



FLY TIMES

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Welcome to the latest issue of *Fly Times*! Congratulations on 25 years of *Fly Times*! As usual, I thank everyone for sending in such interesting articles, although submissions came a little later than usual! In any case, I hope you all enjoy reading it as much as I enjoyed putting it together! Please let me encourage all of you to consider contributing articles that may be of interest to the Diptera community for the next issue. *Fly Times* offers a great forum to report on your research activities and to make requests for taxa being studied, as well as to report interesting observations about flies, to discuss new and improved methods, to advertise opportunities for dipterists, to report on or announce meetings relevant to the community, etc., with all the associated digital images you wish to provide. This is also a great place to report on your interesting (and hopefully fruitful) collecting activities! Really anything fly-related is considered. I also want to thank Chris Borkent for again assembling the list of Diptera citations since the last *Fly Times*!

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

Issue No. 52 of the *Fly Times* will appear next April. Please send your contributions by email to the editor at stephen.gaimari@cdfa.ca.gov. All contributors for the next *Fly Times* should aim for 10 April 2014 – don't worry – I'll send a reminder! And articles after 10 April are OK too!

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NEWS

Flying High at the Zurquí All Diptera Biodiversity Inventory (ZADBI) in Costa Rica

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Since our last report in the Fly Times, there has been further major progress in preparing and understanding the Diptera of the cloud forest at Zurquí, Costa Rica. The five parataxonomists working at INBio have continued to collect and prepare the wealth of material coming in, resulting in thousands of well curated specimens. October 31 sees the end of the collecting portion of our project – now all that remains is to separate and prepare all those flies in the remaining samples collected over this past year – a major task that will take up much of the next two years of our project.

A significant amount of material from earlier trap samples has already been processed and we now have representatives of 68 families. At an earlier date we sent a few specimens to each collaborator to ensure our preparation was up to their standards. A few comments resulted in some fine tuning and in September, Wendy Porras arranged the packaging of thousands of curated specimens to be shipped to the Los Angeles County Museum and from there, together with Anna Holden, to our many collaborators, each receiving more specimens of their families. Feedback has been very positive and the diversity of flies in most groups is high.

On August 5-9, our project held a DipteraBlitz at Zurquí. This event, primarily organized by our talented project manager Anna Holden (LACM), gathered 15 of our collaborators: Greg Curler, Carl Dick, Wayne Mathis (and his wife Dianne), Steve Gaimari (and son Tony), John Gelhaus, Eric Fisher, Peter Kerr, David Grimaldi, Manuel Zumbado, Chris Thompson, Mathias and Catrin Jaschhof, Steve Marshall (and son Steven), Jeff Skevington (and wife Angela, son Alexander), and Sergio Ibanez-Bernal (and his son Diego). In addition, we were fortunate to have the following also join the event: Kimball Garrett and Edgar Chamorro (LACM), John Hash (Ph.D. student at University of California, Riverside), Carlos Viquez (INBio), Carlos de la Rosa (La Selva Research Station, Costa Rica), Michael Turelli (University of California, Davis), Paul Hanson (University of Costa Rica) and Alejandro Vargas (an enthused undergraduate student from University of Costa Rica). Of course, our five parataxonomists were present and assisted throughout the event: Annia Picado, Elena Ulate, Marco Moraga, Wendy Porras and Carolina Avila.

Our week was centered on collecting at Zurquí, and staying at the nearby Hotel Villa Zurquí was very convenient. Bushes were swept, microhabitats examined and a variety of specialized techniques were employed, including the collecting of birds for Hippoboscidae by Kimball Garrett. Daytime collecting was generally excellent and we were very fortunate in having good weather. Nighttime collecting centered at the lights and the collecting of bats by Carl Dick for Streblidae.

We also had a day at INBio to listen to excellent talks by Brian Brown (our project), Carlos de la Rosa (Chironomidae) and Michael Turelli (Wolbachia in insects) in the morning and in the afternoon, we examined the collection and studied the many curated specimens prepared from early samples from the ZADBI project.

One day of the DipteraBlitz had everyone going to Tapanti National Park, one of the two other sites we are sampling, each with a single Malaise trap, to compare with our more intense study of Zurquí.

The Costa Rican media came out for one day and our project was highlighted on local television. The show can be seen at the following link:

http://www.mediaguru.co.cr/MG_NOTI/MTA/CRC/MULTIM/NOTI/VIDEOS/MP4/2013/08/07/20130807__tv11__info_per__212916.mp4

Our final day of the DipteraBlitz had a wrap up dinner and event at the hotel. Good food and wine (and some very excellent tequila contributed by Sergio!) made for a wonderful banquet, followed by a time for everyone to share their findings. A rough estimate of species seen at Zurquí and in the collection resulted in a tally of over 1400 species. David Grimaldi reported, for example, 99 species in the two drawers of pinned Drosophilidae. Wayne Mathis collected over 500 Diptera, including 26 species of Ephydriidae and our first Therevidae.

The DipteraBlitz was followed by another field event in which many went on to the Soltis Center from August 10-14 to collect Diptera at a lower (and warmer!) elevation (440 meters).

Mathias and Catrin Jaschhof have been living in Costa Rica for three months (August – October) and are intensely studying Cecidomyiidae. Specimens from many samples have been extracted by Mathias and Catrin and Annia Picado has made hundreds of excellent slide preparations. The most recent report (every week the number increases) is that there are over 500 species present at Zurquí, virtually all of which are unnamed. Clearly, the cecids are going to be an outstanding example of the diversity present. We are very (!!!) fortunate indeed to have Mathias and Catrin applying their skills and energy to our project.

Jeff Cumming visited INBio and Zurquí in September, unfortunately not being able to make the DipteraBlitz in August. He added to our collection of empidids and examined material housed at INBio. He estimated there to be about 22-23 genera present – species yet to be determined.

Other news: one of our parataxonomists, Marco Moraga, has left the project to pursue a life in Italy. We are very glad to report that Elvia Zumbado, a very experienced parataxonomist who worked earlier at INBio on Diptera, has agreed to replace him in the lab.

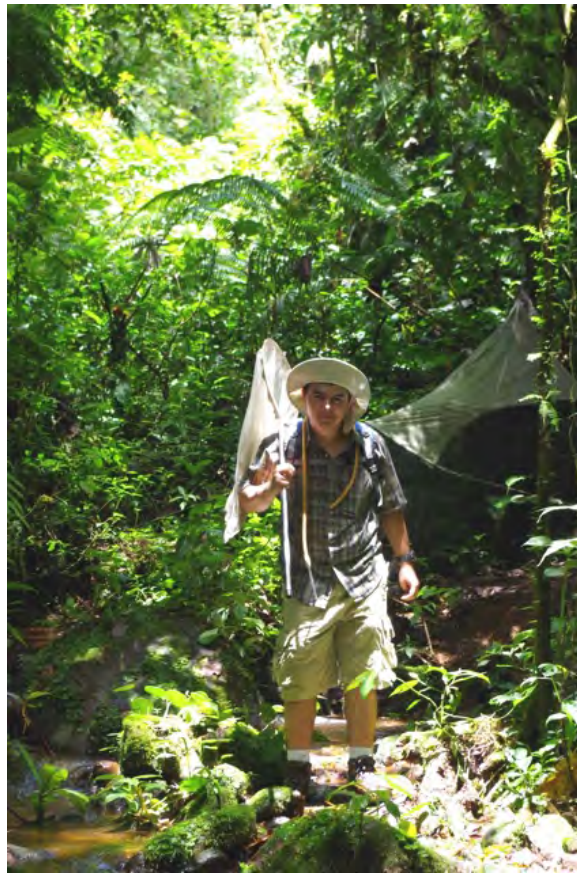
The months to come will focus on extracting, identifying to family and fully curating Diptera from the pile of samples gathered in this past year from Zurquí, Tapantí and Las Alturas. We plan to make intermittent reports on the diversity of various groups, as these are studied by our collaborators on our website: www.tropicalflies.net



Carl Dick and Kimball Garrett examining a hummingbird for Hippoboscidae



Lunchtime at Zurquí



Greg Curler on his way to finding Psychodidae (left) and Alejandro Vargas, our youngest Dipterist, hunting Culicidae and Empididae (right).



Carl Dick examining a bat for Streblidae



Chris Thompson explaining the universe to Catrin and Mathias Jaschhof



Steve Gaimari, Manuel Zumbado, Tony Gaimari and Chris Thompson at the banquet table



The final event – sharing the good news from each collaborator



Mathias Jaschhof reacting to the discovery of over 80 species of Cecidomyiidae on his second day of opening vials!



Group photo, end of the week. *Front row (seated) from left to right:* Marco Moraga, Alejandro Vargas, Brian Brown, Anna Holden, Wendy Porras, Edgar Chamorro, Betty Thompson, Mathias Jaschhof. *Front row (standing) from left to right:* Annia Picado, Sergio Ibanez-Bernal, Angela Skevington, Carolina Avila (Alexander Skevington in front), Elena Ulate, Michael Turreli, David Grimaldi, Jon Gelhaus, Catrin Jaschhof, Soraya Uribe. *Back row (somewhat scattered) from left to right:* Steve Marshall, Carlos Viquez, Stephen Marshall, Jeff Skevington, Kimball Garrett, Eric Fisher, Manuel Zumbado, Carlos de la Rosa, Chris Thompson, Art Borkent, Peter Kerr, Carl Dick, John Hash, Tony Gaimari, Greg Curler, Steve Gaimari.



New "Asiloid Flies" web-site

Torsten Dikow

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I am excited to unveil a new research web-site on asiloid flies now hosted by the National Museum of Natural History, Smithsonian Institution. "Asiloid Flies" (<http://asiloidflies.si.edu>) is the main gateway to information on my research on Apioceridae, Asilidae, and Mydidae. It combines my previous web-sites on these flies into one coherent theme and provides access to research data in a database-driven environment through [Drupal 7](#), which will allow the easy use, re-use, and re-purposing

of the provided data. While not all functionality and data are available yet, I thought to take the opportunity of the *FlyTimes* October issue to make the URL known as the web-site will grow over the next few months and certainly years as my research progresses. Some of the highlights available on the web-site, which I invite you to explore and come back to from time-to-time to see the latest developments, are as follows:

- Access to dichotomous and matrix-based interactive keys developed with [Lucid Phoenix](#) and [Lucid Builder](#). The available keys (<http://asiloidflies.si.edu/content/online-identification-keys>) include (1) published dichotomous keys by other researchers that have been digitized, enhanced with images/illustrations, and updated to the current terminology, (2) published dichotomous and matrix-based keys from my own taxonomic revisions, and (3) unpublished matrix-based keys to Leptogastrinae genera or Asilidae subfamily taxa developed by myself.
- Interactive distribution maps of specimen occurrence data gathered during my research. For example, if you would like to query the database in order to see the distribution map for *Mydas clavatus*, the most common Mydidae species in eastern North America, just follow this link: <http://asiloidflies.si.edu/specimen-map-mydidae?genus=Mydas&species=clavatus>. Such maps are obviously only based on specimens I have personally studied and databased and the bottleneck is the georeferencing part. However, even the global aggregator [Global Biodiversity Information Facility \(GBIF\)](#) relies on natural history museums to digitize their collection and provide data on the specimens under their care, which in the case of *Mydas clavatus* is a meager three records (see <http://www.gbif.org/species/5080984>) as most museum collections of insects do not yet have a specimen-level inventory (although this is changing with the U.S. National Science Foundation-funded [Advancing Digitization of Biodiversity Collections](#) program and [iDigBio](#)). Also see my article in *FlyTimes* 46 entitled, “Apioceridae, Asilidae, and Mydidae specimen occurrence data online” explaining more about how these maps work.
- Ever wondered what the latest classification of Asilidae genera and subfamily taxa is? Since the publication of my phylogenetic studies on this diverse lineage in 2009, I have been asked numerous times by colleagues to assist in placing a particular genus that I did not include in my dissertation work. I have now developed a database that provides a classification based on the cladistic hypotheses, which can be accessed at: <http://asiloidflies.si.edu/asilidae-generic-classification-dikow2009>. The previous classification is taken from the generic world catalog by Fritz Geller-Grimm (2004. World catalogue of the genera of the family Asilidae (Diptera). *Studia dipterologica* 10(2): 473–526) with the addition of generic names published since then. Note that at this time I cannot place 127 robber-fly genera of the Dasygogoninae and Stenopogoninae *sensu* Geller-Grimm (2004, and previous authors such as J.N. Artigas, F.M. Hull, and N. Papavero) because I didn’t include them in my studies and future phylogenetic analyses will need to be conducted. However, this database will be updated as new information becomes available, providing the most up-to-date information.
- Data access made easy: permanent URLs to all of my data and data-sets in repositories (*e.g.*, images in [Morphbank](#), occurrence data-sets in [GBIF](#), species descriptions in [DRYAD](#) and [Plazi](#), presentations on [SlideShare](#), published articles on a publisher’s web-site and in [Mendeley](#), phylogenetic matrices and trees in [TreeBase](#), DNA sequence data in [GenBank](#), aligned molecular data-sets in [DRYAD](#), new taxonomic names in [ZooBank](#) and [BioNames](#), distribution maps in [SimpleMapp](#), and other data compiled with cybertaxonomic tools), will be summarized and accessible in database-driven summary pages/tables.
- Blog entries on field-work, museum visits, exciting new publications and other news on Asiloidea.

First report of fatal wound myiasis caused by *Chrysomya bezziana* (Dip.: Calliphoridae) in Persian Fallow Deer populations in Iran

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The Persian Fallow Deer (PFD) population was heavily decimated (by 80%) due to myiasis primarily caused by the calliphorid fly, *Chrysomya bezziana* Villeneuve, commonly known as Old World screwworm fly, during the summer 2013.

Myiasis, that is a general term to describe the infestation of a body area or cavity by fly maggots, has been a common occurrence in Iran's Persian Gulf provinces where the *Chrysomya* species are known as important wound myiasis agents and largely responsible for attacking livestock (Parchami-Araghi, 1995; Parchami-Araghi *et al.*, 2001). The endangered bovine species *Dama dama mesopotamica* is native to Iran and lives in various parts of the country including Karkheh National Park (KNP), in southwestern province of Khuzestan. A population of about 75 PFDs used to live in a fenced off enclosure with an area of 200 hectares (494 acres). The first myiasis-afflicted PFD was spotted in early June 2013 and since then an estimated 60 PFDs have been killed through their extensive wounds caused by fly maggots. Monitoring the PFD population by the KNP's closed-circuit cameras, revealed that the ears and eyes were the mostly infested areas by maggots causing ear severance or complete blindness. To study the dipterous fauna of the KNP, we employed different collecting methods including Malaise traps, pan traps and bait traps (stuffed with rotten water-cow entrails) in addition to direct removal of larvae from the wounds of the live captured PFDs or from their carrion.

Due to unusual torrential rains in Khuzestan province during the spring, an outbreak of arthropods including ticks and flies occurred in the KNP that is a pesticide-free area. The blood-feeding ixodid ticks largely aggregated inside the ears and around the eyes of PFDs, where the most cases of myiasis occurred. It appeared the wounds from ixodid bites served to attract the gravid females of the obligatory parasite *C. bezziana* for oviposition. To test our hypothesis, we examined the cattle in the surrounding rural communities and found no signs of myiasis or heavy tick infestations on their bodies. Our findings underscore the need for environment-friendly measures to control the tick populations of the KNP.

Although our pan traps captured the sarcophagid obligatory parasite *Wohlfahrtia magnifica*, there was no larval infestation by this species on the PFDs. A number of facultative parasite species including *C. megacephala*, *C. albiceps*, *C. rufifacies*, *W. nuba*, *Lucilia sericata*, *L. cuprina*, *L. caesar* and *Sarcophaga* spp. and blood feeding flies such as muscid *Musca crassirostris*, *Haematobia* spp., and horse fly species of the genus *Tabanus* were collected as well.

We continue working on the KNP's diverse collection of about 5000 fly specimens in order to identify the veterinary important species and possibly new records or undescribed species.

This ongoing research is being funded by Iran's Department of Environment (DOE) and Iranian Research Institute of Plant Protection (IRIPP). Karkheh National Park (KNP) rangers are greatly thanked for their support and cooperation in the course of this work.

References

- Parchami-Araghi, M. 1995. The blow flies of the subfamily Chrysomyinae (Diptera: Calliphoridae) in Iran. *J. Entomol. Soc. Iran.*, 15: 27-44.
- Parchami-Araghi, M., Peris, S. V. & Gonzalez-Mora, D. 2001. New records of Iranian Calliphoridae and Sarcophagidae, with a guide to the males of Palearctic *Protocalliphora* (Diptera: Calypttratae). *Bol. R. Soc. Esp. Hist. Nat. (Sec. Biol.)*, 96 (3-4): 175-181.



PFD in Karkheh National Park, in Khuestan Province, Iran; June & July 2013: (upper left figure) A captured male in a makeshift cage with cut-off left ear caused by Old World Screw-worm maggots; (upper right figure) A female's right eye has been completely destroyed by Old World Screw-worm maggots. Her right ear was heavily infested by blood-feeding ticks. She died shortly afterwards; (lower left figure) A male with its left eye entirely destroyed through myiasis primarily caused by Old World Screw-worm maggots.



Third-instar larvae of *Chrysomya* spp. are leaving the PFD carrion to pupate in the soil in Karkheh National Park in southwestern province of Khuzestan, Iran, July 2013.



Chrysomya spp. females busy feeding on serous fluid, while their maggots devouring the PFD carrion



A view of Karkheh National Park and Karkheh River in southwestern province of Khuzestan, Iran



Pan traps being run at Karkheh National Park



Rotten water-cow entrails were used in cone traps for collecting saprophagous flies.



A Malaise trap is being set up by the rangers at Karkheh National Park, in southwestern province of Khuzestan, Iran, July 2013.

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

Torsten Dikow and S.W. Williston Fund committee
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The S.W. Williston Diptera Research Fund is a Smithsonian Institution administered endowment fund established for the *increase and diffusion of knowledge about Diptera*. Williston was a great biologist, who made significant contributions to paleontology, entomology, medicine and education. He was the first native dipterist, the first to produce generic monographs of Nearctic Diptera, the first to curate and study the Diptera of the United States National Museum (USNM), and the first to make a contribution to that collection (his types of Nearctic Syrphidae). Thus, this man and his achievements epitomize what this fund was established to support.



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

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

The Williston Fund is administered by a committee of at least three members, two of whom (the majority) must be systematists actively working on Diptera, and one who must be a scientist affiliated with, but not necessarily employed by, the Smithsonian Institution (for example, a dipterist of the United States Department of Agriculture Systematic Entomology Laboratory). The current committee consists of: [Wayne Mathis](#), [Chris Thompson](#), [Gary Hevel](#), and [Torsten Dikow](#).

While the income from the endowment is small (currently about US\$ 6,000 available annually), over the years the fund has supported the travel of American graduate students and other dipterists to the *International Congresses of Dipterology*, travel of students and researchers to the USNM Diptera Collection in Washington, DC, and field work.

The requirements for support are minimal: contact any of the committee members with a synopsis of what you need to increase and diffuse knowledge about Diptera. Summarize your research goals into a short proposal in PDF format (1–2 pages maximum) with a separate, itemized budget (anticipated transportation costs, *per diem* costs for lodging and food, and any other items). Proposals are reviewed annually in December, so submit by December 1st. Note that every awardee will need to comply with the rules of the Smithsonian Institution regarding travel and reimbursements, which require several forms to be filled out prior to any travel.



Ceria loewii Williston, 1887

Contributions to the principal of the S.W. Williston Diptera Research Fund endowment are always welcome. For further information, please contact any member of the Committee.

HISTORICAL DIPTEROLOGY

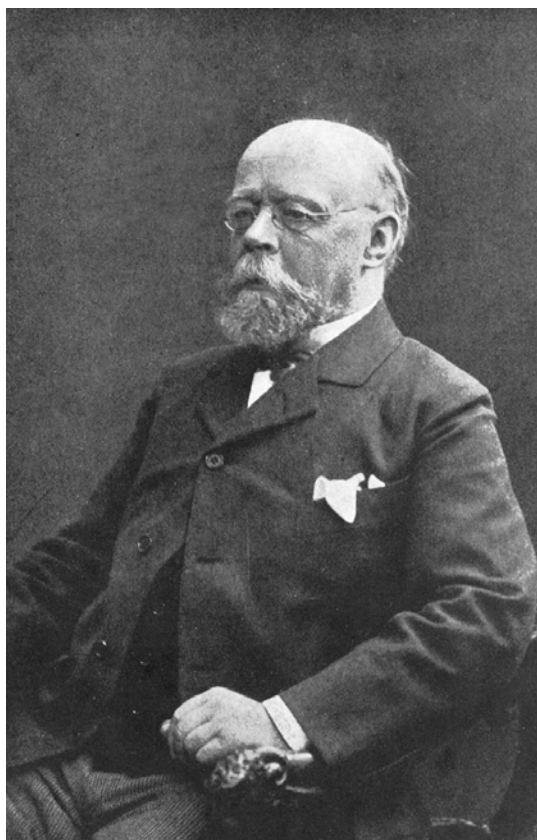
Notes toward a biography of the “little-known” Karl Robert Osten Sacken (1828–1906)

Neal L. Evenhuis

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I enjoy writing about some of the lesser-known or neglected dipterists but also enjoy finding little-known facts about some of our better-known colleagues. To discover that Osten Sacken was diminutive in size and called “mosquito” by his colleagues; or that he had the rare mnemonic ability called synesthesia (seeing numbers as colors); or that (having never been married) he had a special interest in a South Carolinian female painter during his “retired” years in Europe, got me hooked into finding out a bit more of this intriguing diplomat/entomologist. The notes below are rather scattered but hopefully can be later quilted into a fuller biography of the life and times of one of our most famous dipterists.

One of the greatest North American dipterists, sometimes known as the “Father of American dipterology” (he light-heartedly referred to himself as the “Grandfather of American dipterology” in his autobiography) and the subject of this biographical study, Osten Sacken was born in St. Petersburg, Russia on 21 August 1828 (9 August in the Julian calendar used at the time), the oldest of eight children (five sisters and two brothers; only three of whom survived childhood). As one of the leading dipterists of his time and one of the best known of those who specialized in the North American fly fauna, one might think the title of this paper a bit odd. True enough, Osten Sacken’s life as an entomologist is very well known, especially so through his autobiography (Osten Sacken, 1903) the review of his work by Alexander (1969), and further biographical details researched by Smith (1978). However, his life aside from entomology is less known, and that is the primary focus of this written portrait, although some entomological activities are included to put things into a temporal context.



Family Heritage

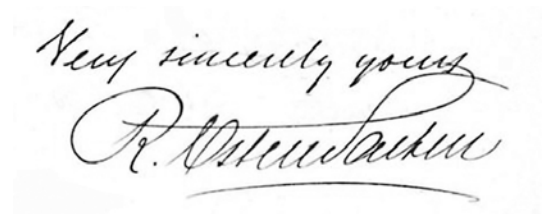
Osten Sacken was born of a noble heritage. His family can be traced back to Austria in the 1200s, a lineage whose people emigrated to Kurland in Latvia where one of his ancestors, Arnold von der Osten auf Plathe (1335–1393) was a member of the Knights of Livonia, who conquered Kurland in the 1200s and carved out a Catholic state. The various lineages of the Osten Sacken family contain some interesting descendants and family connections including Queen Beatrix of the Netherlands, Count Bismarck of Germany, and the writer Lev “Leo” Tolstoy (the last was father-in-law to an Osten

Sacken). Around 1555, some of Osten Sacken's ancestors emigrated from Livonia to the island of Øsel (now part of Estonia) where they established a large estate called Randavere [Randefer]. The estate remained in the Osten Sacken family and Robert was a Trustee of the estate from 1873 until his death. It is still there today.

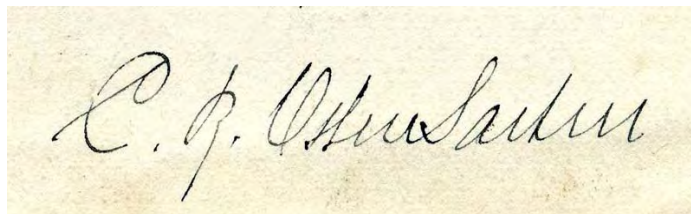
Osten Sacken's father, the Baron Roman [Reinhold] Fedorovich Osten Sacken [Роман Федорович Остен Сакен] (1791–1864) was, during the Russo-Turkish war of 1828–1829, the Russian State Councilor in the Foreign Ministry, and conducted all matters relating to trade, border issues, solutions, cartel agreements, and questions about the fate of Poland, residing at the headquarters of His Imperial Majesty, Czar Nicholas I. [He was thus not in Øsel, but was instead in St. Petersburg at the time of Robert's birth.] He was Secretary of the Russian delegation in London and Copenhagen from 1835–1863. He continued to garner awards and medals for his service and was eventually awarded the title of Privy Councilor in the Foreign Ministry in 1840. The title of Baron passed to Robert (being the oldest of the sons) when he became of age and he retained this appellation for the rest of his life.

The Given Name(s) of Osten Sacken

There are various given names for Osten Sacken in the literature and this apparently stems from the confusion over his birth name (Baltic German) and his Russian name. From some nobility genealogies examined, I have been able to determine that he was born as Karl Robert Osten Sacken but used the Russian form (given name, patronymic, family name) of Robert Romanovich Osten Sacken [Роберт Романович Остен Сакен] since his father was working for the Russian government in St. Petersburg at the time of his birth. We can see how he referred to himself only in his diplomatic papers, personal correspondence, and published scientific writings; and it did indeed vary over the years. He used only Robert during his years while in the Russian diplomatic corps (1857–1871) and signed his letters using only “R” as the leading initial (see signature below). But in his first paper in 1854 and after his resignation from his consular duties in 1871, his scientific papers have him as “C.R. Osten Sacken”, the “C” for “Carl” and he signed his letters using “C.R.” in a completely different style than his earlier signatures (see example below of his signature in a letter to R. McLachlan in the 1880s using “C.R.”). There are rare instances of the use of “Charles” instead of “Carl” and this seems to have originated sometime after his resignation from his consular post in 1871 and subsequent travel to Europe: there is one handwritten listing of the ship manifest using the name “Charles O. Sacken” when he arrived in New York on 3 September 1873 to begin his study of North American Diptera at the Museum of Comparative Zoology¹ at Cambridge, Massachusetts and Verrall (1906) referred to him as “Charles”. His own use of “Carl” with a “C” instead of a “K” is curious. Other than the “K” found in published genealogies of the Osten Sacken family and a few biographies, the spelling is with a “C”. In any case, most of his contacts outside of his scientific studies referred to him only as “Baron Osten Sacken”, “Baron von Osten Sacken”, or “the Baron” without using a given name.



Very sincerely yours
R. Osten Sacken



C. R. Osten Sacken

¹ Interestingly, although then essentially unemployed, he gave his profession as “Physician” on the ship’s manifest.

Early Life

Osten Sacken says in his autobiography that during a temporary residence with his mother Elizabeth Yegorovna Osten Sacken [née von Engelhardt] in Baden-Baden in 1838–1839 he met 14-year old Joseph Nikolaievich Schatiloff [Иосифа Николаевич Шатилов] (1824–1889) [later to become a well-known Russian zoologist (primarily ornithologist) and agriculturalist] who gave him his first instruction in collecting Coleoptera and thereby influenced his life-long interest in entomology. It was possibly also this teacher who later helped him memorize numbers by associating them with colors. In a letter to the researcher, Francis Galton, Osten Sacken explained his synesthetic ability of visualizing numbers as colors:

“The localisation of numerals, peculiar to certain persons, is foreign to me. In my mind’s eye the figures appear *in front* of me, within a limited space. My peculiarity, however, consists in the fact that the numerals from 1 to 9 are differently coloured; (1) black, (2) yellow, (3) pale brick red, (4) brown, (5) blackish gray, (6) reddish brown, (7) green, (8) bluish, (9) reddish brown, somewhat like 6. These colours appear very distinctly when I think of these figures separately; in compound figures they become less apparent. But the most remarkable manifestation of these colours appears in my recollections of chronology. When I think of the events of a given century they invariably appear to me on a background coloured like the principal figure in the dates of that century; thus events of the eighteenth century invariably appear to me on a greenish ground, from the colour of the figure 7. This habit clings to me most tenaciously, and the only hypothesis I can form about its origin is the following:—My tutor, when I was ten to twelve years old, taught me chronology by means of a diagram on which the centuries were represented by squares, subdivided in 100 smaller squares; the squares representing centuries had *narrow coloured borders*; it may be that in this way the recollection of certain figures became associated with certain colours. I venture this explanation without attaching too much importance to it, because it seems to me that if it was true, my *direct* recollection of those coloured borders would have been stronger than it is; still, the strong association of my chronology with colour seems to plead in favour of that explanation.” (Osten Sacken *in* Galton, 1883: 146)

What effect this synesthesia may have had on Osten Sacken’s memory is unknown but it could have helped his ability to conduct such rigorous and methodical research on his entomological research subjects with minimal errors.

Diplomatic Years

There is little evidence as to what formal education Osten Sacken obtained in St. Petersburg after being tutored as a young child, although he alludes to it in his autobiography (1903: 2). At the age of 21, he entered the Imperial Foreign Service where his father worked and for the next seven years he was posted to various European cities (Tuckermann, 1910). Because his father was stationed in London and Copenhagen from 1835–1863, it is probable that he worked with his father in those cities at some point, which undoubtedly afforded him the time to meet with fellow entomologists and to visit the major collections there. However, Osten Sacken’s autobiography (1903) only indicated travel from 1852 to 1853 to visit colleagues and museums, when he went to cities in England and Germany where he met a number of colleagues, e.g., Westwood, Stainton, Walker and White in England (1852); and Klug, Humboldt and Ruthe in Berlin; Kiesenwetter in Dresden; Schiner, Brauer and Kolenati in Vienna; and Dohrn in Stettin (all in 1853).

Then, in 1856, he was sent to the United States as the Secretary to the Russian Legation in Washington, DC at the close of the presidency of Franklin Pierce. During his travel to the U.S. he visited more

colleagues: Hagen in Königsberg; Winnertz in Crefeld, Selys de Longchamps in Brussels and Wulp and Snellen van Vollenhoven in The Netherlands. He arrived in New York on 14 June on the Cunard steamship *Arabia* (traveling as “Baron Robt. Osten Sacken) and after disembarking made his way to D.C. While in Washington, he resided for the first few years in modest quarters in the boarding house of a Mrs. Nicolson on the corner of Pennsylvania Avenue and 22nd Street (Saul, 1991: 251). Later he found better quarters at “246 K Street (North)”. Both places of residence were within walking distance of the Russian embassy at the corner of Constitution Avenue and G street.

Most of his time in Washington was spent assisting the *Chargé d’Affaires*, German-born Eduard Stoeckl, with various diplomatic duties (even taking over the role of *Chargé d’Affaires* for 9 months during 1858–1859 when Stoeckl was called back to Russia), but he also attended various celebrations and awards as a representative of the Russian delegation, e.g., he was in attendance in New York in September 1858 at the celebration to commemorate the completion of the Atlantic Telegraph Cable between North America and Europe.

He was involved in a few interesting international matters during his tenure in Washington: one involved acting as liaison between the U.S. and English and French authorities, the latter two who were protesting at the presence of a warship in the Bosphorus when the U.S. frigate USS *Wabash* was sighted near Istanbul (it was being sent to Turkey at their request to inspect the new design) (Galton, 1937: 31); and another was to identify insects collected during a survey of the fauna for a proposed canal to be built in Colombia to allow ships to pass more easily between the Atlantic and the Pacific² (Osten Sacken, 1861a, b).

A bit of the diplomatic business side of Osten Sacken can be seen in the description of him by historian Robert Allen:

“Carl Robert, Freiherr von Osten-Sacken (1828–1906) was one of that group of Baltic Germans who were so frequently found in the upper levels of the Russian administration where they served loyally, if at times somewhat pedantically, the emperors, whose own German backgrounds inclined them toward an acceptance of many Germanic attitudes. ... During all his residence in the United States he seems to have been chiefly interested not in the minutiae of diplomacy but in the description and classification of the diptera [sic], two-winged flies, of North America.” (Allen, 1988: 32).

Although posted to the U.S. in the diplomatic service, his fervor for dipterology was close to the forefront of his priorities when time permitted. Soon after he arrived in Washington, Assistant Secretary of the Smithsonian, Spencer Baird, and Osten Sacken made contact and arrangements were soon made for Osten Sacken to produce a catalogue of North American Diptera (Osten Sacken, 1858), the first such catalogue for Diptera of any zoogeographical realm. Osten Sacken would remain a close family friend of the Baird’s throughout his time in the U.S. (Dall, 1915). In 1857, less than a year later, he would finish the manuscript, but Baird had other activities planned for him.

Toward the end of 1857, not having had any response from Louis Agassiz on the subject of some Cuban turtles despite numerous letters requesting his services, Baird requested Osten Sacken to go to

² This survey, from 1857 to 1860, was along a proposed route near the present border between Panama and Colombia, from the Gulf of Darien to the Pacific. At the time of the survey, the Isthmus of Panama was a province of Colombia (Clarke, 2009: 3).

Cuba to meet with Felipe Poey, head of the natural history museum in Havana at the time. Poey had been corresponding with Baird concerning turtles he wished to send to Washington. Allen (1988) noted the trip to Cuba but could not see any diplomatic reason for Osten Sacken to be traveling there. Galton's (1937: 22) list of letters between Osten Sacken and the Russian government at this time shows otherwise. The possible purchase and annexation of Cuba by the United States was being entertained by some members of the Pierce administration in the late 1850s, so Russia authorized Osten Sacken to travel there and investigate further. Osten Sacken obliged and took the opportunity to collect during the three-month sojourn.

Osten Sacken was a prolific letter writer with a large network of correspondents and there is no doubt much to be gained by reading through all the letters he wrote to numerous colleagues. His advice on matters entomological was sought by many while he was in Washington. For example, one of his early letters after arriving in the U.S. was to Samuel H. Scudder on 17 January 1859 in which he gave advice on the Thaddeus W. Harris Collection stating that it should be kept "sacred" without changing the arrangement, because it contained some of the few original types of Thomas Say (most of Say's types had been destroyed through shipping and insect pests before Harris saw the donated material) (Sorensen, 1995: 39).

Having a new scientist in Washington (and with a title of "Baron") was a good excuse for those in high society and high scientific circles to invite him to dinners and other functions. One of the first social clubs he joined was the so-called Potomac Naturalist's Club (an informal precedent of the more formal Potomac-Side Naturalist's Club, which was in turn the forerunner of the Washington Academy of Sciences), members of which were scientists residing in Washington or those there who had an interest in natural history. They initially got together informally for dinner at members' homes every fortnight, most often Baird's. Nine members (including naturalists Titan Peale and Robert Kennicott; see Table 1) founded the club in 1858 and Osten Sacken joined soon after. It was during this time that one of its members, Secretary of the Treasury Lucius E. Chittenden, remembered Osten Sacken in his memoirs:

"Yet I cannot wholly pass over Baron Osten-Sacken, of the Russian Legation. The Diptera, or Cuvier's twelfth order of insects, was his *forte*. Very learned was he too, and, if I am not mistaken, his monograph on the *Diptera*, a large quarto, was printed by the Smithsonian as one of its contributions to science. He was a genial, kind-hearted, unassuming student of nature. The club had not a more popular member; but owing to his diminutive size, he acquired a name which clung to him ever afterwards.

"Pray what are the *Diptera*?" asked a member, whose studies had not been entomological, of another member, when Osten-Sacken was mentioned.

"*Diptera*? Well, I suppose a *Culex* belongs to the *Diptera*."

"What is a *Culex* then?" pursued his questioner.

"A *Culex*!" was the reply. A *Culex* is an insect with a double pair of wings, abounding in moist localities, which, thirsting for human gore, invades the habitations of man with an irritating buzzing sound, pierces the cuticle with his lancet-shaped proboscis, and discharges into the wound a poisonous fluid."

"Confound the man! He means a mosquito!" exclaimed the irreverent auditor.

"Osten-Sacken would naturally write about the species. Don't you see the resemblance?"

This was sufficient to fasten an undeserved nick-name upon the good-natured little entomologist." (Chittenden, 1891: 242–243).

Table 1. Founding Members of the Potomac Club in 1858

Cooper, James Graham (1830–1902)
 Foreman, Edward [Patent Office employee]
 Hayden, Ferdinand Vandever (1829–1887)*
 Kennicott, Robert (1835–1866)*
 Peale, Titian Ramsay (1799–1885)
 Schaeffer, George Christian (1815–1873)
 Smithsonian Institution [i.e., Spencer Baird and Joseph Henry]
 Stimpson, William (1832–1872)*

*also members of the short-lived but concurrent Megatherium Club³

Most entomologists probably envision Osten Sacken as a rather large and robust man. However, an early photograph of him seated next to a table and leaning slightly forward, taken around 1860 while he was in Washington as Secretary of the Russian delegation, shows a very thin young man. But only when knowing the probable height of the table next to the chair on which he was seated and extrapolating can it be calculated that he was probably between 5 feet and 5 feet 2 inches tall (ca. 15 dm), corroborating Chittenden's (1891) back-handed compliment of a "good-natured little entomologist".

President Pierce's term of office came to a close in March 1861 whereupon a new President was elected and Osten Sacken was there at the inaugural reception to meet the new man in charge, Abraham Lincoln. He reflected on the President when interviewed at his home in retirement in Heidelberg years later:

"Soon after his inauguration, Mr. Lincoln, as is the custom, received the Diplomatic Corps. Many of the members of that body, expecting to find him awkward and ill at ease, indeed wholly lacking in *savoir-faire*, were anticipating an amusing occasion rather than one full of dignity. But they were disappointed.

Mr. Lincoln played at this difficult *rôle* as though to the manner born. As each Minister in turn was presented, he greeted him graciously and in words most fitting, seldom if ever repeating himself. Baron Osten-Sacken witnessed it all, and we have his testimony that Lincoln was *perfectly* at ease.



³ Interestingly, apparently this was a more irreverent club, many of whose members lived in the Smithsonian "Castle" but were eventually kicked out for conducting sack races in the Castle's halls and serenading Smithsonian Secretary Joseph Henry's daughter (Roberts & Schmidt, 2012: 105).

On leaving the White house, the Russian Minister asked the Secretary what he thought of the new President? He replied, "I think he is a *great* man."

During the fifteen years of his official life and residence here [in the U.S.], from 1856 to 1871, Baron Osten-Sacken had exceptional opportunities for observing the leading men both in Congress and in the Cabinet, but especially Seward and Lincoln. He had also known or seen most of the leading public men of his time in Europe." (Tuckermann, 1910: 85–86).

Lincoln's desire for emancipation of the slaves was something of which Osten Sacken was also an advocate, and he delivered to a New York Times correspondent a copy of Tsar Alexander II's policy on emancipating serfs in Russia entitled *Études sur la question de l'abolition du servage en Russie, par un contemporain* (Everett, 1861) to help with the article that told of Russian sympathies to the problem in the United States.

Osten Sacken was not in Washington for much longer, though. The unfortunate death of the Russian Consul General in New York City, Jean de Nottbeck (another German-born Russian diplomat), when his horse ran wild in the streets near Central Park and threw him, led to Osten Sacken replacing him in June 1861. Interestingly, his residence while in New York City was at 52 Exchange Place, the Wall Street area today.

Osten Sacken's New York duties as Consul General and activities in that position were just as varied and interesting as in Washington. One of the major functions during his posting was hosting a grand reception of the Russian naval fleet in New York City in October 1863. He mingled with the dignitaries not only of the New York's mayor's office but those from across the country and internationally. Tours of the vessels for politicians and those of high social station took place and various dinners and galas were given to honor the Russian admiralty and its fleet. All activities were reported in numerous papers across the country, e.g., the *Sacramento Daily Union* not only described in detail the major dinner and who was seated next to whom, but also mentioned a quote from Osten Sacken concerning, of all things, not the naval fleet, but the progress of communication and the invention of the telegraph: "When the telegraph was invented, man was to a certain extent, re-created; his position on Earth was new!" (Anonymous, 1863).

Other highlights of his New York diplomatic service included being one of the few of his fellow diplomats arguing to his Russian superiors back home against the sale of Alaska to the U.S. and pointing out the value of mining and natural resources there (Gerus, 1973: 173–175); and innocently inviting the services of a Russian Orthodox priest, Father Agapius Honcharenko, to give the first Greek Orthodox mass in New York (at Trinity Church), and also hiring the priest to help him learn Greek. Knowledge of the priest being in New York and with Osten Sacken upset Russian authorities greatly (Osten Sacken was unaware of the criminal charges against the fugitive Honcharenko, who eventually managed to elude authorities and ended up in California).

In mid-April 1865, upon hearing the news of the assassination of President Lincoln, Osten Sacken abandoned plans to hold his annual dinner party and ball in celebration of Tsar Alexander II's birthday on 29 April. Instead, he and his staff respectfully honored the memory of the late President by wearing black armbands for 30 days of mourning. Osten Sacken was said to be one of the first to pay a visit to authorities to express personal condolences of his passing (Anonymous, 1865).

On the "personal" social side, in New York City as in Washington, Osten Sacken was the prize of society at the houses of Union generals, scientists, artists, and writers. He himself claimed he had dining invitations to over 100 houses (Osten Sacken, 1903). In the published diaries of some of those

whose houses he visited we see the social Osten Sacken. For example, Osten Sacken was impressed with America, how it had grown so fast and had become a leading country in the world in such a short amount of time.

“Osten Sacken was an enthusiastic supporter of the ‘American experiment.’ ‘He wants a book to be written upon America, showing how remarkable growth is produced, how towns are formed from settlements, etc.; in fact, the whole organism!’ He asked Dr. Lieber, but he [Lieber] said that the difficulty would be that no European could be made to believe that an American was born with all this organism in him and developed it as naturally as he breathed.” (Daly, 1962: xxxiii).

Russia was on the side of the U.S. government during the years of the Civil War, yet the *Chargé d’Affaires* in Washington, Eduard Stoeckl was told by his Russian superiors to be “amiable to all sides”. Osten Sacken was sympathetic to the discussions about the ending of slavery at the dinners in the homes of the Unionists but was careful to claim neutrality on difficult subjects whenever possible, always being the diplomat. In diplomatic papers from and to Russia, a different tone was heard. The diplomatic staff in Washington thought Lincoln a weak leader and Seward not very intelligent, but they still hoped for a Union victory (Golder, 1937).

On the scientific “social” side, Osten Sacken had numerous and varied memberships and associations with scientific societies and academia in the New York City area, including the American Geographical Society and his listing as an Associate Member of the School of Mines at Columbia College from 1869–1870. Additionally, he was instrumental in assisting with the formation of the entomology collection at the new American Museum of Natural History. He was listed in their first Annual Report as donating “more than four thousand specimens of beetles, and insects of other orders” (Trustees of the American Museum of Natural History, 1870: 7), which were initially stored in the offices of a Wall Street banking firm because storage for them at the Museum had not yet been built.

The End of His Diplomatic Service

In early 1871, Osten Sacken resigned his service as Consul General but, in keeping his diplomatic obligations for another year, headed to Europe for diplomatic, entomological, and family business. On 5 August 1871 he sailed for Europe and first went to his mother’s home in Baden Baden (his father passed away in 1864 in St. Petersburg but he was unable to attend services). In early November he traveled to Guben, Germany, to visit Loew and was in St. Petersburg from 10 November to the end of December. On the 1st of January 1872 he arrived in Berlin for diplomatic business and then went back to Baden Baden and traveled on to Paris before returning to the U.S. in early February.

The next few months he attended various society meetings in New York City and dinner functions before finally officially ending his diplomatic service, packing up everything, and sailing back to Germany on 11 July.

He spent the remainder of 1872 and early 1873 visiting museums throughout Europe and spent a great deal of time in Italy, where he is first noted in the published letters of the southern U.S. artist Caroline Carson [more on this later]. Apparently his mother joined him for a part of this Italy trip; she passed away in Naples on 11 February 1873.

Second Phase of Work in the United States

Osten Sacken traveled back to the U.S. in 1873 (arriving in New York on 3 September) and settled in Cambridge at the Museum of Comparative Zoology to finish the fourth and last part of the

Monographs of North American Diptera (this one by Loew, the manuscript of which he probably had picked up on his visit to Loew in Guben), to complete the second edition of the North American Diptera catalog (Osten Sacken, 1878), write his two-part *Prodrome* on the Tabanidae, and to make final arrangements for the acquisition of the Loew Collection. While in Cambridge, he was able to divide his time between daytime taxonomic pursuits and evening social events. He was a member of the “Club”, a dinner club of scientists and high society in Boston (Morse, 1929: 63); he met poet Ralph Waldo Emerson (Rusk & Tilton, 1939: 291), and on 9 January 1874 he became a founding member of the Cambridge Entomological Club.

Having finished many of the manuscripts he had planned to work on, on 27 November 1875 Osten Sacken traveled to the West Coast to begin an almost year-long collecting trip in California and environs, arriving in San Francisco on 20 December, almost one month after the cross-country trip from New York. After collecting on Angel Island in San Francisco Bay on 11 January he quickly made his way down to the Santa Barbara area where he made his first collections in southern California on 25 January 1876. He remained in southern California collecting for the next couple of months before returning northward on 16 March. He collected in the Bay area, the Sierra Nevada, and especially Yosemite until early July when he began the trip back to Boston, collecting along the way in Nevada, Utah, Colorado, and Wyoming. In August he stopped at Rock Island, Illinois to visit the grave of fellow entomologist Benjamin Walsh, a frequent correspondent of his, who had passed away from sunstroke (Evenhuis, 2013) while Osten Sacken was in California. He finally got back to Boston in September 1876 and began work on his *Western Diptera* paper (Osten Sacken, 1877), the results of which could then be added to the second edition of the catalogue.

Life in “Retirement”

Osten Sacken finally left the United States for good in June of 1877, at the age of 49. Although he was no longer employed by anyone, the remainder of his life could not really be called retirement as he was just as prolific, if not more, in his scientific publishing.

“In the years which followed [after 1877] and which constituted the third period of his entomological career, Baron Osten Sacken published numerous critical papers on Diptera, and increased the number of his published writings from 53 to 179.” (Bryan, 1906: 181)

That he was prolific was also combined with a confession that perhaps he bit off more than he could chew with his scientific work as described by writer Thomas Higginson, whom he met while in Rhode Island collecting insects:

“He was a most agreeable man, who always complained that he had made a fatal mistake in his career, through rashly taking the whole of *Diptera*, or two-winged insects, for his scientific task; whereas to take charge of a single genus would have been enough, he thought, for the life-work of a judicious man. Personally he should have selected the mosquito.” (Higginson & Boynton, 1902: 276).

In addition to his specialty of Diptera taxonomy and classification, Osten Sacken had varied interests throughout his life. Some of these were pointed out by his life-long friend, physicist George Hartley Bryan in Bryan’s (1906) obituary where he remembered Osten Sacken having an avid interest in every aspect of mathematics, especially historical points, posing a question relating to the conchoid of Nicomedes [no publication on this question could be found during this study] and having a collection of photographs of paintings of the great masters, all arranged systematically in much the same way he

would classify his collection of Diptera⁴. Apparently his noble heritage, which no doubt provided him with independent means, allowed him to sustain himself without employment and to travel frequently throughout Europe.

Upon disembarking from his voyage to Europe from the U.S. in the summer of 1877, his first destination was Guben, where he met up with Loew to arrange for the Loew Collection of American Diptera (containing many specimens collected by Osten Sacken and sent to Loew for his identification and description) to be transferred to the Museum of Comparative Zoology. Thousands of specimens [1,300 types and about 1,600 other species (Smith, 1978)] were involved in the transaction.

Next was to choose a place of residence. Osten Sacken had at one time entertained the possibility of London, but ended up choosing Heidelberg, where he lived the rest of his life, changing homes only once while remaining near the city center.

Now well ensconced in a fairly central location in western Europe, he could easily visit museums, colleagues, and travel for leisure. The last included frequent visits to Italy. Some, like his travel there in 1872–1873, were to visit museums and entomological colleagues, but others were apparently purely for pleasure. Apparently at some point he made the acquaintance of the South Carolinian painter Caroline Carson, a Unionist who left the south and her father's hopes of her becoming a plantation mistress and moved to New York City at the start of the Civil War to paint. After a few years there, she decided to seek out a new life and moved to Italy, where the now widowed Mrs. Carson lived the rest of her life. It is not clear when the two met, whether while she was living in New York and attending high society social events where the Russian Consul General would naturally be, or when both were in Naples at the time Osten Sacken's mother passed away. Either he was smitten by her or she fantasized it. At least one of her letters mentioning him (Pease & Pease, 2003) implies as much.

[August 5, 1883, Hotel Allee Saal, Langen Schwalbach]

“Baron Osten Sacken came 7 hours journey from Heidelberg to see me, he stopped two days & went on to visit at Ems another friend, so as to not make it too particular coming to see me!” (Pease & Pease, 2003: 152).

To put this “relationship” in context, at the time of her first entries mentioning Osten Sacken making social visits in 1872, she was 52 and Osten Sacken was 44. At the time of this 1883 letter when she took a brief trip to the health resort at Bad Langenschwalbach in Hesse, Germany she was now a ripe 63 and he was still a rather spry 55. Mrs. Carson died in 1892 and Osten Sacken never made mention of her in any of his known publications or correspondence.

In between his travels, Osten Sacken also hosted visiting scientists of all disciplines at his home in Heidelberg, sometimes taking walks with them in the nearby hills. Having maintained such a large network of correspondents and communicating the results of his research through numerous scientific papers in many journals, he was extremely well-known and well respected for his generous nature in assisting and advising whenever possible. Osten Sacken's reputation as a leader in the field of entomology and his international renown for his scientific achievements were recognized in 1886 when the Universitas Ruperto-Carolina (Heidelberg) conferred upon him the degree of “Ehrendoktor”

⁴ Biographers (Verrall 1906; Smith 1978) could not find any evidence of where these photographs may have ended up. Research conducted in this study found a notation in the *Literarisches Zentralblatt von Deutschland* that stated that his beetle collection and “wertvolle Kunstsammlung” were passed to the Universitas Ruperto-Carolina (Heidelberg) (Anonymous, 1906: 21). This “Kunstsammlung” is no doubt his photograph collection of the major works of art.

[= Honorary Doctorate of Philosophy]. Six years later, he had the unique distinction of being the only entomologist to ever have had a minor planet (the asteroid Roberta) discovered and named after him, which was done by Anton Staus of Heidelberg in 1892. This was in thanks for Osten Sacken having brought back from the U.S. for Staus a 3-inch refractor (Schmadel, 2012: 41).

He continued to publish [his last paper (Osten Sacken, 1905) was on the drone fly] and to attend various scientific meetings, and spent the later years compiling his autobiographical “*Record of My Life Work*”, which was published in parts. A facsimile edition of all three parts was published in 1978 by E.W. Classey, with Kenneth G.V. Smith providing an introduction (Smith, 1978) that contained much additional biographical material. Osten Sacken ended Part Three of his original autobiography (1904: 240) with the oft-quoted lines “This my ‘Record’ of half a century (1854–1904) of entomological work I now conclude, at the age of seventy-six, in good health, and with unimpaired eyesight.” He died 2 years later in Heidelberg, at the age of 77, three months shy of his 78th birthday.

I conclude with a quote from the obituary by Verrall (1906), which sums up many of the qualities of this man and, now knowing his synesthetic ability, may explain his retentive memory for minutiae that Verrall mentioned:

“Probably no entomologist was ever more ‘thorough’ in his work, and his bibliographical collection on Dipterology was unrivalled, and his was not merely a Library but notes were made by him from every work, so that he practically never missed a record of what had been previously written Absolute master of almost every European language; possessor of adequate means to associate in any company; of noble birth, which would give him admission to any rank of society; of diplomatic training which produced the most polished manners; all these qualities combined with an exceedingly retentive memory which he helped by detailed notes and exact observations, produced such a Master of Dipterology as we shall probably never see again.” (Verrall, 1906: 234–235).

Acknowledgments

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Louis Piton and the mystery of the fossil asilid genus *Permessus*

Neal L. Evenhuis

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When I was gathering information on all published names of fossil flies for my catalog of fossil Diptera in 1994, I was perplexed by F.M. Carpenter's (1992) listing of an asilid genus *Permessus* and its attribution to Piton and Théobald in 1939. The name is not treated in Hull (1962). I searched for the article by these two cited by Carpenter but failed to find anything that was actually published by them. The only two published references I could find to *Permessus* was a listing of the genus-group name in Rüdell (1940) and a mention of it by Timon-David (1944). Failing to find any article by Piton & Théobald that would confirm its publication, Rüdell's listing was the earliest publication I could cite in the catalog (see Evenhuis, 1994: 327).

A few years ago, I received an email from Jean-Louis Piton, the son of Louis Piton who saw his father's name listed on my dipterists' website. He told me a bit about his father and he offered to send me his father's portrait and some of his publications.



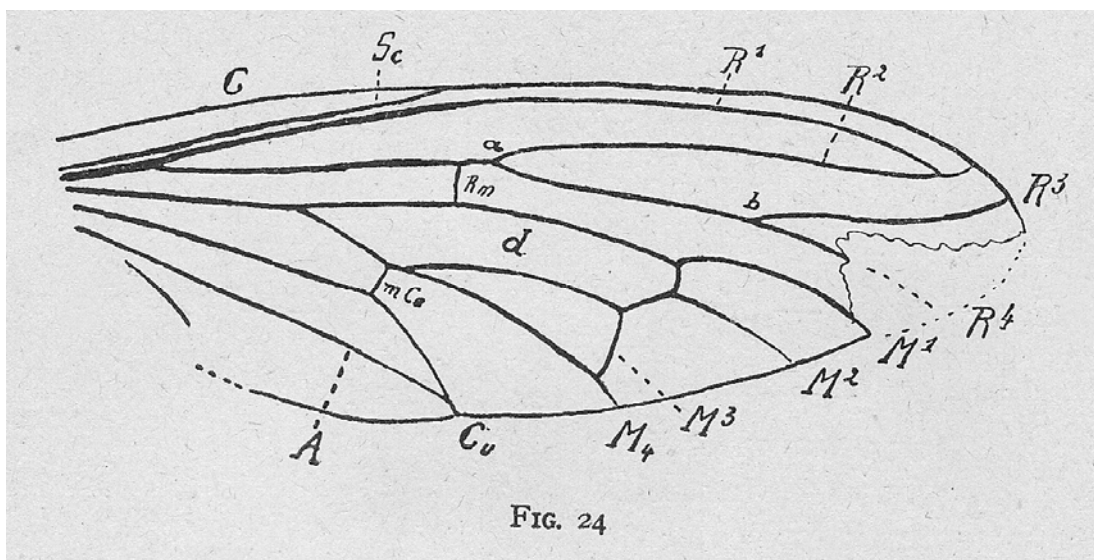
Louis Emile Piton was born in 9 January 1909 in Jumeaux in Auvergne, France. He remained in the Auvergne area and worked as a physician in a small town there. Although his profession was a medical one, he had an avid interest in the local fossil fauna, especially Coleoptera. He published a number of

articles on fossil insects, many with the paleontologist Nicolas Théobald in the 1930s. During World War II, his study of fossils and his work in medicine was halted when he was captured by German troops and incarcerated in the concentration camp at Dachau for aiding allied soldiers. He unfortunately died of typhus there in February 1945, just two months shy of the freedom of those imprisoned at Dachau when allied forces arrived at the camp.

Among the articles I received from Piton's son was an offprint of the work in which *Permessus* was described and illustrated. The work was the same as that cited by Rüdell (1940) and Carpenter (1993): "*Poissons, Crustacés et Insectes fossiles de l'Oligocène du Puy-de-Mur (Auvergne)*" by Louis Piton and Nicolas Théobald. A note on the bottom of the wrapper indicated that it was an "Extrait des Mémoires de la Société des Nancy" and dated 1939.

This particular work with that same title was noted in a number of bibliographies and literature review publications, but my initial search during the compilation of the 1994 catalog in a number of libraries worldwide for the journal found that there were no *Mémoires* in any library with that article title. The journal apparently ceased publication at around the same time as this article was supposed to have appeared. After receipt of the offprint and through correspondence with Piton's son, it became clear as to what had transpired that led to it not being in libraries but still being cited in bibliographies of geological literature for that time.

There was every initial intention of publishing the work on the *Mémoires* and after typesetting for inclusion into the journal, offprints were made and sent to authors, who themselves sent off copies to colleagues, some of whom were writers of the bibliographies that cited it. But due to the advent of the war in Europe and eventual occupation of France by German troops, the journal ceased publication in either 1939 or 1940 and this article never appeared. Thus, the offprint version with a "1939" date is the only known publication of this work. Rüdell (1940) listed the fossil *Permessus asiloides* because he had a copy of the offprint but also because he was the collector of the type specimen from Puy-Saint-Jean.



The mystery of its publication having been solved, there is still the question of what the fossil represents. This is more difficult as *Permessus asiloides* Piton & Théobald, 1939 was based on a single fossil of a partial wing impression (Piton & Théobald's Fig. 24 of the wing is reproduced here). Piton & Théobald gave the measurements of the wing as "longueur conservée, 13 mm., la longueur totale a du

être de 15 mm. environ; largeur: 4 mm.” and said the venation was similar to the genera *Pamponaura* Loew and *Antiphrisson* Loew; it actually seems more similar to *Atomosia* Wiedemann. However, the confounding character is the placement of the r-m crossvein before the origin of vein R_{2+3} . No known asilid has the r-m crossvein in this position in the wing. It is very probable that the authors misinterpreted its placement; however, until the fossil itself can be located and examined (some of Théobald’s fossil type are supposed to be in the Université de Nancy), it is best to leave *Permessus* as *incertae sedis* in Asilidae.

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Announcement of the passing of some of our dipterist colleagues

Dr. Wilford J. Hanson, student of Stratiomyidae, and past curator of the insect collection at Utah State University passed away on 18 August 2013 at the age of 86. A more comprehensive obituary is planned for the next issue of Fly Times.

Jack Clayton Hall, student of Bombyliidae, formerly employed at the University of California, Riverside, passed away on January 16, 2013 at the age of 87.

Dr. Ole Anton Sæther, formerly of the University of Bergen, Norway, and specialist on aquatic Diptera, particularly Chironomidae, passed away on January 8, 2013 at the age of 77.

MEETING NEWS



8th International Congress of Dipterology

www.icd8.org

10-15 August, 2014, Potsdam, Germany

Marion Kotrba, ICD8 chair

Sektion Diptera, SNSB Zoologische Staatssammlung München
Münchhausenstr. 21, 81247 München, Germany

Following is an extract from the Second Circular (http://www.contoo.de/index.php/file/1032/en_US) for general interest about the scientific program, and giving relevant dates for registration, abstract submission, etc. Please consult the ICD8 website and the Second Circular for more details, including post-Congress tours, travel information, social events, information on accommodations and accompanying persons, and invitations from the Council for the International Congresses of Dipterology and the ICD8 Organizing Committee.

<u>Important Dates</u>	<u>Delegates</u>	<u>Students (*)</u>
Until February 1, 2014: Early Registration	350.00 €	200.00 €
Until July 1, 2014: Regular Registration	400.00 €	225.00 €
From July 2, 2014: Late Registration	450.00 €	250.00 €
1-day Congress ticket for Friday, August 15	100.00 €	55.00 €

(*) Students must ask their supervisor to send an e-mail on a university letterhead confirming their status to sara.werner@pcma.de.

Scientific Program

The following plenary talks and symposia are currently planned for the ICD8. Additional symposia will be added to the program as needed. To contribute to a specific symposium, please contact either the relevant symposium organizer or Netta Dorchin (ndorchin@post.tau.ac.il), head of the Scientific Committee. Contributed talks are most welcome! You can submit talks on topics that are not represented in the following list or suggest additional symposia. Contributed talks will be allocated to appropriate symposia by the scientific committee.

Plenary talks

Dipteran diversity through a different lens: digital photography and the democratization of dipterology

Steve Marshall, University of Guelph, Canada

Using genomics, morphology, and behavior to reveal the creative power of sexual selection in Sepsidae

Rudolf Meier, National University of Singapore, Singapore

Mosquitoes and the prospects for malaria elimination

Maureen Coetzee, University of the Witwatersrand, Johannesburg, South Africa

Europe as a frontier in fly diversity research

Thomas Pape, Natural History Museum of Denmark, Copenhagen, Denmark

Banquet Address**When it all began – Johann Wilhelm Meigen and the birth of dipterology**

Adrian Pont, Oxford University Museum of Natural History, United Kingdom,

Symposia**Advances in Neotropical Dipterology**

Claudio Carvalho, Universidade Federal do Paraná, Curitiba, Brazil, cjbcarva@ufpr.br

Márcia Couri, Museu Nacional, Rio de Janeiro, Brazil, mcouri@terra.com.br

Marta Wolff, Universidad de Antioquia, Antioquia, Colombia, mwolff@matematicas.udea.edu.co

Applied Dipterology

Stefan Kühne, Institute for Strategies and Technology Assessment, Federal Research Centre for Cultivated Plants, Kleinmachnow, Germany, stefan.kuehne@jki.bund.de

Behavioral ecology

Wolf Blanckenhorn, University of Zurich-Irchel, Zurich, Switzerland, wolf.blanckenhorn@uzh.ch

Bibionomorpha

Chris Borkent, California Department of Food and Agriculture, Sacramento, CA, USA,
chris.borkent@mail.mcgill.ca

Biodiversity surveys

Marc Pollet, Research Institute for Nature and Forest, Brussels, Belgium, mpollet.doli@gmail.com

Biting midges

Doreen Werner, Institut für Landnutzungssysteme, Müncheberg, Germany,
Doreen.Werner@zalf.de

Calyptratae

Daniel Whitmore, Natural History Museum, London, United Kingdom, D.Whitmore@nhm.ac.uk

Diptera anatomy and morphology

Rolf Beutel, Friedrich-Schiller-Universität, Jena, Germany, Rolf.Beutel@uni-jena.de

Diptera biogeography – patterns and processes

Ashley Kirk-Spriggs, National Museum, Bloemfontein, South Africa,
ashley.kirk-spriggs@nasmus.co.za

Empidoidea

Marc Pollet, Research Institute for Nature and Forest, Brussels, Belgium, mpollet.doli@gmail.com

Evolution and ecology of parasitoid Diptera

John Stireman, Wright State University, Dayton, OH, USA, john.stireman@wright.edu

Forensic Dipterology

Jens Amendt, Institut für Rechtsmedizin, Frankfurt-a-M, Germany, amendt@em.uni-frankfurt.de
Martin Hall, Natural History Museum, London, United Kingdom, m.hll@nhm.ac.uk

Fossil Diptera

Dan Bickel, Australian Museum of Natural History, Sydney, Australia,
Dan.Bickel@austmus.gov.au

Christel Hoffeins, Hamburg, Germany, chw.hoffeins@googlemail.com

Global Dipterology

Torsten Dikow, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA, dikowt@si.edu

Thomas Pape, Natural History Museum of Denmark, Copenhagen, Denmark, TPape@snm.ku.dk

Higher phylogeny

Brian Wiegmann, North Carolina State University, Raleigh, NC, USA,
brian_wiegmann@ncsu.edu

Molecular identification of Diptera

Björn Rulik, Zoologisches Forschungsmuseum A. Koenig, Bonn, Germany, b.rulik@zfmk.de
Torbjørn Ekrem, NTNU University Museum, Trondheim, Norway, torbjorn.ekrem@ntnu.no
Elisabeth Stur, NTNU University Museum, Trondheim, Norway, elisabeth.stur@ntnu.no
Mark J. Blacket, La Trobe University, Bundoora, Victoria, Australia,
mark.blacket@depi.vic.gov.au

Taxonomy and phylogeny of orthorrhaphous Brachycera

Torsten Dikow, National Museum of Natural History, Smithsonian Institution, Washington, DC, USA, dikowt@si.edu

Psychodidae

Rüdiger Wagner, Universität Kassel, Germany, Ruediger.Wagner@uni-kassel.de

Sciomyzidae

Mike Gormally, National University of Ireland, Galway, Republic of Ireland,
mike.gormally@nuigalway.ie

Stalk-eyed flies

Philip Johns, Bard College, New York, NY, USA, philip.m.johns@gmail.com
Richard Baker, American Museum of Natural History, New York, NY, USA, baker@amnh.org

Syrphoidea

Ximo Mengual, Museum Koenig, Bonn, Germany, X.Mengual@zfmk.de

Tephritoidea

Marc de Meyer, Royal Museum for Central Africa, Tervuren, Belgium,
marc.de.meyer@africanmuseum.be

Traps, attractants and collection techniques for dipterans

Andreas Rose, Biogents AG, Regensburg, Germany, andreas.rose@biogents.com

Panel discussion: The future of Diptera taxonomy and systematics

Chaired by Rudolf Meier, National University of Singapore, Singapore, meier@nus.edu.sg

Submission of Abstracts, and instructions for speakers and poster exhibitors

Abstracts are required for both oral and poster presentations. They must be submitted online through the Congress website under “Abstract submission”. **The deadline for abstract submission is April 17, 2014.** Only registered delegates can submit abstracts. Please consult the “Registration and abstract submission guidelines“ on the Congress website.

- 1) Presentations will be 15 minutes including time for discussion. A digital file in MS PowerPoint, saved as a ppt or pptx file must be uploaded prior to the last break before the talk at the “Media Check Counter”, where speakers will also be able to preview their presentations. Files must be named with the presenter's first and last name and date of presentation.
- 2) Posters have to be in A0 format (841 mm × 1189 mm). They must be mounted by the presenters on the corresponding poster boards according to numbers provided by the organizers. All poster boards and mounting materials will be available in the foyer.

OPPORTUNITIES

Fellowship Opportunities at the Smithsonian Institution

Torsten Dikow

Department of Entomology, National Museum of Natural History,
Smithsonian Institution, PO Box 37012, MRC 169
Washington, DC 20013-7012, U.S.A.; DikowT@si.edu

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

National Museum of Natural History undergraduate summer internship

The National Museum of Natural History runs a U.S. National Science Foundation-funded Research Experience for Undergraduates program called [Natural History Research Experiences \(NHRE\)](#). This 10-week, paid summer internship is a great opportunity for sophomore, freshman, and junior students at U.S. colleges and universities to work with a curator on a collections-based research project. Researchers from across the museum suggest projects and the applicants can rank the projects that sound most interesting to them. The program is very competitive as there are limited internships available (usually 15 per summer across the entire museum in the departments of Anthropology, Botany, Entomology, Invertebrate Zoology, Mineral Sciences, Paleobiology, and Vertebrate Zoology) and entomology will likely only get one intern (if there are qualified applicants).

I have had an intern this past summer working with me on a taxonomic revision of the robber-fly genus *Leptopteromyia*, which we plan to submit for publication this autumn. See information about Chris Cohen's project [here](#). I will be submitting a new project, the revision of the Asilidae: Leptogastrinae genus *Acronyches*, for the 2014 internship program and would appreciate if you could encourage outstanding entomology students who are interested in collections-based research on Diptera to apply. This internship and its predecessor, the *Research Training Program (RTP)* in which a number of dipterists have participated over the years, can be a great opportunity to get into Diptera research and start a career in this field. I myself worked as an RTP-intern with Wayne Mathis on a revision and phylogenetic study of an Ephydriidae genus ([Dikow and Mathis 2002](#)) back in 2000, met my later Ph.D. advisor David Grimaldi during that summer, and I am now Wayne's successor as Smithsonian dipterist.

Application deadline: most likely January 31, 2014.

Smithsonian Institution fellowships

For general information about the fellowships below and guidelines of the application process please see the [OFI web-site](#). All proposals dealing with entomological projects are first reviewed by the [Smithsonian Department of Entomology](#) and ranked within their respective categories (graduate, predoctoral, and postdoctoral). The top-ranked applications are then forwarded to the museum-wide competition including all of the biological departments (*i.e.*, Botany, Entomology, Invertebrate

Zoology, Paleobiology, and Vertebrate Zoology). These fellowships are very competitive because applicants have to compete not just with other entomology proposals, but with applicants in other fields of systematic biology and taxonomy, too. Especially the postdoctoral fellowship, which receives the largest number of applications, will be the toughest one to succeed in. However, the Department of Entomology has in recent years at least obtained funding for its top-ranked candidate and in 2012 and 2013 even obtained funding for two postdocs each. These programs are open to students and researchers from around the world.

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

Application deadline: January 15, 2014.

10-week Graduate Student Fellowship

This fellowship is a great opportunity for graduate students to spend 10 weeks at the NMNH to study and work in our collection during this time period and incorporate the findings in their Masters or Ph.D. dissertation.

Fellowship funding: up to US\$ 4,000.

3–12 Month Predoctoral Fellowship

This program supports those Ph.D. students who have fulfilled the requirements of candidacy (or its equivalent internationally) and who intend to spend up to 12 months working in our collection and utilize our facilities for their research for inclusion of the findings in their dissertation. This fellowship could be seen as providing a stipend for up to 12 months, which could be spent entirely or at least in part at the NMNH.

Fellowship funding: US\$ 30,000 plus a research budget of up to US\$ 4,000.

3–24 Month Postdoctoral Fellowship

Young scientists who have completed their Ph.D. within the past five years and who are interested in conducting research at the NMNH in close collaboration with one of the curators can apply to this fellowship program. The project proposals need to be cutting-edge and use the latest tools and methods in phylogenetic systematics in order to be competitive. A straight morphological taxonomic proposal will most likely not be competitive although proposing a taxonomic and phylogenetic project utilizing a diversity of approaches including morphology and molecular data on a large scale can be competitive.

Fellowship funding: US\$ 45,000 annually plus a research budget of up to US\$ 4,000 annually. Note that health insurance coverage is not included in the fellowship and is the personal responsibility of the fellow with Smithsonian Institution healthcare options being available.

I am happy to discuss project ideas and proposals with graduate students and postdocs who are interested to apply to the above fellowships. Personally, I would be happy to support graduate student fellowship proposals on any Diptera taxon, but for the predoctoral and postdoctoral projects I am likely only able to support proposals that deal with Asiloidea—my expertise and where I can provide the most resources. However, having several Diptera postdocs at the NMNH would be great for our unit and if you have an outstanding proposal on other Diptera taxa, please don't hesitate to contact me.

Position Announcement

Research Curator of Insects Texas Natural Science Center, University of Texas, Austin

The Texas Natural Science Center (TNSC) seeks a Curator of Insects with a broad research program. The appointment is 100% in the TNSC, which has strong ties to the Department of Integrative Biology. The TNSC collections include insects and cave arthropods, fish, amphibians, reptiles, and genomic resources. A Ph.D. in a natural science field is required by the start date of the appointment. The position is a research staff appointment.

The Curator will:

- 1) Develop an externally funded, collection-based research program in biodiversity, including ecology, evolution, and systematics; some emphasis on the Texas insect or cave arthropod fauna is desirable. The research program should be at the forefront of the field and complement existing strengths in Department of Integrative Biology. With approval of the faculty, the candidate may be admitted to the Graduate Faculty (non-tenure track) and supervise graduate students in the Ecology, Evolution, and Behavior Graduate program. The candidate will contribute to interdisciplinary initiatives of the College of Natural Sciences.
- 2) Oversee the accessioning, georeferencing, and general curation of the collections, including securing external support, development and maintenance of electronic databases, processing of loans, compliance with regulations and permits, and pest management. It is highly desirable that the candidate has substantial curatorial experience with insect and general arthropod collections in a natural history museum setting. Required curatorial skills include attention to detail, management, communication, and professional interaction with the University, public, governmental and research communities.
- 3) Manage and guide the growth of the collections and associated resources including archives, databases, and genomic resources.
- 4) Engage in the teaching mission of the University. Although the appointment as Curator within the TNSC is 100%, the candidate is encouraged to teach courses in the Department of Integrative Biology (which may include Entomology and Field Entomology) and to enhance academic relationships with the Department.
- 5) Contribute to exhibits, outreach, and informal education initiatives of the TNSC.
- 6) Contribute to service activities at the University, state, and national level.

Applicants should provide one pdf file that includes the following: (1) curriculum vitae; (2) pdfs of three representative publications; (3) statement that addresses current and future research, curatorial experience, and teaching experience and philosophy; and (4) contact information for three references. The pdf should be emailed to Margaret Fischer, mfischer@austin.utexas.edu.

Review of applications will begin on 1 December 2013 and continue until a suitable applicant is identified. Contact David Cannatella (catfish@austin.utexas.edu) for further information.

The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer. This is a security-sensitive position. A criminal history background check will be required for finalist(s) under consideration for this position.

Position announcement

Assistant Professor of Entomology -- Arthropod Systematics and Biodiversity Department of Entomology, Texas A&M University, College Station, Texas

Position Description. Assistant Professor of Entomology, 10-month tenure-track appointment. Located in the Department of Entomology, College of Agriculture and Life Sciences, Texas A&M University, College Station, TX 77843-2475. The appointment is structured as 62% research, 33% teaching, and 5% service. For more information, see <http://insects.tamu.edu> and <http://aglifesciences.tamu.edu>.

Qualifications. Ph.D. or equivalent degree in Entomology or related biological science field with emphasis on insect or arthropod systematics is required. Candidates should have a strong record of scholarly achievement. Desired qualifications include experience in teaching at the undergraduate or graduate level, experience in mentoring students, a demonstrated record of obtaining extramural support, and experience in the development of natural history collections. The successful candidate will demonstrate the ability to collaborate in multidisciplinary teams and have excellent written and oral communication skills.

Research (62%). Development of a strong, extramurally funded research program in systematic entomology is expected. The research program should employ phylogenetic methods in comprehensive or monographic studies to address questions involving evolutionary patterns of adaptation, biodiversity, speciation, behavior, ecology, biogeography, or other areas of evolutionary or comparative biology. Research may be directed at any group of insects or terrestrial arthropods. Demonstrated experience in one or more of the following is highly desirable: emerging methods for high-throughput DNA sequencing, phylogenomics, biodiversity informatics, cybertaxonomy, population genetics and coalescent theory, quantitative analysis of molecular data, or other modern research methodologies relevant to the research.

Teaching (33%). Teaching duties will include both undergraduate and graduate courses in Entomology that are appropriate to the expertise and interests of the appointee and that address the needs of the department. Mentoring of undergraduates, graduate students, and post-docs as appropriate is expected of all faculty. A 33% teaching appointment in Entomology typically means teaching two, 3-credit undergraduate courses per academic year and one graduate level course in the incumbent's specialty on an alternate year basis.

Service (5%). The incumbent will be expected to participate in Departmental, College and University governance and to become an active participant in professional scientific societies.

Other Opportunities. Substantial opportunities exist for the appointee to utilize the resources of the Texas A&M University Insect Collection, and to actively participate in its development. The appointee will have an opportunity to engage with a variety of interdisciplinary research programs such as those in Forensic and Investigative Sciences, Ecology and Evolutionary Biology, Whole Systems Genomics Initiative, Vector Biology Research Group, Institute for Neuroscience, and Molecular and Environmental Plant Sciences.

Application. The Department of Entomology, together with Texas A&M University and Texas AgriLife Research, seeks individuals who are able to work with diverse students and colleagues, who have experience with a variety of teaching methods and curricular perspectives, and who will contribute to the diversity efforts of the University. *Applicants must include in their cover letter information about the manner in which they will further this goal.* Applicants should also address how their research and teaching programs will contribute to addressing the Grand Challenges identified by the College of Agriculture and Life Sciences (<http://aglifesciences.tamu.edu/about/grand-challenges/>).

Applicants should submit a detailed curriculum vitae; a letter of application that outlines longterm career goals and addresses specific issues as they relates to the research, teaching, and service missions of the position; copies of transcripts; reprints of three most significant publications from the previous five years, and the names of four references including their title, mailing address, e-mail address, telephone number, and a brief statement of how each reference knows the candidate. For more information please visit <http://insects.tamu.edu>. To receive full consideration for the position, **all application materials must be received by the closing date, 16 January 2014.**

Send all application materials to:

Department of Entomology
Texas A&M University
Attn: Ms. Teresa Gold
Minnie Belle Heep Center, Room 412
College Station, Texas 77843-2475
Phone: (979) 845-2510; Email: t-gold@tamu.edu

DIPTERA ARE AMAZING!

We have a special "Diptera ARE Amazing" contribution this issue. Rather than a series of just a couple pages of cool fly photos, this one is more extensive and comes with a theme and an explanation! Flies from Matt Bertone's backyard!

Exploring backyard fly fauna: A photographic tour of Diptera in a temperate Piedmont yard (North Carolina, USA)

Matt Bertone

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Over the past five years I have become passionate about macrophotography. I enjoy documenting myriad types of insects, arthropods and other (usually small) animals, but of course flies have a prominent place in my heart and, thus, in front of my lens. I take my camera to many different habitats and, of course, visiting exotic areas is wonderful, but sometimes I prefer to explore my own yard.



Four years ago my family and I moved into a home on 0.48 acres (1,942.5 m²) of land in Raleigh, North Carolina (USA), located in the Piedmont region (35.779710, -78.702109). While not a large area, we have many plants inhabiting our *somewhat* tended yard. The front yard boasts a “lawn” made of various grasses (Poaceae), some sedges (Cyperaceae), mosses, *Liriope*, *Viola*, *Oxalis*, *Lespedeza*, and other low-growing, herbaceous plants. There are larger bushes of *Rhododendron* with a few other shrubs, including ornamentals like *Mahonia* and *Nandina*. The trees in the front are mature (some many decades old) and mostly hardwoods: *Acer*, *Quercus*, *Liquidambar*, *Cercis*, *Carya* and *Cornus*. There are also some conifers like a few large *Pinus*. One of my favorites is a fringe tree (Oleaceae: *Chionanthus virginicus*) that has beautiful, fragrant blooms in the late spring. The back yard is heavily shaded by numerous trees, including ones similar to the front, but also *Nyssa*, *Juniperus*, *Betula* and *Morus*. Various small shrubs grow among the shade, along with ferns, mosses and other plants. In the summer typical “weeds” grow abundantly, including large pokeweed (*Phytolacca americana*) and Virginia creeper (*Parthenocissus quinquefolia*). All in all we must have several dozen species of plants growing over the course of the year, some abundant while others sparsely distributed.

Along with the plants are various fungi and lichens, as well as rotting media like fallen leaves (left to decay under the trees after dropping in the autumn), and an active compost bin full of yard waste and food scraps (fly heaven!).

The following are just some of the flies I have had the opportunity to photograph in my yard. All of the photos here were taken using a Nikon D90 camera with a Nikon 105mm f/2.8G AF-S VR Micro-Nikkor Lens, and up to 65mm of extension tubes. Diffused flashes provided the lighting. All photos have the date and ID (to the best of my abilities). Enjoy!

(All photos © Matt Bertone 2009-2013; for more photos, please visit [my Flickr page](#))

“Nematocera” or Lower Diptera:



LEFT: Mating pair of black crane flies (Tipulidae s.l.: *Gnophomyia tristissima*) on compost bin. These flies emerge around the same time every year for a few years in a row. [29-April-2012]. RIGHT: Phantom crane fly (Ptychopteridae: *Bittacomorpha clavipes*) inspecting the house. [20-April-2013]



LEFT: Dark-winged fungus gnat larvae and pupae (Sciaridae) among the leaves in a rain gutter, discovered while doing yearly cleaning. [10-February-2013]. RIGHT: Beautiful dark-winged fungus gnat (Sciaridae: *Sciara?*) found in garden during a spring emergence [29-April-2012]



LEFT: Another larva, this time a biting midge (Ceratopogonidae: Ceratopogoninae), found among the leaves in a rain gutter. [10-February-2013]. RIGHT: Female biting midge (Ceratopogonidae) found at porch light. [April-2011]



LEFT: A mating pair of minute black scavenger flies (Scatopsidae: *Coboldia fuscipes*) on a window screen. Many have been found in the compost bin. [6-May-2012]. RIGHT: Wood gnat (Anisopodidae: *Sylvicola alternatus*) at porch light. [7-January-2012]

Orthorrhapha or Lower Brachycera:

LEFT: The widespread, wasp-like black soldier fly (Stratiomyidae: *Hermetia illucens*) is common in our compost bin. [19-May-2012]. RIGHT: Beautiful little pachygastrine soldier fly (Stratiomyidae: *Neopachygaster*) on the outside of the compost bin. [29-April-2012]



LEFT: A soldier fly (Stratiomyidae: *Ptecticus trivittatus*) buzzing around the compost bin. [1-June-2013]. RIGHT: This *Xylomya pallidifemur* (Xylomyidae) flew into the house one day and I could not pass up the opportunity to photograph this colorful fly. [9-May-2010]



LEFT: This xylomyid fly, *Solva pallipes* (Xylomyidae), was resting on our compost bin. [14-July-2013]. RIGHT: This large xylophagid (Xylophagidae: *Dialysis rufithorax*) was sitting at my porch light one night ready to be photographed. [20-May-2011]



LEFT: This dance fly (Empididae: *Rhamphomyia*) was another one attracted to the porch light. [28-April-2011]. RIGHT: This hybotid dance fly (Hybotidae: *Stilpon*) was very small – about 1 mm long! It and others were sitting on an oak leaf. [1-June-2013]



LEFT: The red eyes stand out on this interesting hybotid dance fly (Hybotidae: *Syneches*). [1-June-2013]. RIGHT: This long-legged fly (Dolichopodidae: *Condylostylus*) is among the most beautiful of the predatory flies in my garden. [12-May-2012]

Cyclorrhapha or Higher Brachycera:



LEFT: Though most hover flies (Syrphidae) are brightly colored, this *Brachyopa* is dull brown. It was investigating a weeping area of an oak tree. [29-March-2012]. RIGHT: Before it landed I thought this was a potter wasp. Turns out it is one of the better hover fly wasp mimics (Syrphidae: *Sphiximorpha willistoni*). [3-April-2012]



LEFT: This relatively large scuttle fly (Phoridae: *Dohrniphora incisuralis*) was perched on a leaf in the backyard. (ID: Brian Brown) [1-June-2013]. RIGHT: While collecting flies in the backyard, Keith Bayless gets a guest on the tip of his aspirator – a lauxaniid fly (Lauxaniidae: *Minettia*)! [1-June-2013]



LEFT: A sap flow on an oak attracts a number of acalyprate flies, including drosophilids and these psychedelic aulacigastrids (Aulacigastridae: *Aulacigaster* probably *neoleucopeza*). [3-June-2012]. RIGHT: Dancing with striped wings, this vinegar fly (Drosophilidae: *Chymomyza amoena*) stopped long enough for a photo shoot in the grass. [29-March-2012]



LEFT: Though not native to our area, these leaf miners (Agromyzidae: *Ophiomyia*) are commonly found attacking daylily (*Hemerocallis*) in my garden. [11-May-2011]. RIGHT: A small dung fly (Sepsidae) found on a rotting wood pile in the backyard. [1-June-2013]



LEFT: A stilt-legged fly (Micropezidae: *Raineria*) waving her front legs on the trunk of an oak tree, full of eggs and looking for a good place to oviposit. [26-July-2009]. RIGHT: Among the other flies at a sap flow was this handsomely spotted odiniid (Odiniidae: *Traginops irroratus*) [2-June-2012]



LEFT: An unidentified muscoid fly perched on a garden plant. [2-June-2012]. RIGHT: Though they landed on me first, these mating tachinid flies (Tachinidae) sat on the driveway for some photos. [26-March-2012]

A few more cool fly pics from Scott Fitzgerald (left, *Dilophus* head) and head shots of the Australian genus *Paracnephia* from Doug Craig (middle, male *P. fergusonii*; right, last instar, *P. strenua*).



BOOKS AND PUBLICATIONS

Here, once again, is the last six month's crop of Diptera papers, as found in the Zoological record and Web of Science. As usual there are a large number of great taxonomy and phylogeny papers (including the first complete treatment on the Sciaridae of North America)! There are also papers on various other topics, including: methods for individually marking larvae through multiple instars; development of chironomid allergies in humans; lateral transfer of fungal genes into cecidomyiids; detailed investigations of various immature morphologies; the effect of nest flies on Darwin's finches and the evaluation of several different trap types.

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

Happy reading!

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Projects and taxa studied: _____
