STRATIOMYIDAE OF WISCONSIN (DIPTERA)

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The family Stratiomyidae is a relatively small one. Essig, 1942, estimated the species in the world at 1,200. These flies are generally distributed throughout the world with the greatest number of species in the Neotropical region.

Stratiomyidae are quite common in Wisconsin. There are thirty-nine identified species representing sixteen genera in the University of Wisconsin collection.

The adult Stratiomyidae, in general, fall into three easily recognizable groups. The first group is medium to large, black flies with yellow or greenish striped abdomens. These are the typical "soldier flies." The second group is small to medium sized, metallic flies with elongated abdomens; the third group is small black flies with telescoped abdomens which are rarely marked with yellow.

The antennae are of two general types. The first type is conical and has an arista; the second type is elongated with a flagellum and often terminating in a style.

The adult Stratiomyidae can always be recognized by the discal cell which is located toward the fore margin of the wing with four veinlets leading from the discal cell toward the hind margin, but often one or two of these veinlets have disappeared or are not easily visible.

In most species the eyes of the males are contiguous and those of the females are widely separated. Occasionally the eyes are separated in both sexes.

Stratiomyidae are commonly referred to in the literature as being found on flowering bushes and shrubs in the same localities as Syrphidae. In collecting around Madison in the summer of 1951, the black and yellow striped species were found commonly on flowering plants; the metallic groups were found most abundantly on foliage bushes in shaded areas, and the small black flies were collected almost exclusively on the inside of windows in old buildings. Usually the best collecting time on the windows was in late afternoon when the windows were shaded.

Although the adult forms have been studied extensively, relatively little is known of the immature stages.

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Eggs that have been observed are usually in clusters lying parallel to each other on the undersides of leaves or aquatic weeds.

The larvae are aquatic, semi-aquatic or terrestrial in habitat. They vary in length from four to forty millimeters and in color from a dirty white to nearly black. The aquatic larvae usually have a fusiform body with an elongated terminal segment. They are often found in creeks and muddy streams where they feed on micro-organisms. Many larvae of the subfamily Stratiomyinae are aquatic.

The semi-aquatic larvae, often found in decaying organic matter are less than one inch long and have nearly parallel sides with blunt head and terminal segments. Many members of the subfamily Sarginae belong to this group.

Terrestrial larvae are usually very small and are often found under bark. All segments are about equal in length and have on them long conspicuous setae.

Stratiomyidae larvae are distinguished from all other dipterous larvae because of a heavy deposit of calcium carbonate on all body parts. This secretion is at times so thick that it obscures the delicate larval parts.

The pupal stage is inactive and spent within the last larval skin. Usually larval characteristics are in evidence in the pupa, and can be seen through the pupal case.

The following keys and descriptions are based on specimens in the collections of the University of Wisconsin, Milwaukee Public Museum, and Juanita Sorenson.

**STRATIOMYIDAE OF WISCONSIN**

Key to the Genera

1. Abdomen with seven visible dorsal segments ....................... 2
   Abdomen with six or less distinct abdominal dorsal segments .... 3
2. Scutellum four-spined ........................................... ACTINA Meigen
   Scutellum unsiped ............................................ ALLOGNOSTA Osten Sacken
3. Antennae with an arista ........................................ 4
   Antennae without an arista; often terminating in a style ....... 5
4. Abdomen long and slender; often resembling a club .......... 6
   Abdomen usually short and broad ................................ 8
5. Four posterior veins all of which arise from the discal cell; medium to large flies usually having black and yellow striped abdomens... 13
   Three posterior veins; if four posterior veins, only three arise from discal cell; small flies sometimes marked with yellow ............... 15

1 Modified from James and Curran.
6. Second segment of antennae produced finger-like into third segment.................. \textit{PTECTICUS} Loew
Second segment of antennae not produced finger-like into third segment .......... 7
7. Anterior ocellus remote from the other two a distance greater than the length of base of ocellar triangle.................. \textit{SARGUS} Fabricius
Ocellar triangle equidistant .................. \textit{MEROSARGUS} Loew
8. Metallic flies ........................................ 9
Non-metallic flies, usually black ......................................... 10
9. Discal cell small; posterior veins weak and not extending to wing margin; very small flies .................. \textit{MICROCHRYSA} Loew
Discal cell normal; posterior veins strong and extending to wing margin; medium-sized flies .................. \textit{CEPHALOCHRYSA} Kertesz
10. Black flies strongly marked with yellow; four weak posterior veins .................. \textit{OXYCERA} Meigen
Wholly black flies; three strong posterior veins .......................... 11
11. Antennae elongate .................. \textit{BERKSHIRIA} Johnson
Antennae disc-like ........................................ 12
12. Dark brown spot on inside of antennae. \textit{NEOPACHYGASTER} Austen
Antennae wholly light-colored .................. \textit{PACHYGASTER} Meigen
13. Five-segmented flagellum, never forming a style; ratio of first segment to second, 2:1 or more; large flies ........................................ 14
Six-segmented flagellum; fifth segment short and ring-like; sixth segment set on an angle to rest .................. \textit{ODONTOMYIA} Meigen
14. Face receding; scutellar spines located outside median third of scutellar rim .................. \textit{STRATIOMYS} Geoffroy
Face produced; scutellar spines weak and usually located at apex on median third of rim .................. \textit{LABOSTIGMINA} Enderlein
15. Face strongly produced to a snout .................. \textit{NEMOTELUS} Geoffroy
Face not strongly produced .................. \textit{EUPARYPHUS} Gerstaecker

\textbf{ACTINA} Meigen

\textit{Actina viridis} (Say)

\textit{Actina viridis} James, 1939, Annals Ent. Soc. Amer. 32:548.

\textbf{MALE Head}.: Face and front dark metallic green with long, stiff black hairs; antennae black and elongate with terminal segments forming a horn; eyes separated by one-fifth the width of head. \textbf{Thorax}: Entirely metallic green with long white hairs on dorsum; scutellum with four spines; legs yellowish brown; stigma brown. \textbf{Abdomen}: Metallic green to brown; seven visible dorsal segments.

\textbf{FEMALE Head}.: Similar; face and front shining metallic green with only a few scattered white hairs; eyes separated by one-
third the width of head. Thorax and Abdomen same as male. Length 3 to 5 mm.

Found commonly in Columbia and Dane Counties during May and early June.

**ALLOGNOSTA Osten Sacken**

Key to the Species

1. Abdomen with yellowish transparent areas in center of tergites ...........................................fuscitarsis (Say)
2. Abdomen with tergites uniformly black or bronze..obscuriventris (Loew)

**Allognosta fuscitarsis (Say)**


*Allognosta fuscitarsis* James, 1939, Annals Ent. Soc. Amer. 32:544.

**MALE Head:** Face and front black and densely covered with silvery pubescence; antennae elongated with basal segments yellow, terminal segments black; eyes contiguous. **Thorax:** Dorsum black with white hairs; legs yellow to brown; wings with definite brown stigma. **Abdomen:** Black with yellow transparent areas in middle of tergites; seven visible dorsal segments.

**FEMALE Head:** Face black with dense silvery pubescence; front black with two sclerites above antennae outlined with silvery pubescence; eyes separated by a distance one-third the width of head. **Thorax:** Dorsum black with yellow pile; pleura black to brown.

Widely distributed in Dane and Columbia Counties but found also in Racine and Brown Counties. Most common during June and July.

**Allognosta obscuriventris (Loew)**

*Metoponia obscuriventris* Loew, 1863, Centuria 4:45.

*Allognosta obscuriventris* James, 1939, Annals Ent. Soc. Amer. 32:544.

**MALE Head:** Face black; front black with silvery pubescence along eye margin; antennae elongate with basal segments brown, terminal segments black; eyes contiguous. **Thorax:** Black with scattered yellow hairs; wings hyaline without a stigma. **Abdomen:** Uniformly bronze tergites; seven visible dorsal segments.

**FEMALE Head:** Face and front black with two sclerites above antennae outlined with silvery pubescence.

Collected commonly in Fond du Lac, Waupaca, Dane and Columbia Counties during June and July.
ODONTOMYIA¹ Meigen

Key to the Species
(Modified from James)

**FEMALES** (Eyes widely separated)

1. R-m cross vein present ........................................ 4
   R-m cross vein absent ........................................ 2

2. Two yellowish vitteae on disc of thorax .......................... 3
   Disc of thorax entirely black ................................... vertebrata Say

3. Face prominent below base of antennae ......................... trivittata (Say)
   Face receding below base of antennae ......................... truquii Bellardi

4. Femora black; apices often yellowish ........................ interrupta Latreille
   Femora yellow (or yellowish) .................................. 5

5. Pile beneath anterior basitarsi as long or longer than width of segment 6
   Pile beneath anterior basitarsi less than the width of the segment .......................... 7

6. Face tuberculate ................................................ pilimana Loew
   Face receding below antennae .................................. borealis James

7. Abdomen black with interrupted yellow bands on posterior edges of tergites 2, 3, and 4 ................................ pubescens Day
   Abdomen green or yellow in ground color with median black stripe .......................... 8

8. Face yellow (or dark reddish yellow) .......................... 9
   Face black ......................................................... virgo (Wiedemann)

9. Face yellowish with dark ocellar triangle and a dark spot on each side of front ................. cincta Latreille
   Face decidedly reddish with darker lines in sutures ................................... hydroleonoides Johnson

**MALES** (Eyes contiguous)

1. R-m cross vein present ........................................ 4
   R-m cross vein absent ........................................ 2

2. Face yellow (or yellowish) ...................................... 3
   Face brown; oral margin black .................................. vertebrata Say

3. Disc of thorax black with two yellowish spots ................... truquii Bellardi
   Disc of thorax entirely black ................................... trivittata (Say)

4. Femora black; apices often yellowish ........................ interrupta Latreille
   Femora wholly yellow (or yellowish) .......................... 5

5. Pile underneath anterior basitarsi as long as or longer than width of segment .............. 6
   Pile underneath anterior basitarsi not as long as width of segment .......................... 7

6. Face tuberculate ................................................ pilimana Loew
   Face receding ................................................... borealis James

7. Face and front yellow ........................................... cincta Latreille
   Face and front black ........................................... 8

8. Abdomen black with interrupted yellow bands on posterior edges of segments two, three and four ........................................ pubescens Day
   Abdomen green or yellow with median black stripe .............................................. 9

9. Third antennal segment black; style blunt ........................ virgo (Wiedemann)
   Third antennal segment yellow; style sharp .................................. hydroleonoides Johnson

¹ Odontomyia Meigen, 1803 = Eulalia Meigen, 1800.
Odontomyia vertebrata Say


**MALE Head:** Face and front brown; antennae brown. **Thorax:** Black with yellow tomentum; legs yellow; r-m cross vein absent. **Abdomen:** yellow to green with a narrow, median, black stripe.

**FEMALE Head:** Face yellow with a brown spot on each side of facial prominence; front yellow with a brown, wavy, interrupted transverse band above antennae and three brown markings below ocellar triangle; ocellar triangle brown; occiput yellow. **Thorax:** Black with scutellum, spines, and lateral margin behind the suture yellow. **Abdomen:** Yellow with tergites having a wide black transverse band.

Specimens collected in Dane and Walworth Counties during June and July, and in Door and Vilas counties during late July and early August.

*Odontomyia interrupta* Latreille

*Odontomyia interrupta* Latreille, 1811, Ency. Meth. 8:433, 434.


**MALE Head:** Face and front black with long white hairs; antennae black with sharply pointed styles. **Thorax:** Black with scutellar rim and spines yellow; femora dark brown; r-m cross vein present. **Abdomen:** Black with narrow yellow indentations along posterior edges of tergites.

**FEMALE Head:** Face black with long white hairs; front black with yellow lateral stripes along frontal suture and a yellow spot on each side of ocellar triangle.

Very common in Dane and Columbia Counties and found also in Door, Brown, and Racine Counties. Most commonly collected during late May and early June.

*Odontomyia pilimana* Loew

*Odontomyia pilimana* Loew, 1865, Centuria 6:27.


*Odontomyia pilimana* James, 1936, Annals Ent. Soc. Amer. 29:531.

**MALE AND FEMALE Head:** Face black and tuberculate; front black; antennae light brown to yellow with black styles. **Thorax:**
Black with white tomentum; legs yellow; pile under front basitarsi as long or longer than width of segment; r-m cross vein present. **Abdomen**: Yellow with narrow black median stripe dorsally.

Distributed throughout Dane and Jefferson Counties during July and August.

**Odontomyia trivittata** (Say)


**MALE** **Head**: Face tuberculate; face and front yellow; antennae brown. **Thorax**: Black with scutellum and lateral margin yellow; legs yellow; r-m cross vein present. **Abdomen**: Yellow with narrow median black stripe dorsally.

**FEMALE** **Head**: Face tuberculate; face yellow with brown spot on each side of facial prominence; front yellow with brown interrupted transverse band. **Thorax**: Black dorsally with two pale vittae; wide lateral margins and scutellum yellow.

**Dane County**, July 5, 1951, 1 female (C. L. Fluke). **Madison**, June 2, 1931, 1 female (C. L. Fluke); June 30, 1929, 1 male (M. H. Doner); August, 1946, 1 female.

**Odontomyia truquii** Bellardi

*Odontomyia truquii* Bellardi, 1859, Saggio di Ditterol Messico 1:37.


**MALE** **Head**: Face and front yellow; antennae brown. **Thorax**: Dorsum black with two large yellow spots; pleura, lateral margins and scutellum yellow; pectus black; r-m cross vein absent. **Abdomen**: Yellow with median black stripe dorsally.

**FEMALE** **Head**: Face yellow and receding below antennae; front yellow with a brown, wavy, transverse line above antennae which is connected by narrow brown vertical lines to a wide brown transverse spot around ocellar triangle. **Thorax**: Dorsum black with two pale vittae. **Abdomen**: Yellow with first segment almost wholly black dorsally and tergites two to five with black transverse bands.

**Columbus**: July 8, 1924, 1 female. **Dane County**: July 19, 1914, 1 male (Wm. S. Marshall); August 30, 1950, 1 male (D. G. Allen). **Madison**: May, 1946, 1 female.
Odontomyia borealis James

Odontomyia borealis James, 1936, Annals Amer. Ent. Soc. 29:537.

**Male and Female Head:** Face and front black; face receding below base of antennae; antennae yellow with black, sharply pointed styles. **Thorax:** Black with yellow hairs; legs entirely yellow; pile under anterior basitarsi as long or longer than width of segment; r-m cross vein present. **Abdomen:** Yellow to green with median black stripe dorsally.

Specimens collected in Dane, Crawford and Jefferson Counties during July. Paratypes of males and females are in the University of Wisconsin collection.

Odontomyia pubescens Day


Odontomyia pubescens James, 1936, Annals Ent. Soc. Amer. 29:530.

**Male Head:** Face and front black; antennae black with pointed styles. **Thorax:** Black with long white pile; scutellar rim and spines yellow; femora yellow. **Abdomen:** Black with conspicuous indentations of yellow on tergites two, three and four.

**Female Head:** Face black; front black with yellow streaks along and covering the frontal suture; yellow spot on each side of ocellar triangle. **Thorax:** Black with short yellow hairs. **Abdomen:** Black with yellow indentations on posterior borders of tergites.

Very common in Dane and Columbia Counties during May and June. Found also in Door and Winnebago Counties.

Odontomyia virgo (Wiedemann)


**Male and Female Head:** Face and front black; antennae black with blunt styles. **Thorax:** Black with short yellow hairs; legs entirely yellow; pile on anterior basitarsi not as long as width of segment; r-m cross vein present. **Abdomen:** Green with median black stripe dorsally.

Found very commonly in Columbia, Dane and Door Counties during July and August.
**Odontomyia cineta** Latreille

**Figure 3**

*Odontomyia cineta* Latreille, 1811, Ency. Methodique 8:482.
*Odontomyia cineta* James, 1936, Annals Ent. Soc. Amer. 29:547.

**MALE Head:** Face and front green; antennae yellow with black styles. **Thorax:** Disc and pectus black; scutellum, spines and lateral margins green; legs entirely yellow; r-m cross vein present. **Abdomen:** Green with black triangular spots forming a median stripe dorsally.

**FEMALE Head:** Face green; front green with a black spot along each eye margin; ocellar triangle black; occiput green. **Thorax:** As in male. **Abdomen:** Green with black central triangles which unite but do not form a stripe.

Collected commonly in Dane and Columbia Counties during May and June. Specimens found also in Crawford, Manitowoc and Oshkosh Counties.

**Odontomyia hydroleonoides** Johnson

**Figure 10**

*Odontomyia hydroleonoides* James, 1936, Annals Ent. Soc. Amer. 29:535.

**MALE Head:** Face black and receding below antennae; front black; antennae reddish yellow with black, sharply pointed styles. **Thorax:** Black with erect white pile; legs yellow; pile beneath anterior basitarsi no longer than width of segment; r-m cross vein present. **Abdomen:** Yellow with median black stripe dorsally.

**FEMALE Head:** Face and front shining reddish yellow. **Thorax** and **Abdomen:** As in male.

**Door County:** August 9, 1929, 1 female (C. L. Fluke). **Madison:** July 19, 1929, 1 female (C. L. Fluke); July 4, 1941, 1 female (C. L. Fluke); July 14, 1917, 1 female (C. L. Fluke); July 15, 1930, 1 female, 1 male (C. L. Fluke); July 3, 1929, 1 male (C. L. Fluke).
PLATE I

All drawings were made with the aid of the camera lucida

FIGURE

1.—Stratiomys brunerii Johnson, female. Anterior view of face.
2.—Stratiomys badia Walker, male. Antenna.
3.—Odontomyia cincta Latreille, male. Antenna.
4.—Sargus decorus Say, male. Antenna.
5.—Odontomyia pubescens Day, male. Wing.
6.—Sargus decorus Say, male. Wing.
7.—Berkshiria aldrichi Malloch, female. Wing.
8.—Stratiomys brunerii Johnson, female. Scutellum.
9.—Nemotelus unicolor Loew, male. Abdomen—dorsal view.
10.—Odontomyia hydroleoneoides Johnson, female. Abdomen—dorsal view.
11.—Sargus decorus Say, male. Abdomen—dorsal view.
STRATIOMYS Geoffroy

Key to the Species

FEMALES (Eyes widely separated)

1. Eyes hairy ........................................ badia Walker
   Eyes bare ........................................ 2
2. Fore femora yellow (usually entire leg yellow) .......... brunerii Johnson
   Fore femora black or half black .......................... 3
3. Fourth abdominal tergite with entire posterior border yellow .......... 4
   Fourth abdominal tergite entirely black or with interrupted yellow
   posterior border ................................... 5
4. Face and oral margin yellow ................................... obesa Loew
   Face and oral margin black ................................... normula unilimbata Loew
5. Fourth abdominal tergite entirely black ....................... 6
   Fourth abdominal tergite with interrupted yellow posterior border .... 7
6. Only slight extension of yellow inward on tergites of segments two and
   three; fourth tergite entirely black ...................... meigenii Wiedemann
   Yellow trapezoids or triangles extending in from lateral edges of ter-
   gites of segments two and three .......................... 8
7. Fore tibia with definite brown band; small yellow spot below ocellar
   triangle ........................................ normula normula Loew
   Fore tibia entirely yellow to reddish brown; large yellow spot around
   ocellar triangle ....................................... norma Wiedemann
8. Basal half of posterior femora yellow ...................... adelpha Steyskal
   Posterior femora entirely black ........................... discalis Loew

MALES (Eyes contiguous)

1. Eyes hairy ........................................ badia Walker
   Eyes bare ........................................ 2
2. Fore femora yellow (usually entire leg yellow) .......... brunerii Johnson
   Fore femora black or half black .......................... 3
3. Fourth abdominal tergite with posterior border entirely yellow ....... 4
   Fourth abdominal tergite entirely black or with interrupted posterior
   yellow border ........................................ 5
4. Face yellow .......................................... obesa Loew
   Face black .......................................... normula unilimbata Loew
5. Fourth abdominal tergite black with at most extremely short prolonga-
   tions of yellow inward ................................ 6
   Fourth abdominal tergite with interrupted yellow posterior border .... 7
6. Abdominal tergites two and three without yellow markings
   ........................................................ meigenii Wiedemann
   Abdominal tergites two and three with yellow triangles or trapezoids .. 8
7. Fore tibia with definite brown band ........................ normula normula Loew
   Fore tibia entirely yellowish to reddish brown ................ norma Wiedemann
8. Basal half of posterior femora yellow (usually large flies) ............. adelpha Steyskal
   Posterior femora entirely black (usually medium-sized flies) ............ discalis Loew
Stratiomyis badia Walker

Figure 2

Stratiomyia badius Walker, 1849, List 8:529.

MALE Head: Face yellow with median dark brown stripe; front brown; antennae black with bristle-like hairs on second segment; eyes hairy. Thorax: Black with scutellar rim and spines yellow; legs yellow to brown. Abdomen: Black with interrupted yellow bands on posterior border of tergites two and three; entirely yellow posterior border on tergite four.

FEMALE Head: Face as in male; front yellow, lined with one transverse brown band just above the antennae, a second transverse brown band extends from the ocellar triangle, and a vertical band centrally connects the two transverse bands. Thorax: Black with scutellum and spines yellow. Abdomen: Black with interrupted yellow posterior borders on tergites two, entire yellow posterior border on tergite three, and entire yellow posterior border tapering to a point ventrally on tergite four.

Not found commonly in Wisconsin. A few collections made in Oneida, Dane, and Door Counties during July and August.

Stratiomyis bruneri Johnson

Figures 1 and 8


MALE Head: Face yellow with median brown stripe; front brown; antennae dark brown. Thorax: Black with yellow hairs; metapleura, propleura, scutellum and spines yellow; legs yellow. Abdomen: Yellow with wide transverse black band on tergites.

FEMALE Head: Face yellow with narrow median brown stripe; front yellow with variable brown transverse spot extending ventrad from around ocellar triangle. Thorax and Abdomen: As in male.

Collected in Dane County most commonly in July.
Stratiomys obesa Loew

Stratiomyia obesa Loew, 1865, Centuria 6:11.

**MALE Head:** Face yellow with median brown stripe; front dark brown; occiput yellow; antennae black. **Thorax:** Black with scutellum and spines yellow; legs light brown. **Abdomen:** Black with interrupted yellow band on tergite two, usually interrupted yellow band on tergite three and entire yellow posterior border on tergite four.

**FEMALE Head:** Face yellow with narrow light brown median stripe; front yellow with black "W" mark over ocellar triangle. **Thorax:** As in male. **Abdomen:** Black with usually interrupted yellow posterior borders on tergites two and three; entire yellow posterior border on tergite four; often, however, the yellow posterior border on tergite three is not interrupted.

Collected in Dane and Door Counties during June and July.

Stratiomys normula unilimbata Loew

Stratiomyia unilimbata Loew, 1865, Centuria 6:6, 12.

**MALE Head:** Face and front black with long white hairs; antennae black. **Thorax:** Black with scutellum and spines yellow; legs brown to yellow with black femora. **Abdomen:** Black with interrupted yellow bands on posterior borders of tergites two and three; entire yellow posterior border tapering to a central point on tergite four. (Description from a male from Waukegan, Illinois.)

**FEMALE Head:** Face black with yellow spot along eye margin; front black with yellow spot below ocellar triangle.

**Madison:** June 28, 1918, 1 female (C. L. Fluke); June 17, 1914, 1 female (A. C. Burrrill).

Stratiomys meigenii Wiedemann

MALE Head: Face and front black with long white hairs. Thorax: Black with short white hairs; scutellum black with narrow rim and spines yellow; legs yellow with black femora. Abdomen: Black with widely interrupted yellow posterior bands on tergites two and three; almost no yellow band on tergite four; median yellow stripe on tergite five; whole abdomen has a convex glossy appearance.

FEMALE Head: Face black with yellow spot along eye margin; front black with yellow spot below ocellar triangle; antennae black. Thorax: As in male. Abdomen: Usually entirely black dorsally except for median stripe on fifth tergite.

Uncommon in Wisconsin. Collected in Dane County during May and June.

Stratiomys normula normula Loew

Stratiomyia normula Loew, 1865, Centuria 6:5.

MALE Head: Face and front entirely black. Thorax: Black with long white hairs; scutellum and spines yellow; fore tibia with definite brown band; femora black. Abdomen: Black with interrupted yellow posterior bands on tergites two, three and four; median yellow stripe on tergite five.

FEMALE Head: Face black; front black with small yellow spot below ocellar triangle. Thorax: Black with dark yellow pile.

The abdominal markings in both the males and females of this subspecies vary considerably.

Widely distributed in Dane, Columbia and Fond du Lac Counties. All specimens collected in June.

Stratiomys norma Wiedemann


MALE Head: Face and front entirely black. Thorax: Black with dark yellow hairs; scutellum and spines yellow; fore tibia entirely yellow to reddish brown. Abdomen: Black with interrupted yellow posterior bands on tergites two, three and four; median yellow stripe on tergite five.
**Female Head:** Face black with yellow spot near eye margin; front black with large yellow spot extending ventrad from around ocellar triangle. **Thorax** and **Abdomen:** As in male except usually a central yellow triangle on tergite three.

Collected commonly in Columbia, Dane, Crawford, Fond du Lac, and Waupaca Counties during June, July and early August.

*Stratiomys adelpha* Steyskal


*Stratiomyia discalis* Auctt. (non Loew).

**Male Head:** Face and front black with long white pile. **Thorax:** Black with long pale yellow pile; scutellar rim and spines yellow; posterior femora with basal half yellow, apical half black. **Abdomen:** Black dorsally with large yellow lateral rectangle on tergite two and a small lateral yellow triangle on tergite three; tergite four entirely black; median yellow stripe on tergite five.

**Female Head:** Face black; front black with yellow spot below ocellar triangle.

This species is unusually large and is the *Stratiomys discalis* of Auctt. non Loew.

Collected commonly in Dane, Columbia and Green Counties during May and June.

*Stratiomys discalis* Loew


*Stratiomys discalis* James and Steyskal, 1952, Annals, Ent. Soc. Amer. 45:393.

**Male Head:** Face and front wholly black. **Thorax:** Black with silvery hairs on dorsum; narrow rim and spines of scutellum yellow; posterior femora entirely black, rest of leg yellow. **Abdomen:** Entirely black with yellow lateral rectangles on tergite two, small yellow lateral triangles on tergite three, and no yellow posterior border on tergites four and five.

**Female Head:** Face black with long white hairs; front black with a small yellow spot below ocellar triangle. **Thorax:** Black with dense white hairs. **Abdomen:** As in male.
This species is smaller than *Stratiomys adelpha* and is most easily told by the femora which are entirely black in *S. discalis* and half yellow and half black in *S. adelpha*.

Found in Dane, Columbia and Green Counties during late May and June.

**LABOSTIGMINA Enderlein**

**Key to the Species**

(From James and Steyskal, 1952)

1. Eyes densely and distinctly pilose .................. *viridis* (Bellardi)
   Eyes bare ............................................. *obscura* (Latreille)

**Labostigmina viridis** (Bellardi)

*Odontomyia viridis* Bellardi, 1859, Saggio di Ditterol. Messico 1:36.


**MALE**: No specimens available.

**FEMALE** Head: Face strongly produced below antennae; face yellow with a brown spot around protuberance and extending over protuberance and to each side of it; front yellow with interrupted brown transverse band; large brown spot around ocellar triangle; eyes hairy. **Thorax**: Black dorsally with pale yellow pubescence; calli, humeri, pleura and scutellum yellow; scutellar spines reduced; femora black. **Abdomen**: Black with continuous posterior border on tergites three and four.

**Waukesha County**: July 21, 1913, 1 female.

**Labostigmina obscura** (Latreille)


**MALE** Head: Face and front entirely black; antennae amber at base with black terminal segment; eyes bare and contiguous. **Thorax**: Scutellum yellow with small apical, proximal spines; dorsum black with golden colored pubescence; legs yellow with black femora. **Abdomen**: Black with interrupted yellow band-like indentations on posterior edges of tergites two and three and faintly on four. (Description from a Mississippi male, Oxford, April, 1940. F. M. Hull.)
Female Head: Face strongly produced to a prominence below base of antennae; face black with yellow markings at lower lateral angles where yellow extends inward from the occiput; front black with a large yellow spot below the ocellar triangle and a pair of yellow spots lateral to this central spot; a second pair of yellow proximal spots are located above the antennae and a third pair are lateral to the antennae; occiput and vertex are yellow with an area around the ocellar triangle; eyes bare and widely separated. Thorax: Dorsum black with short silvery pile; metepleura with yellow borders on anterior and dorsal edges; scutellum and small apical scutellar spines yellow. Abdomen: Black with a narrow yellow lateral margin.

Madison: July 21, 1929, 1 female (C. L. Fluke).

Nemotelus unicolor Loew

Figure 9

Nemotelus unicolor Loew, 1863, Centuria 8:11.
Nemotelus unicolor Melander, 1903, Psyche 10:176.

Male Head: Face and front entirely black; face produced to a snout; antennae elongate and project from head just below the middle of head in profile; eyes contiguous. Thorax: Wholly shining black; scutellum black; halteres pale yellow; femora black, rest of legs yellow except posterior tibia which have a dark brown band. Abdomen: Shining black; abdomen broader than thorax.

Female Head: Similar to male; antennae elongate and project at the middle of the head in profile; eyes widely separated. Thorax and Abdomen: As in male. Length: 3–4½ mm.

Collected commonly in Dane and Columbia Counties during June and July.

Euparyphus tetraspilus Loew

Euparyphus tetraspilus Loew, 1866, Centuria 7:15.

Male Head: Face brown; front yellow; antennae and ocellar triangle black; eyes contiguous. Thorax: Black with two yellow longitudinal vittae; scutellum, spines, humeri, calli and lateral margins yellow. Abdomen: Black dorsally with two yellow spots on each of tergites three and four; a large central yellow spot on tergite five.

Female Head: Face black with silvery stripe along eye margin; front black with two yellow vittae near eye margin; lower
occiput yellow to silvery, upper occiput black with yellow spot on each side of ocellar triangle. Thorax and Abdomen: As in male. Length: 4 to 5 mm.

Found commonly in Dane and Columbia Counties during June and July.

**Oxycera albovittata** Malloch


**MALE Head:** Face black with silvery stripe along eye margin; front black; antennae reddish yellow; eyes contiguous. **Thorax:** Dorsum black with four bright yellow vittae; lateral margin, calli, humeri, scutellum and scutellar spines yellow. **Abdomen:** Black with a large yellow spot on tergite three; yellow border on lateral edges of tergites two, three, four and five.

**FEMALE Head:** Face as in male; front black with two yellow vittae; occiput and vertex yellow; eyes separated by one-third the width of head. **Thorax and Abdomen:** As in male. Length: 4 to 5 mm.

**Madison:** June 12, 1918, 1 male (C. L. Fluke); July 6, 1918, 1 male (C. L. Fluke); June, 1933, 1 female.

**SARGUS** Fabricius

**Key to the Species**

(Modified from James, 1935)

1. Femora metallic green ............................................. *viridis* Say
   Femora black or yellow; not metallic ........................... 2
2. Femora black; dark cloud over discal cell .......... *cuprarius* Linneaus
   Femora yellow; wings entirely hyaline .......................... 3
3. Metapleura white; other pleurites metallic .......... *clavis* Williston
   Metapleura brown; other pleurites brown ........ *decorus* Say

**Sargus viridis** Say


**MALE Head:** Face metallic green; front entirely metallic green; antennae and arista black; eyes separated by a distance slightly greater than width of ocellar triangle. **Thorax:** Entirely metallic blue; femora metallic, rest of legs black; wings without cloud over discal cell. **Abdomen:** Shining metallic green; same width as thorax and elongate.

**FEMALE Head:** Face metallic green; front metallic blue-green with very small interrupted ivory frontal calli; eyes separated by a distance equal to one-third the width of the head. **Thorax:**
As in male. **Abdomen:** Shining metallic green; wider than thorax.

Collection data show scattered collecting from May through August in Dane, Columbia and Fond du Lac Counties.

**Sargus cuprarius** Linnaeus

*Musca cuprarius* Linnaeus, 1758, Systema Naturae 10:598.


**MALE Head:** Face brown to black; front dark metallic green with small interrupted ivory-white calli; antennae black with black arista; eyes narrowly separated by width of ocellar triangle. **Thorax:** Metallic green-blue; legs brown to black; dark cloud over discal cell. **Abdomen:** Metallic with coppery to violet reflections.

**FEMALE Head:** Face brown; front metallic green with interrupted ivory-white calli; eyes separated by one-fourth the width of head. **Thorax and Abdomen:** As in male.

Scattered distribution in Kewaunee, Dane, Green, Door, Racine and Washburn Counties from late June to mid-August.

**Sargus clavis** Williston

*Sargus clavis* Williston, 1885, Can. Ent. 17:123.


**MALE Head:** Face brown to yellow; front white; antennae reddish brown with black arista; eyes contiguous. **Thorax:** Metallic green with lateral margins and metapleura white; legs yellow. **Abdomen:** Club-shaped with metallic coppery lustre; segments longer than wide. (Males from Tennessee.)

**FEMALE Head:** Face brown; front metallic green with non-interrupted white frontal calli; eyes separated by one-fourth the width of head. **Thorax:** As in male. **Abdomen:** Less club-shaped than in male; dark metallic with violet reflections.

**Walworth County:** July 15, 1913, 1 female (62209 M.M.).

**Sargus decorus** Say

Figures 4, 6 and 11


**MALE Head:** Face black; front metallic blue-green with interrupted ivory-white calli; eyes narrowly separated by ocellar triangle. **Thorax:** Dorsum metallic green; pleura brown; legs yellow. **Abdomen:** Metallic coppery color with dense golden pile.
FEMALE Head: Similar to male; eyes separated by one-third the width of head. Thorax: As in male. Abdomen: Uniformly dark with metallic reflections; wider than in male.

Found in Dane, Columbia and Kewaunee Counties. Common in late May and early June and again in August and early September.

Merosargus coerulifrons (Johnson)

MALE: No specimens available.

FEMALE Head: Face brownish yellow; front metallic blue-green with a wide white transverse ridge above antennae; antennae reddish brown; arista black; eyes separated by one-fourth the width of head; ocellar triangle equilateral. Thorax: Dorsum metallic green; pleura brownish yellow; pectus black; legs yellow except hind tibia which are white on basal halves and black on apical halves; posterior basitarsi and first tarsal segments yellow; wings hyaline with dark veins. Abdomen: Dark metallic with violet reflections.

Madison: July 16, 1951, 1 female (J. S. Sorenson).

PTECTICUS Loew

Key to the Species

Front black .................................................. sackenii Williston
Front yellow .................................................. trivittatus (Say)

Ptecticus trivittatus (Say)

MALE Head: Face white to light green; front yellow; second antennal segment produced finger-like into third segment; eyes nearly contiguous. Thorax: Yellow to pale brown; hind basitarsi and all tarsal segments yellow to light brown. Abdomen: Yellow dorsally with pale brown transverse band on anterior half of each segment.

FEMALE: Differs from male only in having eyes widely separated. Length 9–11 mm.

Dane County: August 7, 1947, 1 male (Student). Madison: September 27, 1950, 1 male (D. G. Allen); July 5, 1951, 1 female (J. S. Sorenson).
Ptecticus sackenii Williston


MALE Head: Face white; front black; antennae yellow with pale brown arista; second antennal segment produced finger-like into third segment; eyes nearly contiguous. Thorax: Yellow with basitarsi and base of second tarsal segment black to dark brown; second and third tarsal segments white or yellow. Abdomen: Yellow dorsally with brown transverse band on anterior half of each segment.

FEMALE: Same as in male except eyes widely separated.

Madison: August 1, 1917, 1 male (C. L. Fluke); August 13, 1926, 1 female (C. L. Fluke).

Cephalochrysa nigricornis (Loew)

Chrysonotus nigricornis Loew, 1866, Centuria 7:14.
Cephalochrysa nigricornis James, 1939, Ent. News 50:218.

MALE Head: Face and front black. Thorax: Metallic green to coppery with heavy golden pile dorsally; legs yellow; large angular discal cell. Abdomen: Metallic blue-green; as wide as thorax.

FEMALE Head: Face brown; front metallic blue with distinct white transverse band above antennae. Thorax: Metallic green to blue dorsally. Abdomen: Broader than thorax; metallic blue to green.

Found in Dane and Columbia Counties during June and July. One specimen collected in Washburn County.

Microchrysa polita Linnaeus

Musca polita Linnaeus, 1758, Systema Naturae 10:598.

MALE Head: Face and front metallic brown; antennae and arista dark brown; eyes contiguous. Thorax: Metallic blue-green; legs yellow with dark band on femora and tibia; very small discal cell. Abdomen: Metallic green with golden hairs; broader than thorax.

FEMALE Head: Face and front bright metallic green; eyes separated by a distance more than one-third width of head. Thorax and Abdomen: As in male. Length: 3 to 4½ mm.

Found in June through mid-September in Dane, Door and Washburn Counties.
**Berkshiria aldrichi** (Malloch)

**Figure 7**

*Johnsonomyia aldrichi* Malloch, 1915, Annals Ent. Soc. Amer. 8:313.

**MALE Head:** Face and front shining black; silvery pile along eye margin on face; ocellar triangle black with brownish ocelli; eyes contiguous; antennae elongate with two basal segments yellow, remainder black; arista black at base with white flagellum; antennae project above middle of head in profile. **Thorax:** Shining black with fine light brown pubescence; thoracic suture distinct; scutellum black with a definite marginal rim; legs yellow except apices of tibiae and basal joints of tarsi yellow. **Abdomen:** Shining black with indistinct divisions between segments. Length: 3 to 4 mm.

**FEMALE:** No specimens available.

**Madison:** (University Arboretum) May 14, 1951, 1 male (C. L. Fluke).

*Neopachy gast er maculicornis* (Hine)

*Pachy gast er maculicornis* Hine, 1902, Ohio Naturalist, 2:228.  
*Neopachy gast er maculicornis* Malloch, 1915, Annals Ent. Soc. Amer. 8:318.

**MALE Head:** Face black with wide silvery band on eye margin; front black with depressions above antennae covered with silvery pile; front comparatively narrower between eyes than in female; antennae conical, yellow with a conspicuous glossy dark brown spot on inner surface of third complex segment. **Thorax:** Mesonotum shining black and covered with silvery pile; distinct silvery diagonal stripe on metapleura. **Abdomen:** Shining black; abdominal divisions not distinct.

**FEMALE Head:** Similar to male. **Thorax:** Mesonotum shining black and covered with short brassy colored pile. **Abdomen:** As in male. Length 2 to 3.5 mm.

Collected on windows in Dane County in June and July.

*Pachy gast er pulcher* Loew

*Pachy gast er pulcher* Loew, 1863, Centuria 3:16.  
*Pachy gast er pulcher* Malloch, 1915, Annals Ent. Soc. Amer. 8:315.

**MALE:** No specimens available.

**FEMALE Head:** Face and front shining black; silvery pile along eye margin on face; antennae yellow with dark brown
arista; antennae situated below middle of head in profile. **Thorax:** Black, covered with short yellow hairs; halteres with dark brown spot on under side; scutellum projects upward, without distinct rim; legs yellow except for brown band on femora. **Abdomen:** Uniformly shining black. Length: 2 to 3 mm. **Dane County:** July 23, 1951, 2 females (J. S. Sorenson).

**BIBLIOGRAPHY**


**JOHANSEN, O. A.** 1935. Aquatic Diptera. Part II. Cornell University Ag. Experiment Station Memoir 177.


