

**NEW RECORDS OF STRATIOMYIDAE (DIPTERA) FROM THE NEAR EAST  
WITH A KEY TO THE SPECIES OF ISRAEL, SINAI AND THE GOLAN**

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ABSTRACT

A supplement is given to the publications of the senior author (Lindner, 1974 and 1975) on the Stratiomyidae of the Near East. *Pachygaster atra* Panzer and *Aspidacantha atra* Kertész (Pachygastrinae) are recorded from the area for the first time. The male of *Heradina galeata* Lindner is described for the first time. New synonyms are established, and a key is given to all the species recorded so far from the area.

INTRODUCTION

The results of extensive collecting of Stratiomyidae in the Golan, Israel and Sinai were presented in two previous publications (Lindner, 1974 and 1975). In the present paper additional records, are given. The examination of additional material enabled the correction of some previous identifications and the establishing of new synonymy. Geographical areas of Israel, the Golan and Mt. Hermon are according to Theodor's (1975) map. Distribution is supplied for those species recorded from these areas for the first time. We assume that in these studies a considerable part of the stratiomyid fauna of Israel, the Golan and Sinai was recorded, and therefore a key is given for all recorded species.

B E R I D I N A E

*Beris chalybeata* Forster

Nahal Amud, Upper Galilee, 31.X. 1972, 1♂, 1♀ (M. Kaplan); 6.X.1974, 1♂, 1.IX.1971, 1♀, (A. Freidberg) ; 26.X.1977, 1♀(D.

Furth); Mt. Meron, Upper Galilee, 10.XI.1976, 1♀ (M.

Kaplan); 27.X.1977, 1♀ (D. Furth); Bar'am, Upper Galilee, 11-20 .XI. 1977, 2♀♀ (A. Freidberg).

A rather uncommon species, the adults of which occur in autumn, previously recorded in the area from one female only.

#### S A R G I N A E

*Sargus cuprarius* (Linnaeus)

Bar'am, Upper Galilee, 18-20.XII.1977, 1♀, resting on *Quercus calliprinos* Webb (Fagaceae) (A. Freidberg).

The headless male recorded from Zefat by Lindner (1974) as *S. nigripes* Zetterstedt apparently belongs to *S. cuprarius*.

General distribution: Europe, Asia Minor, Mongolia, North America.

*Sargus maculatus* (Lindner)

Haifa, Carmel Ridge, 8.XI.1975, 12♂♂, 2♀♀; Bar'am, Upper Galilee, 11-20.XI.1977, 11♂♂, 20♀♀ (A. Freidberg).

A species common in some localities within the maquis. The adults occur in autumn and are often observed resting on oaks, or hovering, sometimes in small swarms.

#### C L I T E L A R I I N A E

*Nemotelus albifacies* Becker

*Nemotelus theodori* Lindner, 1974:95, n. syn.

Kalia, Dead Sea Area, 15.III.1977, 1♂, 1♀ (A. Freidberg).

Observed in spring in large numbers on flowers of *Pulicaria undulata* (L.) Kostel (Compositae) and *Limonium* sp. (Plumbagiaceae). The museum in Stuttgart possesses 3 males only (one of which is from Tunis, Vosseler). The female was described as *N. theodori*. R. Rozkošný \* has settled this new synonymy (personal communication). General distribution: Tunis, Egypt.

*Nemotelus anchora* Loew

Only one female was recorded by Lindner (1974) and additional material is needed to establish more firmly the occurrence of the species in the area.

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*Nemotelus cypriacus* Lindner

The specimens from Akko and Benjamina, which were recorded by Lindner (1974) as *N. balearicus*? are misidentifications of *N. cypriacus*.

*Nemotelus pantherinus* (Linnaeus)

*Nemotelus punctirostris* Lindner, 1974:96, n. syn.

A rather common species, collected on flowers of *Tamarix* sp. (Tamaricaceae) and various Umbelliferae.

*Nemotelus perplexus* Becker

*Nemotelus freidbergi* Lindner, 1975:43, n. syn.

Known from only a few specimens.

*Adoxomyia cinerascens* Loew

Kalia, Dead Sea Area, 8.III.1977, 1♀, ex. *Cistanche tubulosa* (Schenk) Wright (Orobanchaceae) (M. Kaplan).

The larvae inhabit the subterranean part of the plant.

*Adoxomyia dahlia* (Meigen)

*Adomyxia personata* Lindner, 1975:45, n. syn.

Mt. Hermon, 1700m, 16.VI.1977, 2♀♀, resting on *Quercus libani* Oliv. (Fagaceae); Mt. Hermon, 1600m, 25.V.1977, 2♂♂, on leaves of *Althaea* sp. (Malvaceae) (A. Freidberg).

General distribution: Yugoslavia.

*Adoxomyia hermonensis* Lindner

Mt. Hermon, 2000m, 11.VIII.1977, 1♀, on flowers of *Ferula* sp. (Umbelliferae) (A. Freidberg).

*Heraclina galeata* Lindner

Tel Dan, Upper Galilee, 16.VI.1971, 1♂ (J. Kugler) (this male misidentified by Lindner (1974) as *Oxycera calceata* Loew); Nahal Zavitan, Golan, 25.V.1977, 1♀ (D. Gerling).

The male is described herewith for the first time. It is similar to the female, differing from it in the following: the eyes touching; head completely black, frontal triangle

with large silvery spots above the antennae, which extends downwards along the eyes, as in the female; first and second antennal segments mainly brown (yellow in the female), third segment black (as in the female); on the mesonotum the large rectangular yellow spot behind the transverse suture is missing; the legs are yellow, except for blackish rings near the base and apex of the posterior tibiae (the same is true also for the female).

*Heraclina stigmosa orientalis* Lindner

Wadi Faria, Samaria, 27.V.1976, 1♂, 3♀♀, bred from larvae collected on a stone-wall, covered by a thin film of running fresh water (A. Freidberg).

S T R A T I O M Y I N A E

*Oplodonta viridula* Fabricius

Ramot Naftali, Upper Galilee, 21.V.1969, 1♂ (J. Kugler).

See also note under *Odontomyia pulchriceps*.

*Odontomyia cephalonica* Strobl

Tel Aviv, Central Coastal Plain, 26.III.1977, 1♀ (A. Freidberg); Ga'ash, Central Coastal Plain, 24.IV.1974, 1♀ (D. Furth). The specimen from Ga'ash, which was recorded by Lindner (1975) as *Clitellariopsis persica* is a misidentification of *O.cephalonica*. A species for which the subgeneric name (*Clitellariopsis*) is very appropriate. It differs clearly from *Adcxomyia* or any other clitellariine by the absence of  $m_3$  and by  $r_4$ , which is represented at most by a very small protuberance (Fig. 4). The anterior marginal cells are very narrow; the hairs of the female's eyes are very sparse, short and whitish; the hairs on the thorax are like down, thin, long and whitish, especially long on the margin of the scutellum; the two spines on the scutellum are dirty yellowish, with black ends; the tibiae are yellowish, darkened dorsally on their basal half by a black stripe; the wings are hyaline, only the veins are dark; the pattern on the female's abdomen is similar to that of the male (compare Fig. 36, Taf. IV in Lindner, 1938), the pale parts of the abdomen show a greenish-yellow tinge.

General distribution: Corfu, Sicily, Greece and England.

*Odontomyia damascena* Villeneuve

Qusbiye, Golan, 19-20.IV.1976, 14♂♂, 14♀♀, on flowering Umbelliferae and Compositae (M. Kaplan and A. Freidberg).

*Odontomyia hydroleon* (Linnaeus)

Hula, Upper Jordan Valley, 14.VI.1975, 2♂♂, 1♀ (D. Simon); 6.VI.1977, 1♂, 1♀, 14.IX.1977, 1♀ (A. Freidberg).

The specimens recorded under the name *O. megacephala* Olivier (Lindner, 1974) are better retained as *O. hydroleon*, since the identity of the former species is not clear.

*Odontomyia pulchriceps* Loew

Tel Aviv, Central Coastal Plain, 25.VI.1977, 3♂♂, 28.VII.1976, 1♀ (A. Freidberg); 23.VI.1977, 1♂ (F. Kaplan); 13.X.1974, 1♀ (B. Galil); Migdal Zedek, Foothills of Judea. 25.VII.1974, 1♂ (A. Freidberg); Kiryat Gat, Southern Coastal Plain, 19.IV.1977, 1♂ (A. Freidberg); Arad, Northern Negev, 1.VII.1971, 1♂ (J. Kugler); Ein Akev, Central Negev, 8.VIII.1977, 1♂ (A. Freidberg); Shivta, Central Negev, 23.VI.1976, 1♂, 1♀ (A. Freidberg); Jericho, Dead Sea Area, 19.VII.1976, 1♀ (A. Freidberg); Faran, Arava Valley, 10.IV.1976, 1♂ (Ben-Mordechai). The great majority of the specimens were swept from vegetation along brackish or sewage water.

The specimens determined by Lindner (1974) as *Oplodonta viridula* Fabricius are actually *O. pulchriceps*. To this species also belong two females, Kenya, Naivasha, 14-17.I.1972 (A. Freidberg) in the collection of the Tel Aviv University. They differ from the typical form by the augmented extension of the black pattern of the head, the nearly black scutellum and abdomen, with reminders of narrow light stripes on the hind borders of the tergites; this pattern is also variable in the males.

## P A C H Y G A S T R I N A E

*Pachygaster minutissima* Zetterstedt

Tel Aviv, Central Coastal Plain, 13.II.1977, over 200♂♂♀♀, bred from larvae collected under bark of local dead pines (A. Freidberg).

*Pachygaster atra* (Panzer)

Banias, Upper Galilee, 4.V.1977, 3♂♂, swept from *Quercus calliprinos* Webb (Fagaceae); Wadi Nemrod, Mt. Hermon, 10.VI.1976, 1♀, swept from *Acer obtusifolium* (Boiss. et Gaill.) Holmboe ex Zoh. (Aceraceae) (A. Freidberg).

The female differs somewhat from the males in having no *r-m* cross-vein (discal cell touches vein *r*) and in the scutellum, which has a flat margin with small protuberances, while in the males *r-m* cross-vein is distinct and the scutellum is devoid of flat margin and protuberances.

General distribution: Europe.

*Aspidacantha atra* Kertesz

Kalia, Dead Sea Area, 15.III.1977, 1♀ (M. Kaplan); Ein Hajla, near Jericho, Dead Sea Area, 11.V.1977, 1♂ (A. Freidberg).

The female closely resembles the male but differs in the dimensions of the frons, which is 0.42 the width of the head at the vertex, and 0.28 at the narrowest part, near the base of the antennae.

General distribution: Rhodesia, East Africa, Egypt.

## A KEY TO THE SPECIES OF STRATIOMYIDAE OF ISRAEL, SINAI AND GOLAN

- |   |  |   |
|---|--|---|
| 1 | Abdomen with at least 7 apparent segments (Sub-family Beridinae) . . . . .   | 5 |
| - | Abdomen with 5 or 6 apparent segments . . . . .  | 2 |
| 2 | Vein <i>m-cu</i> present; <i>cu</i> <sub>1</sub> not a part of discal cell (Fig. 1) . . . . .  | 3 |
| - | Vein <i>m-cu</i> absent; <i>cu</i> <sub>1</sub> constitutes a section of the posterior border of discal cell; this section sometimes very short (Figs. 2, 3) . . . . . | 4 |
| 3 | Antenna with a long and thin terminal arista (Fig. 5); usually elongate flies with metallic colors (Sub-family Sarginae) . . . . .                                     | 6 |
| - | Antenna with no such arista; sometimes with a short stylus; flies with broad and flat abdomen and with no metallic colors (Sub-family Stratiomyinae) . . . . .         | 8 |

- 4 Three branches of  $m$  as well as  $cu_1$  reach the wing margin from discal cell (Fig. 2) <sup>1</sup>(Subfamily Clitellariinae) . . . . . 19
- Only 2 branches of  $m$  as well as  $cu_1$  reach the wing margin (Fig. 3) (Subfamily Pachygastrinae) . . . . . 46
- 5 Palps about as long as the proboscis; scutellum with 4 spines . . . . . *Chorisops tibialis* Meigen
- Palps completely reduced; scutellum with 6 spines . . . . . *Beris chalybeata* Forster
- 6 Eyes densely pubescent; males holoptic . . . . . *Chloromyia melampogon* Zeller
- Eyes bare or only sparsely pubescent; males dichoptic (*Sargus* Fabricius) . . . . . 7
- 7 Legs, except the yellow knees, blackish . . . . . *Sargus cuprarius* Linnaeus
- Anterior and middle legs mainly yellow . . . . . *Sargus maculatus* Lindner
- 8 First segment of antenna at least 3 times as long as the second (*Stratiomys* Geoffrey) . . . . . 9
- First segment of antenna 1-2 times as long as the second . . . . . 10
- 9 Scutellum yellow, except the narrow black base. . . . . *Stratiomys hispanica* Pleske
- Scutellum black, except the narrow yellow apex . . . . . *Stratiomys longicornis* Scopoli
- 10 Antennae carried on a nose-like projection; peristome well produced downwards on each side . . . . . *Exochostoma ornatum* Lindner
- Antennae not carried on such a projection; peristome normal (*Odontomyia* Meigen, sensu lato) . . . . . 11
- 11 Vein  $r_4$  present (cf. Fig. 1) . . . . . 12
- Vein  $r_4$  absent (cf. Fig. 2) . . . . . 15

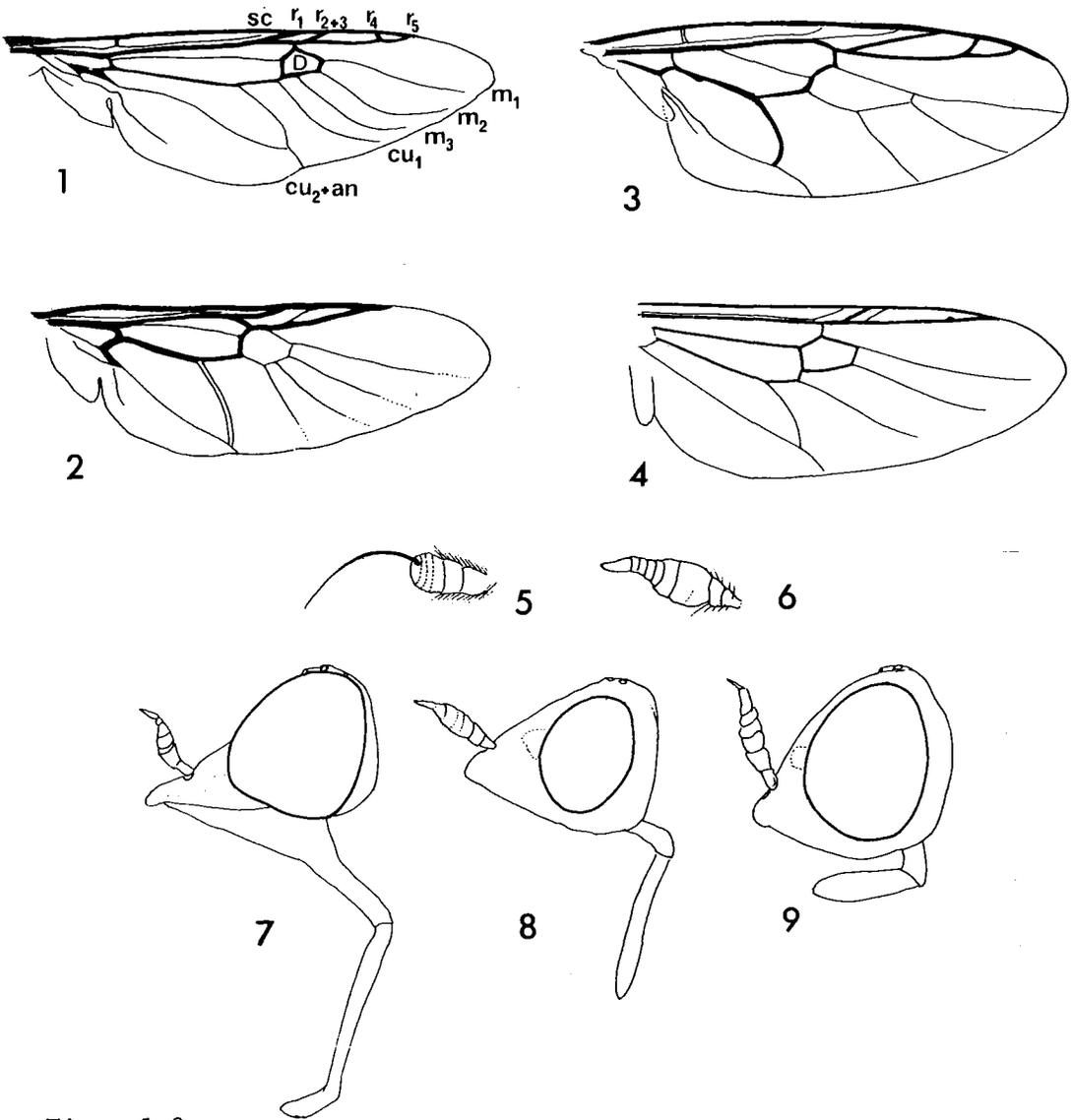
- 12 Scutellum and legs completely black; abdomen dorsally with broad, median, black band and orange margins.  
 . . . . . *Odontomyia flavissima* Rossi
- Scutellum yellow or orange, at most black at base; legs yellow . . . . . 13
- 13 Scutellum orange with black corners; discal cell with 2 *m* branches only . . . . . *Odontomyia xanthopus* Bezzi
- Scutellum yellow with black base; discal cell with 3 *m* branches. . . . . 14
- 14 Scutellar spines strong, much longer than half the length of the scutellum; female: frons with 2 pairs of triangular black spots touching the eyes. . . . .  
 . . . . . *Odontomyia ornata* Meigen
- Scutellar spines at most as long as half the length of the scutellum; female: frons yellow, without black spots. . . . . *Odontomyia hydroleon* Linnaeus
- 15 Scutellum completely black. . . . . 16
- Scutellum yellow at the apical part. . . . . 18
- 16 Eyes distinctly pubescent . . . *Odontomyia discolor* Loew
- Eyes bare. . . . . 17
- 17 Antennae about as long as the head. . . . .  
 . . . . . *Odontomyia damascena* Villeneuve
- Antennae about half as long as the head.  
 . . . . . *Odontomyia viridula* Fabricius (♂)
- 18 Wing venation brownish;  $m_1$ ,  $m_2$  and  $cu_1$  distinct. . .  
 . . . . . *Odontomyia cephalonica* Strobl (♀)
- Wing venation yellowish;  $m_1$ ,  $m_2$  and  $cu_1$  appear only as folds. . . . . *Odontomyia pulchriceps* Loew
- 19 Scutellum with 2 spines. . . . . 20
- Scutellum without spines. . . . . 30
- 20 Antennae much longer than the head; first segment at least 2.5 times as long as the second . . . . .  
 . . . . . *Pycnomala splendens* Fabricius
- Antennae and first antennal segment shorter. . . . . 21

- 21 Antennae elongate with more or less thick stylus (Fig. 6); medium sized flies. (*Adoxomyia* Kertész). . . 22
- Antennae short with more or less thin terminal arista; small flies. . . . . 25
- 22 Third segment of antenna (complex segment) orange. . . . . *Adoxomyia cinerascens* Loew
- Third segment of antenna dark brown to black. . . . . 23
- 23 Scutellar spines yellow. . . . .
- . . . . . *Adoxomyia palaestinensis* Lindner (♂)
- Scutellar spines black. . . . . 24
- 24 Terminal segment of antenna relatively thin and long, 0.3 the length of the antenna. . *Adoxomyia dahli* Meigen
- Terminal segment of antenna thick and short, 0.2 the length of the antenna (Fig. 6) . . . . .
- . . . . . *Adoxomyia hermonensis* Lindner (♀)
- 25 Vein  $r_4$  present (*Oxycera* Meigen). . . . . 26
- Vein  $r_4$  absent (*Heraclina* Lindner). . . . . 29
- 26 Green flies with 3 longitudinal black stripes on the mesonotum. . . . . *Oxycera trilineata* Linnaeus
- Not so colored. . . . . 27
- 27 Abdomen mainly black, with yellow, oblique, lateral spots. . . . . 28
- Lateral spots of abdomen not oblique. . . . .
- . . . . . *Oxycera calceata* Loew (♂)
- 28 Venter of abdomen black, with narrow yellow margin. . . . . *Oxycera muscaria* Fabricius
- Abdominal sternites mainly yellow. . . . .
- . . . . . *Oxycera morrissi* Curtis (♀)
- 29 Scutellum almost entirely yellow; venter mainly black. . . . . *Heraclina galeata* Lindner
- Basal half of scutellum black; venter mainly yellow. . . . . *Heraclina stigmata* Kertész

- 30 Face swollen and rounded. . . . *Lasiopa villosa* Fabricius  
 - Face extended into a snout or "rostrum" (Figs.7-9)  
 (*Nemotelus* Geoffrey).. . . . . 31
- 31 Eyes touching; males. . . . . 32  
 - Eyes separated by broad frons; females. . . . . 39
- 32 Frons above the antennae and "rostrum" completely  
 black. . . . . 33  
 - Frons and sometimes also "rostrum" with white spots. 34
- 33 Abdomen completely shining black. . . . .  
 . . . . . *Nemotelus syriacus* Lindner  
 - Abdomen mainly yellow, with black pattern; frons with  
 dense silver hairs.. . . . *Nemotelus nigrifrons* Loew
- 34 Abdomen black, tergites 3-6 covered with dense and  
 adpressed, shining silvery hairs. . . . .  
 . . . . . *Nemotelus argentifer* Loew  
 - Abdomen otherwise colored . . . . . 35
- 35 "Rostrum" at least half as long as the length of an  
 eye (Fig.7). . . . . *Nemotelus albifacies* Becker  
 - "Rostrum" shorter than half the length of an eye. . . . . 36
- 36 Veins in anterior part of wing very thick and brown;  
 abdomen white, with two transverse black stripes: one  
 on first tergite, slightly penetrating into second  
 tergite, and another on fifth tergite, slightly  
 penetrating into fourth tergite near its lateral  
 margins. . . . . *Nemotelus cypriacus* Lindner  
 - Veins paler; abdomen with different pattern.. . . . 37
- 37 Humerus mainly black; white notopleural line very  
 thin; abdomen mainly white, with a black median spot  
 on first tergite, with or without median transverse  
 stripe on anterior half of tergite 5. . . . .  
 . . . . . *Nemotelus pantherinus* Linnaeus  
 - Humerus completely white; upper part of mesopleura  
 including notopleural suture broadly white. . . . . 38

- 38 Median black spots present on all abdominal tergites except on tergite 3, which is completely yellow. . . . . *Nemotelus kugleri* Lindner
- All abdominal tergites with black spots; third tergite with a crescent median black spot. . . . .  
. . . . . *Nemotelus notatus* Zetterstedt
- 39 Head more than two times as long as its height; "rostrum" about as long as an eye. . . . .  
. . . . . *Nemotelus albifacies* Becker
- Head less than two times as long as its height; "rostrum" usually much shorter than an eye. . . . . 40
- 40 Head, thorax and abdomen completely black. . . . .  
. . . . . *Nemotelus syriacus* Lindner
- Body not completely black. . . . . 41
- 41 Abdomen dorsally and ventrally black, except very narrow, yellow, lateral margins, with shining silvery adpressed hairs mainly on tergites 4 and 5; Thorax completely black, except very small, yellow humeral spots. . . . . *Nemotelus argentifer* Loew
- Body otherwise colored. . . . . 42
- 42 Frons with a pair of white spots. . . . . 43
- Frons without white spots. . . . . 45
- 43 Abdomen mainly black, with small rounded white spots at the posterior border of tergites 2-4, and with very narrow yellow lateral and posterior margins: veins at the anterior part of the wing thick and brown. . . . . *Nemotelus cypriacus* Lindner
- Yellow lateral margins of abdomen broader and extend along the posterior border of the tergites. . . . . 44
- 44 "Rostrum" about as long as an eye; apical portion of the proboscis almost twice as long as the antenna (Fig.8). . . . . *Nemotelus notatus* Zetterstedt
- "Rostrum" about half as long as an eye; apical portion of the proboscis about as long as the antenna (Fig.9) . . . . . *Nemotelus punctiventris* Becker  
and *Nemotelus kugleri* Lindner

- 45 Abdomen mainly black, with small, triangular white spots at the posterior border of tergites 2-4; tergites also with narrow white lateral and posterior margins; apex of "rostrum" white . . . . .  
 . . . . . *Nemotelus pantherinus* Linnaeus
- Yellow lateral margins of abdomen intrude considerably along the posterior border of the tergites; apex of "rostrum" dark brown to black.... *Nemotelus anchora* Loew
- 46 Scutellum with an apical knob... *Aspidacantha atra* Kertész
- Scutellum without an apical knob. (*Pachygaster* Meigen). . . . . 47
- 47 Vein  $r_4$  present. . . . . *Pachygaster atra* Panzer
- Vein  $r_4$  absent. . . *Pachygaster minutissima* Zetterstedt



Figs. 1-9.

1. *Stratiomys hispanica* cypria Pleske (Subfamily Stratiomyinae), wing.
2. *Heraclina galeata* Lindner (Subfamily Clitellariinae), wing.
3. *Pachygaster atra* Panzer (Subfamily Pachygastrinae), wing.
4. *Odontomyia cephalonica* Strobl, wing.
5. *Sargus maculatus* Lindner, antenna.
6. *Adoxomyia hermonensis* Lindner, antenna.
7. *Nemotelus albifacies* Becker, male, head in profile.
8. *Nemotelus notatus* Zetterstedt, female, head in profile.
9. *Nemotelus kugleri* Lindner, female, head in profile.

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