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Last year's issue of **The Tachinid Times** was dedicated to Professor Chien-ming Chao of China, who passed away in March 2007. Sadly, the year 2008 was similarly marked by the passing of a famous tachinidologist, Dr. José Henrique Guimarães, formerly of the Museu de Zoologia da Universidade de São Paulo (MZSP), São Paulo, Brazil. Dr. Guimarães died on 14 October 2008, just days after his 71th birthday. He was a world authority on the Neotropical Tachinidae and also published on the Calliphoridae, Oestridae, Muscidae, and a few other families of Diptera. This issue of **The Tachinid Times** is respectfully dedicated to his memory. A brief biography of Dr. Guimarães was published by R. Toma and S.S. Nihei several years ago in their paper on the type material of Tachinidae in MZSP (2006, *Revista Brasileira de Entomologia* **50**: 240–256). Dr. Nelson Papavero, a colleague and personal friend of Dr. Guimarães, will publish a posthumous biography of Dr. Guimarães in an upcoming issue of *Revista Brasileira de Entomologia*.

The Tachinid Times is primarily an online newsletter but continues to be offered in hardcopy to provide a permanent record of all issues in a few libraries around the world, and to comply with the wishes of those persons who prefer to receive a print copy for their own files. Both versions are based on the same PDF original and have the same pagination and appearance. The online version of this issue is available as a PDF file (ca. 3 MB in size) on the North American Dipterists Society (NADS) website at: http://www.nadsdiptera.org/Tach/TTimes/TThome.htm.

If you wish to contribute to **The Tachinid Times** next year, then please send me your article, note or announcement before the end of January 2010. This newsletter accepts submissions on all aspects of tachinid biology and systematics, 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. Student submissions are particularly welcome, especially abstracts from theses and accounts of studies in progress or about to begin. I encourage authors to illustrate their articles with colour images, since these add to the visual appeal of the newsletter and are easily incorporated into the final PDF document. Please send images as separate files apart from the text.

A preliminary study of the diversity and temporal patterns of abundance of Tachinidae in Southwestern Ohio (by D.J. Inclan and J.O. Stireman III)

Although tachinids are one of the most diverse families of Diptera (Irwin *et al.* 2003) and represent the largest group of non-hymenopteran parasitoids (Belshaw 1994), the ecology of most species in the family is poorly known. Most of the studies that have focused on tachinids are related to taxonomic descriptions. Currently, our knowledge is very limited in terms of the diversity and distribution of populations across time and space, especially in the Nearctic and Neotropical Regions (Stireman 2008). There have been a number of recent studies focused on diversity and temporal distributions of tachinids in the Palaearctic Region such as Ford and Shaw (1991, 2000), Avci and Kara (2002) and Richter (2005), but there are relatively few similar studies for specific areas of the Nearctic Region (though see O'Hara 1999, 2002; Tooker *et al.* 2006; Stireman 2008). The present study provides some initial data on the diversity and temporal distribution of Tachinidae in Southwestern Ohio, USA.

Tachinid specimens were collected in a single Malaise trap located in Greene County, Southwestern Ohio in the Huffman Metropark (39°48'27.91"N 84°05'35.58"W, ~250m in elevation). The trap was placed in a narrow grass and forb dominated field in a powerline right-of-way that is periodically mowed (ca. once every two to three

years) (Fig. 1). The plant community in the immediate vicinity of the trap was dominated primarily by Asteraceae (e.g., *Solidago*, *Symphyotrichum*) and Poaceae (e.g., *Sorghastrum*). The narrow field was bordered by second growth deciduous forest consisting largely of maples (*Acer* spp.), ashes (*Fraxinus* spp.), hickory (*Carya*) and honeysuckle (*Lonicera*). The trap was set up perpendicular to the forest edge in the middle of the field on 25 June 2008 and it was periodically checked once or twice per week until 17 November 2008. Potassium cyanide was used as the killing agent in the dry head of the trap. All the material collected in the trap was taken to a laboratory at Wright State University, where specimens were sorted, pinned, and identified using Wood (1987) and comparison with specimens in the Wright State University insect collection.

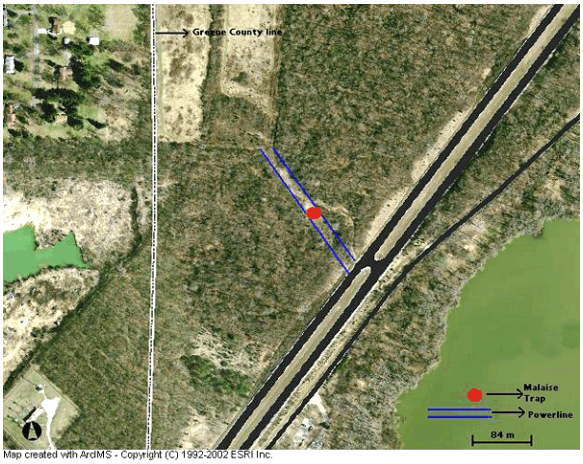

Figure 1. Aerial photograph of Huffman Metropark. The location of the Malaise trap is indicated by a red oval, inside the power line right of way (blue lines). Huffman Metropark, Greene County, Ohio, USA.

Over the summer and fall season of 2008, in 146 days of collecting material, 368 tachinid specimens were collected. A total of 54 genera were identified (~17% of all the genera described for the Neartic Region (O'Hara 2008)). The subfamily Exoristinae comprised 54% of all the specimens collected, followed by Tachininae, Dexiinae, and Phasiinae with 22, 20, and 4% respectively. Likewise, only four tribes represented 68% of the total specimens collected (Blondeliini 29%, Campylochetini 14%, Leskiini 14%, and Eryciini 11%) (Table 1; Figs. 3–5). Identification of species is still in progress.

The distribution of tachinid abundance over the sampling period appears to be bimodal (Fig. 2). The early summer mode, however, is relatively small and most of the specimens were collected between late summer and fall (Fig. 2). An ongoing inventory of caterpillars in the same geographic area indicates that the temporal distribution of larval stages of Lepidoptera is also bimodal, with an early spring peak (April – May) and late summer-early fall peak (mid August to September) (Stireman, unpub. data). The temporal distribution of tachind abundance and diversity reported here appears to follow this pattern, although further sampling in the spring months is needed to evaluate this correlation.

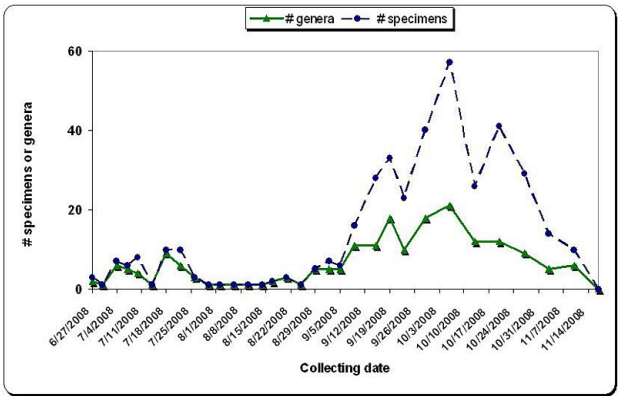

Figure 2. Numbers of genera and individuals over the summer fall season of 2008, Huffman Metropark, Ohio, USA.

Twenty-four percent of the identified genera are represented by only a single specimen. This percentage is likely to increase if evaluated at the species level. This makes it difficult to accurately assess the seasonality of particular genera and species. However, some patterns are suggested by these data. First, genera that were found in multiple, disparate seasons are likely to complete several generations per year (e.g., *Aplomya, Thelaira*, *Campylocheta*, *Actia, Exorista*), or they consist of species that are active in different seasons (e.g., *Lespesia*, *Lixophaga, Myiopharus, Winthemia*). Conversely, those genera represented by appreciable numbers of individuals that were only captured in a single sampling period or across two neighboring sampling periods, are likely to be univoltine (e.g., *Genea* (Fig. 4), *Kirbya*, *Medina*). Of course, these patterns could also reflect changes in habitat use (e.g., attraction to floral resources), and must be interpreted with caution. Some specimens in the genera *Admontia*, *Blondelia*, *Campylocheta*, *Lixophaga*, *Medina*, and *Strongygaster* exhibited unexpected patterns in their temporal distribution, with relatively large numbers being collected late in the season when temperatures were falling below 0ºC. It would seem that this late in the season, time for development and availability of hosts is likely to be limited.

In order to better understand these patterns of activity and their relationship to voltinism, seasonal fluctuations of available hosts, and temperature, a broader sampling period (summer, fall, and spring), and additional replicate traps will be needed. In addition, trapping in other nearby habitats (e.g., forest interior and canopy, see Cerretti *et al.*

2004; Stireman 2008), would provide valuable information on the habitat specificity of the tachinid community and the effect of habitat structure on their seasonal patterns of abundance and diversity.

Acknowledgments

We would like to thank the Five-Rivers Metroparks of Dayton for permission to sample Tachinidae at Huffman Metropark, J. Heath for assistance with the Malaise trap, and H. Devlin for reviewing this contribution.

Figure 3. A specimen of *Belvosia* (probably *B. unifasciata* (Rob.-Des.)) collected in the Malaise trap on September 15, 2008. This species was relatively common throughout the summer months. Huffman Metropark, Ohio, USA. (photo by D.J. Inclan)

Table 1. List of identified genera and their seasonality over summer and fall of 2008, Huffman Metropark, Ohio, USA.

Subfam/Tribe/Genus	Seasonality**
EXORISTINAE	
BLONDELIINI	
Admontia (36)*	LS, F
Blondelia (5)	ES, LS
Celatoria (10)	ES, LS, F
Chaetostigmoptera (2)	F
Cryptomeigenia (1)	LS
Eucelatoria (2)	MS, LS
Lixophaga (15)	ES, LS, F
Medina (14)	F
Myiopharus (12)	ES, LS, F
Oxynops (8)	LS, F
ERYCIINI	
Aplomya (16)	ES, LS, F
Buquetia (1)	ES
Carcelia (4)	MS, LS, F
Drino (1)	ES
Lespesia (8)	MS, LS, F
Nilea (4)	LS
Prooppia (1)	LS
Siphosturmia (6)	MS, LS, F
EXORISTINI	
Chetogena (1)	LS
Exorista (4)	ES, MS, F
Tachinomyia (3)	F
GONIINI	
Belvosia (13)	ES, MS, LS
Leschenaultia (2)	F
Platymya (3)	LS
MASIPHYINI	
Masiphya (4)	ES, MS
WINTHEMIINI	
Hemisturmia (1)	LS
Winthemia (21)	ES, LS, F
DEXIINAE	
CAMPYLOCHETINI	
Campylocheta (51)	ES, LS, F
DEXIINI	
Zelia (1)	LS
THELAIRINI	
Spathidexia (5)	MS, LS, F
Thelaira (4)	MS, LS, F
VORIINI	
Eulasiona (3)	LS, F
Kirbya (7)	ES
PHASIINAE	
CATHAROSIINI	
Catharosia (2)	F
CYLINDROMYIINI	
Cylindromyia (4)	MS, LS
Gymnoclytia (1)	ES
PHASIINI	
Phasia (2)	F
TRICHOPODINI	
Xanthomelanodes (6)	F
TACHININAE	
ACEMYINI	
Ceracia (10)	LS, F
ERNESTIINI	
Gymnocheta (1)	F
Linnaemya (2)	F
EUTHELAIRINI	
Neomintho (1)	MS
LESKIINI	
Clausicella (2)	F
Genea (46)	LS, F
Ginglymia (1)	F
Leskia (3)	LS, F
MINTHOINI	
Paradidyma (11)	MS, LS, F
MYIOPHASIINI	
Cholomyia (1)	F

Gnadochaeta (3)	ES, LS
POLIDEINI	
Lypha (1)	LS
SIPHONINI	
Actia (3)	ES, F
STRONGYGASTRINI	
Strongygaster (8)	LS, F
TACHININI	
Archytas (1)	LS
Deopalpus (1)	LS

* Numbers between parentheses indicate the number of specimens collected for each genus.
** Seasonality is indicated by ES, Early Summer (Jun/21-Jul/22); MS, Middle Summer (Jul/23-Aug/21); LS, Late Summer (Aug/22-Sep/21); and F, Fall (Sep/22-Nov/10).

Figures 4–5. Figure 4. A specimen of *Genea* collected in the Malaise trap on 6 October 2008. This was one of the most abundant tachinids collected in the late Summer and Fall. **Figure 5.** A specimen of *Ceracia dentata* (Coquillett) collected in the Malaise trap on 9 September 2008. This species appears to be abundant across North America except at high latitudes. Both specimens from Huffman Metropark, Ohio, USA. (Photos by D.J. Inclan.)

References

Avci, M. and Kara, K. 2002. Tachinidae parasitoids of *Traumatocampa ispartaensis* from Turkey. Phytoparasitica **30**: 361–364.

Belshaw, R. 1994. Life history characteristics of Tachinidae (Diptera) and their effect on polyphagy. Pp. 145–162. *In*: Hawkins, B. and Sheehan, W., eds., Parasitoid community ecology. Oxford University Press.

Cerretti, P., Whitmore, D., Mason, F. and Vigna Taglianti, A. 2004. Survey on the spatio-temporal distribution of tachinid flies – using Malaise traps (Diptera, Tachinidae). Pp. 229–256. *In*: Cerretti, P., Hardersen, S., Mason, F., Nardi, G., Tisato, M. and Zapparoli, M., eds., Invertebrati di una foresta della Pianura Padana, Bosco della Fontana. Secondo contributo. Conservazione Habitat Invertebrati, 3. Cierre Grafica Editore, Verona. 303 pp.

Ford, T.H. and Shaw, M.R. 1991. Host records of some West Palearctic Tachinidae (Diptera). Entomologist's Record and Journal of Variation **103**: 23–38.

Ford, T.H., Shaw M.R. and Robertson, D.M. 2000. Further host records of some West Palearctic Tachinidae (Diptera). Entomologist's Record and Journal of Variation **112**: 25–36.

Irwin, M.E., Schlinger, E.I. and Thompson, F.C. 2003. Diptera, true flies. Pp. 692–702. *In*: Goodman, S.M. and Benstead, J.P., eds., The Natural History of Madagascar. University of Chicago Press, Chicago and London. 1728 pp.

O'Hara, J.E. 1999. Tachinidae (Diptera) parasitoids of bertha armyworm (Lepidoptera: Noctuidae). Canadian Entomologist **131**: 11–28.

O'Hara, J.E. 2002. Spring collecting in the Sonoran desert. Tachinid Times **15**: 3–4.

O'Hara, J.E. 2008. World genera of the Tachinidae (Diptera) and their regional occurrence. Version 4.0. PDF document, 71 pp. Available from: http://www.nadsdiptera.org/Tach/Genera/Gentach ver4.pdf (accessed 9 January 2009).

Richter, V.A. 2005. New data on the biology and distribution of Palaearctic tachinids (Diptera, Tachinidae). [In Russian.] Entomologicheskoe Obozrenie **84**: 911–915. [English translation in Entomological Review **85**: 1227–1230, 2005.]

Stireman, J.O., III. 2008. α and β diversity of a tachinid parasitoid community over space and time. Annals of the Entomological Society of America **101**: 362–370.

Tooker, J.F., Hauser, M. and Hanks, L.M. 2006. Floral host plants of Syrphidae and Tachinidae (Diptera) of Central Illinois. Annals of the Entomological Society of America **99**: 96–112.

Wood, D.M. 1987. Chapter 110. Tachinidae. Pp. 1193–1269. *In*: McAlpine, J.F., Peterson, B.V., Shewell, G.E., Teskey, H.J., Vockeroth, J.R. and Wood, D.M., eds., Manual of Nearctic Diptera. Vol. 2. Agriculture Canada Monograph **28**. iv + 675–1332 pp.

Notes on the Tachinidae of Kyrgyzstan (by T. Zeegers)

Introduction

In 2008, I had the opportunity to visit the central Asian state of Kyrgyzstan. My main interest for visiting Kyrgyzstan was the presence of coniferous forest in the east of the country. This forest can be seen as the southernmost extension of the Siberian taiga, which I had visited in 2006. I had some opportunity to collect flies, though restricted in intensity and only by traditional netting. Collecting took place between June 17th and July 10th, 2008.

Landscape

Kyrgyzstan is a former Soviet Republic located in Central Asia, neighbored by Kazakhstan in the north, Uzbekistan in the west, Tadzikistan in the south and China in the east. Though often referred to as one of the steppe

states, the country is very mountainous, with more than 90% of its area above 1500m. Two major mountain chains meet in the eastern part of the country, the Pamir running southeast to Pakistan and the Tien Shan running northeast to China. Both mountain ranges have the highest peaks above 7000m. Altitudes above 4000m are indicated in Fig. 1.

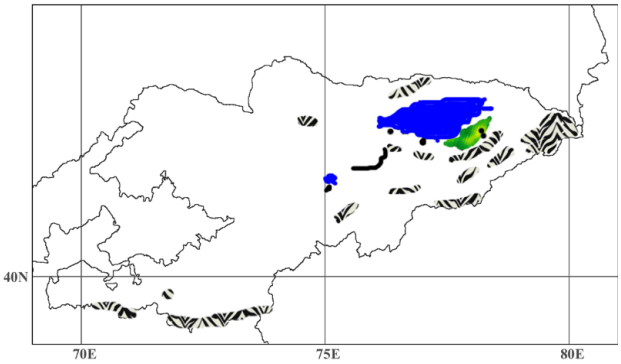

Figure 1. Map of Kyrgyzstan. Blue: great lakes. Black and white: high altitudes, above 4000m. Green: forested area (taiga). Black dots: visited locations. Black drawn line: itinerary by foot.

Some parts of eastern Kyrgyzstan are forested. The forested area (Figs. 1, 3) is limited to the northern slopes of the central Tien Shan. The high altitude and relatively dry climate makes it difficult for forest to occur. Most of the country is treeless, varying from semi-desert in the driest parts (Fig. 4) to tundra high up in the mountains (above 3000m) (Fig. 5). The locations visited are depicted in Figs. 1–2. Figure 2 gives a close-up of eastern Kyrgyzstan, showing the general west-east orientation of the mountain ranges.

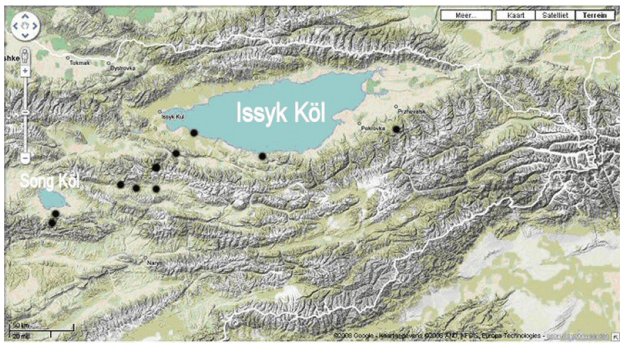

Figure 2. Close-up of eastern Kyrgyzstan (GoogleEarth) with indication of lakes, rivers and mountains. Black spots: collecting localities.

The area is dominated by two large lakes, Issyk Köl at an altitude of 1600m and Song Köl at 3100m. The taiga region, semi-desert (at Issyk Köl) and tundra (Song Köl) (Fig. 6) were visited. The highest altitude reached was 3800m. In between there are alpine meadows, most of them over-grazed by cattle. Meadows with many flowers are restricted to high altitudes (above 3000m, often even above 3400m) and marshy places.

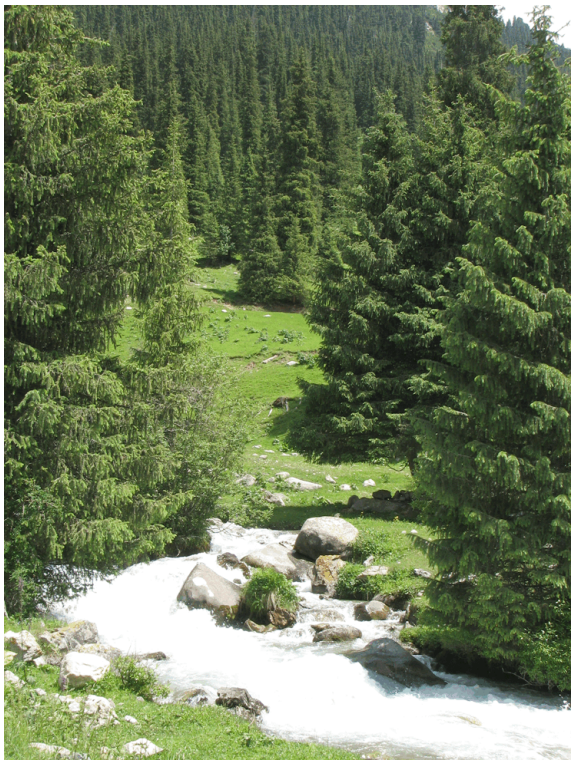

Figure 3. Coniferous forest in the mountains at Jeti Oguz, just west of Karakol (previously Przhevalsk), 3200m.

Figure 4. Semi-desert at the south bank of Issyk Köl (Karaa-Tala, east of Balykchy), 1600m.

Results

Table 1 gives an overview of the Tachinidae recorded. As can be seen, the tachinid fauna of the taiga area is completely different from that of the treeless areas.

Table 1. Records of Tachinidae in Kyrgyzstan by the author in 2008, with indication of general distribution (x = present).

Species	Forest	Steppe/ tundra	Known distribution (Herting, 1984)
Admontia nr. cepelaki (Mesnil, 1961)	X		
Cnephaotachina spectanda (Villeneuve, 1930)	X		SE Kazakhstan, S Siberia, N China, Mongolia, Primorye
Cylindromyia intermedia (Meigen, 1824)		X	Europe, Transcaucasia, Uzbekistan, Tadzhikistan, S Siberia, Mongolia, Primorye
Dinera grisescens (Fallén, 1817)		X	Europe, Transcaucasia, Central Asia, S Siberia, Mongolia, N China
Dinera xuei Zhang & Shima, 2006		X	China
Erycia furibunda (Zetterstedt, 1844)		X	Europe, Transcaucasia, S Siberia, Mongolia
Estheria nr. pallidicornis (Loew, 1873)		X	
Estheria petiolata (Bonsdorff, 1866)	X		Europe, Transcaucasia, Central Asia
Eurithia vivida (Zetterstedt, 1838)		X	Europe, Transcaucasia, Tadzhikistan, S Siberia, Mongolia
Macquartia tessellum (Meigen, 1824)		X	Europe, Transcaucasia, Tadzhikistan; Nepal (pers. obs.)
Meigenia dorsalis (Meigen, 1824)	X		Europe, Transcaucasia, S Siberia
Nowickia atripalpis (Robineau-Desvoidy, 1863)		X	Europe, Caucasus, Ural, South Siberia, Pamir, Mongolia, Szechuan, Primorye
Nowickia strobeli (Rondani, 1865)		X	Alps, Ural, Uzbekistan, S Siberia, Mongolia
Peleteria prompta (Meigen, 1824)		X	Alps
Phasia pusilla Meigen, 1824		X	Europe, Transcaucasia, Kazakhstan, S Siberia, Mongolia, Primorye, Japan
Tachina albidopilosa (Portschinsky, 1882)		X	Turkmenistan, Uzbekistan, S Kazakhstan, N China, Mongolia
Thelaira haematodes (Meigen, 1824)		X	Europe, S Siberia, Mongolia
Winthemia quadripustula (Fabricius, 1794)	X		Europe, Transcaucasia, Central Asia, S Siberia, Mongolia
Zeuxia ??montivaga Kolomiets, 1971		X	*Z. montivaga* is only known from Kyrgyzstan

Figure 5. Alpine region near pass at 3500m.

Figure 6. Tundra at the south bank of Song Köl, 3150m.

Notes on species

Admontia sp. (Fig. 7)

This species has been recorded as *cepelaki* (Mesnil, 1961). I am, however, not completely confident that this species is conspecific with its European counterpart.

Dinera grisescens

The colouration of the legs is more variable than indicated in the literature (Zhang & Shima, 2006).

Dinera xuei

Only recently described from China (Zhang & Shima, 2006).

Estheria nr. pallidicornis

The specimen differs from my material from the Altaj, south Siberia.

Eurithia vivida

Very common in the higher taiga-zone in the Altaj (pers. obs., 2006).

Macquartia tessellum

Has been recorded from India by Crosskey (1976) and by myself from Nepal.

Peleteria prompta

Apparently first recorded for Asia (Zimin, 1961), hilltopping.

Thelaira haematodes

Caught hilltopping. This behaviour is also known from Europe (pers. obs., Spanish Pyrenees). The specimens do not belong to *Th. medvedevi* Richter, 2004.

Figure 7. Male of *Admontia* sp. on a yurt.

Acknowledgments

I thank Hiroshi Shima (Fukuoka) and Vera Richter (St. Petersburg) for helping me find the relevant literature on *Dinera* and *Thelaira*, respectively.

References

Crosskey, R.W. 1976. A taxonomic conspectus of the Tachinidae (Diptera) of the Oriental Region. Bulletin of the British Museum (Natural History). Entomology Supplement **26**. 357 pp.

Herting, B. 1984. Catalogue of Palearctic Tachinidae (Diptera). Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie) **369**: 1–228.

Richter, V.A. 2004. A new species of the tachinid genus *Thelaira* Rob.-Desv. (Diptera, Tachinidae) from Tajikistan. [In Russian.] Entomologicheskoe Obozrenie **83**: 905–908. [English translation in Entomological Review **84**: 946–948, 2004.]

Zimin, L.S. 1961. A review of the Palaearctic genera and species of the subtribe Peletieriina (Diptera, Larvaevoridae). [In Russian.] Trudy Vsesoyuznogo Entomologicheskogo Obshchestva [Horae Societatis Entomologicae Unionis Soveticae] **48**: 230–334.

Zhang, C.-t. and Shima, H. 2006. A systematic study of the genus *Dinera* Robineau-Desvoidy from the Palaearctic and Oriental Regions (Diptera: Tachinidae). Zootaxa **1243**: 1–60.

Tlephusa cincinna (Diptera: Tachinidae), a parasitoid of fritillaries (Lepidoptera: Nymphalidae, Argynnini) (by J. Pohjoismäki and C. Bergström)

Tlephusa cincinna (Rondani) is a fairly common tachinid fly in the Nordic countries, inhabiting warm forest margins, clear-cuts and mires. Despite its abundance, there have been only a few host records and at least the old records from *Sphinx pinastri* (Lepidoptera: Sphingidae) and *Melanchra persicariae* (Lepidoptera: Noctuidae) are erroneous (Herting 1960, Belshaw 1993, Tschorsnig and Herting 1994). The only published record that is considered reliable (Ford *et al.* 2000) is based on one male reared from the pupa of a fritillary, *Argynnis aglaja* (Lepidoptera: Nymphalidae) from Lapinjärvi, Finland (A. Komonen and J. Paukkunen leg, H.-P. Tschorsnig det.), June 1996. As further support for this finding, we have recently identified two more *T. cincinna* specimens reared from fritillary pupae: one old record that originates from Norway and the 19th Century is available in the Naturhistoriska Riksmuseet, Stockholm [NHRS] (C. Bergström det.). This specimen is mounted on an old pin together with its puparium. It bears two labels, the first

reading Nv.m. (meaning Norvegica meridionalis = southern Norway) and the second handwritten label reading in Swedish "kläckt ur en puppa af *Arg. pales* (= emerged from a pupa of *Arg. pales*" (= *Boloria napaea*)). The other record is from Riihimäki, Finland, June 1979, from the pupa of *Boloria euphrosyne* (M. Raekunnas leg, J. Pohjoismäki det.).

Judged from the flight time, in the Nordic countries from mid June to late August and host biology, it is likely that *T. cincinna* parasitizes young larvae in the late summer. The parasitized host larva overwinters and is ready to pupate in spring or early summer. The tachinid larva then finishes its development, finally killing the host and the full-grown larva exits the host pupa to pupate. A plausible conclusion is that *T. cincinna* is a specialized parasitoid of fritillary larvae. However, further studies on the host-species preference and biology is needed but could prove to be interesting.

References

Belshaw, R. 1993. Tachinid flies. Diptera: Tachinidae. Handbooks for the Identification of British Insects 10, Part 4a(i). Royal Entomological Society, London. 169 pp.

Ford, T.H., Shaw, M.R. and Robertson, D.M. 2000. Further host records of some West Palaearctic Tachinidae (Diptera). Entomologist's Record and Journal of Variation **112**: 25–36.

Herting, B. 1960. Biologie der westpaläarktischen Raupenfliegen (Dipt., Tachinidae). Monographien zur angewandten Entomologie **16**. 188 pp.

Tschorsnig, H.-P. and Herting, B. 1994. Die Raupenfliegen (Diptera: Tachinidae) Mitteleuropas: Bestimmungstabellen und Angaben zur Verbreitung und Ökologie der einzelnen Arten. Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie) **506**: 1–170.

New host records for *Nemorilla maculosa* (Diptera: Tachinidae) from Finland (J. Pohjoismäki and C. Bergström)

Nemorilla maculosa (Meigen) is a rather rare tachinid in Northern Europe and previously considered to be mostly associated with microlepidopteran hosts (Tschorsnig and Herting 1994). In May 2008, J. Pohjoismäki managed to rear six males and six females of *N. maculosa* from the pupae of *Gynaeophora selenitica* (Lepidoptera: Lymantriidae), which is a previously unpublished host species. However, in the collection of Helsinki Zoological Museum (MZH) there are several specimens of *N. maculosa* reared from this host species (C. Bergström det.) (Table 1).

The *G. selenitica* larvae were collected on 26th of April from V (=Varsinais-Suomi): Lieto, Nautelanrahka (60°30'15"N 22°27'30"E) by Mr. Manu Soininmäki. The habitat is a typical Southern-Finnish mire with an open center with *Sphagnum* mosses and low, peatland-specific plants, bordered by low pine trees and *Vaccinium uliginosum, Betula nana, Ledum palustre* and *Calluna vulgaris* shrubs.

The seemingly normal, full grown host larvae were found hiding under the leaves of *Rubus chamaemorus*. The parasitized host larvae managed to spin a cocoon and to pupate apparently normally before the tachinid larvae emerged. One host could harbor one to four parasitoid larvae and the overall parasitism rate was approximately 60%. *Nemorilla maculosa* was also the only encountered parasitoid. This observation together with the historical findings (Table 1), indicate that *N. maculosa* is an important parasitoid of *G. selenitica*, at least regionally. Some *Phragmatobia fuliginosa* (Lepidoptera: Arctiidae) larvae that were collected from the same location on the same day, produced only the common and expected tachinid *Hubneria affinis* (Fallén). Both moth species have hairy larvae which live on low growing plants and overwinter as larvae and pupate the following spring.

It is, based on the host records and flight-time observations, in the Nordic countries the end of May to early September, tempting to suggest that *N. maculosa* has two generations with different host preferences. The spring generation might prefer smaller, often microlepidopteran hosts and the autumn generation larger hosts that provide a more favorable overwintering environment. Similar host preference differences between generations are known among other tachinids, such as *Actia resinellae* (Schrank) (Andersen 1996). *Gynaeophora selenitica* seems to be the preferred host for the assumed polyphagous parasitoid, although other apparently possible hosts are available in the same habitat. This raises further interesting questions about the key factors affecting host selection in Tachinidae.

References

Andersen, S. 1996. The Siphonini (Diptera: Tachinidae) of Europe. Fauna Entomologica Scandinavica **33**: 1–146.

Tschorsnig, H.-P. and Herting, B. 1994. Die Raupenfliegen (Diptera: Tachinidae) Mitteleuropas: Bestimmungstabellen und Angaben zur Verbreitung und Ökologie der einzelnen Arten. Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie) **506**: 1–170.

Table 1. Host records for *Nemorilla maculosa* in the HZM collection.

Host	exx	Province	Location	Date	Collector
Anarta myrtilli (Lep: Noctuidae)	1	Uusimaa	Tvärminne	1923	Kanerva
Exapate congelatella (Lep: Tortricidae)	1	Uusimaa	Tvärminne	VII-1926	Nordman
Eupithecia nanata (Lep: Geometridae)	1	Uusimaa	Tvärminne	VII-1933	Nordman
Gynaeophora selenitica (Lep: Lymantriidae)	1	Varsinais-Suomi	Vihti	4-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	1	Varsinais-Suomi	Vihti	14-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	4	Varsinais-Suomi	Vihti	21-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	1	Varsinais-Suomi	Vihti	22-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	1	Varsinais-Suomi	Vihti	27-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	1	Varsinais-Suomi	Vihti	28-II-1939	O. Peltonen
Gynaeophora selenitica (Lep: Lymantriidae)	2	Varsinais-Suomi	Vihti	1-III-1939	O. Peltonen
Acrobasis consociella (Lep: Pyralidae)	3	Ahvenanmaa	Föglö	20-VII-1939	Nordman
Depressaria heraclei (Lep: Oecophoridae)	1	Uusimaa	Helsinki	22-VIII-1941	J. Grönvall
Lacanobia oleracea (Lep: Noctuidae)	1	Uusimaa	Sipoo	22-IX-1947	Nordman
Gynaeophora selenitica (Lep: Lymantriidae)	1	Etelä-Häme	Forssa	1945/46	Hellman
Athetis lepigone (Lep: Noctuidae)	1	Uusimaa	Tvärminne	?	Kanerva
Scythris noricella (Lep: Scythridae)	2	Uusimaa	Tvärminne	?	Nordman

Updated checklist of the Tachinidae of Israel (by P. Cerretti and A. Freidberg)

Introduction

During a recent visit to Tel Aviv (March 2007) by the senior author, we took the occasion to re-examine part of the vast tachinid collection held in the Zoological Collections of Tel Aviv University (TAU). From the point of view of faunistics, the material kept at TAU is outstanding. Indeed, the specimens, collected from throughout most of Israel, cover a continuous period of about 50 years. A large part of the material collected up to the early 1980s was studied and published by the late Prof. J. Kugler (cf. Kugler 1961, 1963, 1966a, 1966b, 1968, 1971, 1972, 1974, 1977, 1978a, 1978b, 1980; Kugler & Nitzan 1977).

In the months following that visit we decided to contribute further to the considerable tachinid heritage of this collection and the excellent work of Prof. Kugler (part of which remains unpublished), by planning, over a period of three years (2009–2011), a volume for the series Fauna Palaestina. The first stage of the project has been to compile a preliminary checklist based on data in the literature and several new records. We consider *The*

Tachinid Times to be the appropriate venue in which to present this list, in order to make it immediately available to the scientific community, and in the hope that we will receive useful suggestions, and possibly also additional material, over the coming three years.

Methods

The list, unless otherwise indicated, was compiled essentially from the two important Palaearctic catalogues (Herting 1984; Herting & Dely-Draskovits 1993). Most of the species listed in the catalogues were confirmed by a study of the specimens held at TAU. This list, of 299 species, comprises 33 newly recorded species resulting from the study of over 2,000 specimens from the TAU miscellanea. Each new record is followed by the label data of the examined specimens. The systematic arrangement essentially follows that suggested by Herting (1984). All the specimens examined are preserved in TAU.

Abbreviations:
AF = Amnon Freidberg
B&B = Brauer and Bergenstamm
R-D = Robineau-Desvoidy
TAU = Museum of Zoology, Tel Aviv University, Tel Aviv, Israel

DEXIINAE

DEXIINI

Billaea R-D, 1830
- *adelpha* (Loew, 1873)
- *biserialis* (Portschinsky, 1881)
- *intermedia* (Portschinsky, 1881)
- *maritima* (Schiner, 1862)
- *pectinata* (Meigen, 1826)

Estheria R-D, 1830
- *nigripes* (Villeneuve, 1920)

Trixiceps Villeneuve, 1936
- *russea* Mesnil, 1980

Zeuxia Meigen, 1826
- *aberrans* (Loew, 1847)
- *cinerea* Meigen, 1826
- *subapennina* (Rondani, 1862)
- *tricolor* (Portschinsky, 1881) (Bystrowski & Zeegers 2008)

DUFOURIINI

Dufouria R-D, 1830
- *chalybeata* (Meigen, 1824)
- *nigrita* (Fallén, 1810)

Microsoma Macquart, 1855
- *exiguum* (Meigen, 1824)

Pandelleia Villeneuve, 1907
- *albipennis* Villeneuve, 1934
- *sexpunctata* (Pandellé, 1896). **New record**. 1♀, Haifa, 2.IV.1977, AF leg.

Rondania R-D, 1850
- *dispar* (Dufour, 1851)

VORIINI

Athrycia R-D, 1830

The genus is being revised by Bergström & Cerretti (in prep.)

Undescribed species

Campylocheta Rondani, 1859
- *inepta* (Meigen, 1824). **New record**. 1♂, Nahal Oren, #4, 30.V.1998, AF leg.

Cyrtophleba Rondani, 1856
- *ruricola* (Meigen, 1824)

Engeddia Kugler, 1977
- *multisetosa* Kugler, 1977

Eriothrix Meigen, 1803
- *apennina* (Rondani, 1862)
- *argyreata* (Meigen, 1824). **New record**. 1♀, Mt. Hermon, 2000 m, 6.VII. 1987, I. Nussbaum leg.; 1♀, Mt. Dov, 8.VII.1987, I. Nussbaum leg.
- *rufomaculata* (DeGeer, 1776)

Hyleorus Aldrich, 1926
- *nudinerva* (Villeneuve, 1920)

Hypovoria Villeneuve, 1912
- *hilaris* (Villeneuve 1913)
- *pilibasis* (Villeneuve, 1922)

Periscepsia Gistel, 1848 subg. *Periscepsia*
- *carbonaria* (Panzer, 1798)
- *handlirschi* (B&B, 1891)

Periscepsia subg. *Ramonda* R-D, 1863
- *cleui* Herting, 1980. **New record**. 1♂, Lifta, 2.V.1982, I Nussbaum.
- *plorans* (Rondani, 1861)
- *prunicia* (Herting, 1969)

Plagiomima B&B, 1891
- *sinaica* (Villeneuve *in* Hermann & Villeneuve, 1909)

Uclesia Girschner, 1901
- *brevinervis* Mesnil, 1974
- *melancholica* (Mesnil, 1953)
- *nigrescens* (Mesnil, 1953)
- *simyrae* Herting, 1966

Stomina R-D, 1830
- *angustifrons* Kugler, 1968
- *caliendrata* (Rondani, 1862)
- *iners* (Meigen, 1838)
- *kugleri* Mesnil, 1975
- *tachinoides* (Fallén, 1817)

Voria R-D, 1830
- *ruralis* (Fallén, 1810)

Wagneria R-D, 1830
- *albifrons* Kugler, 1977
- *cunctans* (Meigen, 1824)
- *dilatata* Kugler, 1977
- *theodori* Mesnil, 1974

EXORISTINAE

ACEMYINI

Acemya R-D, 1830
- *fishelsoni* Kugler, 1968

Ceracia Rondani, 1865
- *mucronifera* Rondani, 1865

Metacemyia Herting, 1969

aartseni Zeegers, 2007 (Bystrowski & Zeegers 2008)
calloti (Séguy, 1936)

BLONDELIINI

Bampura Tschorsnig, 1983
angustigena Tschorsnig, 1983. **New record**. 1♀, Zomet Zohar, 4.IV.1998, AF leg.
Belida R-D, 1863
angelicae (Meigen, 1824)
Compsilura Bouché, 1834
concinnata (Meigen, 1824)
Erynniopsis Townsend, 1926
antennata (Rondani, 1861)
Gastrolepta Rondani, 1862
anthracina (Meigen, 1826). **New record**. 2♂♂, Majdal Shams, 12.V.1998, AF leg.
Istocheta Rondani, 1859
cinerea (Macquart, 1850)
Ligeria R-D, 1863
angusticornis (Loew, 1847)
Lomachantha Rondani, 1859
rufitarsis Villeneuve, 1912
Meigenia R-D, 1830
dorsalis (Meigen, 1824). **New record**. 3♂♂, Golan, Ani'am, 18.V.1983, F. Kaplan leg.; 5♂♂, Qasabiya, 30.XII.1983, 22.I.1984, 17.II.1984, I. Nussbaum leg.; 1♂, Judean Desert, W[adi] Qilt 1 Km E Qilt, 16.I.1984, D.G. Furth leg.; 1♂, Qazrin, 21.V.2002, L. Friedman leg.
incana (Fallén, 1810). **New record**. 1♀, Rosh Zuqim, 23.XII.2002, AF leg.; 1♀, Zefat, 10.VI.1982, AF leg.
mutabilis (Fallén, 1810)
simplex Tschorsnig & Herting, 1998. **New record**. 1♂, Azor, 5.V.1992. 1♂, Devira, 14.IV.2003, AF leg.
Picconia R-D, 1863
incurva (Zetterstedt, 1844)
Rioteria Herting, 1973
submacula Herting, 1973
Steleoneura Stein, 1924
czernyi Stein, 1924
Zaira R-D, 1830
cinerea (Fallén, 1810)

ERYCIINI

Alsomyia B&B, 1891
capillata (Rondani, 1859)
sp. nr. *olfaciens* Pandellé, 1896
Amelibaea Mesnil, 1955
?*signifera* (Villeneuve, 1929). Material examined: 1♂, Ein-Zivan, 15.IV. 1982, I. Nussbaum leg.; 3♂♂, 2♀♀, Golan, 5 Km S Quneitra, 15.IV.1982, F. Kaplan leg.; 1♀, Tel Aviv, dunes, 9.III.2002, AF leg.
Remarks. The identity of this species is not clear since the male holotype is apparently lost. All the specimens examined correspond well to the original description (Villeneuve 1929) and are surely congeneric with *A. tultschensis* (B&B) by having the compound eye covered with long ommatrichia, postpronotum with only 3 setae arranged in a triangle and very similar shape of male terminalia. *Amelibaea "signifera"* differs from *A. tultschensis* as follow: i) having occiput without black setulae behind postocular row, and ii) scutum with 4 postsutural dorsocentral setae. *Amelibaea tultschensis* has black setulae behind the postocular row, and the scutum with 3 postsutural dorsocentral setae.
tultschensis (B&B, 1891)
Amphicestonia Villeneuve, 1939
dispar Villeneuve, 1939
Aplomya R-D, 1830
confinis (Fallén, 1820)
metallica (Wiedemann, 1824)
Buquetia R-D, 1847
musca R-D, 1847
Cadurciella Villeneuve, 1927
rufipalpis Villeneuve, 1927
Carcelia R-D, 1830 subg. *Carcelia*
lucorum (Meigen, 1824)
rasa (Macquart, 1849)
Carcelia subg. *Carcelita* Mesnil, 1976
Remarks: new record of the subgenus for the Palaearctic Region.
Undescribed species
Carcelia subg. *Euryclea* R-D, 1863
falenaria (Rondani, 1859)
Cestonia Rondani, 1861
canariensis Villeneuve, 1936
cineraria Rondani, 1861
grisella Mesnil, 1963 (Bystrowski & Zeegers 2008)
Cestonionerva Villeneuve, 1929
petiolata (Villeneuve, 1910)
punctata Kugler, 1980
Cestonioptera Villeneuve, 1939
mesnili Villeneuve, 1939 (Bystrowski & Zeegers 2008)
Chetina Rondani, 1856
longicauda Kugler, 1974
setigena (Rondani, 1861)
Drino R-D, 1863
atropivora (R-D, 1830)
imberbis (Wiedemann, 1830)
Remarks: citations of *D. imberbis* for Israel, as well as for Egypt, probably refer to *D. zonata* (cf. Crosskey 1967, as *Palexorista*).
zonata (Curran, 1927). **New record**. 1♂, Nahal Qetura, 2.V.1986, F. Kaplan leg.; 2♂♂, Nahal Zenifim, 3.V.1986, F. Kaplan leg.
Doubtful species: *monosetosa* Kugler, 1963. *Nomen nudum*.
Erycesta Herting, 1967
caudigera (Rondani, 1861)
Erycia R-D, 1830
fasciata Villeneuve, 1924
Doubtful species: *hierosolymitana* Kugler, 1963. *Nomen nudum*.
Gymnophryxe Villeneuve, 1922
nudigena (Villeneuve, 1922)
theodori (Kugler, 1968)

Lydella R-D, 1830
grisescens R-D, 1830
Phryxe R-D, 1830
prima (B&B, 1889)
vulgaris (Fallén, 1810)
Pseudoperichaeta B&B, 1889
palesioidea R-D, 1830
Ptesiomyia B&B, 1893
longicornis Kugler, 1980
Sturmiopsis Townsend, 1916
emdeni Mesnil, 1952
Thelyconychia B&B, 1889
solivaga (Rondani, 1861)
Wardarina Mesnil, 1953
melancholica Mesnil, 1956

ETHILLINI
Amnonia Kugler, 1971
carmelitana Kugler, 1971
Atylomyia Brauer, 1898
albifrons Villeneuve, 1911
loewii Brauer, 1898
Ethilla R-D, 1863
aemula (Meigen, 1824)
Paratryphera B&B, 1891
barbatula (Rondani, 1859)
mesnili Herting, 1977

EXORISTINI
Alloprosopaea Villeneuve, 1923
efflatouni Villeneuve, 1923
Bessa R-D, 1863
selecta (Meigen, 1824). **New record**. 1♀, Zikhorn Ya'aqov, 1.IV.1998. AF leg.
Chetogena Rondani, 1856
acuminata Rondani, 1859
aegyptiaca (Villeneuve, 1923)
cercosa Kugler, 1980
nigrofasciata (Strobl, 1902) [= *repanda* (Mesnil, 1939)]
obliquata (Fallén, 1810)
siciliensis (Villeneuve, 1924)
Crassicornia Kugler, 1980
pilosa (Kugler, 1980)
Exorista Meigen, 1803 subg. *Exorista*
larvarum (Linnaeus, 1758)
segregata (Rondani, 1859)
Exorista subg. *Adenia* R-D, 1863
cuneata Herting, 1971. **New record**. 2♂♂, N[ahal]. Tut, 18.V.1982, I. Nussbaum leg.
lacteipennis Mesnil, 1970
mimula (Meigen, 1824)
rustica (Fallén, 1810)
Exorista subg. *Podotachina* B&B, 1891
longicercus Kugler, 1980
sorbillans (Wiedemann, 1830)
tesselans Mesnil, 1939
Exorista subg. *Ptilotachina* B&B, 1891
deligata Pandellé, 1896
ebneri Villeneuve, 1922
kugleri Mesnil, 1960
xanthaspis (Wiedemann, 1830)
Phorocera R-D, 1830
grandis (Rondani, 1859)
Doubtful species: *carmelitana* Kugler, 1963. *Nomen nudum*.

GONIINI
Baumhaueria Meigen, 1838
goniaeformis (Meigen, 1824)
Blepharipa Rondani, 1856
pratensis (Meigen, 1824)
Brachychaeta Rondani, 1861
petiolata Mesnil, 1953
Ceratochaetops Mesnil, 1954
triseta (Villeneuve, 1922)
Doubtful species: *emdeni* (Kugler, 1963) *Nomen nudum*.
Clemelis R-D, 1863
gymnops Herting, 1975
massilia Herting, 1977. **New record**. 1♂, 'Arad, 1.V.1997, AF leg.; 1♂, Har Horesha, 900-1000 m, 18.IV.1998, AF leg.
pullata (Meigen, 1824)
Crapivnicia Richter, 1995
Remarks: the genus was recently moved from Eryciini to Goniini by Richter (2007).
blaptis (Kugler, 1971)
Datvia Richter, 1972
deserticola Richter, 1972. **New record**. 2♂♂, Jericho, 7.IV.1970, 29.IV.1971, J. Kugler leg.; 1♂, 'Arad, 6.V.1971, J. Kugler leg.; 1♂, Lower Wadi Faria, 28.IV.1976, M. Kaplan leg.
Dolichocolon B&B, 1889
paradoxum B&B, 1889
Elodia R-D, 1863
ambulatoria (Meigen, 1824)
atricans (Herting, 1975)
Eumeella Mesnil, 1939
perdives (Villeneuve, 1926)
Gaedia Meigen, 1838
Unidentified sp.
Gonia Meigen, 1803
atrata Bischof, 1906
bimaculata Wiedemann, 1819
foersteri Meigen, 1838
maculipennis Egger, 1862
olgae (Rohdendorf, 1927). **New record**. 1♀, Bor Mashash, 22.IV.1986, F. Kaplan leg.
ornata Meigen, 1826
picea (R-D, 1830)
umbripennis Herting, 1958
Goniophthalmus Villeneuve, 1910
halli Mesnil, 1956
Mendelssohnia Kugler, 1971
sinaica Kugler, 1971. **New record**. 1♀, Nahal Raham, 300 m, 8.IV.1997, A Freidberg leg.; 1♂, Ramon-HaMeshar,

25.III.1993, AF leg.)
Ocytata Gistel, 1848
pallipes (Fallén, 1820)
Pales R-D, 1830
abdita Cerretti, 2005. **New record**. 1♂, Baniass, 13.VI.1982, AF leg.; 1♂, 1♀, Baniass, 12.IV.1983, AF leg.; 4♂♂, Carmel, 6.xi.1980 and 30.IX.1981, AF leg.; 1♂, 'En Zetim, 21.V.1997, AF leg.; 1♂, Montfort, 17.III.1983, AF leg.; 1♂, Nahal Oren, 26.IV.1999, AF leg.; 1♀, Park HaYarden, 20.VI.1982, AF leg.
latifrons Kugler, 1980
pavida (Meigen, 1824)
Palesisa Villeneuve, 1929
aureola Richter, 1974
Remarks: all the specimens in TAU were misidentified as *P. nudioculata* Villeneuve, 1929.
[*Palesisa nudioculata*: Kugler 1980: 49.]
maculosa (Villeneuve, 1936) (probable junior synonym of *P. deserticola* (Rohdendorf, 1931)).
Parapexopsis Mesnil, 1953
cephalotes Mesnil, 1953
Platymya R-D, 1830
antennata (B&B, 1891)
fimbriata (Meigen, 1824
Prosopea Rondani, 1861
nigricans (Egger, 1861)
Pseudogonia B&B, 1889
rufifrons (Wiedemann, 1830)
Ramonella Kugler, 1980
mesnili (Kugler, 1980)
Rhynchogonia B&B, 1893
algerica B&B, 1893
Schembria Rondani, 1861
meridionalis Rondani, 1861
Simoma Aldrich, 1926
grahami Aldrich, 1926
Spallanzania R-D, 1830
hebes (Fallén 1820) **New record**. 1♂, Bor Mashash, 21.VII.1986, AF leg.
rectistylum (Macquart, 1847)
Sturmia R-D, 1830
bella (Meigen, 1824)

THRIXIONINI
Thrixion B&B, 1889
aberrans (Schiner, 1862)

WINTHEMIINI
Nemorilla Rondani, 1856
maculosa (Meigen, 1824)

PHASIINAE
CATHAROSIINI
Catharosia Rondani, 1868
albisquama (Villeneuve, 1932)
claripennis Kugler, 1977
flavicornis (Zetterstedt, 1859)
pygmaea (Fallén, 1815)

CYLINDROMYIINI
Besseria R-D, 1830
lateritia (Meigen, 1824)
nuditibia Kugler, 1977
zonaria (Loew, 1847). **New record**. 1♂, Eshkolot, 29.V.2002, AF leg.
Cylindromyia Meigen, 1803 subg. *Plesiocyptera* B&B, 1893
rubida (Loew, 1854)
Cylindromyia subg. *Cylindromyia* Meigen, 1803
brassicaria (Fabricius, 1775)
montana Kugler, 1974
pilipes (Loew, 1844)
Cylindromyia subg. *Calocyptera* Herting, 1983
intermedia (Meigen, 1824)
Cylindromyia subg. *Conopisoma* Speiser, 1910
rufipes (Meigen, 1824). **New record**. 2♂♂, Nahal Hiyyon Rt. 40 nr. Ne'ot Semader, 13.X.1997, AF leg.; 1♂, En Gev, 2.IV.1998, AF leg.
Cylindromyia subg. *Dupuisia* Lehrer, 1973
crassa (Loew, 1845)
Cylindromyia subg. *Eucylindromyia* Herting, 1983
theodori Kugler, 1974
Cylindromyia subg. *Neocyptera* Townsend, 1916
auriceps (Meigen, 1838)
hermonensis Kugler, 1974
Cylindromyia subg. *Ocypterula* Rondani, 1856
pusilla (Meigen, 1824)
Phania Meigen, 1824
albisquama (Villeneuve, 1924)

LEUCOSTOMATINI
Clairvillia R-D, 1830
biguttata (Meigen, 1824)
pninae Kugler, 1971
Dionaea R-D, 1830
aurifrons (Meigen, 1824)
Dionomelia Kugler, 1978
hennigi Kugler, 1978
Eulabidogaster Belanovsky, 1951
setifacies (Rondani, 1861)
Labigastera Macquart, 1834
nitidula (Meigen, 1824)
Leucostoma Meigen, 1803
abbreviatum Herting, 1971
crassum Kugler, 1966
edentatum Kugler, 1978
engeddense Kugler, 1966
obsidianum (Wiedemann, 1830)
Oblitoneura Mesnil, 1975
agromyzina Mesnil, 1975
Weberia R-D, 1830
digramma (Meigen, 1824)

PHASIINI
Clytiomya Rondani, 1861
dupuisi Kugler, 1971
mesnili Kugler, 1968
sola (Rondani, 1861)

Ectophasia Townsend, 1912
crassipennis (Fabricius, 1794)
oblonga (R-D, 1830)
Eliozeta Rondani, 1856
helluo (Fabricius, 1805)
Elomya R-D, 1830
lateralis (Meigen, 1824)
Gymnosoma Meigen, 1803
acrosterni Kugler, 1971
clavatum (Rohdendorf, 1947)
nudifrons Herting, 1966. **New record**. 2♂♂, Zomet Ha'Amaqim (Jalame), 26-30.V.1993. AF leg.
Opesia R-D, 1863
grandis (Egger, 1860) (Bystrowski & Zeegers 2008)
Phasia Latreille, 1804 subg. *Phasia*
obesa (Fabricius, 1798)
subcoleoptrata (Linne, 1767)
Phasia subg. *Hyalomya* R-D, 1830
mesnili (Draber-Monko, 1965) [= *theodori* (Draber-Monko, 1965)]
pusilla Meigen, 1824
Xysta Meigen, 1824
holosericea (Fabricius, 1805)

TACHININAE
BIGONICHETINI
Triarthria Stephens, 1829
setipennis (Fallén, 1810)
Trichactia Stein, 1924
pictiventris, Zetterstedt, 1852

BRACHYMERINI
Neoemdenia Mesnil, 1953
mirabilis Mesnil, 1953

ERNESTIINI
Erebiomima Mesnil, 1953
hertingi Kugler, 1968
luteisquama Mesnil, 1953
Gymnochaeta R-D, 1830
viridis (Fallén, 1810). **New record**. 8♂♂, Mt. Hermon, 1600 m, 23.IV.1982, AF leg.
Linnaemya R-D, 1830 subg. *Linnaemya*
neavei Curran, 1934
soror Zimin, 1954
Linnaemya subg. *Homoeonychia* B&B, 1889
frater (Rondani, 1859)
lithosiophaga (Rondani, 1859)
Linnaemya subg. *Ophina* R-D, 1863
dumonti Mesnil, 1971. **New record**. 1♂, 1♀, Zomet Ha'Arava, 5 Km S, 2.III.1994, AF leg.
petiolata Kugler, 1971. **New record**. 1♂, Ziqim, 10.i.1998, AF leg.
setifrons Zimin, 1954
Loewia Egger, 1856
crassipes (Mesnil, 1953)
Microcerophina Kugler, 1977
planifacies Kugler, 1977
Panzeria R-D, 1830
castellana (Strobl, 1906) (= *Eurithia* R-D)
longiventris (Kugler, 1971) (= *Ernestia* R-D)

GERMARIINI
Germaria R-D, 1830
hermonensis Kugler, 1980
ruficeps (Fallén, 1820)

GRAPHOGASTRINI
Graphogaster Rondani, 1868
dispar (B&B, 1889) (Bystrowski & Zeegers 2008)
parvipalpis Kugler, 1974
vestita Rondani, 1868
Heraultia Villeneuve, 1920
albipennis Villeneuve, 1920
Neaera R-D, 1830
atra R-D, 1850
laticornis (Meigen, 1824). **New record**. 1♂, 1♀, Mt. Hermon, 1400 m, 9.VI.1983, Y. Zuila [?] leg.; 5♂♂, 1♀, Mt Hermon, 21.V.1986, AF leg.
Phytomyptera Rondani, 1845
lacteipennis Villeneuve, 1934. **New record**. 1♀, Nahal Kasuy, 2.V.1986, AF leg.; 1♂, Nahal Raham, 200 m, 6.IV.1997, AF leg.; 1♀, 'En Hazeva, 4.IV.1998, AF leg.; 2♂♂, 1♀, Elot, 26.III.1993, AF leg.
nigrina (Meigen, 1824)

LESKIINI
Aphria R-D, 1830
longirostris (Meigen, 1824)
Bithia R-D, 1863
acanthophora (Rondani, 1861). **New record**. 1♂, Mt. Hermon, 1600 m, 19.V.1983, AF leg.
golanensis (Kugler, 1971)
hermonensis Kugler, 1977
modesta (Meigen, 1824)
pauciseta Kugler, 1974
setulosa (Kugler, 1968)
Clausicella Rondani, 1856
puella (Rondani, 1861)
suturata Rondani, 1859
triangulifera Mesnil, 1963
Fischeria R-D, 1830
bicolor R-D, 1830
Leskia R-D, 1830
erevanica Richter, 1974. **New record**. 1♂, Mt. Hermon, 1600 m, 31.VIII.1984, AF leg.
Prodemoticus Villeneuve, 1919
moderatus Kugler, 1980
orientalis Villeneuve, 1919

MACQUARTIINI
Macquartia R-D, 1830
praefica (Meigen, 1824)
tenebricosa (Meigen, 1824)
tessellum (Meigen, 1824)

MINTHOINI
Mintho R-D, 1830

compressa (Fabricius, 1787)
rufiventris (Fallén, 1817)
Minthodes B&B, 1889
latifacies Herting, 1983
[*pictipennis*: Kugler 1980, misidentification.]
Palmonia Kugler, 1972
hermonensis Kugler, 1972
Plesina Meigen, 1838
claripennis Mesnil, 1953
deserticola Kugler, 1978. **New record**. 1♀, En Mor, 23-24.VIII.1990, AF leg.; 1♂, N[ahal] Ye'elim, 2 Km E Arad, 28.IV.1988, AF leg.
Pseudomintho B&B, 1889
atra Kugler, 1971
diversipes (Strobl, 1899)
Rossimyiops Mesnil, 1953 [= *Mesnilomyia* Kugler, 1972 (cf. Cerretti et al. 2009)]
achilleae (Kugler, 1972)
longicornis (Kugler, 1972)
magnificus (Kugler, 1972)
subapertus (Herting, 1983)
Ziminia Mesnil, 1963
masiceraeformis (Portschinsky, 1881)

SIPHONINI
Actia R-D, 1830
infantula (Zetterstedt, 1844)
Peribaea R-D, 1863
apicalis R-D, 1863. **New record**. 1♂, Zikhron Ya'aqov, 1.V.1998, AF leg. [= *minuta*: Andersen 1996.]
orbata (Wiedemann, 1830)
palaestina (Villeneuve, 1934)
tibialis (R-D, 1851)
Siphona Meigen, 1803
efflatouni Mesnil, 1960
geniculata (De Geer, 1776). **New record**. 1♂, 1♀, Hadéra, Berekhat Atta, 1.V.1998, AF leg.; 1♀, Qasabiya, 20.III.1984, I. Nussbaum leg.
griseola Mesnil, 1970
variata Andersen, 1982 (cf. Andersen 1996)

TACHININI
Laufferiella Villeneuve, 1929
elegans Villeneuve, 1929
Peleteria R-D, 1830
iavana (Wiedemann, 1819) [= *varia* (Fabricius, 1794), junior primary homonym]
meridionalis (R-D, 1830)
rubescens (R-D, 1830)
ruficornis (Macquart, 1835)
Tachina Meigen, 1803 subg. *Eudoromyia* Bezzi, 1906
fera (Linnaeus, 1761)
magnicornis (Zetterstedt, 1844)
Tachina subg. *Echinogaster* Lioy, 1864
praeceps Meigen, 1824
Tachina subg. *Servillia* R-D, 1830
lurida (Fabricius, 1781)

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References
Andersen, S. 1996. The Siphonini (Diptera: Tachinidae) of Europe. Fauna Entomologica Scandinavica **33**: 1–148.
Bystrowski, C. and Zeegers, T. 2008. Some interesting Tachinidae from Israel. The Tachinid Times **21**: 16–17.
Cerretti P., De Biase, A. and Freidberg, A. 2009. Systematic study of the genus *Rossimyiops* Mesnil (Diptera, Tachinidae). Zootaxa **1984**: 31–56.
Crosskey, R.W. 1967. A revision of the Oriental species of *Palexorista* Townsend (Diptera: Tachinidae, Sturmiini). Bulletin of the British Museum (Natural History). Entomology **21**: 35– 97.
Herting, B. 1984. Catalogue of Palearctic Tachinidae (Diptera). Stuttgarter Beiträge zur Naturkunde (A) **369**: 1–228.
Herting, B. and Dely-Draskovits, Á. 1993. Family Tachinidae. Pp. 118–458. *In*: Soós, Á & Papp, L., eds., Catalogue of Palaearctic Diptera. Volume 13. Anthomyiidae – Tachinidae. Hungarian Natural History Museum, Budapest. 624 pp.
Kugler, J. 1961. *Orgyia dubia* Tausch. and its parasites in Israel. The Bulletin of the Research Council of Israel (B) **10**: 62–72.
Kugler, J. 1963. Tachinidae of Israel. I. General part. Israel Journal of Zoology **12**: 25–34.
Kugler, J. 1966a. A list of parasites of Lepidoptera from Israel. Israel Journal of Entomology **1**: 75–88.
Kugler, J. 1966b. Species of the genus *Leucostoma* (Tachinidae, Phasiinae) in Israel. Israel Journal of Zoology **15**: 173–182.
Kugler, J. 1968. Tachinidae of Israel III. Description of six new species. Israel Journal of Entomology **3**: 59–68.
Kugler, J. 1971. Tachinidae of Israel IV. Description of ten new species. Israel Journal of Zoology **20**: 69–88.
Kugler, J. 1972. Tachinidae of Israel V. *Mesnilomyia* and *Palmonia*, two new genera of Tachinidae (Diptera). Israel Journal of Zoology **21**: 103–112.
Kugler, J. 1974. Tachinidae (Diptera) from Mt. Hermon, with the description of six new species. Israel Journal of Entomology **9**: 109–131.
Kugler, J. 1977. Neue Tachinidae aus Israel (Diptera). Stuttgarter Beiträge zur Naturkunde (A) **301**: 14 pp.
Kugler, J. 1978a. A revision of the tachinid fly genus *Plesina* (Diptera, Tachinidae). Entomologica Germanica **4**: 84–96.
Kugler, J. 1978b. *Leucostoma edentata* n. sp. and *Dionomelia hennigi* n. gen., n. sp., two new Leucostomatini from Israel (Dipt: Tachinidae, Phasiinae). Entomologica Germanica **4**: 344–348.
Kugler, J. 1980. New taxa of Tachinidae (Diptera) with a list of the species from Israel and adjacent territories. Israel Journal of Entomology **13**: 27–60.
Kugler, J. and Nitzan, Y. 1977. Biology of *Clausicella suturata* (Dipt., Tachinidae) a parasite of *Ectomyelois*

ceratoniae (Lep., Phycitidae). Entomophaga **22**: 93–105.
Richter, V.A. 2007. On the tachinid fauna (Diptera, Tachinidae) of the southeast of European Russia. [In Russian.] Entomologicheskoe Obozrenie **86**: 905–917.
Villeneuve, J. 1929. Descriptions de Diptères égyptiens. Bulletin de la Société Royale Entomologique d'Egypte **1928**: 43–46.

TACHINID BIBLIOGRAPHY

Included here are references on the Tachinidae that have been found during the past year and have not appeared in past issues of this newsletter. This list has been generated from an EndNote® 'library' and is based on online searches of literature databases, perusal of journals, and reprints or citations sent to me by colleagues. The complete bibliography, incorporating all the references published in past issues of **The Tachinid Times** and covering the period from 1980 to the present is available online at: http://www.nadsdiptera.org/Tach/Bib/biblio.htm. Articles from **The Tachinid Times** are now included in this tachinid bibliography. I would be grateful if omissions or errors could be brought to my attention.

Please note that citations in the online Tachinid Bibliography are updated when errors are found or new information becomes available, whereas citations in this newsletter are never changed. Therefore, the most reliable source for citations is the online Tachinid Bibliography.

I am grateful to Shannon Mahony for maintaining our EndNote® libraries of tachinid literature and for performing the online searches that contributed most of the titles given below.

Abbasipour, H. and Tschorsnig, H.-P. 2008. Report of parasitoid flies, *Compsilura concinnata* and *Peribaea tibialis* (Dip.: Tachinidae) on the rice armyworm from Iran. [In Farsi.] Journal of Entomological Society of Iran **27** (2), Supplement: 3–6.
Bailey, N.W. and Zuk, M. 2008. Changes in immune effort of male field crickets infested with mobile parasitoid larvae. Journal of Insect Physiology **54**: 96–104.
Bergström, C. 2008. The identity of *Myxexoristops arctica* (Zetterstedt), with notes on some other *Myxexoristops* (Diptera: Tachinidae). Stuttgarter Beiträge zur Naturkunde A, New Ser. **1**: 435–444.
Bergström, C. and Hall, K. 2008. De första fynden av parasitflugan *Ectophasia crassipennis* (Fabricius, 1794) (Diptera, Tachinidae) från Norden. Entomologisk Tidskrift **129**: 95–98.
Caron, V., Janmaat, A.F., Ericsson, J.D. and Myers, J.H. 2008. Avoidance of the host immune response by a generalist parasitoid, *Compsilura concinnata* Meigen. Ecological Entomology **33**: 517–522.
Caron, V., Myers, J.H. and Gillespie, D.R. 2008. Fitness-related traits in a parasitoid fly are mediated by effects of plants on its host. Journal of Applied Entomology **132**: 663–667.
Cerretti, P., Biase, A. de and Freidberg, A. 2009. Systematic study of the genus *Rossimyiops* Mesnil (Diptera: Tachinidae). Zootaxa **1984**: 31–56.
Cerretti, P. and Tschorsnig, H.-P. 2007. Two new species of *Siphona* Meigen (Diptera: Tachinidae) from Sardinia and Morocco. Stuttgarter Beiträge zur Naturkunde. Serie A (Biologie) **704**: 1–7.
Cerretti, P. and Tschorsnig, H.-P. 2008. A new species of *Plesina* Meigen (Diptera: Tachinidae) from the Mediterranean. Stuttgarter Beiträge zur Naturkunde A, New Ser. **1**: 445–450.
Chen, H.-x. and Luo, L.-z. 2007. Host species, instar and position preference of a tachinid parasitoid, *Nemorilla maculosa* (Diptera: Tachinidae). [In Chinese.] Acta Entomologica Sinica **50**: 1129–1134.
Cossentine, J., Bennett, A., Goulet, H. and O'Hara, J. 2007. Parasitism of the spring leafroller (Lepidoptera: Tortricidae) complex in organically managed apple orchards in the north Okanagan valley of British Columbia. Pan-Pacific Entomologist **83**: 276–284.
Cui, J.-z., Bai, M., Wu, H. and Ji, L.-q. 2007. Catalogue of the insect type specimens deposited in China. Vol. 1. [In Chinese.] China Forestry Publishing House, Beijing. 2 + 10 + 792 pp.
Delfín-González, H., Bojórquez-Acevedo, M. and Manrique-Saide, P. 2007. Parasitoids of fall armyworm (Lepidoptera: Noctuidae) from a traditional maize crop in the Mexican state of Yucatan. Florida Entomologist **90**: 759–761.
Easton, E.R. 2007. Exploits of some famous entomologists of the Hawaiian Entomological Society. Proceedings of the Hawaiian Entomological Society **39**: 153–156.
Evenhuis, N.L. and O'Hara, J.E. 2008. The status of Mesnil's 1949 *Die Fliegen* genus-group names (Diptera: Tachinidae). Zootaxa **1827**: 65–68.
Evenhuis, N.L., Pape, T. and Pont, A.C. 2008. The problems of subsequent typification in genus-group names and use of the *Zoological Record*: a study of selected post-1930 Diptera genus-group names without type species designations. Zootaxa **1912**: 1–44.
Furlong, M.J., Ju, K.H., Su, P.W., Chol, J.K., Il, R.C. and Zalucki, M.P. 2008. Integration of endemic natural enemies and *Bacillus thuringiensis* to manage insect pests of *Brassica* crops in North Korea. Agriculture Ecosystems and Environment **125**: 223–238.
Ghahari, H., Hayat, R., Chao, C.-m. and Ostovan, H. 2008. A contribution to the dipteran parasitoids and predators in Iranian cotton fields and surrounding grasslands. Munis Entomology & Zoology **3**: 699–706.
Gordeeva, T.V. 2007. Unusual features of bionomy and distribution of *Ivela ochropoda* Eversmann, 1847 (Lepidoptera, Lymantriidae) in Siberia. [In Russian.] Evraziatskii Entomologicheskii Zhurnal **6**: 327–336 + vi.
Gordún, E. and Tschorsnig, H.-P. 2008. Wirtsbefunde von Phasiinae (Diptera: Tachinidae) aus Wanzen (Hemiptera: Pentatomidae und Scutelleridae) in Nordost-Spanien. Mitteilungen Entomologischen Verein Stuttgart **43**: 41–42.
Groot, M. de, Virant Doberlet, M. and Zunic, A. 2007. *Trichopoda pennipes* F. (Diptera, Tachinidae): a new natural enemy of *Nezara viridula* (L.) in Slovenia – short communication. Agricultura Slovenia **5**: 25–26.

Hao, J., Yao, Z.-y. and Zhang, C.-t. 2008. Research progress on the genus *Tachina* Meigen of China (Diptera: Tachinidae). Pp. 469–473. *In*: Shen, X.-c., Zhang, R.-z. and Ren, Y.-d., eds., Classification and distribution of insects in China. [In Chinese.] Chinese Agricultural Science and Technology Press, Beijing. 3 + 583 pp.

Hao, J., Zhang, C.-t. and Chi, Y. 2008. Taxonomic study of subgenus *Tachina* Meigen (Diptera, Tachinidae) from North China. [In Chinese with English summary.] Journal of Shenyang Normal University (Natural Science) **26**: 476–479.

Hao, J., Zhi, Y. and Zhang, C.-t. 2008. A list of Dexiini (Diptera, Tachinidae) from Shanghai Entomological Museum, CAS. [In Chinese with English summary.] Journal of Shenyang Normal University (Natural Science) **26**: 98–101.

Hubenov, Z. 2008. Composition and zoogeographical characteristics of the family Tachinidae (Insecta: Diptera) in the Balkan countries. Acta Zoologica Bulgarica **60**: 243–265.

Ichiki, R.T., Kainoh, Y., Kugimiya, S., Takabayashi, J. and Nakamura, S. 2008. Attraction to herbivore-induced plant volatiles by the host-foraging parasitoid fly *Exorista japonica*. Journal of Chemical Ecology **34**: 614–621.

Jagtap, C.R., Shetgar, S.S. and Nalwandikar, P.K. 2008. Key mortality factors of *Earias vittella* (Fabricius) and *Helicoverpa armigera* (Hubner) infesting okra. Journal of Maharashtra Agricultural Universities **33**: 195–200.

Jamalahmad, M. and Zaki, F.A. 2008. Natural parasitism of the rice skipper, *Parnara guttata* (Bremer and Grey) (Lepidoptera: Hesperiidae) infesting paddy at Anantnag, Kashmir. Journal of Biological Control **22**: 113–117.

Kara, K. and Aksu, S. 2008. Contributions to the Turkish Tachinidae (Diptera) fauna. Turkish Journal of Zoology **32**: 227–228.

Kot, I. 2007. Parasitic entomofauna of leaf tortricids (Lepidoptera: Tortricidae) occurring in apple orchards. Electronic Journal of Polish Agricultural Universities **10** (1), Art. 27: http://www.ejpau.media.pl/volume10/issue1/art-27.html.

Kowalczyk, J.K. and Kurzac, T. 2007. Protected, threatened and rare species of insects in the "Polana Siwica" nature reserve in the Bolimow Landscape Park (C Poland). [In Polish.] Chronmy Przyrode Ojczysta **63**: 60–69.

Kueppers, P.V. and Janikorn, L. 2007. Anmerkungen zu einigen Nachtfalterarten aus S-Thailand. (Lepidoptera, Heterocera: Limacodidae, Saturnidae, Sphingidae, Arctiidae et Noctuidae). Atalanta **38**: 335–341.

Kueppers, P.V. and Janikorn, L. 2007. Anmerkungen zu zwei thailaendischen Amathusien-Arten. (Lepidoptera, Morphinae Newman, 1834). Atalanta **38**: 329–334.

Kurahashi, H. and Leh, M.U. 2007. The flies from Sarawak, East Malaysia (Diptera: Muscidae, Calliphoridae, Sarcophagidae and Tachinidae). Medical Entomology and Zoology **58**: 261–273.

Laccone, G. 2007. Control of the grape berry moth based on active substances. [In Italian.] Informatore Agrario **63**: 67–69.

Lafranchis, T., Gil-T., F. and Lafranchis, A. 2007. New data on the ecology of 8 taxa of *Agrodiaetus* Hubner, 1822 from Greece and Spain: hostplants, associated ants and parasitoids (Lepidoptera, Lycaenidae, Hymenoptera, Diptera). Atalanta **38**: 189–197, 313.

Lakes-Harlan, R., Jacobs, K. and Allen, G.R. 2007. Comparison of auditory sense organs in parasitoid Tachinidae (Diptera) hosted by Tettigoniidae (Orthoptera) and homologous structures in a non-hearing Phoridae (Diptera). Zoomorphology **126**: 229–243.

Lee, H.-s. and Han, H.-y. 2008. A taxonomic study of the genus *Frontina* Meigen (Diptera: Tachinidae) in Korea. Journal of Asia-Pacific Entomology **11**: 137–143.

Li, H. and Luo, L.-z. 2007. The tachinids parasitizing on the meadow moth, *Loxostege sticticalis* (Lepidoptera: Pyralidae): species, types of parasitism and their roles in controlling the host population. [In Chinese.] Acta Entomologica Sinica **50**: 840–849.

Liu, J.-y., Ni, Y.-q. and Zhang, C.-t. 2008. Catalogue of the tribe Blondeliini of the Northeast China (Diptera: Tachinidae). Pp. 117–123. *In*: Shen, X.-c., Zhang, R.-z. and Ren, Y.-d., eds., Classification and distribution of insects in China. [In Chinese.] Chinese Agricultural Science and Technology Press, Beijing. 3 + 583 pp.

Lo Verde, G. and Massa, B. 2007. Observations on red palm weevel [weevil] *Rhynchophorus ferrugineus* in Sicily. [In Italian.] Bollettino di Zoologia Agraria e di Bachicoltura **39**: 131–149.

Loehr, P.-W. 2008. Fliegen aus einem Garten im Vorderen Vogelsberg. Hessische Faunistische Briefe **27**: 10–14.

Mamlayya, A.B., Aland, S.R., Kumbhar, V.J. and Bhawane, G.P. 2008. Incidence of uzi fly, *Blepharipa zebina*, on tropical tasar silkworm, *Antheraea mylitta*, from Amba Reserved Forest, Maharashtra. Bionotes **10**: 61.

Marconato, G., Dias, M.M. and Penteado-Dias, A.M. 2008. Larvas de Geometridae (Lepidoptera) e seus parasitoides, associadas a *Erythroxylum microphyllum* St.-Hilaire (Erythroxylaceae). Revista Brasileira de Entomologia **52**: 296–299.

Matama-Kauma, T., Schulthess, F., Le Rü, B.P., Mueke, J., Ogwang, J.A. and Omwega, C.O. 2008. Abundance and diversity of lepidopteran stemborers and their parasitoids on selected wild grasses in Uganda. Crop Protection **27**: 505–513.

Mazzeo, G., Longo, S., Seminara, A., Bella, S. and Ferrauto, G. 2007. Preliminary observations on anthophilous insects and foraging behaviour of *Apis mellifera* L. in a protected area of the Etna Park. Redia **90**: 109–113.

Menéndez, R., González-Megías, A., Lewis, O.T., Shaw, M.R. and Thomas, C.D. 2008. Escape from natural enemies during climate-driven range expansion: a case study. Ecological Entomology **33**: 413–421.

Merz, B., Bächli, G. and Haenni, J.-P. 2006. Zweiter nachtrag zur checkliste der Diptera der Schweiz. Mitteilungen der Entomologischen Gesellschaft Basel **56**: 135–165.

Nahrung, H.F., Duffy, M.P., Lawson, S.A. and Clarke, A.R. 2008. Natural enemies of *Paropsis atomaria* Olivier (Coleoptera: Chrysomelidae) in south-eastern Queensland eucalypt plantations. Australian Journal of Entomology **47**: 188–194.

Ndemah, R., Schulthess, F., Le Rü, B. and Bame, I. 2007. Lepidopteran cereal stemborers and associated natural

enemies on maize and wild grass hosts in Cameroon. Journal of Applied Entomology **131**: 658–668.

O'Hara, J.E. 2008. Tachinid flies (Diptera: Tachinidae). Pp. 3675–3686. *In*: Capinera, J.L., ed., Encyclopedia of Entomology. Second Edition. Vol. 4, S–Z. Springer, Dordrecht. lxiii + 3225–4346 pp.

O'Hara, J.E. 2008. World genera of the Tachinidae (Diptera) and their regional occurrence. Version 4.0. PDF document, 71 pp. Online at http://www.nadsdiptera.org/Tach/Genera/generahome.htm.

O'Hara, J.E. 2009. Resurrection of the name *Pachycheta* Portschinsky for a genus of Tachinidae (Diptera). Zootaxa **1989**: 66–68.

Oliver, J.C. and Prudic, K.L. 2007. Parasitism rates in larval *Lycaena xanthoides* (Godart) (Lepidoptera: Lycaenidae) and a new host record for *Cotesia theclae* (Riley) (Hymenoptera: Braconidae). Pan-Pacific Entomologist **83**: 262–264.

Perez, M., Lopez, C. and Eizaguirre, M. 2008. Effect of the photoperiod in the diapause termination in larvae of *Sesamia nonagrioides* and *Ostrinia nubilalis* developed in different varieties of transgenic maize and the corresponding isogenics. [In Spanish.] Boletín de Sanidad Vegetal, Plagas **34**: 257–266.

Perez-Gelabert, D.E. 2008. Arthropods of Hispaniola (Dominican Republic and Haiti): a checklist and bibliography. Zootaxa **1831**: 1–530.

Prasad, K.S., Aruna, A.S., Vinod, K and Kariappa, B.K. 2007. Feasibility of mass production of *Tetrastichus howardii* (Olliff.), a parasitoid of leaf roller (*Diaphania pulverulentalis*), on *Musca domestica* (L.). Indian Journal of Sericulture **46**: 89–91.

Prischmann, D.A. and Dashiell, K.E. 2008. Parasitism of northern corn rootworms (Chrysomelidae: Diabrotica barberi) by *Celatoria diabroticae* (Tachinidae) in South Dakota: new geographic record. Journal of the Kansas Entomological Society **81**: 392–393.

Richter, V.A. 2008. *Calozenillia tamara*. [In Russian.] Krasnaya Kniga Krasnodarskogo Kraya (zhivotnye) [Red data book of Krasnodar Territory (animals)] **2007**: 238–239.

Richter, V.A. 2008. New data on the tachinid fauna of the Southeast of European Russia (Diptera: Tachinidae). International Journal of Dipterological Research **19**: 11–12.

Richter, V.A. 2008. A new genus and a new species of tachinids (Diptera, Tachinidae) from deserts of Middle Asia. [In Russian.] Entomologicheskoe Obozrenie **87**: 663–667. [English translation in Entomological Review 88: 727–729, 2008.]

Richter, V.A. 2008. On the autumnal aspect of the tachinid fauna in Talysh (Diptera: Tachinidae). International Journal of Dipterological Research **19**: 13–15.

Richter, V.A. 2008. On the tachinid fauna of Tuva (Diptera: Tachinidae). International Journal of Dipterological Research **19**: 75–78.

Richter, V.A. 2008. On the type specimens of two specimens of *Gymnosoma* Meigen, 1803 described by B.B. Rohdendorf in the collection of the Zoological Institute, St. Petersburg (Diptera: Tachinidae). Zoosystematica Rossica **17**: 109–110.

Richter, V.A. 2008. Tachinids from the northern European part of Russia (Diptera: Tachinidae). International Journal of Dipterological Research **19**: 141–143.

Richter, V.A. 2008. Tachinids from the Polar Urals and the lower reaches of the Ob River (Diptera: Tachinidae). International Journal of Dipterological Research **19**: 137–140.

Safaralizadeh, M.H. and Karimpour, Y. 2007. Some biological characteristics of *Nyssia graecarius* (Lepidoptera: Geometridae) in Urmia Region. Journal of the Entomological Research Society **9**: 1–6.

Sarma, A.K. and Gupta, M.K. 2008. Effectiveness of some traditional and non-traditional protection measures on the recovery of uzi-infested eri silkworm. Journal of Biological Control **22**: 231–234.

Sehgal, J., Rose, H.S. and Sidhu, A.K. 2007. Studies on the life cycle of *Pelopidas mathias* (Fabricius), the small branded swift. Himalayan Journal of Environment and Zoology **21**: 177–182.

Selfridge, J.A., Parry, D. and Boettner, G.H. 2007. Parasitism of barrens buck moth *Hemileuca maia* Drury in early and late successional pine barrens habitats. Journal of the Lepidopterists' Society **61**: 213–221.

Shima, H. and Tachi, T. 2008. New species of the genus *Paravibrissina* Shima (Diptera: Tachinidae) from Southeast Asia and South Pacific. Zootaxa **1870**: 43–60.

Siqueira, K.M.M. de, Kiill, L.H.P., Martins, C.F., Lemos, I.B., Monteiro, S.P. and Feitoza, E. de A. 2008. Estudo comparativo da polinização de *Mangifera indica* L. em cultivo convencional e orgânico na região do Vale do Submédio do São Francisco. Revista Brasileira de Fruticultura **30**: 303–310.

Stireman, J.O., III. 2008. α and β diversity of a tachinid parasitoid community over space and time. Annals of the Entomological Society of America **101**: 362–370.

Suazo, A., Cave, R.D. and Frank, J.H. 2008. Reproductive biology and development of *Lixadmontia franki* (Diptera: Tachinidae), a parasitoid of bromeliad-eating weevils. Florida Entomologist **91**: 453–459.

Sujii, E.R., Beserra, V.A., Ribeiro, P.H., da Silva-Santos, P.V., Pires, C.S.S., Schmidt, F.G.V., Fontes, E.M.G. and Laumann, R.A. 2007. Comunidade de inimigos naturais e controle biológico natural do pulgão, *Aphis gossypii* Glover (Hemiptera: Aphididae) e do curuquerê, *Alabama argillacea* Huebner (Lepidoptera: Noctuidae) na cultura do algodoeiro no Distrito Federal. Arquivos do Instituto Biológico **74**: 329–336.

Szpila, K., Bystrowski, C. and Kowalczyk, J.K. 2007. *Brullaea ocypteroidea* Robineau-Desvoidy, 1863 (Diptera: Tachinidae) – new to the Polish fauna. [In Polish.] Wiadomosci Entomologiczne **26**: 41–47.

Tachi, T. and Shima, H. 2006. Review of genera *Entomophaga* and *Proceromyia* (Diptera: Tachinidae). Annals of the Entomological Society of America **99**: 41–57.

Tachi, T. and Shima, H. 2008. Phylogenetic relationships of subgenera of the genus *Exorista* Meigen, with a revision of the Japanese species (Diptera: Tachinidae). Entomological Science **11**: 419–448.

Takahashi, J.-i., Okamoto, A. and Ono, M. 2008. New host records for *Euvespivora decipiens* Walker (Diptera: Tachinidae). [In Japanese.] Japanese Journal of Entomology (New

Series) **11**: 32–33.
Tillman, G. 2008. Populations of stink bugs (Heteroptera: Pentatomidae) and their natural enemies in peanuts. Journal of Entomological Science **43**: 191–207.
Toepfer, S., Walsh, G.C., Eben, A., Alvarez-Zagoya, R., Haye, T., Zhang, F. and Kuhlmann, U. 2008. A critical evaluation of host ranges of parasitoids of the subtribe Diabroticina (Coleoptera: Chrysomelidae: Galerucinae: Luperini) using field and laboratory host records. Biocontrol Science and Technology **18**: 483–504.
Toma, R. 2008. A new species of *Leschenaultia* Robineau-Desvoidy (Diptera, Tachinidae) from Venezuela and new geographical records. Revista Brasileira de Entomologia **52**: 353–354.
Tovar Hernández, H., Bautista Martínez, N., Vera Graziano, J., Suárez Vargas, A.D. and Ramírez Alarcón, S. 2007. Population fluctuation and parasitism of larvae of *Copitarsia decolora* Guenée, *Plutella xylostella* L. and *Trichoplusia ni* Hübner (Lepidoptera) in *Brassica oleracea* L. [In Spanish.] Acta Zoologica Mexicana, New Ser. **23**: 183–196.
Tozlu, G. and Kara, K. 2007. The first host record for *Zeuxia zejana* Kolomiets, 1971 (Diptera: Tachinidae) from Turkey. Turkish Journal of Zoology **31**: 357–358.
Urban, J. 2007. Occurrence, biology and harmfulness of *Galerucella lineola* (F.) (Coleoptera, Chrysomelidae) – Part 2. Larvae and this year's beetles. Journal of Forest Science (Prague) **53**: 424–444.
Veena, N. and Manjunath, D. 2007. Impact of female overcrowding on the offspring fitness of *Trichopria* sp. at fixed host resources. Indian Journal of Sericulture **46**: 146–152.
Veena, N. and Manjunath, D. 2007. Influence of host size on the reproductive performance and morphometric traits of *Trichopria* sp. Indian Journal of Sericulture **46**: 140–145.
Veenakumari, K., Ramani, S. and Rabindra, R.J. 2008. Additions to the natural enemy complex of the red hairy caterpillar, *Amsacta albistriga* (Walker) (Lepidoptera: Arctiidae). Journal of Biological Control **22**: 203–204.
Veldtman, R., McGeoch, M.A. and Scholtz, C.H. 2007. Can life-history and defence traits predict the population dynamics and natural enemy responses of insect herbivores? Ecological Entomology **32**: 662–673.
Wagner, W.E., Jr. and Basolo, A.L. 2007. Host preferences in a phonotactic parasitoid of field crickets: the relative importance of host song characters. Ecological Entomology **32**: 478–484.
Weir, E.H., Contreras, W. and Weir, K.G. de. 2007. Biological control of *Diatraea* spp. (Lepidoptera: Pyralidae) in sugarcane crops in central Venezuela. Revista de Biología Tropical **55**: 655–658.
Woodley, N.E. 2007. A new species of *Jurinella* (Diptera: Tachinidae) from the Dominican Republic with a key to the genera of the tribe Tachinini from the Caribbean. Proceedings of the Entomological Society of Washington **109**: 856–862.
Woodley, N.E. and Arnaud, P.H., Jr. 2008. *Eulobomyia*, a new replacement name for *Lobomyia* Woodley & Arnaud (Diptera: Tachinidae). Zootaxa **1856**: 67.
Woodley, N.E. and Arnaud, P.H., Jr. 2008. *Lobomyia neotropica*, a new genus and species of Tachinidae (Diptera) from the Neotropical Region. Zootaxa **1783**: 31–39.
Yang, Z.-q., Wang, X.-y., Wei, J.-r., Qu, H.-r. and Qiao, X.-r. 2008. Survey of the native insect natural enemies of *Hyphantria cunea* (Drury) (Lepidoptera: Arctiidae) in China. Bulletin of Entomological Research **98**: 293–302.
Yao, Z.-y., Chi, Y. and Zhang, C.-t. 2008. New distributions of Chinese Exoristini (Diptera, Tachinidae). Pp. 405–407. *In*: Shen, X.-c., Zhang, R.-z. and Ren, Y.-d., eds., Classification and distribution of insects in China. [In Chinese.] Chinese Agricultural Science and Technology Science, Beijing. 3 + 583 pp.
Yao, Z.-y. and Zhang, C.-t. 2009. A taxonomic study on the genus *Phorocera* from China (Diptera, Tachinidae). Acta Zootaxonomica Sinica **34**: 62–68.
Zhang, C.-t., Liu, J.-y. and Yao, Z.-y. 2008. One new species and two new record species of Blondeliini (Diptera, Tachinidae) from China. Acta Zootaxonomica Sinica **33**: 532–536.
Zhi, Y., Ge, Z.-p., Chi, Y. and Zhang, C.-t. 2008. Extraction of genome DNA from dried specimens from tachinid flies and amplification of ND5 gene fragment by PCR. Pp. 495–498. *In*: Shen, X.-c., Zhang, R.-z. and Ren, Y.-d., eds., Classification and distribution of insects in China. [In Chinese.] Chinese Agricultural Science and Technology Press, Beijing. 3 + 583 pp.
Ziegler, J., ed. 2008. Diptera Stelviana. A dipterological perspective on a changing alpine landscape. Results from a survey of the biodiversity of Diptera (Insecta) in the Stilfserjoch National Park (Italy). Vol. 1. Studia dipterologica. Supplement **16**: 1–395 + 4 maps.
Ziegler, J. and Lange, C. 2007. Raupenfliegen (Diptera: Tachinidae) aus dem Nationalpark Stilfserjoch (Norditalien): Teil 2. Forest observer **2/3** (2006): 169–204.

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