



FLY TIMES

ISSUE 30, April 2003

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The electronic version of this issue of the *Fly Times* has moved from its previous location with the Government of Canada to a new independent website. This will allow us greater freedom in what is included and will provide an exciting venue for further information on Dipterology. Jim O'Hara, Jeff Cumming and Terry Wheeler provide more details in their article below. We will, of course, continue to provide a hard copy of the *Fly Times* to those without web access.

A variety of other Diptera links, including those to a number of newsletters restricted to a particular family will be listed on the new site, but for the present some of these links are still available at: http://res2.agr.gc.ca/ecorc/cnc/dipter_e.htm

The *Directory of North American Dipterists* is in the process of being updated and will be accessible on the new website.

Issue No. 31 of the *Fly Times* will appear next October as both hard copy (for those of you without Internet access) 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. Those of you with hard copy contributions (last possible choice) may fax, or mail your message to Art Borkent at the above listed address. All contributions for Issue No. 31 should be sent by the end of September, 2003.

NEWS

NADS Meeting in Ft. Lauderdale

by Gary J. Steck

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The North American Dipterists' Society met for an informal conference during the annual meeting of the Entomological Society of America in Ft. Lauderdale, Florida, on 19 November 2002.

The program included the following talks:

- Update on the Diptera Research Program in Washington, **F. Christian Thompson**.
- A post-Congress Diptera collecting expedition to the Australian Outback, with particular reference to the Tachinidae, **James O'Hara**.
- Demonstration of 'LucID key to world genera of Chironomidae' and discussion of development and dissemination of computer-based keys, **Peter S. Cranston**.
- Flies in the Great Smoky Mountains National Park: status of the Diptera TWIG, **Will Reeves**.
- Tephridid flies of the Great Smoky Mountains, **Gary Steck** and **Bruce Sutton**.

The next NADS meeting is being organized by Greg Dahlem (see below).

North American Dipterists' Society & Biting Fly Workshop (NADS/BFW) Joint Meeting - Hocking Hills State Park, Ohio; May 16-20, 2003

by Greg Dahlem

Department of Biological Sciences; Northern Kentucky University;
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I would like to invite you to the 2003 joint meeting of the North American Dipterists' Society and Biting Fly Workshop. You can find information about the meeting and a registration form at: www.nku.edu/~dahlem/NADS%20BFW%20Announcement.htm

Spring has finally arrived here in southern Ohio after an especially long and cold winter and the flies are beginning to buzz. The site of this year's meeting is in a beautiful area in the Appalachian foothills in southeastern Ohio. Creeks and small waterfalls wind their way through the stands of hemlock and mature hardwood deciduous forest. Sandstone cliffs provide awesome views of the surrounding natural areas.

This environment will serve as our main collecting environment, but I am also planning a day trip to some isolated remnant prairie habitat (with a brief cultural stop to view Serpent Mound). I think that you will find a great variety of microhabitats in this area to meet just about any Dipterist's collecting wishes. The meeting is planned for May 16th to 20th. In my years of collecting in southern Ohio and Kentucky, I have found the greatest diversity and number of specimens in Malaise trap samples from the last week of May to the first couple of weeks in June. The meeting may be a week early for peak collecting, but it should be very good. I scheduled the meeting for this time because it lands just before Memorial Day weekend. The parks should have fewer visitors at this time (the kids are still in school) and prices seem to go up for travel and lodging after the Memorial Day weekend. I have been working on getting some Malaise traps up and running in the area before the meetings begin, so that additional material will be on hand to give everyone a better feel for the spring diversity of the area. If anyone wants to see yellow pan trap material, I can probably get some of that trapping done as well. I am planning on bringing out some dissecting microscopes from my university for people to use at the meetings. If you need other collecting equipment (kill jars, etc.) just let me know.

While this site is within driving distance of many who live in the eastern U.S.A. and Canada, I was worried about the cost involved for those in the west. I looked up some airfares on Orbitz this weekend (www.orbitz.com) and was pleased to see that roundtrip prices from Los Angeles, Sacramento, and Oakland to Columbus, Ohio all came in under \$250 for these dates. A much lower cost than I had anticipated! If you are checking out flight costs, look at flying into Columbus, Dayton, or Cincinnati. Any of these three airports is within a couple hours drive of the meeting site. I will try to link up people who are flying in for the meetings, so that people may be able to share a rental car.

I hope that you will be able to come to this meeting. It should be a nice break from your normal routine and a time to renew friendships and meet some new people interested in the secret lives of flies. I am very interested in hearing from anyone who would like to give a 10-15 minute presentation at the meetings. I will have a projector and laptop available for PowerPoint presentations, and will bring other materials (slide projector, etc.) if anyone requests these. I will make up a program of titles and authors, so that anyone who needs this for reimbursement purposes at work will have it. Let me know if I can be of any help and I will try to answer any questions you might have. Hope to see you there!

It has been difficult finding addresses of people to send the announcement to. Please pass on this information to anyone else you think might be interested.

The Fauna Europaea Database Project

Workers in the Nearctic should be aware of this important project which is providing an electronic database providing country by country (in some cases, within country) distributions for all terrestrial and freshwater animals present in Europe. The deadline for the Diptera was March 1, 2003 and the information should be available online in the near future. Readers may also want to check out the list of recent country catalogs which have been published in Europe.

More information is available at: <http://www.faunaeur.org/>

New Website for NADS

by Jim O'Hara¹, Jeff Cumming¹ and Terry Wheeler²

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We would like to announce a new NADS website that is currently under development and will go online shortly. The site is sponsored by the Dipterology Fund and will be open to all North American dipterists for their electronic documents on Diptera, and to other dipterists from other regions who are working on the North American Diptera fauna. We hope that this site will further enhance communication among dipterists and will provide a valuable resource for persons seeking information on the Diptera of our region.

The initial content of the site will include the newsletters *Fly Times* and *Tachinid Times*, the *Directory of North American Dipterists*, catalogues of the primary types of the Canadian National Collection of Insects, Tachinidae resources, a Dipterology Fund web page with application details, information on past and upcoming NADS field meetings, and Links to off-site Diptera resources. The Links page is especially important, since the NADS site is intended to complement existing sites, such as the Washington site at www.diptera.org. With this in mind, we would be pleased to provide links to other sites with Diptera content, and would be grateful if the readership of *Fly Times* could provide URL's of suitable sites.

Please e-mail the webmaster of the NADS site, Jim O'Hara, if you are interested in posting web pages on the site. The Society is an informal one, and so too is the website. We anticipate a small committee of about three dipterists who will evaluate the content of submitted pages to ensure that they are appropriate for the site. Most welcome will be catalogues, bibliographies, taxon-based resources, newsletters, and other such web products of relatively broad interest. We will not accept revisions or other scientific manuscripts that are more properly published in a peer-reviewed hardcopy journal or e-journal. We will also respect copyright regulations.

Persons wishing to post Diptera pages on the NADS site are responsible for developing their own HTML pages. An introductory page linking to PDF content is also acceptable. The NADS site has a menu bar on the lefthand side of all pages for navigation throughout the site, but authors can use the top of their own web pages for navigation within their own pages. The site does not initially support database interactivity but this function might become available later on. Please contact Jim O'Hara for more specifics about web page design on the NADS site.

Request for material of Neotropical Neurigoninae (Dolichopodidae)

by Stefan Naglis

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I have now finished my revision of the Neotropical Neurigoninae (Dolichopodidae) which is published in five parts in *Studia Dipterologica* (Naglis 2001, 2002a, 2002b, 2003a, 2003b). This work includes 3 new tribes, 5 new genera, and 66 new species. Thus the Neotropical region becomes the most species rich region, but many more species undoubtedly will be found. Therefore, I am planning a supplement of the revision and I am looking for specimens from the Neotropics (dry material would be preferred). I would be very grateful for anyone who could provide me with specimens of that taxon.

- Naglis, St. M. (2001): Revision of the Neotropical Neurigoninae (Diptera: Dolichopodidae) I: *Coeloglutus* Aldrich, *Neotonnoiria* Robinson, and *Paracoeloglutus* Gen. Nov., with the Definition of the Tribe Coeloglutini Stat. Nov. *Studia Dipterologica* 8(1): 189-206; Halle (Saale).
- Naglis, St. M. (2002a): Revision of the Neotropical Neurigoninae (Diptera: Dolichopodidae) II: *Argentina* Parent, *Dactylomyia* Aldrich, *Macroductylomyia* Gen. Nov, and *Systemoides* Gen. Nov., with the Definition of a New Tribe Dactylomyiini. *Studia Dipterologica* 8(2): 475-504; Halle (Saale).
- Naglis, St. M. (2002b): Revision of the Neotropical Neurigoninae (Diptera: Dolichopodidae) III: *Bickelomyia* Gen. Nov., with the Definition of a New Tribe Neurigonini. *Studia Dipterologica* 9(1): 225-241; Halle (Saale).
- Naglis, St. M. (2003a): Revision of the Neotropical Neurigoninae (Diptera: Dolichopodidae) IV: *Viridigona* Gen. Nov. *Studia Dipterologica* 9(2) in Press; Halle (Saale).
- Naglis, St. M. (2003b): Revision of the Neotropical Neurigoninae (Diptera: Dolichopodidae) V: *Neurigona* Rondani. *Studia Dipterologica* 10(1) in press; Halle (Saale).

Material from French Guyana and the Comores

by Marion Kotrba
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I have collected quite a range of Diptera in French Guyana and the Comores. The material is preserved in 70% alcohol. Anyone who is particularly interested in certain families from these locations and would like to determine or describe the material, please let me know.

Another New Address and Workplace for Jeff Skevington

Jeff Skevington will be moving from the California Department of Food and Agriculture in Sacramento to a permanent position in Ottawa as a Diptera systematist at the Canadian National Collection of Insects. In August Jeff can be contacted at the following address:

Invertebrate Biodiversity
Agriculture and Agri-Food Canada
960 Carling Avenue
Ottawa, Ontario, K1A 0C6, Canada

Biodiversity Resources Development Project - The Diptera of Central America

by Art Borkent

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The organizing committee for the Diptera portion of this project met in Costa Rica at a mountain lodge called RioSPArαιο from Feb. 15-17, 2003. Our primary objection was to gauge our progress on the "Manual of Central American Diptera" and to determine what was yet needed to be done. Excellent progress has been made and as of today, 44 of the family chapters are completed and 34 are nearly complete but need either some modifications or just illustrations to be added. This leaves only 23 chapters left but these nearly all of these 23 are of very small families. The introductory chapters are either in prep. or require revision but the authors of these were all confident that they would be complete in the near future. We are very much looking forward to receiving the last remaining chapters in the next few months and project submission for publication in 2004.

NORAD and other funding agencies are interested in extending the INBio inventory project to all of Central America, in order to comply with the Rio Convention on Biodiversity, which expects every country to manage its biodiversity in a responsible fashion. Other Central American countries are obviously facing a lack of basic information regarding their biota (the so-called taxonomic impediment) and are examining the prospect of initiating surveys, training locals, supporting collection and museum facilities, etc. In this respect our Manual of Central America Diptera provides an excellent basis for supporting these goals. The Dipterists present indicated their interest in being involved in such a broader survey.

Of course, a good portion of our time was spent exploring and collecting in the pristine rainforest which surrounded the lodge. One of the side benefits at the lodge was a hot spring pool beside a room temperature river: delightful to be leaping from one to the other on one of the moon-lit nights!

The following attended the meeting: Art Borkent, Brian Brown, Guillermo Chaverri, Geoff Hancock, Mathias Jaschhof, Steve Marshall, Wayne Mathis, Manuel Solís, Graham Rotheray, Jade Savage, Chris Thompson, Norm Woodley, Grace Wood, Monty Wood, Elvia Zumbado, Manuel Zumbado.



Here's a photo our group, with an identification guide (a dichotomous key would have been too labourious):

Humbly kneeling in front: Mathias Jaschhof. *Standing, from left to right:* Steve Marshall (contemplating the nature of the universe), Graham Rotheray, Manuel Zumbado, Geoff Hancock, Jade Savage (at the upper trajectory from her trampoline), Wayne Mathis (in his "I take no guff" stance), Monty Wood, Chris Thompson (squatting for an unknown reason), Art Borkent (showing his perpetual bad hair day), Grace Wood, Manuel Solis, Brian Brown, Norm Woodley (flask not shown), Elvia Zumbado, Guillermo Chaverri.

The *Thaumatomyia notata* Problem

by Marion Kotrba
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I've had several inquiries regarding mass aggregations of *Thaumatomyia notata* (yellow swarming fly) on houses in southern Germany. On my desk is a container with more than 600,000 specimens of these flies collected in the attic and on the balcony of one single apartment.

I know this is a common and well-known phenomenon. However, I would like to understand which factors decide on which particular house the flies aggregate, and, of course, what recommendations can be given to the (sometimes quite desperate) human inhabitants of these houses. I will be thankful for any information on the biology of *Thaumatomyia notata* that goes beyond the general papers available on this topic.

The following comic is from Lynda Barry (who graciously gave us copyright permission). She has published in a variety of newspapers, including this one from the *Georgia Straight*. You can see more amusing tidbits at her website: www.marlysmagazine.com/



Although the coincidence is amazing there is no relationship between Jeff the Fly and the name of one of the coeditors here.

Yes Virginia, There Are No Black Flies In Tonga

by Doug Craig, Department of Biological Sciences,
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While visiting the Bishop Museum in 2000 and examining the unsorted pinned Simuliidae from the Pacific, I happened upon a single female black fly from Tonga. The label data was:- “Tonga: Tongatapu I: Nuku’alofa, 0-50m, I.1978. N. L. H. Krause, Coll., BISHOP MUSEUM. Acc. No. 1978.114”

Now, far be it from me to question this record, because I have followed Noel Krause around the Pacific reconfirming his collections of Simuliidae and never yet been disappointed. I admit to have been, however, a bit concerned about that record. First, it was from Nuku’alofa, the main town on Tongatapu - not an auspicious beginning. Further, no maps of Tongatapu that I could find indicated any running water. Indeed, one topographical map of the island was of a single colour, indicating that it fitted between one contour line of 100' interval. Still, that map was from the WWW and we all know how dependable that is! Quite as it turned out. Queries to those who had visited Tongatapu were not reassuring either. Most indicated that they couldn’t recall any running water and that ‘flat’ was a very good descriptor for the island.

An examination of the single female simuliid showed that it was of subgenus *Inseliellum* with characteristics of the more basal species, as in Rarotonga and widespread in the Society Islands (Craig and Joy 2000). Indeed, that Tongan specimen was used, albeit with reservations, for one scenario of colonization by *Inseliellum* from the west into Polynesia (Craig *et al.* 2001).

One way of clearing up this mystery pertaining to presence or otherwise of Simuliidae in Tonga, was go to there to try and find them. So, using the 5th International Congress of Dipterology, Brisbane, Australia, October, 2002 as a partial excuse, my wife Ruth and I visited Tonga to hunt for black flies. Well, the main island of Tongatapu was easy - there is NO running water on this almost pancake-flat island. Indeed, although it rains hard, the coral-based limestone underpinning of the island is so porous that there are no ditches, culverts or bridges anywhere on the island. The local government must save a fortune in not having to maintain such infrastructure. We observed no standing water either, although we did see Dragonflies and Damselflies. In answer to an obvious question, the local Tongans use rainwater, or pump ground water.

Transport around the island presented a few problems, The Good Samaritan Hotel rented us a vehicle that, as we discovered later, was one of the local villager’s Toyota. No paperwork at all and probably as illegal as could be. Further, we soon learned that while food and gasoline can be easily obtained up until midday Saturday, on Sunday NOTHING is open. I repeat NOTHING. Indeed, planes are even not allowed to land in Tonga on a Sunday. Churchgoing, or reading a book, is a recommended activity on that day. On other public holidays, of which there is usually one a month (oddly, typically on the 4th), many stores and other services are open in the morning, but which needs to be discovered.

In short, no simuliids on Tongatapu, or the probability vanishingly low. But, off to the east of Tongatapu, after a short plane ride is the island of `Eua (pronounced as ‘Eh-u-a’. Not a problem for

Canadians). This is a more elevated island and known to have streams. We stayed at “Eua Hideaway”, a small hotel run by Jeff Hausla and his son Taki - both Tongan, but with startlingly broad Australian accents. Both Jeff and Taki are well used to ecotourists and biologists of whale-watching ilk. We were a bit unusual wanting to muck around in streams.



Figure 1. Hafu Stream, `Eua Island, Tonga.

There are no vehicles for rental on `Eua, but there are a number of taxis that will take you just about anywhere. As it is, it is almost necessary to have a guide to get around the multitudinous rough and often overgrown trails. Hiring Taki and the Hideaway’s truck was relatively cheap (max \$70 CN/day). The first stream at Hafu Pool (Fig. 1), just up the road from the Ministry of Forestry (MAF) looked promising, but after a standard hour of searching produced no simuliids. Well, not entirely a blank since there were a large number of tipulid larvae living on the bed rock in moss and algal tubes, along with a few chironomid larvae; and on the surface of pools, gerrids and veliids to complete a rather

depauperate catch. This was a stream that should have been ideal for larvae of *Inseliellum* and if in Rarotonga or Polynesia would have yielded a good collection. At the nearby ‘sliding rocks’ of Heke Stream there were no simuliids either, albeit the site was not as suitable for them. Neither was there anything at the Vaiangana Spring. This last locality, in SE ‘Eua, in an area generally termed ‘Lakufa’anga’, was a 1.5 hr walk along an old lagoon flat above some stunning limestone cliffs with a great view of the Tongan Trench (Fig. 2). The site was a travertine spring arising directly out of a fossil coral cliff (Fig. 3). Not an ideal simuliid habitat, but such does not stop *Hebridosimulium* larvae occurring in similar water in Espirito Santos, Vanuatu.

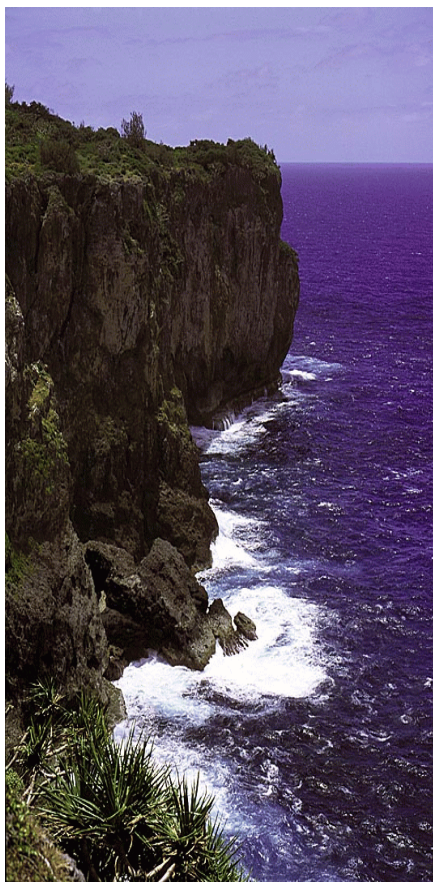


Figure 2. Tongan Trench from cliffs at Lakufa’anga, Southeastern ‘Eua, Tonga.



Figure 3. Vaiangina Spring, Lakufa’anga, Southeastern ‘Eua, Tonga.

So, although we didn’t manage to sample the stream that supplies the main village of ‘Ohonua, the probability of simuliids on ‘Eua appears also to be very low. Therefore, “Yes, Virginia there are no black flies in Tonga”, brings us back to the problem of the single specimen purportedly collected by Noel Krause in Nuko’alofa. Is that a *lapsus calami*? Neither Noel nor the Bishop Museum are noted for making such. Where was Noel before he went to Tonga? Without knowing anything else, I would have said probably Rarotonga, because the specimen appears close to *S. teruamanga* from there, although was not in good enough condition to confirm that.

Neal Evenhuis, Bishop Museum, kindly examined acquisition labels around the date Krause was in

Tonga. It appears that about then Noel went to the Solomon Islands, Samoa, Tonga, and Vanuatu - but not Rarotonga. He also visited `Eua. So, we are left with a mystery. The probability of the specimen coming from Tongatapu is essentially zero since there is no running water there. Did it come from `Eua, and Ruth and I missed finding simuliids there? That is a possibility. In our defense, however, we have found that two of us searching for an hour can turn up very sparse simuliids, as in Guam, so in the streams we did check we don't think we missed anything. Further, such tropical simuliids tend not to have seasonal cohorts, albeit we were collecting in November and Krause in January. Or, did the specimen come from somewhere else that has *Inseliellum*, but we don't know about yet, such as, for example, Fiji or Vanuatu? There is an odd sharp cutoff in distribution of *Hebridosimulium* in those islands to the west and *Inseliellum* to the east. So Virginia, are there black flies in Tonga? Highly unlikely, but maybe we need to look again.

For those of you contemplating going to `Eua, we have some advice about this little bit of paradise. Getting to `Eua must be close to the shortest plane ride in the world - 8 minutes. Or, one can take a ferry that runs daily, except Sunday. Getting off the island should be as easy, but for us was another story. Friday night on `Eua is party night and early Saturday when we went to get some gasoline, the only pumping station was closed in mourning because one young worker there had drunk himself to death. A tragedy, but no real problem for us, or so it seemed. On Saturday night we discovered, via what is termed the 'coconut telephone', that the dead man's family was going to rent the ferry on Monday to take his body over to Tongatapu for the funeral. Why would that be a problem for us?

Royal Tongan Airlines had, previously, cancelled our flight early Monday morning back to Tongatapu and from where we were flying out to Los Angeles later that night. Miss that flight and we would be stuck for four days. Ruth and I were not too worried because we would just take the ferry from `Eua early on Monday morning - no? On Sunday afternoon when we began the process to ask the family that had rented the ferry whether we could go to Tongatapu too, we found out that the ferry had already left with the body and was not coming back until Tuesday because - guess what - Monday was a Public Holiday. So how does one get off `Eua when you really have to? You hire the Water Taxi from Nuku'alofa for a flat rate of \$500Tongan (about \$420CN). Since missing the flight out to Los Angeles was going to be expensive we hired it immediately. Ruth and I then became very popular and we agreed to take a number of other people over with us. As it was, the taxi while a powerful and safe boat was not large and it had to go back to `Eua to pick up the others - not a bad day's business, since that cost them another \$500! The weather had been calm for the four days we were in `Eua and it could have been predicted that on the Monday it would not. What should have been a 3/4 hour trip turned into one twice as long and to cut a long story short, was rather interesting.

Moral of the above. Plan your escape route early and often - Tongan time rules.

Craig, D. A. and D. A. Joy. 2000. New species and some redescriptions in the central-western Pacific subgenus *Inseliellum* (Diptera: Simuliidae). *Ann. Ent. Soc. Amer.* 93:1236-1262.

Craig D. A., Currie D. C. and Joy, D. A. 2001. Geographical history of the central-western Pacific black fly subgenus *Inseliellum* (Diptera: Simuliidae: *Simulium*) based on a reconstructed phylogeny of the species, hot-spot archipelagoes, and hydrological considerations *J. Biogeography*. 28: 1101-1128.

Now, Aren't the Dutch Clever?

The following was pointed out to us by Neal Evenhuis (thanks Neal!). In an attempt to reduce misdirected use of urinals in Schiphol airport in Amsterdam, a picture of a muscid fly has been painted in each urinal. Apparently this helps the aim of a significant number of men! The following website provides photos and more details: [http://maddog.weblogs.com/stories/storyReader\\$68](http://maddog.weblogs.com/stories/storyReader$68)

Dick Foote Obituary

As we noted in *Fly Times* 28, Dick Foote passed away Feb. 9, 2002. Al Norrbom and Chris Thompson have recently published a detailed summary of Dick's incredible life in the *Proc. Ent. Soc. Wash.* 105:508-516 and *American Entomologist* 48:124-126.

Books and Publications

(with thanks to Chris Borkent for completing a literature search)

- Beckenbach, A. and A. Borkent. 2003. Molecular analysis of the biting midges (Diptera: Ceratopogonidae), based on mitochondrial cytochrome oxidase subunit 2. *Molecular Phylogenetics and Evolution* 27:21-35.
- Beuk, P.L.T. (ed.). 2002. Checklist of the Diptera of the Netherlands. ed. P.L.T. Beuk. 448 pp. KNNV Uitgeverij, Utrecht, Netherlands. 11.75 euros + postage, available as CD ROM.
- Carles-Tolrá, M. (ed.). 2002. Catálogo de los Diptera de España, Portugal y Andorra. - Boletín de la Sociedad Entomológica Aragonesa; Monografía 8.
- Chandler, P. 2002. *Heterotricha* Loew and allied genera (Diptera: Sciaroidea): Offshoots of the stem group of Mycetophilidae and/or Sciaridae? *Annales de la Societe Entomologique de France* 38:101-144.
- Lukashevich, E.D. and M.B. Mostovski. 2003. Hematophagous insects in the fossil record. *Paleontological Journal* 37:153-161. Trans. from *Paleontologicheskii Zhurnal* 2003(2):48-56.
- Meier, R. and M.A. Wiegmann. 2002. A phylogenetic analysis of Coelopidae (Diptera) based on morphological and DNA sequence data. *Molecular Phylogenetics and Evolution* 25:393-407.
- Okali, I. 2001. List of the type specimens in the collections of the Slovak National Museum - Museum of Natural History - Bratislava. X. *Zbornik Slovenskeho Narodneho Muzea Prirodne Vedy* 47:40-51.
- Yeates, D.K., D.J. Merritt and C.H. Baker. 2002. The adult ventral nerve cord as a phylogenetic character in brachyceran Diptera. *Organisms Diversity and Evolution* 2:89-96.

Submission Form for Directory of North American Dipterists

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

The information can be emailed, or the form completed and faxed or sent to the following address:

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

FAX: (613) 759-1927

Email: cummingjm@agr.gc.ca

Full name: _____ **Address:** _____

_____ **Telephone Number:** _____

FAX Number: _____ **Email:** _____

Projects and taxa studied: _____

