/ecorc/program2/ento_e.htm). The Directory itself (compiled by Jeff Cumming and Brian Brown) is at:

<https://web.archive.org/web/19961214190725/http://res.agr.ca/ecorc/program2/entomology/diptera/dipteras.htm>. *Fly Times* went online the next year on the same homepage. A link to the earliest

archived version of that issue (no. 18, edited by Jeff Cumming and Art Borkent) is viewable at:

[https://web.archive.org/web/19970811075738/http://res.agr.ca/ecorc/program2/ento\\_e.htm](https://web.archive.org/web/19970811075738/http://res.agr.ca/ecorc/program2/ento_e.htm).

An organizational change within Agriculture and Agri-Food occurred in 1996 and resulted in the break-up of Research Branch and creation of “centres”, with the Canadian National Collection of Insects (CNC) becoming part of the Eastern Cereal and Oilseed Research Centre (ECORC).

Scientists were grouped into “studies” and for several years Jim was leader of the Biocontrol Study (see *The Tachinid Times* 10, 1997: 2, for details). A web presence was created for the Biocontrol Study under the name Identification Systems For Biocontrol Insects (ISBI), and this was up-and-running in late 1997 or early 1998 (before March, see *The Tachinid Times* 11, 1998: 6). Jim created a homepage on Diptera with on-site content and off-site links, and placed *Fly Times* and the Directory under the former due to Jeff Cumming’s involvement in both. An archived version of the ISBI homepage from June 1998 is viewable at:

<https://web.archive.org/web/19990220225338/http://res.agr.ca/ecorc/isbi/dipt/diphom.htm>. At the

same time, Jeff, as Unit Curator of Diptera, posted links to *Fly Times* and the Directory on the homepage of the Diptera Unit of the CNC (archived and viewable at:

<https://web.archive.org/web/20000229140215/http://res.agr.ca/ecorc/cnc/diptera.htm>).

The URL for ECORC and other AAFC centres changed from “res.agr.ca” to “res2.agr.ca” sometime before February 2000. The ISBI website was unaffected except for this URL change. Links to both *Fly Times* and the Directory appear in this archived version with the res2.agr.ca address:

<https://web.archive.org/web/20001214143600/http://res2.agr.ca/ecorc/isbi/dipt/diphom.htm>.

### **Birth of a dedicated Society website**

The ISBI website remained active through most of 2002 until a new requirement was instituted for Government of Canada websites – that all content be fully bilingual (English and French). No Government funds were available for the translation of text-heavy content like that in *Fly Times* and *The Tachinid Times*, and as a result the entire ISBI website was unceremoniously removed from the Internet. By early 2003, Jim, Jeff, Art, Brian and others were wondering where and how to get the orphaned Diptera content back online. Chris Thompson was leading the digital effort for Diptera on a world scale and managed a Diptera website in Washington, but it too was experiencing compliance issues with the hosting institution, the United States Department of Agriculture.

There had been talk prior to 2003 about an independent NADS website, but there had been no immediacy to such discussions. In fact, the priority in 2003 was at first to find a home for *Fly Times*, etc. Jim had by then acquired some knowledge of webpage construction and HTML code and wondered if there might be interest in, and funding for, a dedicated site for their content that he could manage. This was not at first proposed as a NADS site, but morphed into that as a plan developed. But before a plan could take shape, there was the question of how to pay for the expected server and domain fees. The Grants Committee of the Dipterology Fund was approached for support in principle of a website for dipterological content. This fund had been established by Steve Marshall and Terry

Wheeler in the aftermath of the Third International Congress of Dipterology held in Guelph in 1994, as a way to put to good use the money left over from the congress. The Grants Committee consisted of eight dipterists (with Terry as chair) and included several members who were “operators” of the informal NADS (e.g., responsible for the C.P. Alexander Award to W.W. Wirth in 1994, see *Fly Times* 14: 4–5, <https://dipterists.org/assets/PDF/flytimes014.pdf>). The Grants Committee endorsed the proposal, but even more significantly, an arrangement was worked out between Steve Marshall and the University of Guelph to host the website at no cost to the dipterological community. No money was needed from the Dipterology Fund and Jim personally registered the domain name [nadsdiptera.org](http://nadsdiptera.org) to get the site started. Not everyone was pleased to see a NADS website emerge from nothing without greater community involvement, but this had always been the way that things got done in the society. Field meetings, for example, were run by volunteers, *Fly Times* and the Directory were edited/compiled by volunteers, and so the NADS website came about in the same fashion. The new site was announced in the April 2003 issue of *Fly Times* (<https://dipterists.org/assets/PDF/flytimes030.pdf>) while it was still under development and not yet online. In June of that year, the website was born at <http://www.nadsdiptera.org>, where it has resided ever since with Jim as webmaster. The first archived version of the homepage can be viewed at: <https://web.archive.org/web/20030706232452/http://www.nadsdiptera.org/>.

This new paradigm brought forth a time when the North American Dipterists Society was providing more extensive resources for the dipterological community. This of course included the Directory of North American Dipterists and *Fly Times*, but also new resources including information on the C.P. Alexander Award (a merit-based lifetime award meant “to recognize the greatest living North American dipterist”), the Dipterology Fund (which for 15 years provided grants for research, and travel for students and visiting scientists), taxon-based pages (the first of which was the homepage for Tachinidae Resources), a page for details of past and upcoming Society field meetings, and links to Diptera-oriented websites. In addition to these resources, the site hosted the web presence of the International Congresses of Dipterology, the first website for the ICD.

### **The new North American Dipterists Society website**

The new website for the North American Dipterists Society resides at <https://dipterists.org> and has been live since mid-2020, although the existing website (discussed above) coexists. In particular, the latter website is still home to some unique resources (which do have links on the new website), such as Jim’s extensive Tachinidae Resources pages (<http://www.nadsdiptera.org/Tach/home.html>), including *The Tachinid Times* (<http://www.nadsdiptera.org/Tach/WorldTachs/TTimes/TThome.html>), an annual newsletter that is older than the *Fly Times* by a few months.

Although the website <https://dipterists.org> is relatively young, it has needed to be rebuilt not once, but twice! It was first developed with a “What-you-see-is-what-you-get” (WYSIWYG) web editor that shall remain nameless (although you can easily figure it out by viewing the page source from the archived version of the website below). The homepage of the first version was archived in August 2020 (fortunately, this is the only time this version was archived), and is viewable at: <https://web.archive.org/web/20200811005136/https://dipterists.org/>.

At that time, the critical thing in Steve’s mind was to make sure that the now-incorporated society had a representative website online so that the IRS could properly assess what kinds of things we do, or will do, as a society, since they were considering us for non-profit status. Steve had many years of experience (2003–2015) as webmaster for the Plant Pest Diagnostics Laboratory at CDFA, so, in hindsight, really should have known better. But with time of the essence he took the unfortunate

shortcut of using a WYSIWYG web editor. This made an acceptable to decent functional website, but with a most unfortunate downside. The HTML was garbage and bloated with unnecessary and low-quality code and JavaScript after JavaScript. Steve's expectation had been to develop the page in the WYSIWYG editor, and then he could clean things up and continue to make modifications and updates at will using a text editor. But unfortunately, that is not how this works (and again, Steve says he should have known better...). The software used was not sufficiently flexible to allow the manual addition of even a single line of text from outside the software itself. This problem came to light nearly immediately after the website went live in July 2020. Coming to this realization, Steve immediately entered phase two – start over.

### **New version #1**

So, Steve left the webpage live so as not to break access to it, and got started from scratch on the new version. That is, on about 1 August 2020 Steve wrote the first line `<!doctype html>`, and the full rewrite continued until 8 December before it was ready for prime time. As a first step Steve developed a template (i.e., a Dreamweaver Webpage Template, file extension .dwt) and then dealt with page after page of content. Steve made the decision early on to write using pure HTML + CSS (cascading style sheets), leaving out JavaScript almost entirely (unfortunately, to have the rotating banner in the template, 12 lines of JavaScript were needed, but that is pretty minimal for a largish website). For forms and search functions, Steve wrote in PHP (e.g., for the Directory of World Dipterists, and the various submission forms for ICDX). Not very much needs to be said about the day-to-day process of developing these webpages, but let's just say it took time, effort and learning! With relaunch on 9 December 2020, the website had about 50 separate pages. This website happily existed... until one day it did not.

### **Rebuild, new version #2**

On 10 March 2020, Steve went to work on the website and it was missing. Just not there. Not available online. Not accessible through the development backend. The reason? The datacenter hosting the website burned down. Really... That is not a metaphor. It just burned down, which of course is not a common reason for a website to go down. You can read about this datacenter tragedy at <https://www.reuters.com/article/amp/idUSKBN2B20NU>. Although only a couple of the buildings at the facility in Strasbourg, France, were completely destroyed, this website was in one of them. Total loss. At the time, we had no idea how long it would take for them to remedy the problem – in fact, we did not yet know if it was a total loss or if our data was recoverable. But it quickly became evident that the website was just gone and would not return. So, less than a week later Steve signed on to a different datacenter and began the process of rebuilding the infrastructure for the website and associated files, which also included the operating system, an email server, MySQL databases, etc. Fortunately, for the website itself, Steve had all the HTML and associated files manually backed up, so this rebuild was not as drastic as needing to rewrite that first new version. But there was still a lot of work involved to rebuild the entire VPS backbone and operating system before Steve could even start to reupload the files and make the system go live again. Having a website down for a long time is definitely undesirable, so Steve worked as quickly as possible, and by 19 March we were live again, bigger and better than before.

Since that time, the website (<https://dipterists.org>) has been further developed across the board, and Steve added the website (with a new template file) for the 10th International Congress of Dipterology (ICDX, <https://dipterists.org/icdx>). Altogether the full Society web presence currently consists of about 75 separate webpages. As the North American Dipterists Society is envisioned to be an international society for all dipterists, the website is geared towards being a useful resource for the worldwide dipterists community.

We strongly encourage all dipterists to join the Society (<https://dipterists.org/membership.html>), but note that the entire website is freely available and accessible to all, with nothing behind a paywall or requiring membership in the Society. Please visit and check it out! Among some particulars, the website contains:

- 1) General information about the North American Dipterists Society, including history, governance, bylaws, ethics, outreach, grants and awards, etc.
- 2) Information and publications, including such Society publications as *Fly Times*, *Fly Times Supplement*, and *Myia*, as well as non-Society dipterological works.
- 3) Information about Society and non-Society events relevant to dipterists, past and present, including the Field Meetings of the Society, the Annual Conference (held at the Entomological Society of America), outreach events, and other meetings.
- 4) Extensive Diptera-oriented resources at <https://dipterists.org/resources.html>, including links to nomenclators, various publications (journals, newsletters, etc.), literature reference collections, online communities, societies, organizations, collections, Diptera types, catalogs, databases, checklists, regional resources and manuals, as well as taxon-specific resources. This page will be constantly growing and changing as new resources become available or change homes.
- 5) The Directory of World Dipterists (see the article in this issue of *Fly Times*!).
- 6) The Dipterists Mailing List at <https://lists.dipterists.org/mailman/listinfo/dipterists>, which provides a steady means of communication among dipterists, and for making announcements about activities, grants, publications, etc., currently with more than 630 members!
- 7) The website of the International Congresses of Dipterology, <https://dipterists.org/icd.html>, which includes information and documents from past ICDs, the Council and its meeting minutes, honorary members, deceased dipterists, and more. Also, the upcoming ICD, the 10th (ICDX) has its own dedicated website (with a different template) at <https://dipterists.org/icdx>.
- 8) Links for joining the Society as a member (<https://dipterists.org/membership.html>) or otherwise supporting the Society (<https://dipterists.org/support.html>).

We also have a presence on social media, having started both Facebook (<https://www.facebook.com/dipterists>) and Twitter (<https://twitter.com/dipterists>) pages. Both of these are growing with hundreds of followers for each.

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## Systema Dipterorum, Version 3.1 update

Evenhuis, N.L.<sup>1</sup> & Pape, T.<sup>2</sup>

<sup>1</sup> J. Linsley Gressitt Center for Research in Entomology, Bishop Museum,  
Honolulu, Hawai'i 978917-2704, USA; [neale@bishopmuseum.org](mailto:neale@bishopmuseum.org)

<sup>2</sup> Natural History Museum of Denmark, Zoological Museum, Universitetsparken 15,  
2100 Copenhagen, Denmark; [TPape@snm.ku.dk](mailto:TPape@snm.ku.dk)

Version 3.1 of Systema Dipterorum (<http://diptera.org>) was posted in late May 2021 and relevant data are now being exported to the Catalogue of Life Checklist for its periodic updates (<https://www.catalogueoflife.org>). The version numbers we currently use have changed from 2.x to 3.x to reflect our new partnership with Catalogue of Life (COL). Getting data ready for export revealed a number of issues needing mitigation and resolving, so the names could be correctly displayed in the COL Checklist. As a result of the effort to provide as clean a dataset as possible, a bit more time was spent the last few months on cleaning up existing data than adding new data, although we have made progress in that latter area as well and now have more than 205,000 species-group names entered and are nearing 200,000 available species-group names.

As always, we appreciate the assistance of our colleagues in pointing out errors (some small, others large) by clicking on the error button on the “Nomenclatural Detail Record” webpage after performing a search. Shout-outs to the following for their valuable help the last few months: Arthur Frost, Robert Appler, Art Borkent, Chris Borkent, Jean-Sébastien Gerard, Stephen Smith, Gerardo Lamas, Steve Gaimari, Elizabeth Harris, Mihaly Földvári, Jere Kahanpää, Rüdiger Wagner, Gunnar Kvifte, Marija Ivković, Daniel Whitmore, John Skartveit, Benjamin Maples, Ximo Mengual, Michael von Tschirnhaus, Barbara Ismay, Elisabeth Stur, Ralph Harbach, Marjolaine Giroux, Ayman Elsayed, Pjotr Oosterbroek, Tamara Szentiványi, Bill Murphy, John MacConnell, Richard Wilkerson, David Gibbs, Paul Beuk, and Pat Bouchard. As always, Richard Pyle is behind the scenes keeping the website going and fixing glitches. Thanks to all!

### The latest statistics (8 June 2021)

<b>Total References</b>	36,342		
<b>Total Names</b>		<b>Taxonomically Valid Names</b>	
Species-group	205,102	Species-group	165,580
Genus-group	23,923	Genus-group	12,585
Family-group	4,642	Family-group	459
<b>Available Names</b>		<b>Valid Names for Extant Taxa</b>	
Species-group	199,674	Species-group	161,202
Genus-group	20,642	Genus-group	11,580
Family-group	4,273	Family-group	385

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## Directory of World Dipterists

Stephen D. Gaimari

Plant Pest Diagnostics Branch, California Department of Food & Agriculture,  
3294 Meadowview Road, Sacramento, California 95832, USA; [sgaimari@dipterists.org](mailto:sgaimari@dipterists.org)

As an initial statement, I hope that all of you dipterists out there will add your information to this new effort to compile a publicly available Directory of World Dipterists! To add your information, please go to the Directory sign-up page at [https://dipterists.org/dipterists\\_directory.html](https://dipterists.org/dipterists_directory.html). This secure database is hosted by the North American Dipterists Society and is fully searchable at [https://dipterists.org/dipterists\\_directory.php](https://dipterists.org/dipterists_directory.php). There are not many entries so far, but to test the search function and see how data are handled, please make a search in the field for country. The search function uses implicit wildcards, so the search term “n” for country will get all records for the United States, Canada, Germany, China, etc.

### History

This is not a first attempt at a directory of dipterists of the world. Back in 1986, Chris Thompson and Neal Evenhuis spearheaded the “Diptera Systematists Resource Directory”, mailing out some 1,400 questionnaires worldwide as part of the first issue of the short-lived newsletter *The Flyer* (issues available on the Resources page of the new North American Dipterists Society website, <https://dipterists.org/resources.html>). They intended to publish the Directory in two volumes, the first to have two parts: 1) a list of names and addresses of Diptera systematists along with their family-specialties and taxonomic techniques; and 2) a cross index by country, taxonomic specialty, zoogeographical regions of specialty and taxonomic techniques. The second volume was planned to list all the Diptera holdings in museums and private collections. In the second issue of *The Flyer* two years later, Neal and Chris reported that fewer than 500 questionnaires had been returned. They again included the questionnaire in the newsletter, and toyed with the idea of expanding the directory to include all systematists studying insects and related classes. Several years elapsed before Chris and Neal produced the “Resource Directory for Diptera Systematics” in 1992, with 54 pages covering dipterists and their specialties. In issue 11 of *Fly Times* in October 1993 (<https://dipterists.org/assets/PDF/flytimes011.pdf>), Chris reported that the Resource Directory database contained some 1,825 workers, with about 1,150 of them also providing information on their interests, and that a second enlarged printing would be done later. This second edition appeared in 1994, entitled “Resource Directory for Diptera Systematics. A quintessential database of workers, their specialties, and Diptera collections of the world. Part 1, Workers” and listing 61 pages of dipterists.

In October 1988, shortly after the initial push in 1986, the North American Dipterists Society produced the inaugural issue of *Fly Times* (<https://dipterists.org/assets/PDF/flytimes001.pdf>), in which one of the stated “major areas of communication” for North American dipterists was the “hope to develop a checklist of all Dipterists with their addresses and interests”, which was to be printed and distributed from time to time. In issue 2 (<https://dipterists.org/assets/PDF/flytimes002.pdf>), a submission form was included to be returned to Jeff Cumming in Ottawa, with the stated hope to include a list of all North American dipterists in the next issue, with everyone’s addresses, interests and areas of research. In that next issue, the title became the “Directory of North American Dipterists”, and thereafter the submission form was included at the end of every subsequent issue of *Fly Times* through issue 64 (Spring, 2020). The first iteration of the Directory was distributed in hard copy with issue 3 of *Fly Times* in October 1999, and updated versions were distributed with *Fly*

*Times* yearly at first, and becoming intermittent. The first version available online, compiled by Jeff Cumming and Brian Brown, went live in late 1996 – this archived version is viewable via the Internet Archive’s “Wayback Machine” –

<https://web.archive.org/web/19961214190725/http://res.agr.ca/ecorc/program2/entomology/diptera/dipteras.htm>. New dipterists were added periodically and addresses and other information was modified or updated as dipterists sent in their information. Starting with issue 18 (April 1997), the option to submit information for the directory via email became a possibility and was included with the submission form at the back of every *Fly Times*.

Through issue 43 (October 2009), the submission form on the back page of every issue was to be sent to Jeff, and then with issue 44 (April 2010) a one-year interim period started where folks could send the form to Jeff or to Jim O’Hara, and then the reigns were fully passed to Jim with issue 46 (April 2011). Jim has been the caretaker of the Directory of North American Dipterists from that time forward, updating it whenever new information was sent to him. While some other regional dipterist directories have come and gone (e.g., Directory of European Dipterists, Directory of South American Dipterists), the Directory of North American Dipterists has been a mainstay, even though some entries have gone out of date over the years if not revised by the dipterists themselves.

### **Today**

Both the old Resource Directory for Diptera Systematics and the Directory of North American Dipterists as it currently stands at <http://www.nadsdiptera.org/Directory/Directhome.htm> are the inspiration for the Directory of World Dipterists initiative. To start from a clean slate, this new World Directory was started with zero records, i.e., I did not transfer the data from the North American directory, instead believing that people should reaffirm their interest in being in the world directory and provide their current contact information and specialties. It is hoped that this directory will grow organically over time.

So I encourage all of you dipterists to visit the Directory of World Dipterists homepage and submit your information. The required fields are surname and given name, mailing address, city, country, and specific interests in dipterology. There are also optional fields for email, phone number, institution, additional address information, and website. Filling in and submitting the form sends the data to me, and I manually add your data to the MySQL database. I may automate this process in the future, but for now this is the most secure way to upload data. If you do not want to submit the e-form, then please feel free to email your data directly to me at [sgaimari@dipterists.org](mailto:sgaimari@dipterists.org).

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## Flies reared from adult butterflies revisited

John O. Stireman III

Department of Biological Sciences, Wright State University, Dayton, OH 45435

One of my first scientific publications was a scientific note about flies that had emerged from adult butterflies (Greeney & Stireman 2001). I coauthored the note with a fellow graduate student at the time, Harold Greeney. He had collected a number of adult butterflies of the species *Altinote dicaeus* Latrielle (as *Actinote diceus*; Nymphalidae) in a tropical montane forest of Ecuador. Harold had come to me with some flattened, mangled flies (Fig. 1) that had eclosed inside the glassine envelopes that held his butterflies, and he assured me that there was no possibility that something had gotten to them post-mortem. Given that rearing parasitoids from adult butterflies is exceedingly rare (see Greeney & Stireman 2001), he suggested that we might publish a note about this unusual phenomenon if I could identify the fly. Being a bit cocksure back then, and not really understanding how little I knew, I said, “Yeah! I can probably figure out what they are.”



Figure 1. A squished, teneral, sarcophagid (probably *Helicobia* sp.) that emerged from an adult nymphalid butterfly.

Initially, it was evident that the flies were sarcophagids and not Tachinidae, the group I was working on for my dissertation. I don't really remember how it happened, but using Shewell's (1987) key to Sarcophagidae in the MND, I came to the conclusion that the flies likely belonged to the genus *Arachnidomyia* Townsend, which is now subsumed within *Sarcophaga* Meigen (Pape 1996). I faintly recall that I tried to key the badly damaged specimens several times, and probably when I ended up at

one point near *Arachnidomyia*, I thought “Aha!” as the species *Sarcophaga aldrichi* Parker (formerly *Arachnidomyia*) is known to attack lepidopteran pupae. Some other taxa formerly placed in this genus feed on spider egg sacs as the name suggests (Hieber et al. 2002). Unfortunately, due to an overlooked spell-checking mishap at some point in the publication process, all references to *Arachnidomyia* in the note were changed to “*Arachidomyia*,” resulting in an embarrassing beginning to my published work on flies.

Years later (I don’t remember actually when), I was talking to sarcophagid-expert Thomas Pape and he mentioned that he thought that the identification I had made for the note was likely mistaken. I believe he suggested that the flies might belong to the genus *Helicobia* Coquillett. Of course, with many other things occupying my brain, I forgot about this conversation.

### A little bit about *Helicobia*

Members *Helicobia*, in particular the species *Helicobia rapax* (Walker) (Fig. 2), have been reared from a wide variety of dead invertebrates including snails, adult beetles, ants and Lepidoptera (Reeves et al 2000; ants Bragança et al. 2020). They appear to attack weakened or injured insects. As an example, I reared specimens of *H. rapax* (or nr.) from an adult Cerambycidae (*Deobrachus hovorei* Santos-Silva) that was found alive but weakened and apparently drowning in a bucket of water. My PhD student Juan Manuel Perilla López also recently reared what was likely *Helicobia* from an injured Carolina mantid (the adults never emerged). Thus, ecologically, *Helicobia* seems a likely culprit for emerging from *Altinote* butterflies. In addition, *Helicobia* spp. are relatively small bodied among Sarcophaginae, and the flies that emerged for the butterflies were relatively small (ca. 5 mm).



Figure 2. *Helicobia rapax* (Walker), a common and widespread species of Sarcophagidae in North America. This specimens was collected by W.L. Downes in Redwood City, California (2 November 1947).

### Method (sort of)

I came across the fly specimens again a few years ago, having stored them in a vial of ethanol, and, remembering my conversation with Pape, I examined them with his suggestion in mind. Indeed, upon re-inspection (and with some more knowledge and experience), *Helicobia* seemed a likely conclusion, but I was not quite sure. I put the specimens aside thinking I should write something about them to correct the error in the initial publication and then promptly forgot about them for a few more years.

Recently, I was selecting some old tachinid specimens of various groups to try to obtain some COI (“barcode”) sequences through the Canadian Center for Biodiversity Genomics (CCBG). I had some funds that needed to be spent and “barcoding” a bunch of tachinids seemed like a worthwhile use of it. I remembered the sarcophagid specimens and was able to relocate them (my alcohol-preserved collection leaves a lot to be desired, being mostly just a number of plastic tubs filled haphazardly with alcohol vials), and included a specimen of the unknown sarcophagid in the plate of DNA we sent off to the CCBG.

[Side note: I dislike the use of the term “barcode” to refer to DNA sequences from this COI gene region, or any gene region. Unfortunately, there is too much momentum to avert our common usage of this misleading analogy. COI sequences have been an extremely useful source of data used by systematics researchers for decades before it became over-hyped by some as a “magic bullet” for species discovery and delineation. Yet, a species’ barcode it is not. Just like other traits systematists use, COI sequences can vary within species, they can be shared by different species, and there is no objective criterion for determining how different is different enough to reflect distinct species. Calling them barcodes gives the misleading impression that one can simply “scan” the code and assign a species. It’s often not that simple.]

The COI sequence I recovered from the unknown sarcophagid was not great, probably due to the poor quality of the DNA, and had an internal gap of N’s (bases that could not be called), which I believe is a consequence of the ‘next gen’ sequencing approach required to obtain usable DNA data from this old material. Still, I was able to search out and find taxa with similar sequences via NCBI (National Center for Biotechnology Information) to compare with, as well as submit the sequence to a search against the BOLD (Barcode of Life Data System) database. The search in BOLD uses Neighbor Joining (Kimura 2-p, partitioned by codon) to create a tree of the top matching sequences in its database. I performed a Maximum Likelihood search on the NCBI data set using the W-IQ-Tree online server (Trifinopoulos et al. 2016; data partitioned by codon, best model estimated by Modeltest, free rate heterogeneity, 1000 u.f. bootstraps).

### Phylogenetic evidence and interpretation

The phylogenetic position of the unknown sarcophagid sample can be seen in Figures 3 and 4. Both trees (IQ-tree ML and BOLD NJ) place the specimen reared from an adult butterfly near *H. rapax*, suggesting that indeed, it likely belongs to this genus. On the other hand, the sequence is quite distinct from those of *H. rapax* and from any other specimen in either database. The reason for this is unclear. It could be that the specimen represents a distinct lineage of *Helicobia* far from *H. rapax*, the only identified *Helicobia* species with sequence data, or even a related genus. On the other hand, the large distance from *H. rapax* could be a function of the degraded DNA of the specimens resulting in numerous aberrant base calls. Perhaps, it may be a combination of both – a divergent species of *Helicobia* (at least 33 New World species are known; Pape & Dahlem 2010) and a messy sequence due to degraded DNA. The genus *Helicobia* makes sense as to the identity of the fly, given the circumstances of the rearing and that the genus appears to be associated with injured and/or

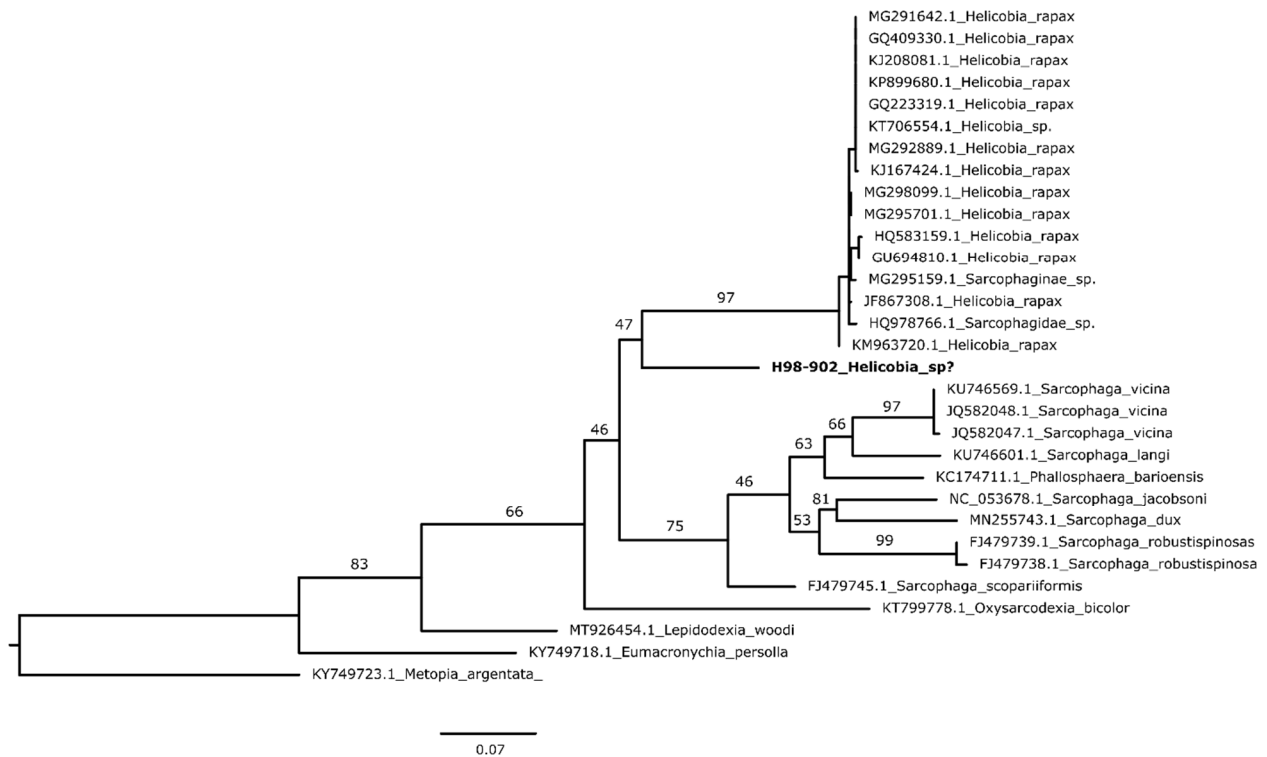


Figure 3. A Maximum Likelihood tree of COI sequences from NCBI, along with the fly in question (bold) inferred with IQ-tree. Numbers above bars represent ultrafast bootstrap values.

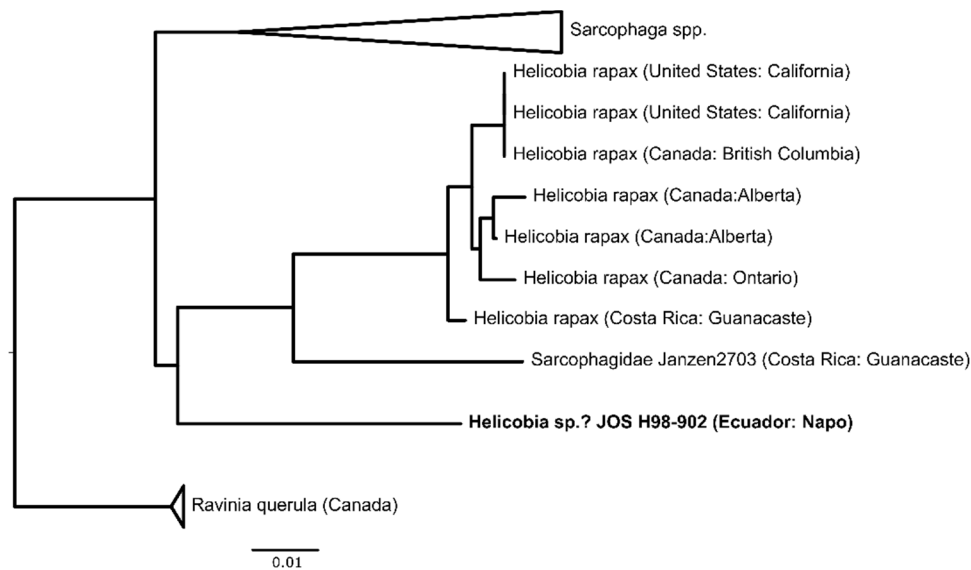


Figure 4. A Neighbor Joining tree of COI sequences from the BOLD database, along with the fly in question (bold).

moribund arthropods. The butterfly host may have been injured (perhaps by a bird), allowing attack by the sarcophagid, but was apparently still able to fly. *Helicobia rapax* appears to be rather catholic in its choice of host, attacking a wide variety of insects and other invertebrates. It is interesting to speculate that perhaps other species of the genus, if they possess similar lifestyles, might be more

specialized, attacking only particular insect or snail groups, perhaps like the phorid flies that specialize on injured and dying ants of particular species (Brown & Feener 1991). For most sarcophagid species, including species of *Helicobia*, life histories are unknown or based on a few tenuous records. Traditional methods of rearing and observation of potential hosts (moribund or healthy), and possibly DNA sequencing of potential hosts that can reveal the presence of *Helicobia* inside them, are necessary to better understand the associations of these ‘grim reaper’ flies.

### Acknowledgements

Thanks to Harold Greeney for inviting me to write the original note with him, Thomas Pape for steering me straight on the potential identity of the flies, Juan Manuel Perilla López for providing some comments on this note, G.A. Dahlem for lending me specimens, and Steve Gaimari for organizing and editing this newsletter.

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## **Continuing investigations on the Mycetophilidae of North Central Nevada**

Robin Gray

Seven Valleys LLC, Winnemucca, Nevada, USA; [sevenvalleysent@gmail.com](mailto:sevenvalleysent@gmail.com)

This spring I have continued my study of the mycetophilids that occur in the North Central region of Nevada. This year is the driest that there has been in this area in over twenty years. The drought has greatly reduced the amount of mosquito work there is, so I have had more time to devote to mycetophilids. The drought has also reduced mushroom production, which has been an avenue into the lives of these insects. North Central Nevada consists of desert and mountain ranges that rise up to nearly ten thousand feet in elevation. The mountains are islands within a sea of desert, and in the mountains themselves there are islands of particular plant communities surrounded by large areas of different vegetation. This situation interests me, so this year I decided to set up Malaise traps in islands of different vegetation and see what I could catch in terms of mycetophilids. I put up the traps as early in the season as I could access the various areas, and I plan to keep them in place through November, checking them on a regular basis. From this project I hope to discover which species are present in each island of vegetation, and something about their biologies through the ebb and flow of their populations. I think I will also learn something about the life and character of each of these island habitats, because I suspect each is a complex community of many creatures. I am also approaching my study of mycetophilids from other directions which I will describe below.

The following is a synopsis of the locations where I have put Malaise traps this year and a brief description of their characteristics.

1. Aspen Island. This Aspen forest is located in the northern Bloody Run Mountains. In the mid nineties this entire area, including this forest, was burned over in a huge wildfire. The trees there now have grown up since the fire, probably from the underground portion of the same trees that were there pre-fire. Fallen charred trunks of the previous forest are everywhere in this patch of vegetation. I think that it is likely that the insect population that was there at the time of the fire was largely, though maybe not wholly, destroyed by the fire and what there is now is the result of subsequent recolonization. This patch of Aspen forest runs up a narrow gorge. The actual forest is only 150 feet wide at its widest, and just under a thousand feet long (Figure 1). There are a couple of springs in the upper areas, which feed a trickle of water into a little creek which runs down through the forest. There seem to be two clones which make up this forest, since the upper and lower halves leaf out at definitely different times. My trap is set up in the lower end at 5450 feet elevation (Figure 2). There is a diversity of plants here, few of which I have identified. And the area around the springs and little creek are different than the rest of the forest, being much damper. I put the trap up here on March 18, at which time the ground was mostly snow covered. I have thus far found no mushrooms in this habitat.
2. Chokecherry Island. This is essentially a pure stand of Chokecherries (*Prunus virginiana*), and is in fact a sort of archipelago of thickets/forests of this plant (Figure 3). They are also located in the northern Bloody Run Mountains. There are no springs or seeps of water in these thickets, they are much drier than the Aspen forest. In number of plant species it appears to be less diverse than the Aspen forest. Being out on a mountainside rather than in a narrow gorge it gets more sun than the Aspen forest, and it is snow covered for a shorter period of time. I set my trap up in the largest patch of this archipelago at 5400 feet elevation (Figure 4), on March 18. This part of the archipelago is 160 by 104 feet in dimension.



Figure 1 (left). Aspen forest. Figure 2 (right). Trap in aspen forest.



Figure 3 (left). Chokecherry archipelago. Figure 4 (right). Trap in chokecherry forest.

3. Service Berry habitat. This habitat is located in a narrow, deep valley in the southern part of the Santa Rosa Mountains. It occupies the slopes of the east side of the valley; the west side gets more sun, is apparently dryer and is covered in sagebrush. The habitat consists of thickets of Serviceberry (*Amelanchier* sp.). I was able to confirm this as I saw the flowers this year. When I set the trap up on April 12, at 6150 feet elevation there were still patches of snow on the ground (Figure 5). This particular habitat is also an island, though much larger than the previous two, covering many acres of the valley side in an irregular fashion and running up to nearly 7000 feet elevation. I have run leaf litter from this area through a Berlese funnel twice on separate dates and caught nothing but one centipede. From photos on Google Earth, taken in 2014, it appears that the Service Berry vegetation has considerably increased since then.

4. Juniper forest habitat. This is located in the Dun Glen Range, my trap is set up in a Juniper forest at 5440 feet elevation (Figure 6), It has been there since March 30. There was no snow at this site at that time. This is also an island habitat, but a very large one as the Juniper forest covers a good deal of the Dun Glen Mountains. It is dry and rocky at this site. I have seen mushrooms and puffballs here in previous years. The needle litter under the trees looks like it has white mold in it, but I have never found mycetophilid larvae in this.



Figure 5 (left). Trap in serviceberry habitat. Figure 6 (right). Trap in juniper forest.

I have also set up two other traps in different locations recently, but have not yet been back to check them. One is up Singas Creek in the Santa Rosa Mountains, at 5250 feet elevation, in a willow copse that is part of the riparian vegetation that runs along this creek (Figure 7). The creek is currently full of water. The second trap was put up at the margin of an extensive thicket of Desert Peach (*Prunus andersonii*) at 5340 elevation in the Dun Glen Mountains (Figure 8). I have other plans for these traps later in the season when the snow retreats from the Pine Forest Range, so unless they show me something interesting they are going to be moved.

I have a lot of mycetophilids that I have caught this spring, and a few from last fall and during the winter. One of the most interesting to me was a *Megalopelma* sp. taken in a Malaise trap I set up in a cattail swamp, during the second half of October. This area is along the Humboldt River, and is usually flooded from April to early fall. I have collected three specimens of this genus, all different species, all in different habitats.

In December I collected leaf litter from next to the mosquito abatement building in Winnemucca, and went through it by hand. I found a large population of mycetophilid larvae of various sizes and some



Figure 7 (left). Trap in riparian vegetation. Figure 8 (right). Trap in desert peach thicket.

pupae - I was pretty sure these were the immatures of *Boletina* sp. The pupae were a brownish green color, and the head capsule of the larva was attached to the tip of the abdomen of the pupa. These darken to black before the adults emerge. On January 13 I found numerous adult *Boletina* sp. out at this location. I collected a few of them, and after that I monitored their activity visually. The adults were out even on days down to 33°F. When it snowed or rained, even if the temperature was in the forties, they vanished. So on one of the days when none were to be seen I ran some of the leaf litter through the Berlese and got one adult. So it appears they retreat back into the leaf litter in weather they don't like. Adults were very active until the last week in March when they vanished. Flowers were out within a few feet of this site by then, but I never saw any of the adults feeding on them. At the Aspen and Chokecherry sites I collected many *Boletina* in the traps up until the end of April. Both are about a thousand feet higher than the site in Winnemucca. They were much more numerous at the Chokecherry site than they were at the Aspen. They were not present at all at the Juniper or Serviceberry site.

So the *Boletina* sp. seems to be active as adults from mid winter to early spring, three months. They don't seem to feed on flowers, which are not available most of that time anyway - what do they feed on, if at all? How many generations if *Boletina* are there during those three months? And when do the larvae first hatch out, because they were already well along when I saw them in late December. These are questions I would like to get answers to this coming winter. If I took some leaf litter and stuck it in the refrigerator, maybe near the freezer compartment, could I get a hatch of larvae?

As of late May I am still getting mycetophilids in the traps in the Aspen forest and Chokecherry thicket. These are a couple of species of *Docosia* and some other genera I have not yet had time to

identify. In the Juniper forest I have caught two species of *Docosia* this spring. In the Serviceberry habitat, nothing so far.

This has so far been a very poor year for mushrooms. I found a large puffball pushing out of the ground at the margin of the Chokecherry forest on April 20 (Figure 9). I dug this up and put it in a



Figure 9. Puffball

rearing chamber. As of May 24 nothing has emerged from it, though there are a few small holes on the underside that look like emergence holes. The puffball itself is now covered with mold. So what do the mycetophilids that I have reared out of mushrooms do when there are no mushrooms? I have many questions about these insects, it's very hard to find the answers.

This fall I want to go to a university library and look for literature that will allow me to take the specimens that I have down to species. A lot of journals, including Zoological Record, are online now making it more difficult to access them if you are not part of an institution. So I have to solve that problem somehow. Every year I find species of mycetophilids I have not seen before, I would like to know what they are. Some do not seem to fit easily anywhere in the generic key in the Manual of Nearctic Diptera - what do I do about those? I have to know what species I have before I can publish anything. So these are some things I need to work on.

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**Two new generic records for Monroe County, Florida  
(Chaoboridae, Chironomidae)**

Lawrence J. Hribar

Florida Keys Mosquito Control District, 503 107<sup>th</sup> Street, Marathon, Florida 33050 USA

Examination of bycatch from mosquito control surveillance in the Florida Keys has yielded a number of new national, state, county, and locality records for nearly 100 taxa (Hribar 2020). Many specimens collected in light traps are not identifiable to species due to damage or loss of important morphological characters (Hribar & Plakidas 2011). Recent collections from the Florida Keys, Monroe County, Florida, have revealed the presence of two genera of flies not yet reported from the island chain (Florida Department of Agriculture & Consumer Services, personal communication). All specimens were cleared in a mixture of phenol and acetic acid and mounted on microscope slides in a phenol-balsam medium.

**Chaoboridae**

Unidentified *Chaoborus* species. FL, Monroe Co., Card Sound Road, Key Largo, Toll Booth CS5, 23 Nov 2020, L. Frischman, light trap. One female.

Borkent (1981) reports three *Chaoborus* species from Florida: *C. albatrus* Johnson, *C. punctipennis* (Say), and *C. festivus* Dyar & Shannon. The specimen was compared to illustrations provided by Cook (1956). The wing spot pattern is very faintly visible on this specimen. The form of the spermathecae and the banding pattern on the legs suggests that it might be *C. punctipennis*, which is known from Miami-Dade County (Florida Department of Agriculture & Consumer Services, personal communication). There is also a chance that it might be *C. antillum* Knab, which is found in Cuba (Borkent 2014); at least one other insect previously known from Cuba has been found in the Florida Keys (Hribar & Henry 2007). Knab's (1913) description of the male of *C. antillum* mentions an indistinct wing pattern. This specimen's wing pattern, although very faint, seems to be spots rather than an indistinct band. Dyar & Shannon (1924) provided a character on the foretarsi for distinguishing *C. antillum*; unfortunately, this specimen is missing both forelegs. Lane (1953) examined two female specimens of *C. antillum* but did not describe them. Vicente (2019) has revised the Neotropical species of *Chaoborus* and described four new species. As of this writing her thesis is yet unpublished. Because of the uncertainty of identifying a single specimen without comparison to identified specimens, I have not put a specific epithet on the label.

**Chironomidae**

Unidentified *Ablabesmyia* species. FL, Monroe Co., Little Crawl Key, Curry Hammock State Park, 18 Nov 2020, K. Pointer, light trap. Six females.

Unidentified *Ablabesmyia* species. FL, Monroe Co., Key Largo, Rte. 905, MM2, 28 Feb 2021, L. Frischman. One male.

Roback (1971) lists seven *Ablabesmyia* species from Florida; Epler's (2019) list contains 11 species. Since the publication of Roback's list, *Ablabesmyia tarella* Roback has been synonymized with *A. mallochi* (Walley) (da Silva & Gelhaus 2010). The color pattern on the wings appears similar for all seven specimens. The genitalia of the male resemble those of *Ablabesmyia cinctipes* (Johannsen), as do the abdominal pigmentation and the banding on the foretibiae, when compared with published illustrations (Johannsen 1946, Roback 1971). The holotype male of *A. cinctipes* was collected in Miami (Johannsen 1946) so it is possible that the species occurs in the Florida Keys. However, there

is considerable morphological variation within and among species; many identifications are suspect and specimens need to be re-examined (Roback 1971). Given the uncertainty and ambiguity of characters used to distinguish species, only the male might be tentatively and hesitantly identified and no specific epithet is assigned to the females.

It is worth noting that the collection sites for all of these specimens are in relatively protected, minimally disturbed areas.

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## **A mite taken from a psychodid fly on Grassy Key, Florida**

Lawrence J. Hribar

Florida Keys Mosquito Control District, 503 107<sup>th</sup> Street, Marathon, Florida 33050 USA

On 8 February 2021 a dry ice-baited light trap was placed on Grassy Key in the City of Marathon, Monroe County, Florida, for mosquito surveillance. A female psychodid fly with an attached larval mite on the abdomen was found the following day (Fig. 1). The mite appears to be a larval water mite.

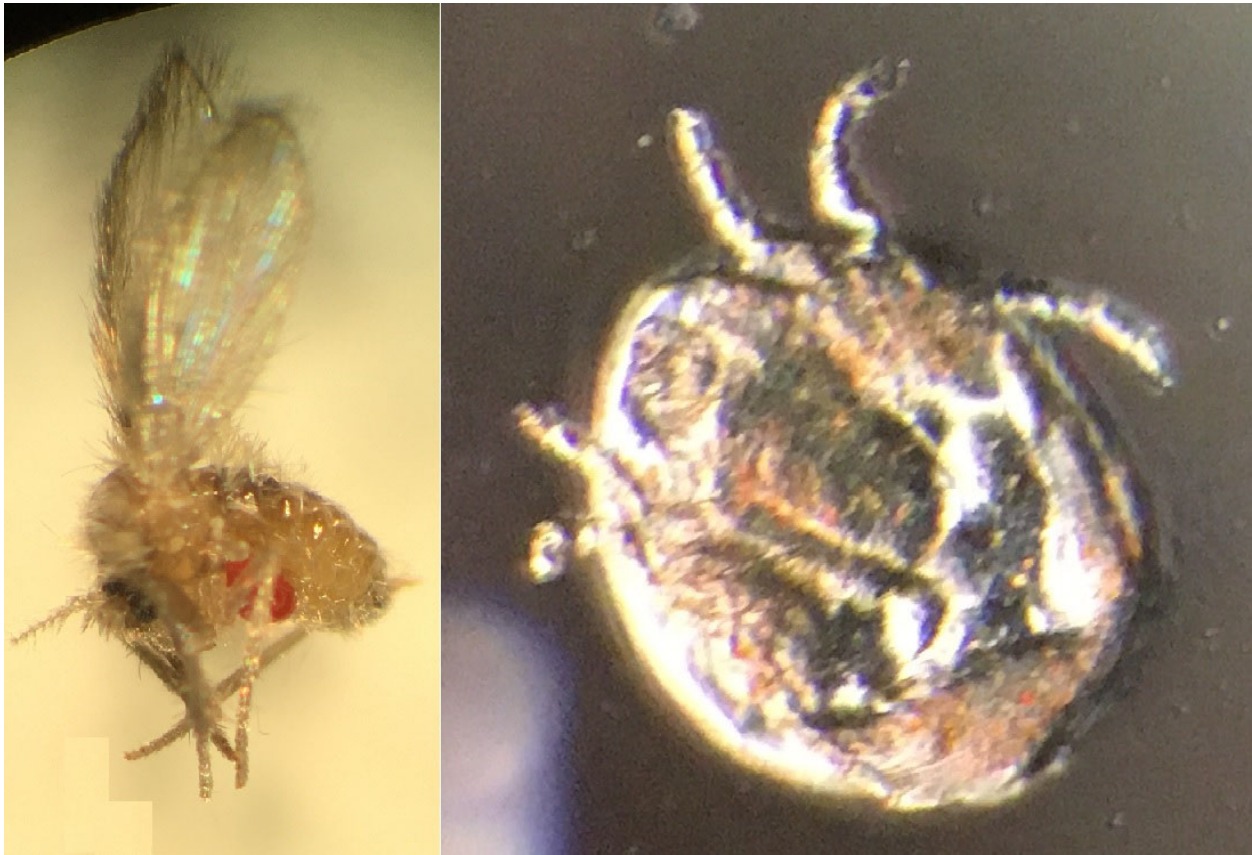


Figure 1. Female psychodid fly with mite attached to abdomen (left); mite larva (right).

There seem to be very few reports of mites attached to Psychodidae (other than Phlebotominae). Two examples include *Iphidozercon californicus* Chant (Ascidae) on *Psychoda satchelli* Quate (Whitesel & Schoeppner 1973), and an unidentified Hydryphantidae on an unidentified Psychodidae (Martin 2008).

*Iphidozercon* species mites are found in wet soil, decaying plant matter, under bark, in the nests of ground-nesting birds, and on Sphaeroceridae (Kaluz & Fend'a 2005, Hajizadeh et al. 2014); neither paper mentioned the record reported by Whitesel & Schoeppner (1973). Smith & Oliver (1986) and Smith et al. (2001) mentioned no records of water mite larvae parasitizing Psychodidae. Whitesel & Schoeppner (1973) mention that Ascidae are associated with Tipulidae and that some Tipulidae and *Psychoda satchelli* have similar larval habitats.

Adults of Lower Diptera are small and live for a short time. Attachment of mites to the abdomen may be less detrimental to the host's ability to fly to a new habitat (I. Smith & Oliver 1986, B. Smith 1988). One would suspect that female hosts would be utilized more often by mites, as they would be more likely to return to an aquatic habitat for oviposition, but this does not seem to be the case for most host taxa (Martin & Gerecke 2009). Proctor & Pritchard (1989) reviewed adult feeding behavior of water mites and reported that larval host taxa are often the same taxa attacked by egg-specialist adult water mites.

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## HISTORICAL DIPTEROLOGY

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### Dipterological bibliography of Francis Walker

Neal L. Evenhuis

J. Linsley Gressitt Center for Research in Entomology, Bishop Museum,  
Honolulu, Hawai'i 978917-2704, USA; [neale@bishopmuseum.org](mailto:neale@bishopmuseum.org)

During his life, Francis Walker (see Evenhuis, 2018, *Fly Times Supplement 2* for more details) published almost 500 articles and notes on various orders of insects, in which he described more than 23,600 species, putting him in the top tier of taxonomists having described the most species. Here, I present a bibliography of his Diptera articles giving accurate dates of publication via bibliographic research, the years of some of which are different than previously noted.

His first publications were on parasitic Hymenoptera; and he did not publish on Diptera until 1833, when he published a short note on the British sepsids. Small notes on Diptera were not the norm for Walker (except in his early and later years when he was not under contract by the British Museum). He instead tended to propose many new Diptera species in larger works, the best known of these being the multi-volume *List of specimens of dipterous insects in the collection of the British Museum*, published from 1848–1855. The number of articles in which he published new names of Diptera is 63 (marked with an asterisk in the bibliography below). Of the 4,241 species-group names he proposed in his 41-year career, 4,162 are available names. He published a number of *nomina nuda*, probably representing species he intended to describe but did not. His percent valid rate for species is 66%, which is higher than that for more revered dipterists like Macquart (61%) or Meigen (60%).

Although Walker was not well thought of in some circles of entomology, namely Lepidoptera and Heteroptera, he was well liked personally and collaborated often with such luminaries of British entomology as John Curtis, A.H. Haliday, and J.C. Dale, where his avid collecting of insects, primarily around his home in Southgate, England, resulted in many new species described by others. No doubt his collegiality among fellow British entomologists led Curtis to describe a dipteran in his honor (*Leptomorphus walkeri* Curtis, 1831) before Walker had published his first paper.

### Bibliography

The articles below are listed in chronological order. Dates, unless otherwise noted, are from the work itself. Sources for dating are annotated. A few works have no date within the year, and are indicated as “31 December+”.

#### 1833

- 1.\* Observations on the British species of Sepsidae. *Entomological Magazine*, 1, 244–256. [April]

#### 1834

- 2.\* Observations on the British species of Pipunculidae. *Entomological Magazine*, 2, 262–270. [July]
3. A list of described Diptera new to Britain. *Entomological Magazine*, 2, 439. [October]

**1835**

- 4\*. Characters of some undescribed New Holland Diptera. *Entomological Magazine*, 2, 468–473. [January]
- 5\*. Descriptions of the British Tephritites. *Entomological Magazine*, 3, 57–85. [April]
- 6\*. Notes on Diptera. *Entomological Magazine*, 3, 178–182. [July]

**1836**

- 7. Notes on some insects of Teneriffe. *Entomological Magazine*, 3, 412. [January]
- 8\*. Diptera, pp. 331–359. In: Curtis, J., Haliday, A.H. & Walker, F., Descriptions &c. of insects collected by Captain P.P. King, R.N., F.R.S., in the Survey of the Straits of Magellan. *Transactions of the Linnean Society of London*, 17, 315–359. [21 June]  
[Dated from Raphael, S., 1970, *Biological Journal of the Linnean Society* 2: 61–76.]
- 9\*. Notes on Diptera. *Entomological Magazine*, 4, 113–117. [October]

**1837**

- 10.\* Notes on Diptera. *Entomological Magazine*, 4, 226–230. [January]

**1841**

- 11. *Tachinus bipustulatus*. *The Entomologist*, 1, 128. [June]
- 12. *Laphria nigra*. *The Entomologist*, 1, 160. [August]
- 13. Musquito cave, (extracted from Paget's 'Travels in Hungary'). *The Entomologist*, 1, 207–208. [November]

**1845**

- 14. The hessian fly. *Zoologist*, 3, 199–200. [December]

**1846**

- 15. Oak-apples in America. *Zoologist*, 4, 1281–1282. [March]
- 16. *Empis borealis*. *Zoologist*, 4, 1354. [May]
- 17. List of insects inhabiting oak-apples [part]. *Zoologist*, 4, 1454–1457. [September]

**1848**

- 18.\* Notes on Diptera, Chalcidites, and other insects [part]. *Annals and Magazine of Natural History*, (2) 2, 73–78. [1 July]  
[Dated from Evenhuis, N.L., 2003, *Zootaxa* 385: 1–68.]
- 19. Notes on Diptera, Chalcidites, and other insects [concl.]. *Annals and Magazine of Natural History*, (2) 2, 218–220. [1 September]  
[Dated from Evenhuis, N.L., 2003, *Zootaxa* 385: 1–68.]
- 20.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part I. British Museum, London. 229 pp. [9 December]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]

**1849**

- 21.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part II. British Museum, London. Pp. [3] + 231–484. [21 April]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]
- 22.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part III. British Museum, London. Pp. [3] + 485–687. [30 June]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]
- 23.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part IV. British Museum, London. Pp. [3] + 688–1172. [8 December]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]

## 1850

- 24.\* Characters of undescribed Diptera in the British Museum [part]. *Zoologist*, 8(Appendix), lxxv–lxxii. [28 May]
- 25.\* Characters of undescribed Diptera in the British Museum [part]. *Zoologist*, 8(Appendix), xcvi–xcix. [28 August]
- 26.\* Diptera. Part I, pp. 1–75, pls. 1–2. In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* Vol. 1. Van Voorst, London. 474 pp. [7 October]  
[Date presented to the Entomological Society of London.]
- 27.\* Characters of undescribed Diptera in the British Museum [concl.]. *Zoologist*, 8(Appendix), cxxi–cxxii. [2 December]

## 1851

28. [Papers read: Descriptions of six new British Diptera.] *Proceedings of the Entomological Society of London*, 1851, 48. [31 May]  
[Although read at the meeting of the Society, this paper was never published. Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
- 29.\* Diptera. Part II. In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* Vol. 1. Van Voorst, London. Pp. 77–156. [2 June]  
[Date presented to the Entomological Society of London.]

## 1852

- 30.\* *Insecta Britannica, Diptera*. Volume 1. “1851”. Reeve & Benham, London. vi + 314 pp. [5 January]  
[Preface dated December; *Bent’s Literary Advertiser* for January 1852 states this work is among those registered between 1 and 10 January 1852 but is not in the list for those registered between 11 and 31 December 1851 in that same issue of *Bent’s*. The Entomological Society of London presented a copy at their 5 January 1852 meeting.]
- 31.\* Diptera (Part III). In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* Vol. 1. Van Voorst, London. Pp. 157–252. [2 August]  
[Date presented to the Entomological Society of London.]

## 1853

- 32.\* Diptera. Part IV. In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* Vol. 1. Van Voorst, London. Pp. 253–414. [7 March]  
[Date presented to the Entomological Society of London.]
- 33.\* *Insecta Britannica, Diptera*. Volume 2. Lovell Reeve, London. vi + 297 + [1] pp., pls. 11–20 [after 9 December]  
[Dated from *Bent’s Literary Advertiser* for January 1854.]

## 1854

- 34.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part V. Supplement I. British Museum, London. Pp. 1–330. [14 October]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]

## 1855

- 35.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part VI. Supplement II. “1854”. British Museum, London. Pp. 331–506. [13 January]

- [Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]
- 36.\* *List of specimens of dipterous insects in the collection of the British Museum*. Part VII. Supplement III. British Museum, London. Pp. 507–774. [14 April]  
[Dated from Sherborn, C.D., 1934, *Annals and Magazine of Natural History* (10) 13, 308–312.]
- 1856**
- 37.\* *Diptera*. Part V. In: *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c.* Vol. 1. Van Voorst, London. Pp. 415–474. [3 March]  
[Date presented by Saunders to the Entomological Society of London.]
- 38.\* Catalogue of the dipterous insects collected in Singapore and Malacca by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 1, 4–39. [1 March]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 39.\* *Insecta Britannica, Diptera*. Volume 3. Lovell Reeve, London. xxiv + 352 pp. [12 April]  
[Date recorded as “just published” by the *Entomologist’s Weekly Intelligencer*.]
- 40.\* Catalogue of the dipterous insects collected in Sarawak, Borneo, by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 1, 105–136. [1 November]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 1857**
- 41.\* Characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c. [part]. *Transactions of the Entomological Society of London (N.S.)*, 4, 119–158. [20 August]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
- 1858**
- 42.\* Characters of undescribed insects in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c. [part]. *Transactions of the Entomological Society of London (N.S.)*, 4, 190–235. [25 January]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
43. *Acrocera albipes*, Meigen. *Entomologist’s Weekly Intelligencer*, 5, 197. [19 March]
- 44.\* Catalogue of the dipterous insects collected in the Aru Islands by Mr. A.R. Wallace, with descriptions of new species [part]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 3, 77–110. [1 November]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 1859**
- 45.\* Catalogue of the dipterous insects collected in the Aru Islands by Mr. A.R. Wallace, with descriptions of new species [concl.]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 3, 111–131. [1 February]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 46.\* Catalogue of the dipterous insects collected at Makassar in Celebes, by Mr. A.R. Wallace, with descriptions of new species [part]. *Journal and Proceedings of the Linnean Society of*

London, *Zoology*, 4, 90–96. [19 September]

[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]

- 47.\* List of Ceylon insects, pp. 269–293. In: Tennent, J.E., *Ceylon: an account of the island physical, historical, and topographical with notices of its natural history, antiquities and productions*. Illustrated with maps, plans, and drawings. Volume I. Longman, Green, Longman, and Roberts, London. xxxv + [1] + 619 pp. [7 October]  
[Dated from the *Athenaeum*.]
  - 48.\* List of Ceylon insects, pp. 269–293. In: Tennent, J.E., *Ceylon: an account of the island physical, historical, and topographical with notices of its natural history, antiquities and productions*. Illustrated with maps, plans, and drawings. Volume I. Second edition, thoroughly revised. Longman, Green, Longman, and Roberts, London. xxxix + 643 pp. [21 November]  
[Date reviewed in *The Evening Herald* (London), p. 2.]
  - 49.\* Catalogue of the dipterous insects collected at Makassar in Celebes, by Mr. A.R. Wallace, with descriptions of new species [part]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 4, 90–144. [8 December]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  - 50.\* List of Ceylon insects, pp. 269–293. In: Tennent, J.E., *Ceylon: an account of the island physical, historical, and topographical with notices of its natural history, antiquities and productions*. Illustrated with maps, plans, and drawings. Volume I. Third edition, thoroughly revised. Longman, Green, Longman, and Roberts, London. xxxix + [1] + 643 pp. [after 26 November]  
[Date of the preface to the third edition; The list of insects in this edition have changes to the original list including corrections of typographical errors.]
- 1860**
- 51.\* Catalogue of the dipterous insects collected at Makassar in Celebes, by Mr. A.R. Wallace, with descriptions of new species [concl.]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 4, 145–172. [10 February]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  - 52.\* Catalogue of the dipterous insects collected in Amboyna by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5, 144–168. [18 July]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  - 53.\* Characters of undescribed Diptera in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c. [part]. *Transactions of the Entomological Society of London* (2), 5, 268–296. [3 November]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
  - 54.\* List of Ceylon insects, pp. 269–293. In: Tennent, J.E., *Ceylon: an account of the island physical, historical, and topographical with notices of its natural history, antiquities and productions*. Illustrated with maps, plans, and drawings. Volume I. Fourth edition, thoroughly revised. Longman, Green, Longman, and Roberts, London. xxxix + 643 pp. [31 December+]  
[The list of insects in this edition have changes to the original list.]

## 1861

- 55.\* Characters of undescribed Diptera in the collection of William Wilson Saunders, Esq., F.R.S., F.L.S., &c. [part]. *Transactions of the Entomological Society of London*, (2) 5, 297–334. [25 February]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
- 56.\* Catalogue of the dipterous insects collected at Dorey, New Guinea, by Mr. A.R. Wallace, with descriptions of new species [concl.]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5, 229–254. [27 March]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 57.\* Catalogue of the dipterous insects collected at Manado in Celebes and in Tond, by Mr. A.R. Wallace, with descriptions of new species [part]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5, 258–264. [27 March]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 58.\* Catalogue of the dipterous insects collected at Manado in Celebes and in Tond, by Mr. A.R. Wallace, with descriptions of new species [concl.]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5, 265–270. [24 May]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 59.\* Catalogue of the dipterous insects collected at Batchian, Kaisaa and Makian and at Tidon in Celebes, by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 5, 270–303. [24 May]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 60.\* List of Ceylon insects, pp. 442–463. In: Tennent, J.E., *Sketches of the natural history of Ceylon with narratives and anecdotes illustrative of the habits and instincts of the Mammalia, birds, reptiles, fishes, insects, &c. including a monograph of the elephant and a description of the modes of camping and training it. With engravings from original drawings*. Longman, Green, Longman and Roberts, London. xxiii + 500 pp. [26 October]  
[Dated from *The Bookseller*.]
- 61.\* Catalogue of the dipterous insects collected at Gilolo, Ternate and Ceram, by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 6, 4–23. [1 November]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 62.\* A hail-stone fly. *Entomologist's Weekly Intelligencer*, 7, 76. [3 December]

## 1862

- 63.\* [Note: on the habits of some Diptera and their parasites, with descriptions.] *Proceedings of the Entomological Society of London*, 1861, 21. [7 April]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]

## 1864

- 64.\* Catalogue of the dipterous insects collected at Waigiou, Mysol and North Ceram, by Mr. A.R. Wallace, with descriptions of new species. *Journal and Proceedings of the Linnean Society of London, Zoology*, 7, 202–238. [5 April]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]

65. On the late swarms of Syrphi in the Isle of Wight. *Entomologist's Monthly Magazine*, 1, 139–140. [November]
- 1865**
66. Notes on insects inhabiting the reed, and their parasites. *Entomologist's Monthly Magazine*, 1, 184–185. [January]
  - 67.\* Descriptions of new species of dipterous insects of New Guinea [part]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 8, 102–108. [13 January]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  68. The celery-fly. *The Entomologist*, 2, 318. [November]
  - 69.\* Descriptions of new species of dipterous insects of New Guinea [concl.]. *Journal and Proceedings of the Linnean Society of London, Zoology*, 8, 109–130. [5 December]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  - 70.\* Descriptions of some new species of dipterous insects from the island of Salwatty, near New Guinea. *Journal and Proceedings of the Linnean Society of London, Zoology*, 8, 130–136. [5 December]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
- 1866**
- 71.\* Synopsis of the Diptera of the Eastern Archipelago discovered by Mr. Wallace and noticed in the 'Journal of the Linnaean Society.' *Journal and Proceedings of the Linnean Society of London, Zoology*, 9, 1–30. [30 April]  
[Dated from Kappel, A.W., 1896, *General index to the first twenty volumes of the Journal and Proceedings of the Linnean Society London (Zoology)*, pp. v–vii.]
  - 72.\* [Descriptions of new taxa], pp. 309–344. In: J.K. Lord. *The naturalist in Vancouver Island and British Columbia*. In two volumes—Vol. II. R. Bentley, London. vii + 375 pp. [16 June]  
[Date recorded in *The Athaeneum*. The descriptions of new taxa of insects (by Frederick Smith and Francis Walker) are in the appendix (pp. 289–375) entitled "A list of mammals, birds, insects, reptiles, fishes, shells, annelides, and Diatomaceae, collected by myself in British Columbia and Vancouver Island, with notes on their habits." Walker was responsible for the new species of Coleoptera, Diptera, and some Lepidoptera, and Hymenoptera.]
- 1870**
73. *Chlorops* imbedded in a hailstone. *Proceedings of the Entomological Society of London*, 1869, xxvi. [7 February]  
[Dated from Wheeler, 1912, *Transactions of the Entomological Society of London* 1911: 750–767.]
- 1871**
74. [Note on the habits of the English species of *Ephydra* and its allies]. *American Journal of Science*, (3) 1, 110. [February]
  - 75.\* List of Diptera collected in Egypt and Arabia, by J.K. Lord, Esq., with descriptions of the species new to science [part]. *The Entomologist*, 5, 255–263. [March]
  - 76.\* List of Diptera collected in Egypt and Arabia, by J.K. Lord, Esq., with descriptions of the species new to science [part]. *The Entomologist*, 5, 271–275. [April]
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  - 78.\* Notes on some insects of Nova Scotia and Canada. *Canadian Entomologist*, 3, 141–144. [October]

79. Notes on oak-apples. *The Entomologist*, 5, 431–433. [November]
80. Galls and gall-makers. *The Entomologist*, 5, 450–451. [December]
- 1872**- 81. Notes in the insects of the Scilly Isles. *The Entomologist*, 6, 3–5. [January]
- 82. On the geographical distribution of some genera of Canadian insects [part]. *Canadian Entomologist*, 4, 184–187. [15 October]
- 83. Mosquitoes. *The Entomologist*, 6, 223. [November]
- 84. On some Amurland insects. Part II. *The Entomologist*, 6, 255–257. [December]
- 1873**- 85. Notes on some insects of Italy and of South France, observed between the middle of May and the middle of July, 1872 [part]. *The Entomologist* 6, 278–281. [January]
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- 87. Central African blood-sucking flies. *The Entomologist*, 6, 327–328. [March]
- 88. On some Amurland insects (Part III). *The Entomologist*, 6, 328–329. [March]
- 89. On Turkestan Diptera. *The Entomologist*, 6, 388. [May]
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- 91. Notes on the wing-bones of the two-winged flies. *The Entomologist*, 7, 36–42. [February]
- 92. Lime-galls. *The Entomologist*, 7, 46. [February]
- 93. Goureau's observations on parasitism. *The Entomologist*, 7, 93. [April]
- 94. Notes on the wing-bones of the two-winged flies. *The Entomologist*, 7, 100–102. [May]
- 95. Notes on some Amurland European Diptera. *The Entomologist*, 7, 103–104. [May]
- 96. Translation of the synopsis of the genera of European Mycetophilidae. *Canadian Entomologist*, 6, 111–114. [15 June]
- 97. Notes on the wing-bones of the two-winged flies [part]. *The Entomologist*, 7, 126–128. [June]
- 98. Notes on the wing-bones of the two-winged flies [part]. *The Entomologist*, 7, 147–149. [July]
- 99. Note on the Tachinidae. *Cistula Entomologica*, 1, 279–283. [1 September]
- 100. Notes on the wing-bones of the two-winged flies [part]. *The Entomologist*, 7, 196–198. [September]
- 101. *Machaerium maritimum* (Fam. Dolichopidae). *The Entomologist*, 7, 207. [September]
- 102. Notes on the wing-bones of the two-winged flies [concl.]. *The Entomologist*, 7, 219–221. [October]
- 103.\* *Notes on Diptera and lists of species*. First series. E.W. Janson, London. [1] + 37 pp. [31 December+]
- 1875**- 104.\* [Descriptions of new species of insects (excluding Coleoptera), pp. 129–200. In: Melliss, J.C., *St. Helena: a physical, historical, and topographical description of the island, including its geology, fauna, flora, and meteorology*. L. Reeve & Co., London. xiv + 426 pp. [6 March]

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**Laszlo Papp (3 October 1946 – 28 March 2021)**

Mihály Földvári

University of Debrecen, MTA–DE "Lendület" Behavioural Ecology Research Group,  
Department of Evolutionary Zoology and Human Biology, Egyetem tér 1.,  
H-4032, Debrecen, Hungary; [mihalyfoldvari@gmail.com](mailto:mihalyfoldvari@gmail.com)

László Papp was born and spent his childhood in the small village of Aranyosgadány in Baranya county in the southern part of Hungary. From a very young age he helped with the agricultural tasks that were compulsory even for children in that area which can be called the "puszta". His ambition was to become a biology teacher and an amateur ornithologist until he had a serious falling injuring (at around the age of 16) during a birding trip that made him paralyzed from the waist down for a few months. After a long recovery he became very determined to achieve something more. After finishing the boarding school in the town of Pécs he attended the ELTE university in Budapest and studied biology. He was influenced by the well-known ecologist Janos Balogh who encouraged him to study the fly communities of dung connected to animal breeding. He received help from Ferenc Mihályi then the curator of the Hungarian Natural History Museum (HNHM) Diptera collection and during months of hard work in the collection he acquired enough knowledge that he could identify the 3 fly groups (Sepsidae, Muscidae-like flies, Sphaeroceridae) he had collected during a self-designed, tough protocol on animal farms. He received help from Árpád Soós in sepsids and Ferenc Mihályi aided him with the muscoid flies. There was not much help regarding the third group, so he taught himself to become knowledgeable in sphaerocerids and later kept on pursuing them and became a specialist of the family.



At a later stage in 1970 he became an employee of the HNHM and worked as a dipterologist until 1981, when after acquiring the CSc degree (a level between the PhD and DSc) he decided he wanted "to learn how to teach" as he said, and became a primary school teacher for a year in Vecsés, just outside Budapest. During this year the head of the Parasitology Department (Tibor Kassai) at the Veterinary University was looking for an agile person with enough knowledge to create and teach the reintroduced course of zoology for veterinary students. He mastered the task with excellence and became an integral part of the teaching team there at the university. Still his destiny was the collection in the museum, so he headed back to fly collection in 1986 and became the curator again after a few years gap, where he continued until his retirement in 2011. In 1990 he became a member of the Hungarian Academy of Science, a remarkable achievement for his age, he was one of the youngest to accomplish that.



The idea of a Palaearctic catalogue was suggested by him at the meeting of Central European entomologists in Leningrad in 1977 and many of the future authors were present. It was Árpád Soós who had always been the main figure in the shaping and editing of the book series, but in the end he did not live to see all the families published and László took over during the last 2 or 3 volumes.

He edited the Manual of Palaearctic Diptera with Béla Darvas. The four volumes appeared over an eight year period, as it had been very difficult to find the financial support and battle through the legal issues with publishers and bookkeepers who had been draining the money from the foundation that had been established for the production of the book series.

He has always treated the HNHM fly collection as his most important accomplishment, his life's work. The destruction of the parts of the building that housed the Diptera collection in 1956 created a difficult situation. Only some 1/4 of the collection remained and it seemed like an impossible task to restart the collecting and organizing work. Ferenc Mihályi started it and then handed it over to László during the 1970s with ca. 350.000 specimens. Today the collection hold more than a million individual specimens and most of the material came during his time as a curator.

He organized the first International Congress of Dipterology in Budapest in 1986 together with Béla Darvas. These congresses are now a mainstay in dipterology, but it was quite a challenge to organize

the very first one in a communist country, and to make matters worse, all the difficulties associated with the accident at Chernobyl that caused half the attendees to cancel, yet nearly 300 came.

His focus has always been Acalyptrate flies and within them Sphaeroceridae, but he worked extensively with Lauxaniidae, Asteiidae, Carnidae, Milichiidae and more than a dozen other acalyptrate families. He also studied bot flies and mosquitoes and later even mycetophiloid and empidoid families. During the years he published ecological papers on fly communities of agricultural pastures and papers treating rare species and their roles, but his main area remained taxonomy and systematics.

During his long career he authored 7 family-group names, 94 genus-group names and 548 species-group names new to science; at the same time there have been 32 species-group names and one genus-group name established in honor of his name. He worked extensively on the Hungarian fauna and reported 700 species from numerous families for the first time in the country.

These are his words from the last manuscript he wrote. These lines will appear in the upcoming *Acta zool. hung.* issue, but because they address a wider audience it seems proper to cite them here:

"Concluding remark. Dear Readers, this is my last paper in the taxonomy of Sphaeroceridae. In the last 50 years, I published much as regards the volume of books, book chapters and scientific papers. As for their quality, it is out of my competence to judge them. Those who used them with benefit are welcome. If I caused you annoyance, I beg your pardon. God bless you all."

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**Oleg Pavlovich Negrobov (21 November 1941 – 8 January 2021)**

Igor Ya. Grichanov

All-Russian Institute of Plant Protection, Podbelskogo shosse 3,  
St. Petersburg–Pushkin, 196608 Russia; [grichanov@mail.ru](mailto:grichanov@mail.ru)

Oleg Pavlovich Negrobov was born in Voronezh, Russia, and almost his whole life was associated with this city and the Voronezh State University. From school-going age, he showed an interest in the insect world. In 1959, Oleg graduated from the secondary A. Koltsov School No. 1 and entered the Faculty of Biology and Soil Sciences of Voronezh University, from which he graduated with honors. During his studies, Negrobov took part in expeditions to the Caucasus, the Kola Peninsula and the White Sea. His graduate thesis was dedicated to Dolichopodidae of the Caucasian fauna under the supervision of Prof. K.V. Skufjin.

In 1964, Oleg Pavlovich entered the postgraduate course of the Zoological Institute of the USSR Academy of Sciences in Leningrad, where he prepared a thesis for the degree of Candidate of biological sciences (PhD) under the guidance of the famous entomologist Prof. A.A. Stackelberg. The work “Palaeartic species of the subfamily Medeterinae (Dolichopodidae)” was defended in 1968. And from the end of 1967, Oleg Pavlovich began working at the Department of Invertebrate Zoology, Voronezh University.



In 1983, Oleg Pavlovich defended his thesis “System and phylogeny of the family Dolichopodidae” for the scientific degree of Doctor of biological sciences (DSc in Biology), and since 1986, he took the position of professor of the Department of Invertebrate Zoology. Later he became the head of this department, which was transformed under his leadership into the Department of Ecology and Systematics of Invertebrates. Since September 2020, after merger of two zoological departments, he became a professor at the Department of Zoology and Parasitology.

From the first years of his work until the end of his life, Oleg Pavlovich was engaged in research on dipterans. And he was one of the world’s leading specialists on long-legged flies, Dolichopodidae. During his 55-year career he described 13 new genera, 512 new extant and extinct species and subspecies of this family from about 35 countries. He professionally collected flies in many regions of Russia, Ukraine, the Transcaucasia, in Germany and Finland. He studied the type material, visiting some leading European museums, and sent his paratypes in exchange to some other museums. The Fundamental Invertebrate Collection of the Voronezh University has become an aggregator of about half-million of mainly dipteran specimens, accurately pinned and labeled.

The dipterological contributions and activities of Oleg Pavlovich were recognized by an honorary membership in the Russian Entomological Society in 2017. In all, he published more than 1000 manuals, handbooks, monographs, papers and small notes in many fields of ecology and zoology, and in history of science. The most important for dipteran systematics papers are presented below.



Prof. O.P. Negrobov participating in the International East European Symposium on Entomology, Voronezh, 18–21 November 2011.

**Alphabetical list of taxonomically significant papers on Dolichopodidae published by Prof. O.P. Negrobov in 1965–2021**

- Barkalov, A.V., Negrobov, O.P., Grichanov, I.Ya. 2009. The *Dolichopus planitarsis* species group in the Palearctic Region (Diptera: Dolichopodidae) with description of a new species from the Russian Altai. *Zootaxa* 2268: 59–64.
- Bulli, A.F., Negrobov, O.P. 1987. A new species of the genus *Sciapus* (Diptera, Dolichopodidae). *Vestnik Zoologii* 3: 81–82 (in Russian).
- Chandler, P.J., Negrobov, O.P. 2008. The British species *Xanthochlorus* Loew, 1857 (Diptera, Dolichopodidae), with description of two new species. *Dipterists Digest* 15: 29–40.
- Chursina, M.A., Negrobov, O.P., Selivanova, O.V. 2016. A comparative description of the thorax chaetotaxy of the Dolichopodidae (Diptera). *Turkish Journal of Zoology* 40(4): 499–512.
- Grichanov, I.Ya., Negrobov, O.P. (eds.). 2013. Fauna and taxonomy of Dolichopodidae (Diptera). Collection of papers. St.Petersburg: VIZR (Plant Protection News Supplements): 1–96.
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## MEETING NEWS

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10TH INTERNATIONAL  
CONGRESS OF DIPTEROLOGY

RENO, USA  
16-21  
JULY, 2023

### 10th International Congress of Dipterology (ICDX)

Shaun L. Winterton & Stephen D. Gaimari

Plant Pest Diagnostics Branch, California Department of Food & Agriculture  
3294 Meadowview Road, Sacramento, California 95832, USA;  
[shaun.winterton@cdfa.ca.gov](mailto:shaun.winterton@cdfa.ca.gov), [sgaimari@dipterists.org](mailto:sgaimari@dipterists.org)

As we enter a world post COVID-19 pandemic with reduced restrictions on international travel, some have wondered about the planning for ICDX. As mentioned in the previous issue of *Fly Times*, after serious consideration the ICDX Organizing Committee sought and received approval from the Council for the International Congresses of Dipterology to postpone the congress from 2022 to 2023. This was due to ever-apparent difficulties in hosting the congress in 2022, including incomplete vaccinations globally, restricted travel, and scheduling conflicts with other meetings. Details of the meeting changes can be found on the ICDX website (<https://dipterists.org/icdx>). We encourage you also to join the Dipterists Mailing List (<https://lists.dipterists.org/mailman/listinfo/dipterists>) as a useful place to receive updates if you have not done so already.

**NEW DATES for ICDX are 16–21 July 2023, in sunny Reno, Nevada.**



Preparations are underway by the Organizing Committee, including selections for symposia and other program elements, seeking sponsorships, pre- and post-congress tours, outreach, travel grants, etc. A lot of information is already present on the ICDX website. If you need an invitation letter (which is not a promise of funding) to make your travel arrangements, this can be downloaded at [https://dipterists.org/assets/PDF/ICDX\\_letter-of-invitation.pdf](https://dipterists.org/assets/PDF/ICDX_letter-of-invitation.pdf).

Plenary speakers will be covering some aspect of the following five general areas, each of which will also have a dedicated symposium or symposia:

- Agricultural Dipterology
- Phylogeny
- Paleontology & Biogeography
- Medical, Veterinary & Forensic Dipterology
- Ecology & Inventory

We are pleased to announce that the Congress Banquet speaker will be the one and only Dr Erica McAlister (Natural History Museum, London), author of the best-selling books “The Secret Life of Flies” and “The Inside out of Flies”.

If you are interested to organize a symposium on a particular topic on Dipterology, please visit [https://dipterists.org/icdx/symposium\\_guidelines.html](https://dipterists.org/icdx/symposium_guidelines.html), which contains details, guidelines and a short submission form. You may also contact Dr Martin Hauser (email: [phycus@gmail.com](mailto:phycus@gmail.com)) with further details, such as a list of potential speakers. Martin will coordinate symposia to minimize duplication and where such overlap exists you may be requested to join with another symposium. Please submit your symposium proposals as soon as possible through the website.

Keep abreast of ICDX updates on our website, including important dates regarding registration, accommodation, tours, symposia, abstract submissions, travel grants, etc. Look for the ICDX first circular later this year.

We look forward to seeing everyone in Reno in 2023!

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**The next Field Meeting of the North American Dipterists Society  
is scheduled for June 2022 in the Philadelphia region**

Jon K. Gelhaus

The Academy of Natural Sciences of Drexel University, 1900 Ben Franklin Parkway  
Philadelphia, Pennsylvania 19103-1195, USA; [jkg78@drexel.edu](mailto:jkg78@drexel.edu); [gelhaus@gmail.com](mailto:gelhaus@gmail.com)

I was originally asked in 2019 to organize the next Field Meeting of the North American Dipterists Society for the mid-Atlantic region around Philadelphia. As I started to plan, the developing pandemic and its long-term consequences made holding such a meeting impossible during 2021. The International Congress of Dipterology is now set for Reno, Nevada in 2023, so it makes sense that the next field meeting of the North American Dipterists Society will be set for the year previous to ICD, in June 2022. Further details on the exact site and dates will be given in the Fall 2021 *Fly Times*, and on the Field Meetings website at [https://dipterists.org/field\\_meetings.html](https://dipterists.org/field_meetings.html).

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## OUT-OF-PLACE DIPTERA

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**Fascinating book for kids!**

Ximo Mengual

Zoologisches Forschungsmuseum Alexander Koenig, Leibniz-Institut für Biodiversität der Tiere.  
Adenauerallee 160, D-53113 Bonn, Germany; [x.mengual@leibniz-zfmk.de](mailto:x.mengual@leibniz-zfmk.de)

Title translation: Look at! The fascinating world of bees. Small insects with big tasks.



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## DIPTERA ARE AMAZING!

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*Mycomya* sp. female, probably *Mycomya fuscipalpis* Van Duzee (Mycetophilidae). This fly was found traipsing on the CDFA Plant Pest Diagnostics lab building, literally a few steps away from Peter Kerr's office! Photographs by Peter Kerr, Sacramento, California.



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## BOOKS AND PUBLICATIONS

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### **Announcement: Mosquitoes of the World, Volumes 1 and 2**

Announcement from the publisher at <https://jhupbooks.press.jhu.edu/title/mosquitoes-world>:

This 2 volume set is by Richard C. Wilkerson, Yvonne-Marie Linton, and Daniel Strickman, being the definitive reference on the biology, evolution, ecology, and diversity of all known species of the world's mosquitoes. Critical for entomologists, public health professionals, and epidemiologists across the world.

Volume One contains a review of the biology and diversity of mosquitoes. Biology is treated in the following chapters:

- Evolution
- Nomenclature
- Distribution
- Development
- Dormancy
- Mosquito Movement
- Feeding and Nutrition
- Excretion
- Copulation and Insemination
- Egg Development and Oviposition



The chapters on biology are followed by a well-illustrated summary of the characteristics of all 41 genera and of representative species of mosquitoes. This treatment of the morphological diversity of mosquitoes is accompanied by a glossary of all morphological terms used.

Volume Two features

- a long-awaited comprehensive mosquito taxonomic catalog detailing the current taxonomic and systematic status of all 3,698 valid species and subspecies, 41 genera, and 187 subgenera
- a list of all taxa for definitive use of nomenclature
- complete lists of species synonyms, distributions, key taxonomic works, and newly defined informal names
- origins of scientific names

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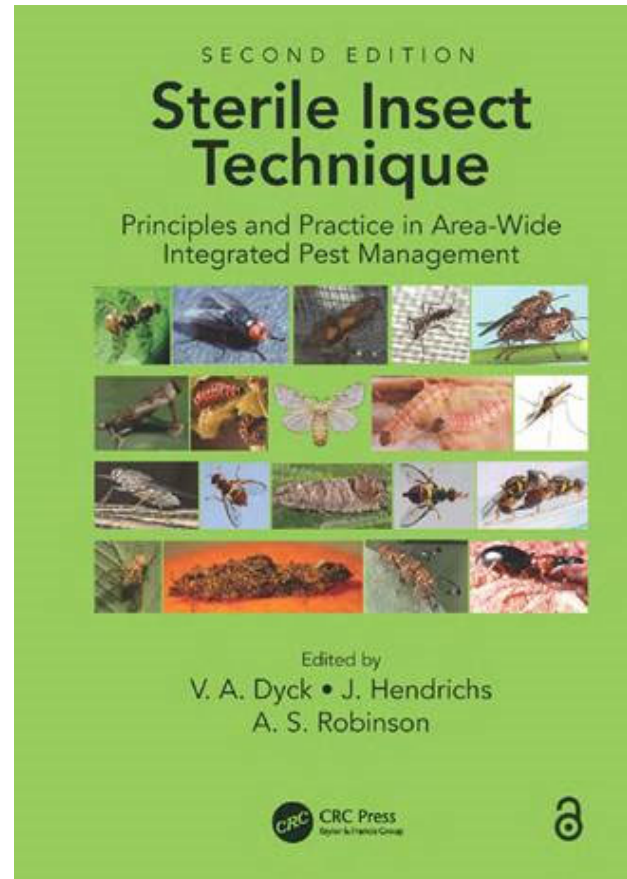
**Announcement:**  
**New Publication Highlights Advances in Use of Nuclear Technique to Fight Insect Pests**

Announcement from <https://www.iaea.org/newscenter/pressreleases/new-publication-highlights-advances-in-use-of-nuclear-technique-to-fight-insect-pests>:

The International Atomic Energy Agency (IAEA) and the Food and Agriculture Organization of the United Nations (FAO) have released a book reviewing major progress in the use of a nuclear technique to suppress agricultural pests and insect outbreaks that have become more frequent due to climate change and global trade and travel, including mosquitoes that spread diseases such as dengue and Zika.

In over 1200 pages, the *Sterile Insect Technique - Principles and Practice in Area-Wide Integrated Pest Management* updates information from a first edition in 2005 and covers advances made since then in the use of the technique.

Source: Insect Pest Control Section | Joint  
FAO/IAEA Centre of Nuclear Techniques in  
Food and Agriculture



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