FLY TIMES

OCTOBER, 1993 - No. 11

As promised this issue (and only this issue) of Fly Times comes to you from the home office in Ottawa. I have endeavoured to maintain the kind of quality control our readers have come to expect from Fly Times (dot matrix printing, cut and paste layouts etc.). Enclosed with this issue is an updated **Directory of North American Dipterists** prepared by Brian Brown and myself. Corrections and further updates to the directory can be submitted to the editors by filling out the last page of this newsletter. In addition, we have enclosed the second annoucement for the **Third International Congress of Dipterology** to be held at University of Guelph, Guelph, Ontario, Canada, August 15-19, 1994. This annoucement includes details of the program, social activities and other arrangements, plus your registration and abstract forms.

Please note that the next issue (for April, 1994) will again be put together by Art Borkent and all contributions should be sent directly to him by March 31 at the following address:

Dr. Art Borkent,
2330 - 70 St. SE,
Salmon Arm, British Columbia
V1E 4M3, Canada.

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NEWS

Tipulidae collected in eastern Texas, May 1993, by George Byers in connection with the third field meeting of NADS held at the Piney Woods Conservation Center, near Broaddus, Texas.

Brachypremna dispellens (Walker)
Dicranoptycha winnemana Alexander
Hexatoma (Eriocera) breviorcornis Alexander
Limonia (Dicranomyia) liberta (Osten Sacken)
Limonia (Dicranomyia) sp. (near brevivena)
Molophilus (Molophilus) forcipulus (Osten Sacken)
Pilaria sp. (near recondita)
Pseudolimnophila australina Alexander
Tipula (Triplicitipula) perlongipes Johnson

Report on the NADS Field Meeting held at th Piney Woods Conservation Center near Lufkin, Texas, May 14-16, 1993

Another successful field meeting was held in May by the North American Dipterists Society. The meeting was well attended, including 26 Dipterists plus family members and 2 switch-hitters (Rob Roughley and Bob Wharton). The facilities provided by the Conservation Center were first rate. Among the highlights (not necessarily in any order) were fly collecting, fly talk, beer, rattlesnakes, and an ice cream bar with multiple flavors produced locally with the cream supplied by hundreds of Jersey cows.

The purpose for holding these semi-annual meetings is to facilitate communication among Dipterists in locations with habitats of biological interest. The participants were students, a second third were intermediate, and the final third was composed of dipterists with more than 15 years experience.

The deep piney woods of Texas provided a wealth of habitat types for collecting including pitcher plant communities, riparian zones, oak and long leaf pine, beech, and magnolia forests. Once again, while the collecting for some individuals was marginal (Brown and Thompson, pers. comm.), others appeared quite happy with their newly acquired collections (aquatic types). It was decided that a list of taxa would be prepared to assist the park service with management decisions and also to provide information useful for future collecting. Given that few organizations are able to accommodate groups of this size in areas with access to good habitat a list will also be useful to future organizers of the field meetings for decisions relating to site selection. Participants should send taxonomic information and locality data to me at the address listed below.

The program was organized so that time was maximized for collecting. Sessions at this years conference were held during the late afternoon and evenings. Eleven papers were presented over the three day conference. The talks covered a wide range of topics from revisionary and cladistic studies to investigations of biodiversity and aquatic community structure. Many individuals were overheard to comment on the high quality of the individual presentations and the talks stimulated a large amount of discussion among participants. The papers were:

A Travel Log from New Caledonia - Don Webb
Monophyly and Relationships of Phoniomyia (Diptera: Culicidae) - Darlene Judd
Systematics of Pterogramma (Sphaeroceridae) - Ian Smith
North American Phasia (Tachinidae) - Xuekui Sun
Systematics and Natural History of Big-headed Flies - Jeff Skevington
Biodiversity Studies of Ant Associated Phorids in Peru - Brian Brown
B.S. from Washington, D.C. - F. Chris Thompson
Whirlwind Tour of Texas Flies - Riley Nelson
Fernandezian Flies - Steve Marshall
Aquatic Diptera in Bamboo Internodes in Peru - Jon Gelhaus
Our Next NADS Meeting Locality - Monty Wood

The final presentation of the meeting was given by Monty Wood who will host the NADS 1995 Field Meeting in Costa Rica. Housing and laboratory space are available on site and the land tract is adjacent to Costa Rican national park land. Monty promises good collecting, so plan to attend. Look for a future announcement in the next issue of Fly Times.

Darlene D. Judd
Dept. of Entomology, NHB 168
Smithsonian Institution, Washington, DC 20560

Sharon Jasper, a water beetle specialist at Texas A&M University, submitted the following offer of material:

> For my dissertation, I have collected macroinvertebrates from a variety of habitats in Texas, east of the Colorado River, including many aquatic dipteran larvae. If you are interested in seeing what I have collected in any taxon, I will send the specimens to you in return for their identification. You may keep most of them, as I only need voucher specimens. If interested, please write to Sharon Knight Jasper, Texas A&M University, Department of Biology, College Station, TX 77843-3258 or call (409)845-0457.

Flash from a University of Texas class, sent by C. Riley Nelson:

For the final in my entomology class last year I gave the following question and got the following response.

Question 49. Ogden Nash wrote, "God in his wisdom made the fly. And then forgot to tell us why." Remember for God and tell me why are flies. Wax poetic and discuss the ecological implications and interactions. Tough essay. 20 points!!

Answer by Heather Gregory:

Why would God create the fly?
It seems only to bother you and I . . .
So much money spent on Culicidae,
Of vectored disease we may never be free.
So much diversity, but so much harm
Lurking around the dairy farm.
Oestrids fly from cow to cow
Making fist-sized warbles now.
Tabanids buzz around the horses
Sucking blood for their main courses.
Calliphorid larvae, screwworms they're called
Munching flesh that's rotting and mauled.
Tachinids with their bristly butts
And others slurping blood from cuts.
But what about the robber flies?
Seeking insects with greedy eyes.
And Muscidae larva, although detested,
Eat all the garbage we've rejected
A lot's been said, a lot has not: why make the fly? Well . . . why not.

DIPTERA OF THE GALÁPAGOS ARCHIPELAGO (ECUADOR)

Bradley Sinclair

The study of the Galápagos insects commenced with the first collections of Charles Darwin in 1835. His collections included several Diptera, specifically a bombylliid, syrphid, tephritid, muscid, calliphorid, two sarcophagids, and a hippoboscid (Walker 1849, Diptera of the British Museum). Since that time there have been many individuals and expeditions collecting insects in the Galápagos, which resulted in an extensive checklist by Linsley and Usinger (1966 Occas. Papers Calif. Acad. Sci. No.125) and a later supplement by Linsley (1977, Proc. Calif. Acad. Sci. 33:113-196). Dr. Stewart Peck (Carleton University - Ottawa) started compiling an inventory of the arthropods of the Galápagos Islands in 1985 in order to increase our knowledge of this group up to the level currently understood for plants and vertebrates. When I stated my Ph.D. at carleton in 1988, Dr. Peck invited me to participate in the Galápagos project. In early 1989, I accompanied Stewart for three months of field work on the islands and my primary role was to collect Diptera.

The Galápagos Islands are located 800-1000km west of the Ecuadorian coast, astride the Equator. There is no evidence of past connection with the mainland and consequently all insects arrived either through wind or water dispersal, or were introduced by humans. There are 45 named islands, islets, and rocks and 87% of the land mass is protected as a National Park; however, there is presently a great deal of pressure on the wildlife due to the tremendous number of tourists (approx. 30,000/year).

A summary of the Galápagos Diptera fauna is presented in Table 1. Currently 46 families are recorded from the Archipelago, consisting of approx. 237 species. Of the total species, 112 are believed to be endemic, 100 native or known from South America and 22 introduced species. There are tentatively only a few examples of species swarms or evolution of several species from a single colonization event [e.g. Otitidae: Euxesta (7 spp.), Pareuxesta (6 spp.) and Canacidae: Nocticanace (8 spp.)]. However, the status of the species involved must be updated and phylogenetic relationships proposed before any conclusions can be made. In a recent analysis of the Ceratopogonidae, Art Borkent (1991, Ent. Scand. 22:97-122) suggested that each endemic species was the result of a single colonization event, with its sister species on the mainland.

A more detailed checklist, including species, habitat preference, and island distribution is gradually being compiled and would not be possible without the cooperation of more than 20 dipterists. In Table 2, the current knowledge of the Diptera fauna is analysed and compared to the lists of Linsley and Usinger (1966) and Linsley (1977). As a result of extensive and diverse collecting methods first initiated by Stewart Peck, a much better estimate of the diversity of the dipteran fauna can now be estimated. Approximately 47% of the species are endemic, which is similar to the endemism in the plants (Jackson 1985, Galápagos. A Natural History Guide). These values are low compared to the Hawaiian Islands (+85%), but are not unexpected, since the Galápagos Islands are closer to the mainland, and much drier, with the upper wet zones only formed in the past 10,000 years.

The Diptera fauna are generally restricted to three biotic zones: littoral, dry, and wet. The Littoral zone includes approx. 37 restricted species (Table 3). The two species of Stratiomyidae were reared from larvae collected from leaf litter beneath mats of the salt tolerant plant, Sesuvium. In addition, a specimen of Galapagomyia inoa (Sarcophagidae) was reared from a puparium collected from an exposed egg of an East Pacific Green sea turtle.

The flora of the Dry zone was dominated by Jasminocereus, Opuntia, and Acacia. More than 15 species of Diptera are restricted to this zone, with many reared from rotting cacti.

My experiences on the Galápagos were very rewarding, especially with the opportunity to explore habitats rarely encountered by tourists (e.g. lava tubes, active fumaroles). Since the last list of Linsley (1977), 15 families of Diptera have been newly recorded from the Archipelago, probably due to increased human introductions. I predict that an additional 40-50 species will be added to the current total as the new collections are worked up by specialists.

Table 1. A summary of the Diptera of the Galápagos Archipelago.

Family	Genera		Species			
	Total	Endemic	Total	Introduced	Native	Endemic
Tipulidae	2		3		2	1
Mycetophilidae	?		?			
Sciaridae	?		?			
Cecidomyiidae	?		?			
Psychodidae	?		?			
Scatopsidae	?		?			
Culicidae	2		2	1	1	
Simuliidae	1		1	1		
Chironomidae	4		6		2(?)	1(?)
Ceratopogonidae	3		11	2	5	4
Tabanidae	1		1			1
Stratiomyidae	4		5(?)		1(?)	4
Bombyliidae	6		7	1	3(?)	3
Scenopinidae	1		1			1
Asilidae	2		2			2(?)
Empididae	4		6			6(?)
Dolichopodidae	9		15		4	11
Phoridae	4		4		4	
Syrphidae	7		10(?)		6	4(?)
Pipunculidae	2		2			2(?)
Lonchaeidae	1		1		1(?)	
Otitidae	5		19		5	14
Tephritidae	5		7	1		6
Piophilidae	1		1	1		
Odinidae	1		1			1
Agromyzidae	5		5		5	
Anthomyzidae	1		1		1(?)	
Stenomicridae	1		1			1(?)
Asteiidae	2		3			3
Milichiidae	3		5	3	1(?)	1(?)
Carnidae	1		1		1(?)	
Sepsidae	1		1		1(?)	
Trixoscelididae	1		1			1
Chyromyidae	1		3			3
Sphaeroceridae	4		7	1	5	1
Drosophilidae	3		15	1(?)	12	2
Ephydridae	12		16	1	10(?)	5(?)
Chloropidae	8		11		4	7
Tethinidae	1		2			2(?)
Canacidae	4		12		2	10
Muscidae	12		13	5	7	1
Calliphoridae	3		6	3(?)	1	2
Sarcophagidae	11	4	14	1	6(?)	7
Tachinidae	5	1	6		2	4(?)
Hippoboscidae	4		8		7	1
Nycteribiidae	1		1		1	
Total 46	**149(?)**	**5**	**237**	**22(?)**	**100(?)**	**112(?)**

Table 2. Statistics on the Diversity of Diptera of the Galápagos Archipelago.

Year	Families	Genera	Species	Genera per Family	Species per Genus	Species per Family	% Endemism
1977	31	101	157	3.3	1.6	5.1	52.2
1993	46	149	237	3.2	1.6	5.2	47.0

Table 3. List of Diptera restricted to the Littoral zone of the Galápagos Archipelago.

Family	Species
Culicidae	Aedes taeniorhynchus (Wiedemann)
Chironomidae	Thalassomya (2 species)
	Clunio schmitti Stone & Wirth
Ceratopogonidae	Dasyhelea (2 species)
Tabanidae	Tabanus vittiger Thomson
Stratiomyidae	Nemotelus albiventris Thomson
	Brachycara digitata James
Empididae	Chersodromia (2 species)
Dolichopodidae	Asyndetus (5 species)
	Cynatopus setosus (Curran)
Syrphidae	Palpada sp.
Chyromyidae	Aphaniosoma (3 species)
Ephydridae	Lipochaeta slossonae Coquillett
Tethinidae	Tethina (2 species)
Canacidae	Canace snodgrassi Coquillett
	Canaceoides angulatus Wirth
	Nocticanace (8 species)
	Paracanace (2 species)
Sarcophagidae	Galapagomyia inoa (Walker)

On the track of unknown tachinids in Arizona and New Mexico

by Jim O'Hara

"You want to collect in Arizona again?" asked an incredulous colleague. "How many times has it been already?" he continued. Well, so what if I find the American Southwest awesomely beautiful and want to collect there again for the fifth time. I am not widely travelled on a world scale but I have driven through or collected in most provinces of Canada and about 40 states in the United States. I can with a clear conscience cite the American Southwest as the hotbed of tachinid diversity in the Americas north of Mexico. Particularly in Arizona and New Mexico are to be found Neotropical elements from Mexico, boreal elements from the north, unusual records of predominantly eastern or western species, and a healthy quantity of endemics. Add geographic, floristic and climatic diversity, and decade-long cycles of rarity/abundance, and one can only hope to scratch the surface of tachinid diversity on any one trip. Of course, these explanations did not impress my colleague, who has never been to the Southwest.

My trip was planned to coincide with the late summer rains of the Southwest, a time when insect activity is heightened and tachinid collecting is usually very good. I set forth from Ottawa on 8 August 1993 in a Government Caravan, loaded with appropriate collecting equipment and camping gear for a 25-day, 12,000km trip to Arizona and back. (I keep hoping for a four-wheel drive vehicle with air-conditioning, but Agriculture Canada does not have the back roads of Arizona in mind when it purchases automobiles.)

On August 11th I reached my first collecting site, the Fourth of July campsite in the Manzano Mtns. southeast of Albuquerque. I decided to start off with a collecting method recommended by Monty Wood, in which a mixture of honey, fresh cola and water is sprayed on sunlit leaves. The effect was astonishing! Tachinids of all sorts descended on a couple of patches of bigtooth maple I had sprayed and kept me so busy that I was torn between tending these patches and searching for other interesting places to collect in the area. After awhile the common species could be ignored, but even after two days of repeatedly spraying the same leaves there were still some species that yielded only a specimen or two. I also discovered that the response to sprayed areas is quite varied, such that certain plants and certain locations work better than others. Later in the trip I sometimes found that sugaring was completely and inexplicably ineffective. After two days at the Fourth of July campground I had nearly filled a Schmidt box, mostly with tachinids. Unfortunately, I came close to repeating this success at only one other site (Pinal Mtns. in Arizona) and completed the trip with an about-average catch of 3⅓ Schmidt boxes of pinned specimens.

I had arranged to visit with Newel Jorgensen (Eastern New Mexico University, Portales) on August 13th, so I spent the morning of that day "hilltopping" in a small mountain range west of Corona, New Mexico. I entered the range from the north and soon spotted a suitable hilltop. During one of my stops for a breather on the way up I became conscious of the fact that I was not used to such strenuous exertion, and wondered if my heart could take it. I reassured myself with the thought that if all went well on this climb then I would probably be okay on other hilltops later on. The hill, at about 6700', was sparsely clothed in juniper and pinyon pine. Collecting at the top yielded little of interest except a couple of bot flies (*Cuterebra austeni*) and a single specimen of *Euthera* sp., a rare tachinid with wings patterned like those of a deer fly.

I spent a couple of days in Portales with Newel and wife Ilsa, setting up Malaise traps (kindly supplied and tended by Newel for the duration of my trip), collecting near Kenna at the type locality of a species I had named *Frontiniella jorgenseni*, and discussing good places to collect tachinids in New Mexico. Newel brought to my attention "The Roads of New Mexico" (1990, Shearer Publishing), which shows every dirt track and highway in New

Mexico at a scale of about 3 miles per inch.

Early on August 15th I headed off again. First stop was Bluff Springs south of Cloudcroft in the Sacramento Mtns., which I could not have found without "The Roads of New Mexico". I took some flies at the mouth of the spring, but saw no tachinids. Dick Vockeroth later identified a scathophagid I collected from this locality as *Acanthocnema ruficauda*, known previously from 1 specimen in the CNC and 2 in the USNM. I continued on to Cherry Creek campground in the Gila Mtns. north of Silver City. I had camped at this site three times in the past and had collected more undescribed and rare tachinids there than anywhere else. I do not know why. This time tachinids were less abundant, but nevertheless yielded the first United States record of a small tachinid, *Siphona futilis* (not known previously from north of Durango, Mexico). From my Malaise traps at Cherry Creek I extracted a rare tabanid, *Bolbodimyia atrata* (identified by Bruce Cooper) and 2 females of *Paradmontia picticornis*, a tachinid hitherto known only from the type (♀) and 1♀ I had taken at Cherry Creek on a previous trip. Blacklighting attracted 1 *Muscopteryx* sp. (Tachinidae) that is unusual in possessing patterned wings; the CNC has no other specimens of this apparently undescribed species.

I left Cherry Creek on August 17th and headed for Portal, in the Chiricahua Mtns. of Arizona. Collecting was poor so I pushed on to a desert site I have visited before, south of Safford at the foot of the Pinaleno Mtns. The site is on Hwy 366, in an area dominated by mesquite and acacia. Ground cover is a mixture of xeric plants and spent handgun, rifle and shotgun shells. This is the type locality of a species I named *Frontiniella incarcerata*, a name inspired by the site's proximity to a federal prison. In the past I had not had very good net-collecting during the day but had caught a high diversity of insects in Malaise traps. So this trip I set up two Malaise traps and returned to the site every few days to empty the traps. I also blacklighted there, using spent shotgun shells to mark a path between my Caravan (in which I usually slept) and my blacklight equipment. I was still a novice at blacklighting and was quite impressed by the size and diversity of the insects that were attracted to the sheet in this desert location. It was probably just as well that I was blacklighting alone because I would make a fool of myself whenever innocuous creatures like giant scarabs landed on my skin (particularly the back of my neck), for I invariably assumed that I would be bitten, pierced or stung by something vicious unless I (over)reacted with all possible speed. Two rare tachinids were taken at blacklight at this desert location (*Muscopteryx chaetosula* and *Zaira* sp. nr. *nocturalis*).

Not far from my desert site is a conical hill a couple of hundred feet high (3.5 miles along Hwy 366 from Hwy 191 [changed recently from Hwy 666!]). Called Cyclone Hill, this hill can be climbed in less than 15 minutes and was very productive for hilltopping. I collected at the top 3 times during my trip, once in the afternoon and twice in the morning. Little was caught during the afternoon, and the heat was intense. In contrast, morning collecting was superb, though "sugaring" did not work. I reached the top the first morning at 0730 and the second morning at 0800, and both times the hilltop was buzzing with activity. *Cuterebra austeni* males were everywhere, darting across the hilltop like miniature jet fighters. I collected 12 in all, and could have taken more if I had concentrated on them. Also hilltopping were males of *Mydas* sp., which I took to be a common pepsid wasp at first. On both mornings, hilltopping activity dropped off considerably before 0930.

I hilltopped on only one other occasion, a high hilltop directly north of Safford in the front range of the Gila Mtns. Immediately upon attaining the top I was beset with no-see-ums (*Culicoides* sp.), the only time I encountered these on my trip. There was little other insect activity, the rocky substrate was difficult to move about on, and heavy rain seemed imminent. The only interesting catch was an acrocerid, *Pterodontia* sp., a genus for which the CNC had no specimens from south of Washington and Michigan.

I spent half a day hiking through Ramsey Canyon in the Huachuca Mtns., but the sky was overcast and few tachinids were seen. Ramsey Canyon is owned and operated by the Nature

Conservancy, and permission to collect there must be arranged prior to arrival. The fauna has a distinctly Neotropical element that is equalled in only a few of southern Arizona's canyons. My only interesting catch was a pitch black tachinid with the wonderful name of *Penthosia satanica*. I camped for the night in Carr Canyon south of Ramsey Canyon, where I blacklighted with little success (no tachinids, several beautiful but common green and gold *Plusiotus* scarab beetles, and 1 moth identified by Don Lafontaine as an exceedingly rare noctuid, *Chrysoecia scira* [1 of only 3 moths I bothered to collect on my trip!]). I had hoped to return to Ramsey Canyon later in the trip but changed my mind when a particularly bad weather system moved into the region.

Next was a quick stop at Sycamore Canyon northeast of Nogales to set up a Malaise trap, then on to Tucson. There I had the pleasure of staying with Dave Maddison and family for a couple of days. Dave is a coleopterist with the University of Arizona, and a friend from my days as a graduate student at the University of Alberta. We decided to spent one evening blacklighting in Madera Canyon in the Santa Rita Mountains. Blacklighting there is generally exceptionally good, I am told. Dave had his reservations about going there with me, for he said I am cursed. Fate had been cruelly unfair to us when we had once travelled together on a two-day collecting trip into Saskatchewan. Not only had the weather been bad and collecting worse, but valuable collecting time was lost when Dave discovered a decomposing *Homo sapiens* on a mudflat and the Royal Canadian Mounted Police had to be summoned. Our collecting in Madera Canyon did little to improve Dave's opinion of me as a collecting partner. Virtually nothing flew to our lights in Madera Canyon so we packed up and tried another site near the base of the mountains. Collecting there was equally poor except for the capture of 1 *Ormia*, a rare, yellow, nocturnal tachinid that parasitizes crickets (1 of only 2 collected on my trip).

I returned to Safford for a day then drove to the Pinal Mtns. south of Globe. I went to Pinal Peak, camping there at about ca. 7500'. The vegetation is distinctly temperate at that elevation. Blacklighting was a failure, but the next morning "sugaring" on oak leaves attracted hordes of flies. Among the tachinids was 1♂ of an undescribed species of *Siphona s.l.* that I have not seen before.

It was now August 24th and I had until September 1st to reach Newel Jorgensen's in Portales. Unfortunately, the weather took a turn for the worse and I had few sunny skies for the rest of the trip. Over the next few days I retrieved my Malaise traps from Sycamore Canyon and from near Safford, then headed through the Gila Mountains, went east to Socorro, and ended up back in the Manzano Mtns. where my trip had begun. I was hoping to match the excellent collecting of my earlier visit but bad weather persisted. Nevertheless I set up Malaise traps in New Canyon and Red Canyon and tried to collect again at the Fourth of July campground in Tajique Canyon. The total number of interesting tachinid species from the Manzano Mtns. was not realized until I had examined the pinned and Malaise-trapped specimens in Ottawa. Some were directly relevant to my current revisionary study (6 specimens of an undescribed *Lydina* sp. known previously from a single specimen from Arizona, the first male of *Paradmontia picticornis*, and 1♂&1♀ of *Dichocera lyrata*) and others were interesting finds (1♂ of an undescribed *Siphona s.l.* species that I have not seen before, several ♂♂ and the first ♀♀ of a rare and undescribed *Siphona s.l.* species, 1♀ of an undescribed *Siphona* (subgenus *Pseudosiphona*) sp., and 1♂ of *Actia autumnalis* not known previously from west of Tennessee).

On my last day of collecting I had a flat tire at the top of a mountain and became horribly stuck in mud at the bottom, but was still able to rendezvous with Newel Jorgensen the next day. Three days later I was back in Ottawa.

I am now more convinced than ever that each trip to the American Southwest will be rewarded with species not hitherto taken, or taken but rarely. For me, the place to go is still the Southwest, and I am eager to return once again.

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A further chemical alternative to critical-point-drying for preparing small (or large) flies.

Previously, I wrote about the use of Peldri II as a chemical alternative to critical-point-drying (CPD) (Brown, 1990). Using Peldri II for specimen preparation has the advantage of not requiring expensive equipment and huge cannisters of CO_2, but the chemical is somewhat expensive and requires some equipment, i.e. a hot plate.

Recently I came across a material that seems to overcome all the drawbacks of Peldri II. This chemical, called hexamethyldisilazane (HMDS) is readily available and cheap, costing $18.00/250g, versus $58.00/250g for Peldri II. No heating or cooling is needed for using HMDS: one merely dehydrates specimens to 100% alcohol, then do two soaks of ½ hour in pure HMDS (i.e. change the HMDS once). I use small vials for the soaks. After the second soaking, I pour the HMDS and flies into shallow depressions or small dishes, and allow the liquid to evaporate under a fume hood. Specimens come out exactly like CPD-prepared specimens, ready for SEM or for general mounting for the collection. Other users agree, finding that HMDS is just as or more effective than CPD for producing perfect specimens of various tissues (Adams et al., 1987; Nation, 1983). Note for larger samples (for instance, 50 small flies at once), I recommend an extra change of HMDS.

HMDS is available from Polysciences, Inc., 400 Valley Road, Warrington, PA, 18976-2590, USA, 1-800-523-2575.

Brian V. Brown

Adams, J.L., Battjes, C.J., & Buthala, D.A. (1987) Biological specimen preparation for SEM by a method other than critical point drying. *Proceedings of the 45th Annual Meeting of the Electron Microscopy Society of America* (ed. by G.W. Bailey). San Francisco Press, San Francisco.

Brown, B.V. (1990) Using Peldri II as an alternative to critical point drying for small flies. *Fly Times*, **4**, 6.

Nation, J.L. (1983) A new method using hexamethyldisilazane for preparation of soft insect tissues for scanning electron microscopy. *Stain Technology*, **58**, 347-351.

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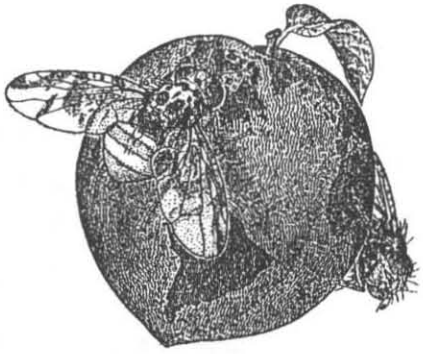
Report on Biosystematic Database of World Diptera



September 15, 1993

The World Diptera Database continues to grow in size. The past two years has seen the completion of data entry for family- group names (4,296 records) and about 95% of the genus-groups names (17,271 records). The family-group names are from the long-term study by Dr. Curtis W. Sabrosky, who has now completed his catalog of them. Dr. Sabrosky's *opus* should be published shortly (mid-1994). All the genus-group names in the various regional Diptera catalogs have now been entered into the database, and the database is now being checked against Neave (*Nomenclator Zoologicus*). By the end of this year, all the genus-group names will have been entered and the data will be ready for review by interested specialists.

Some auxilliary data files have also been built. A file of all type-species designations in various primary sources, such as French encylopediae, Coquillett (1910), Westwood (1840), etc. (see Evenhuis & Thompson (1990, *Bishop Mus. Occas. Pprs* 30: 226- 258))) for details) now contains over 2,500 designations, including many valid designations that are earlier than the currently recognized ones.

While species-group names are not been actively captured at the moment, more than 45,994 are in the database. A systematic database of those names associated with the genus *Musca* will be published this fall (Thompson & Pont). The *Systematic Database of Nearctic Diptera* has reached its final stages, with page proofs to be distributed this Winter and final publication expected in late 1994. The first fascicle of the *Biosystematic database of World Diptera* will cover fruit flies (Tephritidae) and is now being reviewed by specialists.

Resource Directory for Diptera Systematics database now contains address records for some 1,825 workers. Some 1,150 specialists also provided information on their interests (1,890 records). The first printing has now been distributed to key dipterists worldwide. An second enlarged printing for general distribution is planned for this Winter.

The *Biosystematic Database of World Diptera* project is sponsored by the Systematic Entomology Laboratory (**SEL**), Plant Sciences Institute, Beltsville Agricultural Research Center, Agricultural Research and Education Service, United States Department of Agriculture. The project is part of the laboratory's *Biosystematic Information on Terrestrial Arthropoda* (**BIOTA**) program.

MAGGOTEERS ON THE MARCH

Rob Cannings has finished his studies at the University of Guelph and has returned to the Royal British Columbia Museum in Victoria, B.C.

Doug Currie has accepted a full time position at the Royal Ontario Museum in Toronto.

Stephen Gaimari has relocated from Washington State University to the University of Illinois at Urbana - Champaign.

Fiona Hunter is now fully ensconced as a faculty member at Brock University in St. Catharines, Ontario.

Darlene Judd, who continues to peregrinate between Texas A&M University and Washington, D.C., is now back at the Smithsonian on a predoctoral fellowship.

Marion Kotrba is at the University of Maryland on a visiting postdoctoral fellowship from Germany.

Brad Sinclair has broken free of Ottawa and is off to the Australian Museum in Sydney, Australia on a two year postdoctoral fellowship.

John Swann has just started his Ph.D at the Royal Ontario Museum in Toronto.

Terry Wheeler is back at the University of Guelph after a two year stint in Ottawa.

David Yeates has left the American Museum of Natural History to return to Australia, where he is currently working at CSIRO in Canberra.

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Notice

A few copies of the *Proceedings of the Second International Congress of Dipterology* held in Bratislava, Czechoslovakia, August 27 - September 1, 1990, are available for sale by the Council for the International Congresses of Dipterology. The list price of the volume is $82.00 US. The Council is selling it for $70 US. Send orders to F. Christian Thompson, Systematic Entomology Lab., USDA, NHB-168 Smithsonian Institution, Washington, D. C. 20560. Payment in US dollars with checks drawn on US Banks.

1993 Entomological Society of America Meeting

Indianapolis, IN
December 12-16, 1993

Informal Conference
North American Dipterists' Society

Room 203
Organizer and Moderator:
D.W. Webb
Center for Biodiversity
Illinois Natural History Survey
Champaign, IL 61820

Tuesday, December 14, 1993

7:00 PM **Introduction.**
D. W. Webb

7:15 PM **The Diptera of New Caledonia.**
D. W. Webb, Center for Biodiversity, Illinois Natural History Survey, Champaign, IL 61820

7:35 PM **Juan fernandez Islands (CHILE): Isla Robinson Crusoe, Alejandro Selkirk Isla, Isla Santa Clara.**
S. A. Marshall, Department of Environmental Biology, University of Guelph, Guelph, Ontario, CANADA N1G 2W1

7:55 PM **Shore flies of the Belizean Cays (Diptera: Ephydridae).**
W. N. Mathis, Department of Entomology, NHR 169, Smithsonian Institution, Washington, DC 20560

8:15 PM **A preliminary phylogenetic analysis for the *Culex* of the world.**
Varuni Mallampalli. Department of Entomology, University of Maryland at College Park, College Park, MD 20742.

8:30 PM **Notes on a fossil conopid fly.**
Sidney Camras. Field Museum of Natural History, Chicago, IL 60605.

8:45 PM **Business Meeting.**

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 sent to Jeff Cumming at the following address:

Dr. J. M. Cumming,
Centre for Land and Biological
Resources Research,
Agriculture Canada,
K.W. Neatby Building,
Ottawa, Ontario,
K1A 0C6, Canada.

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

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Full name:_____
Address:_____
_____
_____

Telephone Number:_____
FAX Number:_____
BITNET:_____

Projects and taxa studied:_____
_____
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