



FLY TIMES

ISSUE 18, April 1997

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The universe continues to unfold! This issue includes reports of upcoming meetings, failed projects, further contributions concerning the best mounting methods for pinning adult material, web information on Diptera, as well as updates on our Dipterist community. Aficionados of the Internet will be pleased to learn that this issue will also be published on a website in short order. We don't have a specific address yet but you will be able to access it through the Eastern Cereal and Oilseed Research Centre's website as follows: http://res.agr.ca/ecorc/program2/ento_e.htm

We will be sending future hard copies of the *Fly Times* only to those without email addresses. Unless we hear otherwise we will be assuming that those people that have email addresses also have access to the internet. This will save mailing costs, paper (remember the rainforest), time, and gummy lips from all those stamps. Please let the editors know if this is objectionable to any of you.

Some of you may be happy to see that we have left the old 9-dot printer behind and are striving to present a more pleasing presentation. If we're not careful, we may have a Diptera Journal on our hands at some future time!

A reminder too, that the *Directory of North American Dipterists* is now on the web (as we promised in the last issue of the *Fly Times*) and can be accessed at the following address: <http://res.agr.ca/ecorc/program2/entomology/diptera/dipteras.htm>

Issue No. 19 of the *Fly Times* will appear next October in both hard copy format and on the Web. If possible, please send either editor your contributions by email, or on disc; electronic contributions make putting the *Fly Times* together much faster and lets us publish more (is that incentive or what?). Those of you with hard copy contributions (last possible choice) may fax, or mail (or with very short contributions, phone) your message to Art Borkent at the above listed address.

NEWS**North American Dipterists Society Field Meeting
May 3-7, Georgia.**

The NADS Field Meeting are being held at the New Ebenezer Retreat and Conference Center, Rincon, Georgia. The last issue of the *Fly Times* gave some information regarding the meeting. Here's some more.

Registration fee is \$45 (late fee after April 21 is \$55) and accommodation for the full program is \$76 if you want share a dorm room (16 beds/room), \$100 for shared double occupancy and \$156 if you want a single room all to yourself. Meals cost \$73. If you can only make it for part of the time accommodation is \$19/night for the dorms, \$25 for the shared double and \$39 for a single. Meals run \$20/day.

All of the above can be paid by Traveller's Cheques, MasterCard, VISA or cheques drawn on a US bank.

Here's the itinerary for the meetings:

May 3: registration, local collecting.

May 4: Welcome, announcements, invitational address "Disseminating Diptera Data: Getting the Goods to the Users" by Dr. Chris Thompson, group photo, collecting at various sites in the area, NADS wine and cheese in the evening.

May 5: Field trips during the day, talks in the evening.

May 6: Collecting during the day; evening: business meeting, plans for 1999, barbecue, process day's collection, more presentations.

May 7: check out, lunch.

Field trips are as follows (depending on number of subscribers: Okefenokee Swamp (4 hours travel time); Sand Ridge communities (2 hours travel time); Savannah National Wildlife Refuge (2 hours travel time); Coastal Georgia Barrier Island (3 hours travel time); Tour of Georgia Southern University Biology/ National Tick Collection (2 hours travel time). Transportation costs are included in the registration fee (good deal!).

The deadline for title and abstract submissions is April 21. Titles and abstracts of papers or posters may be submitted by e-mail or FAX to Dan Hagan (see address below).

For further information contact Dan at the following:

Dr. D.V. Hagan, Dept. of Biology, Institute of Arthropodology and Parasitology, Georgia Southern College, Statesboro, Georgia, 30460-8042, USA.

e-mail: dhagan@GaSoU.edu

Phone: 912-681-5495

FAX: 912-681-0845

WWW at <http://www.bio.gasou.edu>

1997 Biting Fly Workshop

The next Biting Fly Workshop will be held on June 4-6, 1997 at the Niobrara Valley Preserve located east of Valentine, Nebraska. See the last issue of the *Fly Times* for further details. For more information contact Wayne at the following:

Dr. W.Kramer,
State of Nebraska Dept. of Health,
301 Centennial Mall South,
P.O. Box 95007,
Lincoln, Nebraska,
68509-5007, USA.

email: wkramer@unlinfo.unl.edu

Fourth International Congress of Dipterology

The next Congress will be held in Oxford, England on September 6-13, 1998. The scientific program has not been determined in detail but will likely include sessions on: Morphology, physiology and ultrastructure; Medical, veterinary and forensic Diptera; Agricultural Diptera; Behaviour and ecology; Biodiversity and conservation; Advances in systematics; Cytology and genetics; Control; Collections and databases.

Sections will be organised according to the level of interest in individual topics. Taxon-based workshops will be arranged as in previous Congresses, based on the interests expressed by delegates.

The first circular has already been sent and if you haven't received this and want to be sure to receive the second circular, due out in May, 1997 (or want any other information) contact the congress administration as follows:

Oxford International, ICD4,
Summertown Pavilion,
Middle Way,
Oxford, OX2 7LG, United Kingdom.
Phone: +44 1865 511550
FAX: +44 1865 511570
e-mail: 101475.1765@compuserve.com

Provisional costs are as follows:

- Registration fee: £190
- Accommodation for six nights in Keble College (bed, breakfast and lunch) £222-252, with dinner also available at Keble at £13/night.
- Hotel accommodation for 6 nights £600-720 per person, bed and breakfast.
- Congress banquet: £28/person.

**Informal Conference - North American Dipterist's Society
1996 Entomological Society of America Meeting**

by Mike E. Irwin

The last meeting of the North American Dipterists Society was held at Louisville, KY, during the evening of December 9, 1996. The gathering was sponsored as an informal conference by the Entomological Society of America at their annual meeting. The program was put together by Jon Gelhaus and moderated by Mike Irwin.

Two informal talks were presented:

Michael E. Irwin presented a paper entitled "Spermathecae and associated tissues of the female terminalia hold promise for constructing a higher-level classification of the Therevidae (Diptera: Brachycera)"

Mark Metz presented a paper entitled "Differential variation of body and genitalia size in a species of *Ozodiceromyia* nr. *nanella* (Cole) (Diptera: Therevidae)."

These informal talks stimulated some discussion, after which conversation was shifted to projects currently underway on Diptera. Before adjournment where even more informal discussions were held, Brian Wiegmann of North Carolina State University agreed to chair the meeting at the next Entomological Society meeting. The next ESA meeting will occur between 14 and 18 December, 1997 in Memphis, Tennessee.

**Termination of All Taxa Biodiversity Inventory (ATBI)
of Costa Rican Diptera**

by Jeff Cumming

In the 1996 October issue (*Fly Times* 17:16) we announced the formation of a Diptera TWIG (or Taxonomic Working Group) for the ongoing ATBI initiative in the Area de Conservacion Guanacaste (ACG) in northwestern Costa Rica. This initiative was to be organized primarily through the Instituto Nacional de Biodiversidad (INBio). However, in November, 1996 INBio announced its decision to discontinue with the ATBI stating that the political, economic and institutional conditions were not present to conduct and sustain such a large and complex inventory in the ACG. Negotiations are still ongoing between INBio and the donor countries to continue inventory work on some of the large insect orders, including Diptera, at the national level. Manuel Zumbado, Monty Wood and I will attempt to keep dipterists informed of any opportunities to work on Costa Rican flies as these new developments unfold.

For further information contact <http://www.inbio.ac.cr/ATBI/ATBIletter.html>.

Termination of the "Phylogeny of the Diptera" Project

by Art Borkent

The Phylogeny of the Diptera Project was initiated in 1990 (see *Fly Times* 5) to provide an up to date synthesis of the cladistic relationships of Diptera at the infrafamilial level. This international project has now been terminated. Due to a combination of factors, including continuing delays in receiving contributions for many families and difficulties in obtaining speedy reviews of submitted manuscripts, it has been decided that the submitted manuscripts could not be held in good conscience. These manuscripts have been returned to the contributing authors and I hope that all these will be published through journals in the near future.

I want to extend my sincere thanks to those authors who did submit manuscripts and wish them well in their efforts to publish elsewhere.

Minuten Mounts for Micro-Diptera

by Curtis W. Sabrosky and Wayne N. Mathis

In the April 1996 issue of *Fly Times*, Steve Marshall asked "Is there anyone out there who still prefers minuten-pinned specimens?" We answer with a resounding "YES!" Several angles are involved, and it seems desirable also to discuss card-point mounts and specimens glued directly to the side of a pin. [We will use "glue" as a short expression for affixing material in general].

At the outset, please recognize that any method, however good in the hands of an expert, can be misapplied by someone using a poor selection of glue or substandard technique, whether carelessly or with the best of intentions. What an expert uses skilfully is up to him. But a method that is recommended for general use may be used by others who are untrained, unsupervised, and dependent on what they read, understand, and apply with available materials.

Card-point mounts. If the choice is a card point, all sorts of glues may be used, often simply depending on availability. The point method is quick, cheap, and when carefully done can result in satisfactory mounts. But there are possible drawbacks. Too much glue can bury specimens and conceal taxonomically useful features. Water-soluble glues can soften in a relaxing chamber and specimens may roll over, getting more gummed up or even falling off the mount if relatively heavy, or long, and the amount of glue small. If the surface of the glue dries too much, e.g., if too many points are tipped with glue before specimens are mounted, some of those specimens may simply adhere to the surface film without being firmly affixed. Then the card point becomes a springboard from which a specimen may easily pop off when jarred or the pin ticked. Finally, some glues tend to permeate the mesothorax--the usual attachment of a card point--and may discolor or grease the thorax and thereby spoil the color of the microtomentum, and any pattern may be obscured or indecipherable (as warned long ago by Cresson 1913 and Sabrosky 1937).

Gluing directly to the body of the main pin. Every warning about glue in the preceding paragraph applies here also, but even more because card points may touch only the legs, or only the coxae, whereas

direct gluing almost always involves most of the pleuron. This increases the possibility of soaking up the entire thorax with some glues. Moreover, usually an entire side is covered up, or at the very least difficult to see because of the large pin. We have found this method especially undesirable when for some reason the characters of the pleuron are messed up on the one visible side, and it would have been exceedingly helpful to study the other side, now covered up in whole or in part. This has been found to be an especial handicap in tiny and delicate flies like those of *Stenomicro*, where even a small amount of glue can discolor a whole thorax and obscure the entire pleuron.

Minuten mounts. This is admittedly the most expensive of the methods, involving as it does an additional pin, a minuten, and the time to make the double mount. Regardless, we believe that this method results in far and away the best specimens for study. In particular, dipterists who mount their own material should certainly value highly the quality of the end product. The critical factor here is that one should avoid using minutenens on dried or semi-dried specimens, as warned by Sabrosky (1937). Enough body juices must be present within a target specimen so that firm bonding with the minuten will result. Further, minutenens carefully pinned through the upper part of the pleural suture, below the wing base and between the anepisternum and anepimeron, will not damage areas or structures of interest.

In the field, long series can usefully be handled by combining methods, using minutenens for an adequate series and preserving the rest in alcohol for later retrieval and mounting on card points.

Literature Cited

- Cresson, E.T., Jr. 1913. Collecting and mounting micro-Diptera. *Entomol. News* **24**: 8-12.
 Marshall, S. 1996. Mounting techniques. *Fly Times* **16**: 3.
 Sabrosky, C.W. 1937. On mounting micro-Diptera. *Entomol. News* **48**: 102-107, 4 text figs.

Mounting Methods For Small Diptera

by Terry A. Wheeler

We have had some recent discussions of preferred mounting techniques for small Diptera (see Steve Marshall, *Fly Times* **16**: 3 and Graham Griffiths, *Fly Times* **17**: 7) and I want to add my two cents. I started my Dipterological career at the University of Guelph, where pointing was the accepted practice. Two years of postdoctoral work at CNC in Ottawa taught me that gluing your flies to the sides of pins with Harold Walther's Secret Recipe Shellac is the only way to go. I have since gone back to points for a variety of reasons. I have also dealt with minuten mounted specimens, both old and new.

Time and cost

Like it or not, the limiting factors in how most of us deal with specimens are time and money. Gluing to the side of a pin is the fastest and cheapest technique, with pointing slightly slower because of the extra step in "pinning the point". Double mounting is the most expensive and time consuming process. The differences may not be appreciable to a casual collector, but to anyone involved in large scale collecting, survey work and inventories, the differences become huge.

This brings up another issue, that of who will do the mounting. Most of us just do not have the time

do all our own mounting. Anyone involved with large projects involving thousands of specimens must depend on students, technicians, volunteers, etc. to get the specimens out of the jars and into the drawers. Thus, the question becomes "what method is most difficult to screw up, and most forgiving if you do?" Graham Griffiths has pointed out the major difficulty with gluing flies to the sides of pins -too much glue is used at the wrong place and the whole fly is firmly attached, abdomen and all. This is clearly unacceptable if dissection is required. The opposite situation is also a problem. I have seen large series of specimens glued to pins with too little glue. The result is that the glue, present as a small flake on just one side of the pin, detaches from the pin and drops off when the unit tray is jarred. Care must be taken to ensure that the glue surrounds, or almost surrounds the pin, giving a better grip. I think there is a little more leeway when using points. It is easier for newly trained staff to get a feel for how much glue has to be used to attach a specimen to a point (although I'm sure we can all tell nightmarish stories about the potential holotype that ended up encased in "Elmer's amber"). Also, because the part of a point that contacts the specimen is smaller than the glued side of a pin, there is less likelihood that big portions of the specimen will be immediately covered with glue.

Points are more forgiving with specimen orientation. One of the drawbacks of gluing to pins is that much of one side of the specimen is obscured. This can be an even bigger problem if the specimen is not oriented exactly perpendicular to the pin. With a point glued to the side of the thorax, much of the glued side of the fly remains visible. This is still the case if the fly is tilted slightly up or down.

Points can be attached to larger pins (size 2, 3). Direct gluing requires small pins for small specimens, to keep structures visible. Using very small pins (000, 00) has inherent problems. Skinny pins are difficult to insert into unit trays with hard bottoms, and can become tiny accordions if you try to get them into cork-bottomed boxes. These skinny pins also have the tendency to be transformed into tiny vaulting poles at the slightest contact, thereby launching the attached specimen airborne.

Graham Griffiths has pointed out that the muscles of fresh specimens will contract around a minuten pin and hold the specimen steady. Unfortunately, there is relatively little muscle there and the small amount of lateral movement involved in snipping off the abdomen, even in a relaxed specimen may be sufficient to start the fly spinning. Another problem is that more and more specimens are not mounted "fresh". With the increasing use of critical point driers or chemicals, many specimens are dried before they are mounted. While this results in specimens that are much easier to dissect and identify, I doubt if they would provide much grip on a minuten pin. I think minuten are only practical with air dried (and therefore brittle and shriveled) or possibly freeze-dried material

Repairing the damage

The worst case scenario is that a specimen does get knocked loose or knocked off the mount. A double mounted fly gets jarred and becomes a tiny carousel animal, whole specimens get knocked off points or pins. Here again, I prefer pointed or direct glued specimens. A fly knocked off a point or pin can usually be glued back on with relatively little damage. The odd wing or leg that remains attached to the mount can be re-glued to the upper surface of the point or left in the original location on the pin. Double mounts are not so forgiving. These specimens must be left spinning, or remounted on a point or pin, in which case they are left with a hole in the thorax.

Genitalic preparations

There is always some potential hazard associated with dissecting genitalia, even after relaxation. Specimens mounted with shellac seem to have the most give in the glue and therefore less tendency to drop off. White glue is a little more brittle. I don't like double mounts because there is much less room for movement before the spinning starts. My ideal specimen for genitalic preparation is one that has been critical point dried and mounted on a point. It remains flexible enough that relaxation is often not required. I can get

at the abdomen from both sides, there is slightly more "give" in a point before the specimen is jarred loose, and even if everything else goes wrong, I can easily remount the specimen if I do knock it off.

Note: In the above article, Terry refers to "Harold Walther's Secret Recipe Shellac". The editors have asked Harold to let the world know what he puts into his concoction, which he kindly agreed to do, as follows:

Proven Method of Making Shellac Gel (For Mounting Insects)

by Harold Walther

Ingredients: 250 ml. Pure White Shellac, 20 ml. 75% Ethyl Alcohol

Boil Shellac in a porcelain dish that has a pourout lip. Heat Shellac to a rolling boil and stir constantly while boiling for approximately 20 minutes, or until Shellac becomes foamy. Stir while adding the 75% Ethanol and boil for another 5 minutes, or until mixture becomes foamy again. Remove from heat and immediately pour into screw cap vials. I use 1 Dram (15X45 mm.) size vials, and this amount of Shellac makes approximately 22 vials of Gel. Gel should have consistency of Vaseline and be soft enough to allow movement of specimens when mounting them on pins. The dish and glass stirring rod can be cleaned immediately using Methyl Alcohol as solvent. Methyl Alcohol is the solvent in Shellac. Gel may be thinned. If left open to the air for extended periods of time, it may get too thick. Add a drop of 75% Ethanol and stir in vial with pin. This may not be completely satisfactory but may be used to salvage partial vials of Gel. White Shellac may be purchased at most hardware stores. Brand names such as BULLDOG or HOME or SHEFFIELD are good choices.

From the Mouths of Gnats

"What's the use of their having names," the Gnat said, "if they won't answer to them?"

"No use to them," said Alice, "but it's useful to the people that name them, I suppose. If not, why do things have names at all?"

from "Through the Looking Glass" by Lewis Carroll

Collecting in Surinam

by Larry W. Quate

As with many Neotropical countries, Surinam requires collecting permits for the collection and export of insect specimens. For anyone planning field work in Surinam, I am providing the following information based on my visit there in September, 1996.

Surinam offers an abundance of primary, lowland tropical forests. Two national preserves offer easy access and reasonable accommodations to biotypes at elevations less than 100 meters and up to 450 meters. Advance planning will expedite utilization of these areas.

Brownsberg Nature Park (N 04 47' W 55 11') about 100 kilometers south of Paramaribo (paramari-bo), the capital city, occupies a mountain overlooking Afobaka Dam, Surinam's major hydroelectric plant. Park headquarters are on a plateau at about 450 m and offers several dormitories with individual rooms holding 2-4 bunks, several cabins, and staff quarters. Well marked trails lead out in all directions from the headquarters and lead downhill to the east, west and north; the road and trails also meander across the plateau. Collecting opportunities abound in the rich and undisturbed forests surrounding the headquarters.

This is a popular destination for students on vacation and accommodations are full during school holidays. If one is adverse to crowds of energetic students, work at Brownsberg should be scheduled during school sessions.

Raleighvallen is in lowland forest some 170 km SW of Paramaribo (N 04 43' W 56 12'). Headquarters are on Fungoe Island in the Coppename River, adjacent to a dirt airstrip which accommodates the small chartered planes flown out of Paramaribo by Air Surinam. A small village of about 6 families houses the permanent staff manning the station. In addition to their huts, there is a large thatched, open air building with a kitchen, dining hall and several small rooms each holding four bunks. The water temperature of the river is ideal for bathing.

The forest on Fungoe Island can be covered in a couple of hours, but unlimited expanses stretch away from the shores. The staff has several dugout canoes with outboard motors and provide transportation in either direction from the island and provide convenient access to the vast forests bordering the river.

The first contact should be 'STINASU', a quasi-official department within the Division of Forestry. Translated, the acronym means Foundation for Nature Preservation in Surinam, and it is charged with supporting education, research, and preservation of natural resources in Surinam. Most of their time seems to be spent accommodating local tourists who wish to visit Brownsberg and Raleighvallen. They will make travel arrangements and reserve accommodations at the two preserves. They also furnished two men who accompanied me to Raleighvallen.

The Dept. of Conservation, Division of Forestry issues collecting permits. At least six months, preferably one year, in advance, an outline of the planned research should be submitted and an application requested. The initial request should include enough information on affiliations and qualifications to permit verification of applicants capability of conducting the research.

There are no restaurants at any of the stations and it is necessary to take all food and drink with you. There are a number of grocery stores in Paramaribo and reasonable selection of food supplies is not difficult to find.

Most of the country is primary forest and no interior settlements offer living accommodations. With the assistance of a tour company, it is possible to reach many interior areas. There are a number

of airstrips that can be reached by charter plane. All are near rivers and Indian villages. Dugout canoes with outboard motors can be rented at the villages and the river highways provide unlimited travel opportunities. Camps are set up on the river bank at the end of a day. The tour company will arrange plane charter, boat hire and provide all camping equipment and food. There are a number of tour companies, but the one that impressed me is Cardy Adventure Tours, owned and operated by Dyon Small and his wife. Dyon is a former employee of STINASU, knows the country, appreciates biological studies and has the contacts to make all arrangements for upcountry travel and work.

As a former Dutch colony, the 'lingua franca' is Dutch, but English is widely spoken and understood, so English speakers have no trouble communicating.

The country's money is the Surinamese guilder, worth about 30 cents US. However, American dollars are widely accepted and sometimes preferred. The hotel bill can be paid in US \$, the men that worked for me preferred the same (STINASU sets their wages at US \$10/day).

Only American Express credit cards were accepted (no one would accept VISA or Mastercard).

Paramaribo holds two good hotels, the moderately priced Krasnopolsky at about \$60 US per day and the expensive Torrarica. Adventurous tourists with a limited budget often stay at the YWCA, but this is patronized by the locals and rooms are seldom available without a reservation.

The Zoological Collections at the University of Surinam, on the outskirts of Paramaribo, has modest invertebrate collections. The only entomologist on the staff is Bart De Dijn, a Belgian studying social bees for his PhD thesis. Bart is energetic and enthusiastic and biologists should make an effort to meet him. He enjoys the foreign contact and can be helpful.

Surinam is reasonably safe, but it did go through a revolution from 1985-1990. A few of the visitor requirements of the military regime persist. I had an unpleasant experience of being told by an Army officer checking passports on my departure that I had not checked with the police and would not be allowed to leave until I had. He showed me a stamp in my passport showing some Dutch abbreviations and a date about one week after I entered and stated that I had been instructed to check in with the police. I finally persuaded him that since no one had informed me of this requirement, I should not be forced to miss my plane. This regulation may be dropped, but visitors should be alert to this possible requirement.

Names, addresses, and FAX numbers of relevant persons:

Dr. F.L.J. Baal, Nature Conservation Division, Surinam Forest Service, Cornelius Jongbawstraat 10, Postbox 436, Paramaribo, FAX (597) 410 256, phone (597) 479 431 and 475 845.

Dr. Muriel Held, Director, STINASU, Surinam Forest Service, Cornelius Jongbawstraat 10, Postbox 436, Paramaribo, FAX (597) 410 256, phone (597) 475 845/471 856/476 597.

Dr. Carlo R. Julen, Deputy Director of Forestry and Nature Conservation/ Acting Head of Surinam Forest Service, Cornelius Jongbawstraat 10, Postbox 436, Paramaribo, FAX (597) 410 256, phone (597) 474 346/471 316.

Dyon F. Small, Cardy Adventures, Heerenstraat 19, P.O. Box 2083, Paramaribo FAX (597) 410 555, phone (597) 422 518.

Mr. Bart De Dijn, National Collections of Surinam, University of Surinam, University Complex, PO Box 9212, Paramaribo. Phone (597) 465 558 (ext. 320).

Another Retirement

Amilia Pucat wrote to say "My almost 22 years at Agriculture and Agri-Food Canada are coming to an end. Before that I studied for many years and taught for more than 10 years. March 27, 1997 will be my last day of work.

On April 1, 1997 our Branch, the Food Production and Inspection Branch, with some 4,500 employees, plus many employees from Health Canada and others from fisheries and Oceans Canada, will become a Crown Corporation - The Canadian Food Inspection Agency.

Thank you for your cooperation and help during my working years. For the present I will be in Ottawa, and after I sell my house I will move to Edmonton, Alberta, to be close to my relatives."

Amilia may be reached as follows:

1106 Clyde Ave.
Ottawa, ON, K2C 1Y2
CANADA.
Phone: (613) 226-3210

All the best in your retirement Amilia!

Notice of PostDoctoral Position

by Jon Gelhaus

Position: Postdoctoral Scientist, Insect Systematist.

Announcement no. 564.

Issue date: March 27, 1997.

Closing date: April 25, 1997 or until filled.

The Biodiversity Group of the Academy of Natural Sciences seeks an insect systematist to participate in a research program focusing on the morphology, systematics and biogeography of Diptera (crane flies).

Desired attributes: Ph.D. in biology. Strong background in systematic and biogeographic theory and application. Demonstrated ability in morphological character analysis of Diptera (preferably crane flies, Tipuloidea). Demonstrated ability in phylogenetic and biogeographic analysis. Excellent communication skills. Field collecting experience. Ability to work independently, in team settings and to direct the work of others.

Suitable candidate may also have opportunities to participate in other systematic and applied ecology research projects at the Academy of Natural Sciences. Competitive salary and benefits. Position available Spring 1997 for 18 month commitment.

Send cover letter, CV, representative publications and names, addresses, phone numbers/e-mail addresses of 3 references to:

Dr. Jon K. Gelhaus, Vice President
Biodiversity Group
Academy of Natural Sciences
1900 Benjamin Franklin Parkway
Philadelphia, PA 19103-1195

URL'S of Selected Diptera Sites on the World Wide Web

by Jeff Cumming

General

Diptera, Tree of Life:

http://www2.ncsu.edu/unity/lockers/ftp/bwiegman/fly_html/diptera.html

Diptera Unit, Smithsonian Institution:

<http://nmnhwww.si.edu/entomology/Diptera/diptera.html>

Newsletters and Homepages

Fly Times:

http://res.agr.ca/ecorc/program2/ento_e.htm

Tachinid Times:

<http://res.agr.ca/brd/tachinid/times/>

Phorid Newsletters:

<http://www.lam.mus.ca.us/lacmnh/departments/research/entomology/phorids/phornews.html>

The Chironomid Home Page:

<http://oksw01.okanagan.bc.ca/fwsc/iwalker/intpanis/>

Stiletto Flies - Therevidae:

http://www.inhs.uiuc.edu/cee/wwwtest/therevid/stiletto_fly.html

Asilidae Homepage:

<http://www.th-darmstadt.de/~fgeller/welcome.htm#other>

Directories

Directory of North American Dipterists:

<http://res.agr.ca/ecorc/program2/entomology/diptera/dipteras.htm>

Directory of Chironomid Workers:

<http://oksw01.okanagan.bc.ca/fwsc/iwalker/intpanis/director.html>

Collection Information

Diptera Types in the Canadian National Collection of Insects. Part 1. Nematocera:

<http://res.agr.ca/brd/tachinid/titlpag1.html>

Diptera Types in the Canadian National Collection of Insects. Part 2. Brachycera (excl. of Schizophora):

<http://res.agr.ca/brd/tachinid/titlpag2.html>

Diptera Types in the Canadian National Collection of Insects. Part 4. Tachinidae:

<http://res.agr.ca/brd/tachinid/tacheng.html>

Catalogs

Catalog of the Diptera of the Australasian and Oceanian Regions:

<http://www.bishop.hawaii.org/bishop/ento/aocat/aocathome.html>

Catalogue of the Fossil Flies of the World (Insecta: Diptera):

<http://www.bishop.hawaii.org/bishop/ento/fossilcat/>

Faunal Information

Costa Rican Diptera:

<http://www.inbio.ac.cr/papers/insectoscr/Diptera.html>

Biting Flies Attacking Man and Livestock in Canada:

http://res.agr.ca/ecorc/program2/entomology/biting_flies/english/flies01e.html

BOOKS AND PUBLICATIONS

Contribution on Diptera Dedicated to Willis W. Wirth. *Memoir of the Entomological Society of Washington*, No. 18. 297 pp. [Available for \$25 from the Ent. Soc. Wash.]

This Memoir includes 31 papers contributed by a number of colleagues and friends of the late Bill Wirth to honour Bill's incredible accomplishments. Most papers are taxonomic in nature and report on members of a variety of Diptera (13 papers are on Ceratopogonidae). Also included is a catalog of all names proposed by Bill (n= 1328) and a complete inventory of his publications (more than 400!). This is a worthy remembrance of an esteemed colleague and Wayne Mathis and Bill Grogan are to be congratulated for their editorial work.

Shcherbakov, D.E., E.D. Lukashevich and V.A. Blagoderov. 1995. Triassic Diptera and initial radiation of the order. *International Journal of Dipterological Research* **6(2)**: 75-115.

Ansorge, J. 1996. Insekten aus dem oberen Lias von Grimmen (Vorpommern, Norddeutschland). *Neue Palaontologische Abhandlungen* 2:1-132, pls. 1-17.

This large comprehensive work describes the fossils found in a Jurassic (Upper Liassic) deposit in northern Germany. A number of Diptera are present (on pp. 79-105), including a number of Nematocera and Orthorhaphous Diptera (Rhagionidae and Asilomorpha).

Poole, R.W. 1996. *Nomina Insecta Nearctica*, a Check List of the Insects of North America. Volume 3: (Diptera, Lepidoptera, Siphonaptera). [\$89.95 US, Entomological Information Services (PO Box 4350, Rockville, Maryland, 20849-4350; email: eis@ix.netcom.com)]

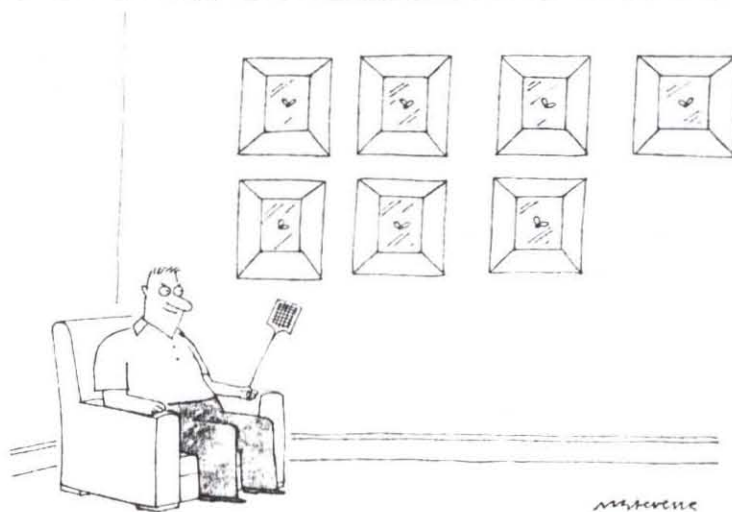
This is the first work to provide a checklist of Nearctic Diptera since "A Catalog of the Diptera of America North of Mexico" published in 1965. Each entry includes the full species name (genus and species), author, year of publication and the genus in which the species was originally described. All genera are arranged alphabetically within a given family.

Although this work should be a welcome addition to any Dipterist's library, readers are warned that there appear to be many omissions and errors in the text. A quick check of the Empididae and Chloropidae revealed the omission of a recent revision in each family; the empidid genus *Stilpon* (1992) with 9 new species and one new synonymy, and the chloropid genus *Epichlorops* (1994) with 7 new species.

Study of a number of the pages in the Ceratopogonidae section showed that valid emendations were ignored (as Poole notes in his introduction), and recently described species for which the type locality is in Central or South America but which are also distributed in North America appear to be excluded. In addition, there are scattered misspellings and a number of other names were also excluded for no apparent reason. For example, *Culicoides* was missing 5 synonyms and *Forcipomyia* was missing 7 synonyms. A spotcheck of *Dasyhelea* indicated that 5 species were missing and that one, *D. atlantis* Waugh and Wirth does not exist as a homonym (it wasn't described as a new species).

Neal Evenhuis also noted that new nomenclatural changes for extant genera made in the Fossil Diptera Catalog were missing.

As a checklist, therefore, this work appears to lack authority and clearly, review by experts would have been very helpful in correcting many of the errors. Nevertheless, Poole has gone through an extraordinary and commendable effort to provide Dipterists with a published checklist and this is certainly to be welcomed. Unpublished authoritative lists, as some of us know exist for many families, are of little use to anyone.



For those who have not yet sent in a synopsis of their interests for the **Directory of North American Dipterists**, the following form is provided. Please restrict yourselves to no more than 20 words when listing the titles of your major projects and the animals you work with.

The completed form may be faxed, emailed or sent to the following address:

Dr. J. M. Cumming,
Biological Resources Program, ECORC
Agriculture & Agri-Food Canada,
K.W. Neatby Building, C.E.F.
Ottawa, Ontario, CANADA, K1A 0C6

FAX: (613) 759-1927

Email: cummingjm@em.agr.ca

Should any of you like to expand or modify your entries from the last list, use the form to indicate the changes.

Full name: _____ **Address:** _____

_____ **Telephone Number:** _____

FAX Number: _____ **Email:** _____

Projects and taxa studied: _____
