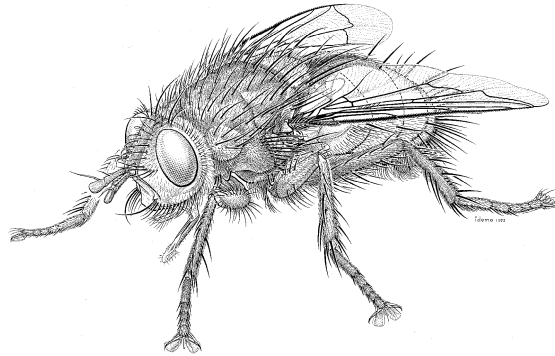


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This issue marks the fifteenth year of **The Tachinid Times**, a milestone I could not have envisioned when I started the newsletter as a graduate student in 1988. I thank all of you who contribute to the newsletter and those of you who tell me that you like to receive it, for without your support **The Tachinid Times** would not still be in distribution.

This year **The Tachinid Times** is again produced as an Acrobat® PDF file for the benefit of those who might want to download and/or print the newsletter from the Internet. Later this spring I hope to offer all back issues as PDF files on the newsletter's homepage at <http://res2.agr.ca/ecorc/isbi/tachinid/times/index.htm>. I do not have text versions of issues 1 to 4 so the contents of those issues will be scanned as images, but all subsequent issues will be produced from text files. Both types of files will look similar, but the text of the latter will be searchable using the "Find" feature under "Edit" on the Acrobat Reader® menu bar.

As always, I encourage all readers who work with tachinids and find this newsletter of interest to send me a note about his/her research for inclusion in next year's issue. Student submissions are particularly welcome, especially abstracts from theses (two of which are included in this issue). Submissions on all aspects of tachinid biology and systematics are gladly accepted but please keep in mind that this is not a peer-reviewed journal and is mainly intended for shorter news items that are of special interest to persons involved in tachinid research. Colour images are easily incorporated into the newsletter so I encourage contributors to send images in accompaniment to their text whenever possible (please send images and text as separate files).

Please send me your news for inclusion in next year's

newsletter before the end of January 2003. This newsletter appears first in hardcopy and then on the Internet some weeks later.

Some characteristics of New Zealand Tachinidae (by J.S. Dugdale)

New Zealand Tachinidae show the following features:

1. Representation "unbalanced": One subfamily (Dexiinae or Proseninae of some authors) is absent. What is a dominant subfamily in many other faunas (Exoristinae) is reduced to one genus (*Pales*) in NZ. The subfamily Tachininae dominates in NZ, with about 158 species (about 83% of the endemic fauna) and these are in genera currently regarded as endemic.

2. Endemism over 90% at generic and specific levels: There is a very high degree of species/genus endemism. Only two species are adventive (see list below). Only one species is shared with Australia (*Chaetophthalma bicolor*), a recently arrived species characteristic of urban and intensive farming sites. None are naturally shared with Australia (i.e., collected between 1769 and 1850 before the zenith of European colonisation). With the exception of *Pales* species (Exoristinae) and *Phasia* (Phasiinae) (two Old World genera), the other 160+ endemic species are placed in 56 described or undescribed endemic genera. However, as morphological interpretation improves, there is the likelihood that more shared genera will be revealed, particularly in the Phasiinae.

3. Relationships with Australia and South America: In his evaluation of relationships of Australian and NZ Tachinidae, Roger Crosskey (1973: 6) stated: "Between Australia and New Zealand there is almost no relationship at all in the tachinid fauna, that of New Zealand being a

baffling and peculiar fauna very different from that of the rest of the Old World; the only notable point of resemblance is in the Phasiini [a tribe of Phasiinae]" (my emphasis).

Cortés (1983: 419) recognized the South American tribe Trichoprosopini as the sister group to the NZ tribe Occisorini (Dugdale, 1969), but there is some doubt about the validity of this association. An earlier possible relationship, between NZ *Calcageria* and South American *Opsophagus* (Aldrich 1934) has not been upheld (Cortés, 1983).

4. Most of NZ fauna characteristic of non-forested areas:

I tried to grade our species based on literature and specimens in NZAC (New Zealand Arthropod Collection). Some species inhabit more than one zone. The results are:

- Forest¹: 25% of fauna (47 species)
- Forest and Shrub-grassland²: 14% (26 species)
- Shrub-grassland: 28% (53 species)
- Shrub-grassland and Alpine³: 5% (10 species)
- Alpine: 26% (50 species)

¹ forest-dwelling, including swamps in forests;

² shrublands and grasslands up to, but not including, the alpine zone;

³ alpine zone (above tree-line), including "subalpine scrub."

By far the greater number of species and genera are found in shrub-grassland and alpine zones (103 species) rather than in forest and forest/shrub-grassland (73 species). Some genera (e.g., *Calosia*, *Perrissinoides* and their coleopterous wood-boring hosts) are restricted to forests. The proliferation in shrub/grassland areas mirrors the proliferation in the same areas by various lepidopterous groups (Patrick & Dugdale, 2000).

5: NZ tachinids have unusual hosts: Elsewhere, the Dexiinae dominate as parasitoids of larval Coleoptera (Crosskey, 1973: 6, 41). NZ lacks Dexiinae, but within the dominant Tachininae the tribes Occisorini (especially the small-eyed genera including *Proscissio*, *Erythronychia*, and *Pygocalcager*) parasitise Scarabaeidae larvae. Other more "normal" Occisorini parasitise Cerambycidae, Lucanidae and in one instance, Oedemeridae. There is evidence to suggest that at least one species parasitises soil-dwelling Tipulidae (Diptera). Other species have been found in association with weevils but none have been reared from weevil larvae (but then, so have few weevils). The rest of our tachinines are either known or strongly suspected to parasitise Lepidoptera larvae, particularly Crambidae. As in many other regions, Voriini parasitise Lepidoptera larvae.

All the tachinines examined (Dugdale, 1969) lay live larvae, or macrotype ("normal" sized) eggs ready to hatch, in the vicinity of the host larva. All the goniine (*Pales*) species parasitise Lepidoptera larvae by laying microtype

eggs on food likely to be ingested by the host.

NZ Phasiinae all have piercing ovipositors. Two genera (*Huttonobessaria*, *Eviibrissia s.l.*) have a forcipate postabdomen, suggesting that the host hemipteran is grasped so that the egg can be inserted into the body cavity.

Faunal structure: The list below is based on the layout of the collection at NZAC (Landcare Research, Mt Albert, Auckland, NZ). There are about 190 endemic species, of which 56 (about 30%) are undescribed, in:

Exoristinae: Sturmiini: *Pales s.l.* (25 species)

Phasiinae: Cyllindromyiini: *Eviibrissia s.l.*, *Huttonobessaria* (2 species)

?Leucostomatini: *Truphia* (2 species)

Phasiini: *Phasia* (*Campbellia* Miller) (1 or 3 species)

Tachininae: ?Leskiini: 2 genera, 4 species

?Nearini: 5 genera, 8 species

Occisorini: 39 genera, 131 species

Voriini: 5 genera, 15 species

The Tachinidae of New Zealand are a fascinating group and the proliferation of taxa in the subalpine and alpine zones is particularly striking. So is the lack of work on them.

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The ecology and evolution of tachinid-host associations (by J.O. Stireman)

[Editor's Note: The following is the Abstract from Dr. Stireman's Ph.D. thesis conducted at the University of Arizona in Tucson and successfully defended on 18 April 2001.]

The Tachinidae are a taxonomically and ecologically

diverse clade of parasitoids for which evolutionary and ecological relationships with hosts are largely unknown. Here, I employed a multidisciplinary approach to evaluate the determinants of patterns of host use in the Tachinidae.

First, I examined spatio-temporal variation in the tachinid-dominated parasitoid assemblage of one lepidopteran species *Grammia geneura* (Arctiidae). The parasitoid assemblage and parasitism rates varied dramatically among and within sampling sites, seasons, and years. I show that this variability may be a function of habitat-specific parasitism and indirect interactions between this host and other Macrolepidoptera through shared tachinid parasitoids.

I then experimentally examined the host selection process in the tachinid *Exorista mella*. Host movement was an important elicitor of attack behavior. Flies also responded to odors associated with food plants of their host. Experienced flies attacked hosts more readily than did inexperienced flies. Based on these results, I proposed a host selection scenario for this tachinid species. *E. mella* also learned to associate colors with hosts and avoided deterrent models that they had experienced. However, I failed to find evidence for odor learning. Learning of host-associated cues by *E. mella* may allow this parasitoid to take advantage of abundant host populations and maintain host-searching efficiency in an unpredictable environment.

To examine how host-associated characteristics evolved in the Tachinidae, I reconstructed the evolutionary relationships within the subfamily Exoristinae using molecular data. Phylogenetic analyses generally supported recent classifications. Analyses of host-related characters indicated that tachinids show great evolutionary lability in behavior, morphology, and host range.

Finally, I sampled host species to assess the determinants of tachinid community structure and host range. Several host characteristics were found to affect tachinid species richness. These patterns may be due to the opportunistic use of abundant hosts by polyphagous tachinids, enemy-free space provided by well-defended hosts, and the process of host location. Patterns of tachinid host use varied significantly with sample size, host diet breadth, host gregariousness, plant form, and host morphology. Taken together, these studies indicate high levels of plasticity in tachinid-host associations. This may be responsible for their ecological and evolutionary success.

Spring collecting in the Sonoran desert (by J.E. O'Hara)

Extending from southeastern California eastward to central Arizona and southward throughout most of the peninsula of Baja California and state of Sonora (Mexico), the Sonoran desert is the most faunistically and floristically diverse of the five deserts of the American Southwest (the other deserts being the Mojave, Great Basin, Painted and Chihuahuan). Encompassing about 260,000 sq. km., this is an arid land of towering mountains, sheltered canyons, rolling foothills and blistering hot desert basins. Biologists generally recognize six geographic subdivisions of the Sonoran desert, each with a distinct climate, topography and flora. A unifying feature of the Sonoran desert is its mild winters (permitting the existence of the majestic saguaro, the most recognizable indicator plant of the Sonoran desert), and unique pattern of rainfall – a winter rainy season in December and January and summer "monsoons" from July to early September. Total annual rainfall in the Sonoran desert varies from year to year and from one place to another, but averages 80-400mm.



Saguaro, ocotillo and desert wildflowers, Organ Pipe Cactus National Monument, AZ.

Faunistically, the Sonoran desert is a hotbed of diversity. With its varied landscape and habitats and almost tropical climate, it boasts a higher number of endemic species than the other deserts in the region. However, its high faunal diversity is principally a consequence of location, because the Sonoran desert (and adjacent areas to its east and west) is also a mixing area for the temperate biota to the north and tropical biota to the south. It is no wonder that tachinid diversity is greater in the American Southwest than anywhere else in America north of Mexico.



Hilltop used for tachinid collecting in Organ Pipe Cactus National Monument, AZ (summit 740m).

I had an opportunity to visit the Sonoran desert for two weeks in late March 2001, mostly in and around Organ Pipe Cactus National Monument in the Arizona Upland subdivision of the Sonoran desert. I have travelled many times to southeastern Arizona during the summer monsoon season, but this was my first spring trip to southwestern Arizona. I chose late March because it is typically the peak of the "spring bloom," a phenomenon characterized by the mass blossoming of winter annuals. The spring bloom is entirely dependent on winter rainfall and therefore varies considerably in intensity and location from year to year. The spring bloom of 2001 in southwestern Arizona was generally considered an above average year.



Cholla cactus and Mexican goldpoppies on hillside south of Globe, AZ.

Tachinids native to the American Southwest are typically less commonly collected in spring than in late summer, but some spring species are quite rare in collections and it was mainly these that I was after. One in particular, *Spilochaetosoma californicum* Smith, a species that parasitizes scorpions and is known from fewer than 10 specimens, was highly sought-after because it belongs to the tribe I was revising at the time, the Polideini.



Jim O'Hara on hilltop south of Safford, AZ (summit ca. 1220m), in a transitional area between the Sonoran and Chihuahuan deserts.

My collecting trip was not as successful as I had hoped and few rare tachinids were found (and not *S. californicum*), despite warm weather, good hilltops, and a coinciding spring bloom. Spectacular habitats were sampled by permit in Anza-Borrego Desert State Park in southern California, Organ Pipe Cactus National Monument in southwestern Arizona, and Ramsey Canyon Preserve (owned by Nature Conservancy) in the Huachuca Mountains of southeastern Arizona (a transitional area between the Sonoran and Chihuahuan deserts). Perhaps the season was still too early and there would have been better collecting some weeks after spring bloom. Much was learned about habitats and logistics from the trip and should the opportunity for another spring visit arise, a slightly later start will be planned.

Further reading

Phillips, S.J. and Wentworth Comus, P., eds. 2000. A natural history of the Sonoran desert. Arizona-Sonora Desert Museum Press (Tucson) and University of California Press (Berkeley, Los Angeles, London). 628 pp.

How effective are yellow pan traps for collecting Tachinidae? (by H.-P. Tschorsnig)

It is always time-consuming to place yellow pan traps and to empty them regularly, especially when many traps are used. Is the additional effort to operate yellow dishes during an excursion effective, when at the same time and at the same place normal net collections are made from flowers, leaves, stones, etc.? To find an answer on this question, I made notes during the last two years' excursions. I used 16-40 yellow pan traps of various sizes. They were emptied every day (or in rare cases at least every three days), so there was no need for any preservative.

The two locations where I collected are situated in Western Spain (Prov. Salamanca, environment of Villar de Ciervo; extensive pastures between granite rocks and shrubs of broom, mixed with woods or single trees of holm oak = *Quercus rotundifolia*), and in the Italian Alps (Alto Adige, Stilfser Joch National Park, altitudes between 900-1750m in May/June, and 1300-2400m in July/August; deciduous forests of alder and ash trees in the lower parts, forests of spruce or larch in middle parts, alpine pastures in the upper part).

Table 1 gives some results. Three-fifths to 3/4 of the specimens were collected in the yellow dishes. There was nearly always a notable number of additional species which otherwise would not have been collected during the excursions. The only case where I found that yellow dishes did not work well was in dry summer in Spain when flowers were obviously more attractive than the dishes. This is strange because one might suspect that yellow dishes would be particularly attractive for thirsty flies during the dry season. But even in this case, 13 additional species were obtained. Hence it may be concluded that the additional effort of placing yellow pan traps during the excursions is worthwhile.

Table 1 refers to several different places which were sampled during the excursions. But what if only a single restricted place is considered? For this purpose I selected a dry field (La Navizuela, Villar de Ciervo, Prov. Salamanca) of about 30x60m in size. *Euphorbia broteri* was flowering abundantly in this area, and 26 yellow dishes were placed between these plants. The flowers of *Euphorbia broteri* have practically the same colour as the yellow dishes. The traps were operated between 12-18 April 2001, and on the same days I also collected regularly from the flowers (15 hours altogether).

Table 2 shows the results. They are not so convincing as the general results given in Table 1. Only 6 additional species were collected in the traps, whereas 13 species were collected exclusively from the flowers by hand. There are obviously preferences of single species involved, but random effects must also be taken into account, so a general statement for each species is hardly possible.

Table 2. Specimens of Tachinidae collected on flowers of *Euphorbia broteri* and in yellow pan traps (YPT) in Spain in April 2001 (see above); the species in each section are arranged in the order of the catalogue of Herting. *Estheria* sp. is a common species in Spain which must still be described.

	<i>Euphorbia</i>	YPT
Predominantly on <i>Euphorbia</i>:		
<i>Chetogena mageritensis</i> (Vill. & Mesnil)	4	1
<i>Picconia incurva</i> (Zetterstedt)	1	-
<i>Aplomya confinis</i> (Fallén)	1	-
<i>Phryxe caudata</i> (Rondani)	1	-
<i>Phryxe vulgaris</i> (Fallén)	69	3
<i>Pales pavidata</i> (Meigen)	5	-
<i>Bothria frontosa</i> (Meigen)	1	-
<i>Ceromasia rubrifrons</i> (Macquart)	50	6
<i>Masicera sphingivora</i> (Rob.-Des.)	6	1
<i>Gonia atra</i> Meigen	21	1
<i>Gonia picea</i> (Rob.-Des.)	4	1
<i>Gonia ornata</i> Meigen	37	6
<i>Tachina fera</i> (Linnaeus)	7	2
<i>Tachina magnicornis</i> (Zetterstedt)	4	-
<i>Tachina lurida</i> (Fabricius)	7	3
<i>Eurithia castellana</i> (Strobl)	1	-
<i>Macquartia dispar</i> (Fallén)	1	-
<i>Campylocheta crassiseta</i> Mesnil	1	-
<i>Kirbya moerens</i> (Meigen)	1	-
<i>Athrycia trepida</i> (Meigen)	6	-
<i>Gymnosoma clavatum</i> (Rohdendorf)	1	-
<i>Phasia truncata</i> Herting	1	-

Table 1. Results of collecting Tachinidae during five excursions with yellow pan traps (YPT).

Locality	Date	Number of collection days	Number of YPT used	Species			Specimens	
				total number, collected by hand and in YPT	collected in YPT	only in YPT (not collected by hand)	total number collected	in YPT (% of the total number)
Western Spain	viii.2000	12	40	54	23	13	369	51 (=14%)
Western Spain	ii.2001	3	16	11	7	-	251	184 (=73%)
Western Spain	iv.2001	11	40	54	41	10	1753	1084 (=62%)
Italian Alps	v-vi.2001	9	25	85	58	27	478	262 (=55%)
Italian Alps	vii-viii.2001	3	28	37	30	18	325	207 (=64%)

	<i>Euphorbia</i>	YPT
Predominantly in the yellow pan traps:		
<i>Exorista rustica</i> (Fallén)	-	1
<i>Chetogena acuminata</i> Rondani	2	10
<i>Chetogena media</i> Rondani	1	3
<i>Meigenia majuscula</i> (Rondani)	-	1
<i>Blondelia nigripes</i> (Fallén)	-	1
<i>Nemorilla maculosa</i> (Meigen)	-	3
<i>Lydella grisescens</i> Rob.-Des.	1	2
<i>Ocytata pallipes</i> (Fallén)	-	6
<i>Baumhaueria goniaeformis</i> (Meigen)	15	4
<i>Peleteria meridionalis</i> (Rob.-Des.)	3	2
<i>Macquartia tessellum</i> (Meigen)	2	4
<i>Triarthria setipennis</i> (Fallén)	2	4
<i>Peribaea apicalis</i> Rob.-Des.	-	1
<i>Estheria</i> sp.	101	385
<i>Eriothrix rufomaculatus</i> (Degeer)	11	64
<i>Periscepsia carbonaria</i> (Panzer)	2	30
<i>Wagneria cunctans</i> (Meigen)	8	29

In several cases I observed Tachinidae (and also Syrphidae) approach a dish, touch the surface of the liquid for less than a second with their legs, and fly off immediately. Some took a second approach or tried to land at the margin of the trap, but they did not drop into the water as they should. It seems likely that at least the larger species try to taste the liquid with their tarsal sensillae before landing. This was the reason why I added sugar to some traps, thus simulating nectar or honeydew. I used a concentration of about 40g of common sugar per litre of water. The position of the dishes with or without sugar water was exchanged every day to avoid a methodological mistake. The first result in Spain was encouraging because the yellow dishes with sugar water contained more than three times as many individuals of tachinids as the ones without sugar. But when I tried the same in the Italian Alps, there was practically no effect, see Table 3. So I am uncertain if the addition of sugar is really an improvement of the yellow pan trapping method or not.

Comparison of *in vitro*- versus *in vivo*-reared *Exorista larvarum* (L.) in the laboratory and in the field (by M.L. Dindo)

The tachinid *Exorista larvarum*, a polyphagous gregarious larval parasitoid of Lepidoptera, is a very important antagonist of *Lymantria dispar* (L.) and other defoliators (Herting 1960; Luciano and Prota 1984). *E. larvarum* is also one of the most promising parasitoids for *in vitro* production on artificial diets. Complete development of this tachinid was obtained on various insect material-free artificial diets based on crude ingredients, with adult yields approaching those commonly obtained in the factitious host *Galleria mellonella* (L.) (see *The Tachinid Times* **14**: 6-7, 2001).

A major concern of programmes aimed at rearing entomophages *in vitro* is the evaluation of their quality, which is ultimately expressed as efficacy in the field. This important topic has to date been addressed by just a few studies (Thompson and Hagen 1999).

Parasitism of *G. mellonella* and of the natural host *L. dispar* by *E. larvarum* reared *in vivo* and *in vitro* was evaluated in the laboratory. The *in vivo* and *in vitro* cultures were respectively performed on *G. mellonella* and on the artificial diet developed by Mellini and Campadelli (1995). With reference to the parameters examined (i.e. the percentage of successfully parasitized larvae, parasitoid puparial weights and development times) the results suggested that there was no substantial difference between the *in vitro* and *in vivo*-reared parasitoids (Dindo *et al.* 1999).

Subsequently, in a cork oak forest in northern Sardinia (Italy) Dindo *et al.* (2002) evaluated parasitism of the natural hosts *L. dispar* and *Malacosoma neustria* (L.) by *E. larvarum* reared on the above mentioned artificial diet and on *G. mellonella*. The *in vitro*-reared females oviposited a significantly lower number of eggs on *L. dispar* larvae. Nevertheless, no difference in percentages of successfully parasitized larvae was recorded between the two rearing methods. By contrast, mortality due to

Table 3. Average number of specimens of Tachinidae collected in yellow pan traps (YPT) without or with sugar added.

Locality	Date	Specimens per YPT, per day of exposure		Ratio of YPT without sugar: YPT with sugar
		YPT without sugar	YPT with sugar added	
Western Spain, La Navizuela	17-18.iv.2001	3.3	10.8	1:3.3
Italian Alps, Untertroeghof	31.v-7.vi.2001	1.4	1.4	1:1
Italian Alps, Lichtenberg	31.v-5.vi.2001	0.9	1.0	1:1.1
Italian Alps, Laaser Tal	1-5.vi.2001	7.0	7.5	1:1.1

unknown reasons was found to be higher in the larvae exposed to *in vivo*-reared flies. No eggs were laid on *M. neustrium* larvae by the *in vitro*-reared *E. larvarum*. No puparia formed in *M. neustrium* larvae, not even in those exposed to *in vivo*-reared flies. In conclusion, in field trials the *in vivo*-reared *E. larvarum* flies proved to be more effective against *L. dispar* than those produced on artificial diet, in terms of oviposition capacity and potential to induce host larval mortality. Neither the *in vitro* nor the *in vivo*-reared *E. larvarum* flies were effective against *M. neustrium*.

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Fifth International Congress of Dipterology (by J.E. O'Hara)

The 5th International Congress of Dipterology will be held in Brisbane, Australia, from 29 September to 4 October 2002. Thomas Pape (Swedish Museum of Natural History, Stockholm) and I will be co-chairing a section on "Systematics of the Oestroidea." We ask anyone interested in presenting a talk in this section to contact one of us; contact me regarding the Tachinidae and Thomas for the Rhinophoridae, Sarcophagidae, Calliphoridae and Oestridae. Three talks on the Tachinidae are already planned: Dan Hansen – systematics of *Chetogena*; Jim O'Hara – systematics of a clade of tribes in the Tachininae;

Hiroshi Shima – systematics of certain taxa in the Dexiinae.

Development of the tachinid parasitoid *Exorista larvarum* (L.) in three common Noctuidae of Azores Archipelago (by A.M.A. Simões)

[Editor's Note: The following is the Abstract from Ana Maria's Ph.D. thesis, to be defended in February 2002.]

For the first time, biological and behavioural aspects of the parasitoid *Exorista larvarum* (Linnaeus, 1758) (Diptera, Tachinidae) were studied upon three host species, *Peridroma saucia* (Hübner, 1808), *Pseudaletia unipuncta* (Haworth 1809) and *Xestia c-nigrum* (Linnaeus, 1758) (Lepidoptera, Noctuidae) all of them common in the Azores Archipelago (Simões 1999).

Even though the study occurred under laboratory conditions, it relied on samples collected on Terceira Island pastures that had previously been characterised for the eventual use of the parasitoid under field conditions.

Preservation and breeding of the parasitoid under laboratory conditions was achieved with the *Galleria mellonella* L. (Lepidoptera - Pyralidae) host (Grenier 1986; Dindo et al. 1999).

For the study of the parasite action of *E. larvarum* upon the mentioned hosts, temperatures of 15, 20 and 25°C were used, determining the hosts' influence on fecundity, development time and parasitoid survival rate.

Parasitism efficiency, parasitoid's sexual proportion depending on the host and temperature conditions, as well as the adult parasitoid's longevity and duration of the different activity periods, were also verified (Simões 2001).

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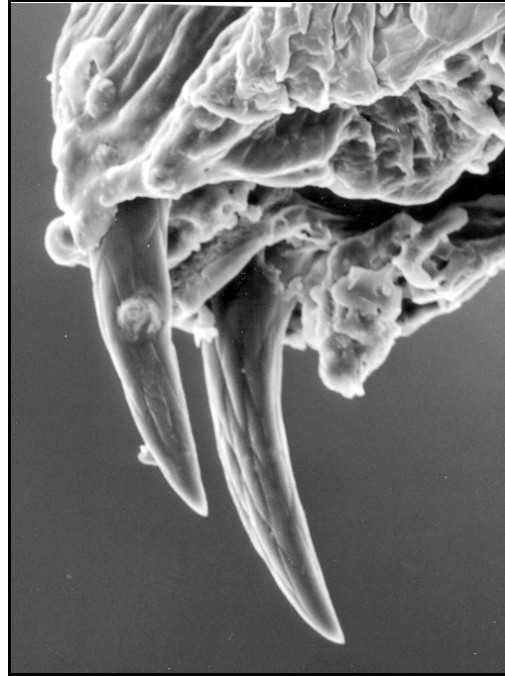
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The following images are all from Simões (2001).



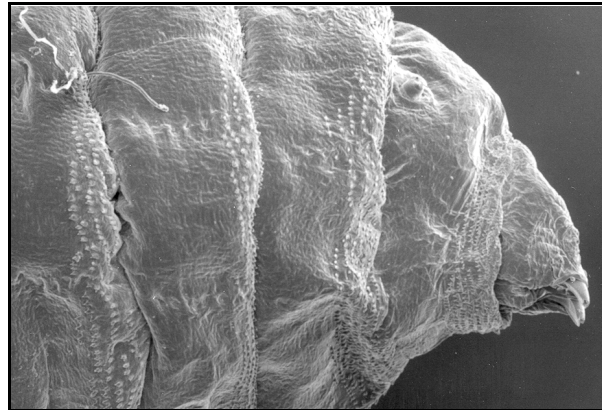
1st instar larva of *Exorista larvarum*.



Mandibles of 2nd instar larva of *E. larvarum*.



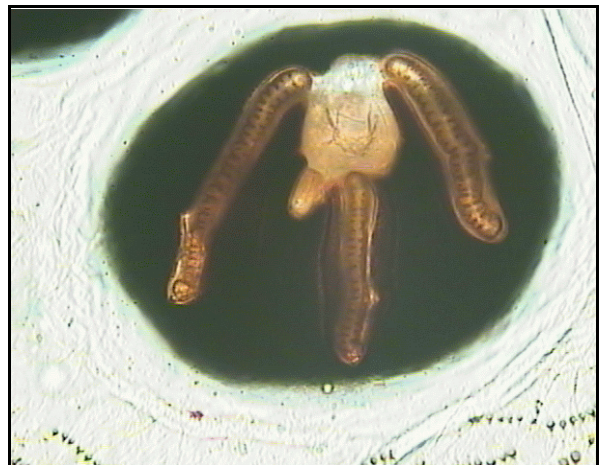
Posterior part of 1st instar larva of *E. larvarum*.



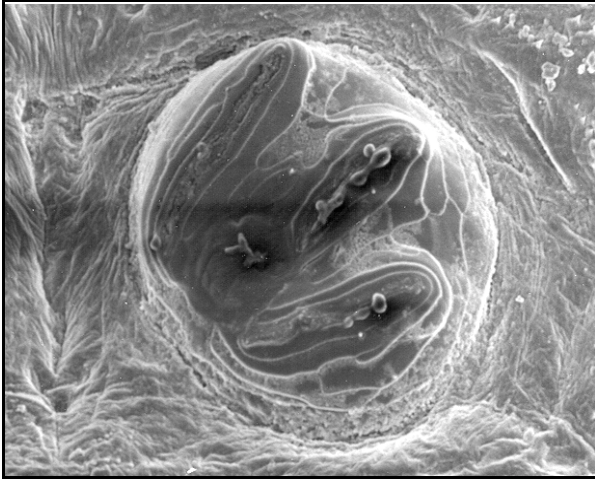
3rd instar larva of *E. larvarum*.



2nd instar larva of *E. larvarum*.



Posterior spiracles of 3rd instar larva of *E. larvarum*.



SEM of posterior spiracles of 3rd instar larva of *E. larvarum*.

PERSONAL NOTES

Dan Hansen writes: This winter I began revisionary work on the Nearctic species of the tachinid genus *Chetogena* Rondani for my Master's program at the University of Minnesota in St. Paul, Minnesota (USA). I have taken over this project from Mehrdad Parchami-Araghi of the University of Guelph (see *The Tachinid Times* **12**: 10, 1999), who switched out of Tachinidae about a year ago. My thesis supervisor is Dr. Len C. Ferrington, Jr., a chironomid specialist.

I have been interested in tachinids as an amateur since 1995 and I am delighted now to have the opportunity to begin a revision within the Exoristini. In mid-January 2002, I spent four days at the CNC with Dr. Jim O'Hara learning methods and approaches to tachinid systematics.

While my thesis effort will focus on the Nearctic fauna, I am interested to see *Chetogena* (*sensu lato*) material from other regions since one of the goals of this project will be to understand the species group relationships. If you have material or ideas which may help, I would be very grateful.

Kenan Kara writes: At present I am interested in determining the tachinid fauna of the Black Sea region, and in the future I hope to document the whole tachinid fauna of Turkey. This latter goal is very difficult because Turkey is a large country and I am the only person in Turkey working on the Tachinidae. I am also preparing (with Peter Tschorsnig) a "Host catalogue for the Turkish Tachinidae" and (with Joachim Ziegler) a "Checklist of Turkish Tachinidae," both of which should be finished in 2002. I wish to acknowledge the kind help and support of Drs. Tschorsnig, Ziegler and O'Hara for literature, a

Malaise trap and other cooperation.

Jim O'Hara writes: I recently finished a large work entitled "Revision of the Polideini of America north of Mexico (Diptera: Tachinidae)," which will be published in spring 2002 as Supplement 11 of *Studia dipterologica*. I am participating for the third and final year in H. Shima's project, "Study on the Phylogeny and Diversity of Higher Diptera in the Northern Hemisphere" (see *The Tachinid Times* **14**: 1-2, 2001), and will meet with the other project participants this summer at the Swedish Museum of Natural History in Stockholm. This fall, Monty Wood and I plan to complete our "Catalogue of the Tachinidae of America north of Mexico" that we have been working on for a number of years. I am also preparing a paper that will permit the identification of adults and puparia of tachinid parasitoids of *Choristoneura* species (Lepidoptera: Tortricidae) in North America.

Theo Zeegers writes: I have finished my work on the Tachinidae of Madeira and hope to publish an article on it shortly. I had the opportunity to study several thousand Tachinidae from eight Malaise traps from Bulgaria, leading to several very interesting findings. I hope to publish the results some day, but I can give the highlight here: two males of *Ceromya dilecta* Herting, 1970 were discovered (and recognized as such by Peter Tschorsnig). This species was otherwise only known from the holotype. My interest will be shifting more to the east in 2002; I hope to get material from Turkey, Yemen and perhaps other nations in the Middle East. Meanwhile, my work on the Dutch fauna continues.

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Each year I include here tachinid references I have found during the past year for the period 1980 to the present which have not appeared in previous issues of this newsletter. The complete bibliography is available on the Web at <http://res2.agr.ca/ecorc/isbi/biocont/biblio.htm>. I would be grateful if omissions or errors could be brought to my attention.

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