59.57,7 (74.7)

Article II.—REPORT ON THE DIPTERA COLLECTED AT THE STATION FOR THE STUDY OF INSECTS, HARRIMAN INTERSTATE PARK, N. Y.

By C. H. Curran

Appendix.—TIPULIDÆ AND PTYCHOPTERIDÆ

By Charles P. Alexander

During the years 1925–1928 the Department of Insect Life, under the direction of Dr. F. E. Lutz, maintained a "Station for the Study of Insects" in the Harriman Interstate Park. The station was located near the southern end of the park about three miles from the village of Tuxedo, N. Y. and a little less than six miles from the New Jersey state line. The purpose of the station was primarily for the study of insect life under natural conditions and, in view of the many special problems engaging the attention of the staff, no attempt was made until the year 1928 to make a survey of the insect fauna of the region.

During the last week in June and the months of July and August the author collected extensively in the neighborhood, paying particular attention to the Diptera and Micro-Lepidoptera. From mid-July to late September Mr. F. E. Watson was engaged in the study of butterfly life-histories and the collection of Lepidoptera.

Most of the collecting was done within a radius of a half mile of headquarters, and the vast majority of specimens were taken within a quarter mile. So ideally was the camp located that one had only to step out-of-doors to commence collecting and conditions were so perfect that very few trips were made away from the station clearing.

The country is rough and hilly with a heavy second growth of deciduous trees, oak, maple, beech, and birch predominating, while along the streams and bordering the old farm clearings the alders predominate. Flowering bushes of dogwood and elderberry provided the necessary melliferous bloom so attractive to the flower-loving species, while later in the season the flowers of goldenrod turned the clearings golden yellow. The streams in the park are cold and swift and provide a suitable habitat for many forms of insect life, but owing to the similarity of the soil and absence of mud-beds their insect life is not so varied as might be desired. They are, nevertheless, very attractive and their inhabitants typical of such watersheds. In addition to the wooded

slopes and clearings, there are small ponds, the often sluggish Ramapo River, open meadows and gravelly slopes, so that conditions suitable for insects peculiar to such places were to be found within surprisingly short distances of the cabins.

To secure an idea of the extent of the fauna, one may form his own conclusions by glancing quickly through the following pages. To summarize: the total number of species of flies secured in less than nine weeks collecting is 540. Of these, 97 are new to New York State and are to be added to the 'New York State List of Insects.' Thirty of these species are new to science, a quite large number when one considers that, with the exception of the Washington district, there is probably no region in America where the collection of insects has been so thorough as in New York and vicinity.

A List of Species Not Contained in the New York State List of Insects

Tipulidæ

Tipula filipes Walker
Limonia novæangliæ Alexander
Limonia iowensis Rogers
Adelphomyia pleuralis Dietz

Culicidæ

Chaoborus albatus Johnson

Chironomidæ

Tanypus currani Walley
Tanypus cornuticaudatus Walley
Tanypus multipunctatus, n. sp.
Protenthes fasciger, n. sp.
Chironomus tuxis, n. sp.
Chironomus tendens Fabricius
Chironomus parvilamellatus Malloch
Chironomus tenuicaudatus Malloch
Chironomus viridis Macquart
Chironomus artifer, n. sp.
Metriocnemis par Johannsen
Metriocnemis innocuus, n. sp.
Metriocnemis mitis, n. sp.
Camptocladius fumosinus, n. sp.
Camptocladius nerius, n. sp.
Orthocladius julia, n. sp.

Rhagionidæ

Symphoromyia pleuralis, n. sp.

Asilidæ

Atomosia rufipes Macquart

Therevidæ

Thereva bella Kröber

Empididæ

Anthalia flava Coquillett
Hilara juno, n. sp.
Hilara argyrata, n. sp.
Hilara seriata, Loew
Hilara lutea Loew
Empis varipennis, n. sp.
Rhamphomyia disconcerta, n. sp.
Rhamphomyia argentia, n. sp.
Rhamphomyia bipunctata, n. sp.
Wiedemannia hamifera Melander
Platypalpus mimus Melander

Dolichopidæ

Chrysotimus lutea, n. sp.

Phoridæ

Gymnophora arcuatus Meigen

Pipunculidæ

Pipunculus semifasciatus Cresson
Pipunculus fasciatus Loew

Syrphidæ

Microdon ocellaris Curran
Volucella bombylans evecta Walker
Chrysotoxum radiosum Shannon
Epistrophe cinctellus Zetterstedt
Sphærophoria robusta, n. sp.

Temnostoma trifasciatum Robertson
Parhelophilus rex Curran and Fluke

PIOPHILIDÆ

Piophila affinis Meigen
Piophila pusilla Meigen

EPHYDRIDÆ

Notiphila vittata Loew
Notiphila latelimbata, n. sp.
Hydrellia prudens, n. sp.

CHLOROPIDÆ

Chlorops rufescens, Coquillett
Chlorops surda, n. sp.

PSILIDÆ

Chyliza erudita Melander

MUSCIDÆ

Americina adusta Loew
Scatophaga pallida Walker
Fannia pretiosina, n. sp.
Fannia abrupta Malloch
Fannia curvipes Malloch
Helina uniseta Stein
Limnophora suspecta Malloch
Trichopticus maculiventris Malloch

SARCOPHAGIDÆ

Lucilia australis Townsend
Helicobia latisetosa Parker
Phrosinella fumosa Allen
Gymnoprosopa filipalpus Allen

TACHINIDÆ

Atelogossa trivittata, n. sp.
Cylindromyia pusilla Aldrich
Elephantocera angulicornis, n. sp.
Lixophaga parva Townsend
Lixophaga diatrææ Townsend
Lixophaga nigribasis, n. sp.
Lixophaga fasciata, n. sp.
Dexodes exilis Coquillett
Dexodes chætoneura Coquillett
Erycia tuxedo, n. sp.
Erycia delecta Curran
Erycioides thoracica, n. sp.
Lydella hyphantriæ Tothill
Lydella eufitchæ Townsend
Compsilura concinnata Meigen
Sturmia schizuræ Coquillett
Sturmia protoparcis Townsend
Hypertrophomma opaca Townsend
Phrynofrontina discalis Coquillett
Tachinomyia variata Curran
Cryptomeigenia dubia Curran
Chætogædia crebra Wulp
Paralispe aldrichi Curran
Zenillia valens Aldrich and Webber
Zenillia cærulea Aldrich and Webber
Phorocera mitis, n. sp.
Phorocera tortricis Coquillett
Phorocera erecta Coquillett
Phorocera sternalis Coquillett
Phorocera tuxedo, n. sp.
Phorocera tenuiseta Aldrich and Webber

ACKNOWLEDGMENTS AND DATA

For the report on the crane-flies, published as an appendix to this paper, I am indebted to Dr. Charles P. Alexander, who very generously offered to make the identifications. In the data in connection with each species the year has been omitted, since all the records are for 1928. Unless otherwise stated, all material in this report was collected by the author. The specimens all bear labels reading as follows: Sta. Study Insects, Tuxedo, N. Y., with the date and name of the collector.

RHYPHIDÆ

Rhyphus alternatus Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 27.

One pair, July 11.

CULICIDÆ

As here understood, this family includes the Culicinæ and Chaoborinæ. The Dixiidæ are not included, as suggested by Dyar and Shannon, although they show certain affinities to the Chaoborinæ, as may be expected of related families.

Dr. Dyar's anticipated monograph of the family, 'The Mosquitoes of the Americas,' Carnegie Inst. Publ. No. 387, appeared in 1928 and must be used as a basis for the study of the American mosquitoes. The plates are clear and the figures apparently accurate, but the differences shown in the "claspets" of the species *alpinus* Linné and *arcticus* Dyar do not actually exist but depend upon the view obtained after mounting, as determined by an examination of the type of *arcticus* and specimens of *alpinus* before placing on the slide. The keys will be found to be unsatisfactory and, for the most part, only reference to the male genitalia will enable the student to determine the species. The descriptions themselves are too brief to be of great value and many characters of importance have been omitted so that there is always uncertainty in working with the larger genera. While the group is exceedingly difficult, it is to be regretted that a little more detail could not have been given in the descriptions and more attention paid to the keys. Had this been done a great deal of uncertainty would have been eliminated and the work infinitely more valuable.

Fourteen species belonging to this family were collected during the summer months. The number would be considerably augmented by spring collecting. The genera recorded from New York are separable as follows:

1. Eyes closely approximated above the antennæ; proboscis elongate.....2.
   Eyes broadly separated above the antennæ; proboscis little longer than width of head.....10.
2. Base of hind coxæ in line with upper margin of metasternum; pre-alar and spiracular setæ present.....*Wyeomia* Theobold.
   Base of hind coxæ conspicuously below upper margin of metasternum.....3.
3. Scutellum trilobed.....4.
   Scutellum almost evenly convex apically.....*Anopheles* Meigen.
4. Anal vein extending to beyond fork of fifth vein.....5.
   Anal vein not extending as far as fork of fifth vein.....*Uranotænia* Lynch.
5. Post-spiracular setæ present.....6.
   Post-spiracular setæ absent.....8.
6. Spiracular setæ absent.....7.
   Spiracular setæ present.....*Psorophora* Desvoidy.
7. Wing scales narrow or base of first vein with setæ posteriorly on upper side. *Ædes* Meigen.
   Wing scales wide; base of first vein bare above.....*Tæniorhynchus* Arribalzaga.

8. Spiracular setæ absent.....9.
   Spiracular setæ present (*Culicella*).....*Theobaldia* Neveu-Lemaire.
9. Upper side of first vein with setæ posteriorly at base; wing scales narrow.
   Culex Linné.
   No setæ on upper side of third vein; wing scales broad.
   Tæniorhynchus Arribalzaga.
10. Anal vein ends beyond the fork of fifth vein.....11.
    Fifth vein forks beyond the end of the anal vein.....*Eucorethra* Underwood.
11. First tarsal segment longer than second segment.....12.
    First tarsal segment shorter than second segment.....*Corethra* Meigen.
12. First vein ending much closer to the tip of the anterior branch of the third vein than to the subcostal vein.....*Chaoborus* Lichtenstein.
    First vein ending nearer to tip of subcostal vein than to anterior branch of third vein.....*Corethrella* Coquillett.

Culicinæ

Ædes Meigen

The species from Tuxedo are separable as follows:

1. Posterior tarsi with one or more distinct white bands.....2.
   Posterior tarsi unicolorous or nearly so, at least not distinctly banded.....4.
2. Apices of all tarsal segments white, the fifth wholly white..*canadensis* Theobold.
   None of the tarsal segments with white apical bands.....3.
3. Wing with scattered white scales anteriorly.....*excrucians* Walker.
   Wings with only blackish scales.....*vexans* Meigen.
4. Base of third vein with setæ posteriorly.....5.
   Base of third vein without setæ posteriorly.....*cinereus* Meigen.
5. Mesonotum with broad whitish vittæ or side margins.....6.
   Mesonotum with unicolorous tomentum.....species.
6. Mesonotum with the sides broadly white.....*triseriatus* Say.
   Mesonotum with two white vittæ broadly separated from the lateral margins.
   trivittatus Coquillett.

Ædes canadensis Theobald

Culex canadensis Theobald, 1901, 'Mon. Culic.,' II, p. 3.

Female, June 30.

Ædes excrucians Walker

Culex excrucians Walker, 1856, 'Ins. Saund. Dipt.,' p. 429.

Female, July 21.

Ædes vexans Meigen

Culex vexans Meigen, 1830, 'Beschr. Eur. Zweifl.,' VI, p. 241.

Thirty-two males and ten females, July 4 tc 27.

Ædes cinereus Meigen

MEIGEN, 1818, 'Beschr. Eur. Zweifl.,' I, p. 13.

A single male, July 21.

Ædes species

Two females which I am unable to identify without males.

Ædes trivittatus Coquillett

Culex trivittatus COQUILLETT, 1902, Journ. N. Y. Ent. Soc., X, p. 193.

Male and three females, July 5, 16.

Ædes triseriatus Say

Culex triseriatus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 12.

Female, July 9.

Tæniorhyncus perturbans Walker

Culex perturbans WALKER, 1856, 'Ins. Saund. Dipt.,' p. 428.

Three females, June 30, July 16, 23.

In the description in his recent monograph, Dyar makes no mention of the median white band on the first segment of the posterior tarsi and he indicates that the abdomen is not white banded, whereas such is usually, if not always, the case. In addition, his statement that the lateral white patches are in the middle of the segments is quite erroneous, since they are usually basal and at most sub-basal.

Culex apicalis Adams

ADAMS, 1903, Kans. Univ. Sci. Bull., II, p. 26.

Male and female, July 16, 26.

Anopheles punctipennis Say

Culex punctipennis SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 9.

Seven males and one female, August 16 to 28.

Chaoborinæ

Only one genus is represented in the collection.

CHAOBORUS Lichtenstein

The four species from Tuxedo Park are separable as follows:

1. Wings spotted with brown ..... 2.
   Wings not spotted ..... 3.
2. Legs with numerous brown spots ..... *punctipennis* Say.
   Legs without brown spots ..... *albatus* Johnson.
3. Basal antennal segment yellowish ..... *albipes* Johannsen.
   Basal antennal segment brown ..... *crystalina* DeGeer.

Chaoborus punctipennis Say

Corethra punctipennis SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 16.

Eight females, July 9 to August 28.

Chaoborus albatus Johnson

JOHNSON, 1921, Oc. Pap. Bost. Soc. Nat. Hist., V, p. 11.

Three males and three females, July 5 to 23.

In the original description the species is stated to have three broad brown stripes on the mesonotum. In the above specimens the vittæ are yellowish, more or less margined with brown.

Chaoborus crystalina De Geer

Tipula crystalina DE GEER, 1776, 'Hist. de Ins.,' VI, p. 386.

Male and female, July 27, August 28.

Dyar and Shannon (1924, Ins. Ins. Mens., XII, p. 210), place *plumicornis* Fabricius, and *plumicornis americana* Johannsen as synonyms, in addition to other species. According to Matheson *americana* is a distinct species.

Chaoborus albipes Johannsen

JOHANNSEN, 1903, N. Y. State Mus. Bull. No. 68, p. 368.

Three females, June 27, July 16.

In their revision of this subfamily (reference under the preceding species), Dyar and Shannon separate this species from *crystallina* by the length of the abdominal segments. In the same species the segments may appear to be almost twice as long as wide or not as long as wide, depending upon drying. Whether the color of the basal antennal segment will hold in a large series remains to be seen.

PSYCHODIDÆ

Only one species was collected, although many others occur in the Park.

Psychoda alternata Say

SAY, 1824, Long's 'Exped. to St. Peter's River,' II, App., p. 358.

Female, July 14, at light.

Psychoda cinerea Banks

BANKS, 1894, Can. Ent., XXVI, p. 331.

Psychoda phalænoides DYAR, 1926, Ins. Ins. Mens., XIV, p. 103.

This species occurs over most of North America. In the reference cited above Dyar includes *Psychoda prudens* Curran among his long list

of synonyms, but this is erroneous as the male genitalia are very different in the two species.

In the same paper, Dyar would upset the work of Tonnoir in regard to the name of our common species and would call *phalænoides* Tonnoir *Psychoda tonnoiri*. This, of course, he has no right to do, since Tonnoir was the first to revise the species, and he had a perfect right to limit the name *phalænoides* in what seemed to him the proper way. Dyar has merely complicated matters and added another name to the synonymy of *phalænoides*. If Dyar's synonymy for his *phalænoides* is correct, the proper name for our North American species would be *degenerans* Walker but, inasmuch as we are certain of the identity of *cinerea* Banks and know nothing of *degenera*, I have used that name. I do not, however, think that all the names placed in the synonymy by Dyar belong there and a thorough study of the genus will probably prove that there are several species concerned. Dyar's suggested synonymy throughout the family needs verification and should not be seriously considered at the present time. His complaint that all previous workers lacked sufficient material very obviously applied to his own case. American collections in this family are notoriously meagre in species.

CHIRONOMIDÆ

About forty species belonging to this family are in the collection from the Field Station. One species, *Culicoides sanguisugus* Coquillett was very bothersome during the summer, biting insistently, particularly at dusk.

Culicoides sanguisugus Coquillett

Ceratopogon sanguisugus COQUILLETT, 1901, Proc. U.S.N.M., XXIII, p. 604.

Common during July and August over the whole district and the most irritating blood-sucking insect in the region. Swarms were observed on many evenings in the vicinity of the cabin at the Field Station and they entered the building in large numbers.

Culicoides guttipennis Coquillett

Ceratopogon guttipennis COQUILLETT, 1901, Proc. U. S. N. M., XXIII, p. 603.

A single specimen, July 9.

Forcipomyia cilipes Coquillett

Ceratopogon cilipes COQUILLETT, 1900, Proc. Wash. Acad. Sci., II, p. 397.

Two males, July 21.

Tanypus hirtipennis Loew

Loew, 1866, Berl. Ent. Zeitschr., X, p. 5.

One male, July 5.

Tanypus species

Two females, possibly *monilis* Linné, but very much smaller than any specimens I have seen of the species.

Tanypus currani Walley

Walley, 1925, Can. Ent., LVII, p. 276.

One male, July 1.

Tanypus cornuticaudatus Walley

Walley, 1925, Can. Ent., LVII, p. 277.

Male and two females, June 29.

Tanypus multipunctatus, new species

Tibiæ with two blackish bands, one basal, the other apical, the tarsal segments not darkened apically. Differs from *dyari* Coquillett in the gray wings with numerous large, roundish clear areas. Length, 1.5 mm.

Female.—Head and its appendages yellowish brown; basal flagellar segment of antennæ yellowish. Mesonotum dull brown, the sides in front of the notopleura, two broad dorso-central vittæ and a slender median line, rather whitish; pleura cinereous pollinose. Legs yellowish; broad apex of femora, broad sub-basal band on the tibiæ and broad apices of the tibiæ, brown; apical segment of anterior four tarsi pale brown. Wings gray, first posterior cell with four, second and third with three rather large, more or less oval or roundish sub-hyaline spots; behind the fifth vein are three larger, more whitish spots and the basal cells are clear. Squamæ with brownish yellow fringe. Halteres yellow. Abdomen brown, the tips of the tergites more or less distinctly grayish; apices of sternites broadly gray. Hair wholly black.

Type.—Female, July 10.

Protenthes culiciformis Linné

Tipula culiciformis Linné, 1767, 'Syst. Nat.,' 12th Ed., p. 978.

Two females, July 9, 10.

Protenthes fasciger, new species

Whitish or pale yellowish with black markings; wings with two blackish bands; legs sharply bicolored. Length, 2.75 to 4.25 mm.

Male.—Head whitish yellow; palpi brownish yellow; antennæ brown. Thorax whitish; mesonotum with three very broad ferruginous vittæ, the middle one limited to the anterior half, narrowly divided in the middle, its posterior end convex on either side of the middle line; outer vittæ abbreviated in front; all the vittæ broadly black anteriorly. Pleura with two brown spots, one below the wings, the other behind the anterior spiracle; mesoternum black to ferruginous; postnotum

ferruginous. Hair yellowish, not abundant. Each femur with a broad preapical brownish band, that on the middle pair obscure; each tibia and first tarsal segment with the broad apex black, the apical three tarsal segments also black. Wings with an incomplete median brownish band extending over the cross-veins, interrupted and more grayish behind the fifth vein; a second broad band extends back from beyond the tip of the second vein to behind the anterior branch of the fifth vein, a brown cloud lying in front of and beyond the apex of the posterior branch of the fifth vein; at the humeral cross-vein there is a very narrow transverse band, while an oblique streak of brownish lies in the basal part of the anal lobe. Narrow bases of third to fifth abdominal segments rusty brownish, sixth and seventh pale rusty brown with white apex, eighth, white; genitalia brown. Hair dark, pale on sides and venter.

FEMALE.—Abdomen white, the third, fourth, sixth and seventh segments with a very broad basal brown fascia which is emarginate in the middle posteriorly, the fifth segment with traces of a similar but smaller ferruginous fascia.

TYPES.—Holotype, male, July 10; allotype, female, June 29.

Procladius bellus Loew

LOEW, 1866, Berl. Ent. Zeitschr., X, p. 4.

Five males and one female, July 5, August 28.

Cardiocladius fulva Johannsen

JOHANNSEN, 1908, Bull. 124, N. Y. State Museum, p. 275.

Female, June 29.

CHIRONOMUS Meigen

Nineteen, or almost half the total number of species belong to this genus. Two distinct groups of species are contained here, one group, represented by the first four species, having a pair of mammiform projections above the antennæ, the other without trace of these. The genus could be divided to advantage on this character.

Chironomus plumosus Linné

Tipula plumosa LINNÉ, 1758, 'Syst. Nat.,' 10th Ed., p. 587.

One female, September 20 (F. E. Watson).

Chironomus riparius Meigen

MEIGEN, 1804, 'Syst. Beschr. Eur. Zweifl.,' I, p. 16.

Seven males and five females, June 29 to August 28.

Chironomus decorus Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 239.

Seven males and four females, June 29 to August 28.

Chironomus tuxis, new species

Related to *riparius* Meigen but the abdomen lacks the yellow segmental bands on the apex; blackish or blackish brown, the legs mostly reddish. Halteres greenish yellow. Length, 6 mm.

MALE.—Head brown; first antennal segment with thin grayish pollen; mammiform processes small, slender. Thorax gray pollinose, the usual three vittæ less thickly so. Hair yellow. Legs brownish yellow; coxæ brown; apices of femora and tibiæ, bases of tibiæ broadly and tips of tarsal segments brownish; the apical two segments wholly brown. Wings with slight whitish tinge; anterior veins pale luteous. Squamal fringe yellow. Halteres yellow with green knobs. Abdominal segments narrowly gray pollinose posteriorly the pollen spreading forward thinly for a considerable distance on the apical segments. Hair yellowish, intermixed with black dorsally and on genitalia. First segment of front tarsus one-third longer than its tibia.

TYPE.—Male, August 28.

Chironomus pulchripennis Coquillett

COQUILLETT, 1902, Proc. U. S. N. M., XXV, p. 94.

Male and female, June 29, August 28.

Chironomus tendens Fabricius

Tipula tendens FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 243.

Three males, July 8 to 16.

Chironomus viridicollis Van der Wulp

VAN DER WULP, 1858, Tijdschr. v. Ent., II, p. 161.

Female, July 9.

Chironomus brunneipennis Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 205.

Male, July 21.

Chironomus albimanus Meigen

MEIGEN, 1818, 'Syst. Beschr. Eur. Zweifl.,' I, p. 40.

Male, July 4.

Chironomus brevitibialis Zetterstedt

ZETTERSTEDT, 1850, 'Dipt. Scand.,' IX, p. 3537.

Male and female, July 8, 21.

Chironomus parvilamellatus Malloch

MALLOCH, 1915, Bull. Ill. State Lab. Nat. Hist., X, p. 479.

Male and female, June 29, July 5.

Chironomus flavus Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 225.

Female, July 5.

Chironomus tenuicaudatus Malloch

MALLOCH, 1915, Bull. Ill. State Lab. Nat. Hist., X, p. 475.

Male, July 16.

Chironomus viridis Macquart

MACQUART, 1834, 'Hist. Nat. Dipt.,' I, p. 52.

Male, June 25, female, July 21.

Chironomus fallax Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 210.

Female, June 29.

Chironomus pallidus Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 230.

Male, August 28.

Chironomus aberrans Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 221.

Male and female, August 28.

Chironomus nigricans Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 219.

Two males, July 16, 26.

Chironomus artifer, new species

Near *nigricans* Johannsen, but at once distinguished by the yellow palpi and antennæ. Length, 5 mm.

MALE.—Occiput and basal-antennal segment brownish; front and proboscis reddish; palpi and antennæ yellow. Thorax shining black; space behind the humeri and the dorso-central region rather brownish, the broad middle area more or less distinctly cinereous pollinose in some lights except for a slender median vitta. Pleura with obscure pale pollen. Hair yellow, black on the scutellum. Legs whitish; the front pair short haired; basal segment of front tarsi one-third longer than tibiæ. Wings hyaline, the veins almost colorless. Squamal fringe brownish yellow. Halteres white. Abdomen whitish yellow, the sixth and following segments brown, the fifth with brownish stains. Hair pale; black on apical segments. Genitalia brown.

TYPE.—Male, July 1.

Tanytarsus obediens Johannsen

JOHANNSEN, 1905, Bull. No.86, N. Y. State Mus., p. 286.

Male and female, July 16.

Tanytarsus species

One female, June 28, apparently represents an undescribed species.

Metriocnemus par Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 301.

Male and female, July 1, August 28.

Metriocnemus innocuus, new species

Related to *nanus* Meigen but the front and occiput are brownish, and the abdomen olive-green with only the apical two segments with yellow posterior borders. Length about 2 mm.

MALE.—Occiput and front brownish, the latter bordered with yellow anteriorly; face, apex of first and the second antennal segment, yellow; palpi yellowish brown. Thorax yellow, the three broad dorsal vittæ, an oval spot below the wings, the pectus and the base of the scutellum rusty brownish; hair yellow. Legs yellowish, rather short haired; first segment of front tarsi five-sevenths as long as tibia. Wings cinereous hyaline, sparsely haired on apical half; posterior branch of fifth vein sinuous apically. Abdomen olive-green, the seventh and eighth segments increasingly broadly yellow apically, the genitalia wholly yellow. Hair blackish dorsally, yellowish on sides and apical segments.

TYPE.—Male, July 1.

Metriocnemus mitis, new species

Whitish yellow. Length about 1.5 mm.

FEMALE.—Head brownish red. Mesonotum with traces of three greenish tinged vittæ. Wings with sparse hairs on apical two-thirds and on the whole posterior border; branches of fifth vein not curved. Abdomen unicolorous.

TYPE.—Female, July 4.

Camptocladius fumosus Johannsen

JOHANNSEN, 1905, Bull. No. 86, N. Y. State Mus., p. 261.

Male, July 1.

Camptocladius fumosinus, new species

Related to *aterrimus* Meigen but the thorax and abdomen are shining. Length, 2.75 mm.

MALE.—Brown, the thorax in part black. Face and antennæ yellowish brown, the basal antennal segment black. Mesonotum, metanotum, pectus and a pleural spot black, shining, in some views the mesonotum thinly pale pollinose; metanotum with a slender median pale vitta; hair brownish. Femora brown; tibiæ and tarsi yellow; basal segment of anterior tarsi about two-thirds as long as the tibia. Wings

with grayish tinge, the veins somewhat luteous. Halteres brownish yellow, the tips and base yellow. Abdomen shining brown, black haired.

TYPE.—Male, July 5.

Camptocladius nerius, new species

Head and thorax bright yellow; abdomen brown with yellow sides and genitalia. Length, about 1.75 mm.

MALE.—Head bright yellow, flagellar antennal segments and rays brownish. Eyes bare. Thorax bright yellowish, the usual vittæ scarcely darker, the outer ones sometimes with brownish tinge posteriorly, humeral area whitish; hair yellow; notopleura pale brownish in some views. Legs yellowish, tips of femora and tibiæ, and the tarsi mostly, pale brownish or brownish yellow; first segment of anterior tarsi about one-sixth shorter than tibiæ. Wings with slight gray tinge; posterior branch of fifth vein strongly sinuate apically. Abdomen brownish, the lateral margins and genitalia yellow; apices of segments sometimes yellow; hair yellowish.

HOLOTYPE.—Male, July 10, paratypes, 15 males, July 4 and 10.

Orthocladius julia, new species

Differs from *oceanica* Packard in having the abdomen pale greenish with brown apex. Belongs in the genus *Psectrocladius* Speiser because of the presence of small brown pulvilli. Length 4 mm.

MALE.—Head yellow; antennæ orange; palpi brown with exception of basal segment. Eyes bare. Thorax pale yellow with orange markings as follows: the three mesonotal vittæ, metanotum, a small spot below the base of the wings and the pectus. Legs yellowish; apical two tarsal segments, whole of front tarsi and apex of front tibiæ, brownish; tibiæ with black apical comb. Wings grayish hyaline, with white reflections. Halteres yellow with green knob. Abdomen pale green the apical segments and genitalia brownish yellow. Hair wholly yellowish.

TYPE.—Male, July 5.

MYCETOPHILIDÆ

Macrocera clara Loew

LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 133.

Three specimens of each sex, June 25 to July 5, one at light.

Asindulum montanum Roeder

ROEDER, 1887, Wien. Ent. Zeit., VI, p. 116.

Male and female, July 1 and 16.

The male abdomen is black with only one broad yellow fascia near the middle. The color of this species is most variable.

Platyura mendosa Loew

LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 135.

Female, July 11.

Platyura elegans Coquillett

COQUILLETT, 1895, Proc. Acad. Nat. Sci. Phila., p. 307.

Female, July 23.

Diomonus magnificus Johannsen

JOHANNSEN, 1910, Maine Agr. Exp. Sta., Bull. No. 180, p. 155.

Male, July 6.

Leia winthemii Lehmann

LEHMANN, 1822, 'Ins. Spec. in Agro Hamb. Captac.,' p. 39.

Female, July 10.

Leia opima Loew

Glaphyroptera opima LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 145.

Male, July 23.

Leia sublunata Loew

Glaphyroptera sublunata LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 145.

Female, August 28.

SCIARIDÆ

The North American genera are separable as follows:

1. Proboscis much shorter than the thorax....3.
   Proboscis longer than the thorax....2.
2. Wing with several veins detached at the bases....*Probolæus* Williston.
   Wing venation complete....*Eugnoriste* Coquillett.
3. Wings present....4.
   Wings absent....*Pnyxia* Johannsen.
4. No wing veins detached at base....5.
   Several veins detached at base....*Manota* Williston.
5. First vein ending in the costa....6.
   First vein fused with the cross-vein at its apex....*Pnixia* Johannsen.
6. Wings not hairy, with the usual setulæ....7.
   Wings with distinct hairs....*Trichosia* Winnertz.
7. Claws toothed....8.
   Claws simple....9.
8. Branches of fourth vein arcuate....*Metangela* Rubsaamen.
   Branches of fourth vein not arcuate....*Phorodonta* Coquillett.
9. Male antennal segments pedicillate and bearing whorls of hair.
   Zygoneura Meigen.
   Male antennæ simple; fourth vein rarely with strongly curved branches....10.
10. Face strongly produced....*Rhynchosciara* Rubsaamen.
    Face not produced....*Sciara* Meigen.

SCIARA Meigen

The collection contains representatives of two species of *Sciara*, but in the absence of males identification is not possible.

CECIDOMYIDÆ

There are two species, both captured at light.

SIMULIIDÆ

Two species were captured in the neighborhood of the cabin, but only one of these has been identified.

Simulium parnassum Malloch

MALLOCH, 1914, U. S. Dept. Agric. Bull., Tech. Ser. No. 26, p. 36.

Three specimens, June 25, 29, and July 7.

BIBIONIDÆ

The North American genera are separable as follows:

1. Third vein forked ..... 2.
   Third vein simple ..... 3.
2. Anterior cross-vein situated more than twice its length before the fork of the fourth vein ..... *Hesperinus* Walker.
   Cross-vein situated much less than twice its length before the fork of the fourth vein ..... *Plecia* Wiedemann.
3. Anterior tibiæ with two spurs at apex ..... 4.
   Anterior tibiæ with a series of apical spurs or spines ..... *Dilophus* Meigen.
4. Third and fourth longitudinal veins coalescent for a short distance. *Bibioides* Coquillett.
   Third and fourth veins not coalescent but connected by a cross-vein. *Bibio* Geoffroy.

Bibio longipes Loew

LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 55.

Thirty specimens of both sexes, July 28 to August 18.

In the male the disc of the mesonotum is very rarely reddish.

TABANIDÆ

The horseflies and deerflies appear to be represented in the Interstate Park by a large number of species, twenty-one having been secured in the two months' collecting.

Chrysops niger Macquart

MACQUART, 1838, 'Dipt. Exot.,' I, part 1, p. 161.

Female, July 4.

Chrysops carbonarius Walker

WALKER, 1849, 'List Dipt. Brit. Mus.,' I, p. 203.

Male and two females, June 26, July 11.

Chrysops celer Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 376.

Three females, June 25.

Chrysops cuclux Whitney

WHITNEY, 1879, Can. Ent., XI, p. 35.

Female, June 25.

Chrysops callidus Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 379.

Male and nine females, June 27 to July 28.

Chrysops geminatus Wiedemann

WIEDEMANN, 1828, 'Ausser. Zweifl.,' I, p. 205.

Chrysops fallax OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 392.

Thirteen females, July 3 to August 3.

Chrysops indus Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 383.

Two females, June 25, July 1.

Chrysops frigidus Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 384.

Two females, June 28, July 4.

Chrysops mœchus Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 387.

Male and five females, July 6 to 24.

Chrysops wiedemanni Kröber

KRÖBER, 1926, Stet. Ent. Zeitg., p. 87.

Eight females, July 16 to August 18.

Chrysops univittatus Macquart

MACQUART, 1855, 'Dipt. Exot.,' Suppl. V, p. 36.

Thirteen females, July 1 to 31.

Chrysops vittatus Wiedemann

WIEDEMANN, 1821, 'Dipt. Exot.,' p. 106.

Four females, July 9 to August 24.

Tabanus costalis Wiedemann

WIEDEMANN, 1828, 'Ausser. Zweifl.,' I, p. 173.

Two females, July 26, August 18.

Tabanus pumilus Macquart

MACQUART, 1838, 'Dipt. Exot.,' I, part 1, p. 146.

Seven females, June 27 to July 24.

Tabanus astutus Osten Sacken

OSTEN SACKEN, 1876, Mem. Bost. Soc. Nat. Hist., II, p. 471.

Female, July 17.

Tabanus species

One female specimen I am unable to place from descriptions or comparisons with named species.

Tabanus lasiophthalmus Macquart

MACQUART, 1838, 'Dipt. Exot.,' I, part 1, p. 143.

Two females, June 26, July 3.

Tabanus trispilus Wiedemann

WIEDEMANN, 1828, 'Ausser. Zweifl.,' I, p. 150.

Three males and one female, July 12 to 16.

Tabanus cinctus Fabricius

FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 366.

Male, July 23.

Tabanus nigrescens Palisot-Beauvais

PALISOT-BEAUVAIS (1805?), 'Ins. Rec. Afric. et Amer.,' p. 100.

Female, July 31.

Tabanus atratus Fabricius

FABRICIUS, 1775, 'Syst. Ent.,' p. 709.

Female, August 20, (F. M. Brown).

STRATIOMYIDÆ

Only four species belonging to this family were collected during the summer.

Ptecticus trivittatus Say

Sargus trivittatus SAY, 1829, Journ. Acad. Nat. Sci. Phila., VI, p. 159.

Three males and five females, July 11 to August 2, and two males August 14, 20, (F. E. Watson).

Chrysochroma nigricornis Loew

Chrysonotus nigricornis LOEW, 1866, Berl. Ent. Zeitschr., X, p. 9.

Female, July 16.

Stratiomys meigenii Wiedemann

WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 61.

Male and female, July 30, August 28.

Stratiomys norma Wiedemann

WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 62.

Male, July 23.

CŒNOMYIIDÆ

Cœnomyia pallida Say

SAY, 1824, Long's 'Exped. to St. Peter's River,' II, App., p. 369.

Three females, June 25 to July 3.

This name should be used instead of *ferruginea* Scopoli for the American species.

RHAGIONIDÆ

Six species were collected at the Field Station during the summer.

Dyalysis elongata Say

Stygia elongata SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 41.

Five males and six females, July 20 to 28.

Rhagio punctipennis Say

Leptis punctipennis SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 34.

Male and female, June 25, July 1.

Chrysopilus quadratus Say

Leptis quadratus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 35.

Female, August 18.

Chrysopilus thoracicus Fabricius

Leptis thoracicus FABRICIUS, 1805, 'Syst. Antl.,' p. 70.

Male, June 25.

Chrysopilus ornatus Say

Leptis ornatus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 34.

Male and female, June 25.

Symphoromyia pleuralis, new species

Differs from *hirta* Johnson in having blackish tibiæ and the mesopleura black pilose; from *montana* Aldrich in having the knobs of the halteres yellow. Length, 7.25 mm.

FEMALE.—Black, grayish pollinose; mesonotum with three brown vittæ. Head gray; pile yellowish white, black on the palpi, antennæ, front and upper third of posterior orbits. Palpi and third antennal segment reddish. Front narrower than eye.

Outer vittæ on mesonotum interrupted at the suture; hair black, on the pleura pale yellowish except on the mesopleura.

Legs black; tibiæ brown, their bases narrowly yellow; apices of femora reddish. Hair black; a little pale hair on the bases of the posterior four femora.

Wings cinereous hyaline, luteous basally and in costal cell. Halteres yellow.

Abdomen uniformly gray pollinose; sixth and seventh segments yellow dorsally. Hair black dorsally, white on the venter, narrow sides of the tergites and the whole of the basal segment.

TYPE.—Female, June 26.

ASILIDÆ

Eighteen species belonging to this family were taken during the summer.

Leptogaster badia Loew

LOEW, 1862, Berl. Ent. Zeitschr., VI, p. 188.

Male, July 24.

Holopogon guttula Wiedemann

Dasypogon guttula WIEDEMANN, 1821, 'Dipt. Exot.,' p. 228.

Male and female, June 28.

Very frequently found sitting on tops of cane and dead twigs.

Cyrtopogon falto Walker

Dasypogon falto WALKER, 1849, 'List Dipt. Brit. Mus.,' II, p. 355.

Male and female, June 26 and 27.

Usually common in open woods during May and June.

Cyrtopogon lutatius Walker

Dasypogon lutatius WALKER, 1849, 'List Dipt. Brit. Mus.,' II, p. 357.

Female, June 26.

Ceraturgus cruciatus Say

Dasypogon cruciatus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 52.

Male, July 30.

Atomosia rufipes Macquart

MACQUART, 1847, 'Dipt. Exot.,' Suppl., II, p. 39.

Male, July 26.

Bombomima grossa Fabricius

Asilus grossa FABRICIUS, 1775, 'Syst. Ent.,' p. 791.

Male and two females, July 26, August 2 and female, August 8, (F. E. Watson).

Bombomima thoracica Fabricius

Laphria thoracica FABRICIUS, 1805, 'Syst. Antl.,' p. 373.

Female, July 11.

Bombomima sacrator Walker

Laphria sacrator WALKER, 1849, 'List Dipt. Brit. Mus.,' II, p. 382.

Male, June 26.

Bombomima flavicollis Say

Laphria flavicollis SAY, 1824, Long's 'Exped. to St. Peter's River,' I, p. 255.

Five males and one female, June 25 to July 8.

Laphria canis Williston

Williston, 1884, Trans. Amer. Ent. Soc., XI, p. 31.

Female, July 30.

Asilus notatus Wiedemann

WIEDEMANN, 1828, 'Ausser. Zweifl.,' I, p. 451.

Two males, one female, July 30, 31.

Asilus flavofemoratus Hine

HINE, 1909, Ann. Ent. Soc. Amer., II, p. 153.

Three males, June 25 to July 1.

One of the males is pinned with a male of the following species but there was no way of telling which was feeding upon the other.

Asilus orphne Walker

WALKER, 1849, 'List Dipt. Brit. Mus.,' II, p. 456.

Male and two females, June 26, July 1.

See note under the preceding species.

Asilus sadyates Walker

WALKER, 1849, 'List Dipt. Brit. Mus.,' II, p. 453.

Male, August 18.

Asilus snowi Hine

HINE, 1909, Ann. Ent. Soc. Amer., II, p. 160.

Five males, one female, July 18 to August 24.

Asilus sericeus Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 48.

Two males, July 8, 11.

Erax æstuans Linné

Asilus æstuans LINNÉ, 1767, 'Syst. Nat.,' 12th Ed., p. 1007.

Four males and one female, July 30 to August 24.

THEREVIDÆ

Three species are in the collection from Tuxedo Park.

Psilocephala frontalis Cole

COLE, 1923, Proc. U. S. N. M., LXII, Art. 4, p. 40.

Male, August 18; female, July 6.

Thereva bella Kroeber

KROEBER, 1914, Beiheft z. Jahrb. Hamb. Wiss. Anstalten, XXXI, p. 64.

Three males and two females, July 19 to August 12, the specimen taken on the last date collected by F. E. Watson.

Thereva frontalis Say

SAY, 1824, Long's 'Exped. to St. Peter's River,' II, p. 370.

One female, July 5.

BOMBYLIIDÆ

Eleven species belonging to this family were collected during the summer.

Anthrax irrorata Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 46.

Three specimens, July 30, August 2.

This name should replace *œdipus* Fabricius in the 'List.'

Anthrax analis Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 45.

Four males and three females, July 16 to August 2.

Villa sinuosa Wiedemann

Anthrax sinuosus WIEDEMANN, 1821, 'Dipt. Exot.,' p. 244.

Two specimens, July 5, 18.

Villa alternata Say

Anthrax alternatus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 45.

Two specimens, July 24, 30.

Villa lateralis Say

Anthrax lateralis SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 42.

Two males and five females, June 28 to July 31.

Villa hypomelas Macquart

Anthrax hypomelas MACQUART, 1840, 'Dipt. Exot.,' II, part 1, p. 76.

Male, July 30.

Villa sabina Osten Sacken

Hyalanthrax sabinus OSTEN SACKEN, 1887, 'Biol. Cent. Amer.,' Dipt., I, p. 137.

Two specimens, July 6, 26, are referred here with some doubt.

Systropus macer Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 305.

Ten specimens, August 18 to 28.

Lepidophora lepidocera Wiedemann

Toxophora lepidocera WIEDEMANN, 1828, 'Ausser. Zweifl.,' I, p. 360.

About fifty specimens of both sexes, July 25 to August 28.

This name replaces *ægeriformis* Westwood.

Geron subauratus Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 304.

One specimen, July 12.

Geron calvus Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 303.

Female, August 26.

SCENOPINIDÆ

Scenopinus fenestralis Linné

Musca fenestralis LINNÉ, 1758, 'Syst. Nat.,' 10th Ed., p. 597.

Female, July 26.

EMPIDIDÆ

This family is represented by twenty species, several of which are new to science.

Anthalia bulbosa Melander

Euthyneura bulbosa MELANDER, 1902, Trans. Amer. Ent. Soc., XXVIII, p. 349.

Female, June 26.

Anthalia flava Coquillett

COQUILLETT, 1903, Proc. Ent. Soc. Wash., V, p. 268.

Female, June 30.

Leptopeza compta Coquillett

COQUILLETT, 1895, Proc. U. S. N. M., XVIII, p. 435.

Female, July 4.

Bicellaria species

A female collected on June 25 appears to represent an undescribed species.

Hilara juno, new species

Near *mutabilis* Loew but the thorax is not cinereous pollinose. Length, 2 to 2.5 mm.

MALE.—Black, the legs mostly reddish. Face and front opaque. Palpi black with a long black bristle below. Third antennal segment brownish, sub-triangular, rounded at base below; style not as long as third segment, thick on whole length, with bristle-like tip. Mesonotum very thinly brown pollinose, the pollen becoming more brownish red posteriorly; pleura thinly gray pollinose. Hair black. Scutellum with four bristles. Legs reddish; tibiæ usually with brownish tinge on apical third or more; tarsi brownish, paler basally; first segment of front tarsi moderately swollen; legs with very short black hair, the tibial hair largely reddish in some views. Wings rather strongly cinereous; stigma pale brownish, the first vein strongly broadened in the stigmal area and blackish; veins brown. Halteres dark brown. Abdomen black, sub-opaque, the pollen rather brownish; hair brown, of moderate length. Genitalia normal.

FEMALE.—Pollen of thorax paler, the brownish-yellow pollen more extensive, otherwise differing only sexually.

TYPES.—Holotype, allotype and paratypes: 11 males and 7 females, June 29, in flowers of yellow water-lily.

Hilara argyrata, new species

Related to *umbrosa* Loew but with silvery pollen on the thorax and abdomen. Length, 3.5 mm.

FEMALE.—Head black in ground color, gray pollinose, black haired. Palpi reddish, with two long hairs below. Antennæ blackish, the second segment red; third segment sub-triangular, evenly tapering, the style with parallel sides and longer than the third segment. Thorax argenteous pollinose, black haired, the scutellum with four bristles. Legs reddish; tarsi brown, the anterior four with the basal segment reddish; posterior femora brown except at the ends, at least on upper half; posterior tibiæ becoming brown apically. Wings cinereous hyaline, whitish basally; stigma brownish. Squamal border and fringe brown. Halteres brown, their bases reddish. Abdomen silvery from dorsal view, the venter with grayish pollen; hair almost absent.

TYPES.—Holotype, female; paratype, female, July 16.

Hilara seriata Loew

LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 82.

Two females, June 29, July 5.

Hilara lutea Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 18.

Female, July 11.

Empis pœciloptera Loew

LOEW, 1861, Berl. Ent. Zeitschr., V, p. 322.

Male, July 5.

Empis varipennis, new species

Black; legs reddish; knobs of halteres black. Differs from *tenebrosa* Coquillett in having blackish tarsi. Length, 5 to 7 mm.

MALE.—Head grayish and yellowish gray pollinose, the front more or less blackish; oral margin shining. Front as wide as face. Hair black. Palpi long, reddish, with black hair and one fine bristle below. Basal two antennal segments reddish, black-haired, the third black, slightly longer than the basal two, tapering from near the base; style slightly longer than third segment.

Thorax opaque grayish, in the middle of the dorsum with a broad, diffuse brown vitta which extends onto the scutellum. Spiracles and a dot on the humeri reddish. Hair black, moderately abundant, acrosticals in four rows. Scutellum with four pairs of marginals, otherwise bare.

Legs reddish; coxæ more or less infuscated; tibiæ more or less brownish except toward the base, the tarsi blackish. Hair short and abundant. Femora with black bristles on apical third to one-half of both lower edges; posterior tibiæ with a row of six dorsal bristles including the preapical.

Wings light grayish, very much darker on apical third; stigma long and blackish; anterior branch of third vein long. Squamæ reddish yellow, with brown border and fringe. Halteres blackish with reddish base.

Abdomen with thin brownish pollen, the apices of the segments with short, appressed bristles; hair short. Genitalia rather globose, the outer lamellæ truncate above, convex in front and behind; filament broad on basal half, evidently not sinuous.

FEMALE.—There are only three pairs of marginal bristles on the scutellum; otherwise differing only sexually.

TYPES.—Holotype, male, July 1; allotype, female, June 29.

Rhamphomyia fumosa Loew

LOEW, 1861, Berl. Ent. Zeitschr., V, p. 327.

Five males and eighteen females, June 27.

Rhamphomyia angustipennis Loew

LOEW, 1861, Berl. Ent. Zeitschr., V, p. 336.

Male, July 23.

Rhamphomyia disconcerta, new species

Figure 1

Black; gray pollinose; male with the apical abdominal segments silvery, the basal segments dull black with silvery apices and sides. Length, 3 to 3.5 mm.

MALE.—Head gray pollinose; front narrow; hair yellowish, black above on the occiput. Palpi brown; proboscis a little longer than the height of the head. Antennæ short; third segment broad, oval, obtusely pointed apically, not longer than the basal two segments combined; style short, the basal segment about twice as long as wide.

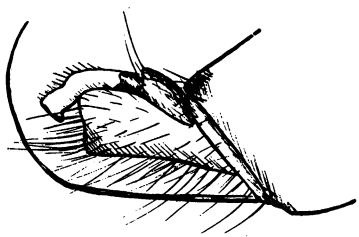

Fig. 1. *Rhamphomyia disconcerta,* n. sp. Lateral view of male genitalia.

Thorax gray, the mesonotum with a large brownish spot on either side between the wings, these spots sometimes connected. Hair and bristles yellow. Scutellum bare except for the two pairs of yellow bristles.

Legs blackish, thinly grayish-brown pollinose, with yellow hair and bristles. First segment of front tarsus slightly swollen, the second yellow on basal half; middle and posterior tarsi with the first three segments pale yellow on basal half or more, brownish or brownish red apically, the fourth segment brownish red. Anterior four tibiæ each with three fine dorsal bristles, the poster pair with a complete row.

Wings whitish, the anterior veins yellowish brown, the others almost colorless; venation normal. Squamæ and fringe whitish yellow. Halteres pale yellow with brown base.

Abdomen opaque brownish black, the sides and venter gray, rather argenteous; apical two segments and the apices of the others silvery white. Hair whitish. Genitalia longer than wide, directed obliquely upward, the filament curved, tapering.

FEMALE.—Front as wide as the ocellar triangle and with several very short black hairs on either side; mesonotum brown except on the very broad sides, the acrostical and dorsocentral hairs black; legs wholly dark, the hair mostly black; abdomen with the sides, venter and apical segments grayish, not silvery.

TYPES.—Holotype, male July 9; allotype, female, July 12; paratypes, male, July 10; male, July 12.

Rhamphomyia argentea, new species

Figure 2

Small, black, the male silvery pollinose; wings white; eyes contiguous; female black, the mesonotum grayish with two brown vittæ. Length, 2.25 to 2.5 mm.

MALE.—Face narrow, shining black; occiput gray pollinose, yellow pilose, several black hairs above; eyes contiguous for most of the length of the front. Proboscis longer than height of head. Antennæ short, black, the third segment subtriangular, rounded at base below; style about as long as width of third segment.

Thorax gray pollinose, moderately silvery, the mesonotum with two rather obscure, incomplete brownish vittæ. Hair and bristles yellow; scutellum with two pairs of yellow bristles.

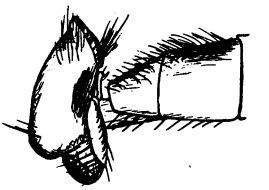

Fig. 2. *Rhamphomyia argentea,* n. sp. Apex of abdomen of male.

Legs black, very thinly brown pollinose, with short white hair, without distinct bristles. First segment of front tarsi not swollen, the second and third segments reddish; basal three segments of posterior four tarsi whitish yellow.

Wings whitish, the costa brownish on apical half; veins almost colorless; venation normal. Squamæ and halteres whitish, the latter with the base broadly reddish brown.

Abdomen silvery pollinose, clothed with very pale yellowish hair. Genitalia hemispherical, projecting below and above the preceding segments of the abdomen.

FEMALE.—Front wide, grayish pollinose, without black hairs; brown mesonotal vittæ more conspicuous; abdomen brown pollinose; wing veins darker.

TYPES.—Holotype, male, July 5; allotype, female, June 30; paratypes, male, July 6 and five males, June 30.

Rhamphomyia bipunctata, new species

Black, legs mostly reddish yellow; wings with large sub-apical brown spot and small spot before the anterior cross-vein. Length, 7 mm.

FEMALE.—Head shining black; face gray pollinose except in the middle below; occiput thinly grayish pollinose on lower half; front with about five black hairs on either side; hair of head wholly black. Proboscis brown, one-fifth longer than head-height. Antennæ elongate, the third segment tapering slightly from the basal fifth to the obtuse apex; style as long as width of third segment.

Thorax black, whitish pollinose, the dorsum very thinly pollinose except posteriorly; sternopleura with a large reddish spot above. Hair sparse, conspicuous posteriorly; notopleura with two bristles.

Legs reddish yellow, including the coxæ; an apical spot on the upper surface of the posterior femora, the posterior tibiæ except ventrally and all the tarsi beyond the apical third of the first segment, black. All the femora bear short, bristle-like hairs on the apical third of their lower surface; hair of legs black except on the anterior surface of the front coxæ where it is yellowish.

Wings cinereous hyaline, yellowish basally; veins clouded with brown; stigma blackish brown; the large apical brown spot lies behind the apex of the second vein and is interrupted where it crosses the two following veins; the spot at the anterior cross-vein is much less conspicuous. Squamæ yellowish. Halteres whitish with reddish base.

Abdomen polished black, with short, sparse yellowish pile. Venter brown, the incisures pale yellowish.

HOLOTYPE.—Female, July 23.

Rhamphomyia species

One female with the posterior four femora squamose on both sides and blackish tinged wings is evidently undescribed.

Wiedemannia hamifera Melander

MELANDER, 1928, 'Genera Insectorum,' Fasc. 185, p. 233.

Five males and ten females, June 25.

One of the males approaches *minor* Melander in shape and color of the face but the palpal hairs are mostly black and there is one very short hair on the humeri in addition to the bristle.

Platypalpus mimus Melander

MELANDER, 1928, 'Genera Insectorum,' Fasc. 185, p. 324.

Two females, June 25, 28.

DOLICHOPIDÆ

Close to forty species of Dolichopidæ were taken at the Field Station. This number would be greatly increased by spring collecting, since many of the species occur only during the months of May and June.

Sciapus pallens Wiedemann

Psilopus pallens WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 219.

Ten specimens of each sex, June 25 to July 11.

Condylostylus patibulatus Say

Dolichopus patibulatus SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 87.

Female, July 24.

Condylostylus sipho Say

Dolichopus sipho SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 84.

Male and female, July 23.

Condylostylus caudatus Wiedemann

Psilopus caudatus WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 224.

Three males and one female, June 26 to July 23.

Neurigona disjuncta Van Duzee

VAN DUZEE, 1913, Ann. Ent. Soc. Amer., VI, p. 42.

Sixteen males and ten females, June 25 to July 16.

Neurigona maculata Van Duzee

VAN DUZEE, 1913, Ann. Ent. Soc. Amer., VI, p. 36.

Female, July 9.

Dolichopus gratus Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 16.

Female, June 25.

Dolichopus calcaratus Aldrich

ALDRICH, 1893, Kans. Univ. Quart., II, p. 8.

Four males, July 1.

Dolichopus setifer Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 12.

Four males, June 26.

Dolichopus flavilacertus Van Duzee

VAN DUZEE, 1921, U. S. N. M. Bull. No. 116, p. 110.

Male, June 27.

Dolichopus virga Coquillett

COQUILLETT, 1910, Can. Ent., XLII, p. 41.

Female, June 26.

Dolichopus variabilis Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 17.

Female, August 1.

Dolichopus harbecki Van Duzee

VAN DUZEE, 1921, U. S. N. M. Bull. No. 116, p. 233.

Fifteen males, twenty-five females, June 26, 28.

Dolichopus versutus Van Duzee

VAN DUZEE, 1921, U. S. N. M. Bull. No. 116, p. 253.

Female, July 9.

Dolichopus dakotensis Aldrich

ALDRICH, 1893, Kans. Univ. Quart., II, p. 11.

Four males, June 26, 28.

Dolichopus batillifer Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 19.

Two males and one female, June 30.

Pelastoneurus vagans Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 39.

Female, June 26.

Hercostomus ornatus Van Duzee

Paraclius ornatus Van Duzee, 1921, Psyche, XXVIII, p. 128.

Nine males and five females, June 26, July 23.

Gymnopternus flavus Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 28.

More than fifty specimens of both sexes, July 12 to August 6.

Gymnopternus crassicauda Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 36.

Female, July 9.

Gymnopternus exilis Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 30.

Eleven males and four females, June 27 to July 24.

Gymnopternus frequens Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 32.

Ten males, twenty-three females, June 25 to 28.

Gymnopternus species

Male and two females, July 21, 23.

I am unable to place these at present but am not sure that the species is undescribed.

Gymnopternus difficilis Loew

Loew, 1861, 'Neue Beitrage,' VIII, p. 33.

One male, June 30.

Gymnopternus chalcochrus Loew

Loew, 1864, 'Mon. N. Amer. Dipt.,' II, p. 335.

Male and two females, June 25 to 28.

Gymnopternus phyllophorus Loew

LOEW, 1866, Berl. Ent. Zeitschr., X, p. 45.

Three males and one female, June 26, July 20.

Chrysotus discolor Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 65.

Twenty-six specimens of both sexes, June 26 to July 23.

Chrysotus species

Two females, July 5, 23.

Chrysotus species

One female, July 27.

Since many of the described species of *Chrysotus* are missing from the collection it is not possible to determine these two species at present.

Diaphorus spectabilis Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 57.

Fifteen males and one female, June 26 to July 23.

Diaphorus species

A female, taken on June 27, I am unable to identify at present.

Argyra calceata Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 47.

Two females, July 1.

Argyra albicans Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 45.

Male, June 26.

Rhaphium signifer Osten Sacken

Porphyrops signifer OSTEN SACKEN, 1878, 'Cat. N. Amer. Dipt.,' 2d, Ed. p. 113.

Two females, July 1, 23.

Hydrophorus pirata Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 71.

Two females, August 20.

Hydrophorus chrysologus Walker

Medeterus chrysologus WALKER, 1849, 'List Dipt. Brit. Mus.,' III, p. 655.

Male, July 7, in small pool in roadway.

Chrysotimus lutea, new species

Readily distinguished from all the described species by being wholly yellowish, the mesonotum rather ferruginous reddish, head green. Length, 1.75 mm.

FEMALE.—Head green, densely grayish or argenteous pollinose; bristles yellow; palpi yellow, brown basally, gray pollinose; antennæ bright yellow, third joint brownish on upper margin, broader than long, the apex rounded but prominent in middle, the long, short pubescent, brown arista situated about one-fifth from the base. Thorax, abdomen and legs yellow, the mesonotum rather ferruginous reddish, wholly thinly pale yellowish pollinose, the pollen on the pleura almost white, almost wanting on the abdomen. Apical joint of all the tarsi brownish. Squamæ and halteres yellowish, the former with yellowish cilia.

MALE.—Genitalia yellow, with brown or black border.

TYPES.—Holotype, female July 23; paratypes, two females, July 4, 20.

The male from which the characters of that sex were gleaned was destroyed. It was taken at Wells, N. Y., July 26, 1923, by D. B. Young.

This species is unique in the genera *Thrypticus* and *Chrysotimus* in being wholly yellow, but it evidently belongs in *Chrysotimus*, the genitalia being small and pedunculate.

Xanthochlorus helvinus Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 75.

Three males, July 5, 11, 21.

Diostracus prasinus Loew

LOEW, 1861, 'Neue Beitrage,' VIII, p. 44.

Eight males and six females, June 3, to July 23.

PHORIDÆ

Gymnophora arcuata Meigen

Phora arcuata MEIGEN, 1830, 'Syst. Beschr. Eur. Dipt.,' VI, p. 222.

One pair, June 26.

LONCHOPTERIDÆ

Lonchoptera furcata Fallén

Dipsa furcata FALLÉN, 1823, 'Dipt. Suec.,' Phytom., p. 1.

Four females, July 5, 6.

PIPUNCULIDÆ

Representatives of two of the four genera occurring in America were secured during the summer.

TABLE OF GENERA

1. Discal cell closed.....2.
   Discal cell incomplete, open apically.....*Chalarus* Walker.
2. Scutellar bristles present.....3.
   Scutellar bristles absent.....*Pipunculus* Latreille.
3. Occiput widely visible; ocellar bristles absent.....*Nephrocerus* Zetterstedt.
   Occiput narrow; ocellars present.....*Verrallia* Mik.

Chalarus spurius Fallén

Cephalops spurius FALLÉN, 1816, 'Dipt. Suec.,' Syrphici, p. 16.

Male, July 1.

Pipunculus Latreille

Six species belonging to this genus were collected.

Pipunculus atlanticus Hough

HOUGH, 1899, Proc. Bost. Soc. Nat. Hist., XXIX, p. 80.

Male and two females, June 28 to July 9.

Pipunculus semifasciatus Cresson

CRESSON, 1911, Trans. Amer. Ent. Soc., XXXVI, p. 288.

Male and two females, July 1 to 9.

Pipunculus cingulatus Loew

LOEW, 1865, Berl. Ent. Zeitschr., IX, p. 176.

Two males and two females, June 28 to July 11.

Pipunculus fasciatus Loew

LOEW, 1872, Berl. Ent. Zeitschr., XVI, p. 88.

Female, July 8.

Pipunculus æquus Cresson

CRESSON, 1911, Trans. Amer. Ent. Soc., XXXVI, p. 292.

Male and female, June 28, July 6.

Pipunculus discolor Banks

BANKS, 1911, Trans. Amer. Ent. Soc., XXXVI, p. 290.

Male, June 25.

SYRPHIDÆ

MICRODON Meigen

The following key separates the species known to occur in New York State.

1. Scutellum without spines or deep apical emargination.....2.
   Scutellum with small spines.....5.
2. Abdomen wholly black pilose beyond the second segment...*megalogaster* Snow.
   Abdomen not wholly black pilose beyond the second segment.....3.
3. Ocellar triangle wider than long.....4.
   Ocellar triangle as long as wide; brownish species.....*globosus* Fabricius.
4. Scutellum convex dorsally.....*cothurnatus* Bigot.
   Scutellum not at all convex; brownish species (? ♀)....*fuscipennis* Macquart.
5. Thorax greenish.....*ocellaris* Curran.
   Thorax blackish.....6.
6. Scutellar spines large, situated close to lower edge of scutellum.....7.
   Scutellar spines very small, situated well above lower edge of scutellum. *cothurnatus* Bigot.
7. Third antennal segment about as long as the first.....*tristis* Loew.
   Third antennal segment not nearly so long as the first.....*champlaini* Curran.

Microdon megalogaster Snow

SNOW, 1892, Kans. Univ. Quart., I, p. 34.

Male, June 25.

Microdon species

Female, July 3.

This may be the female of *fuscipennis* Macquart but it is large and has much longer and more tapering arista than in the males before me.

Microdon cothurnatus Bigot

BIGOT, 1883, Ann. Soc. Ent. France, p. 320.

Three males, June 26, and female, July 9.

Microdon ocellaris Curran

CURRAN, 1926, Kans. Univ. Sci. Bull., XV, p. 81.

Two females, June 25.

The species has not previously been reported from New York State.

VOLUCELLA Geoffroy

The species recorded from New York State are separable as follows:

1. Large species with long pile ..... 4.
   Smaller, short pilose species ..... 2.
2. Brilliant green or bluish in color ..... *obesa* Fabricius.
   With yellow markings ..... 3.
3. Marginal cell strongly bulbous at the end ..... *fasciata* Macquart.
   Marginal cell not strongly widened apically ..... *vesiculosa* Fabricius.
4. Face black or brown; antennæ reddish ..... 5.
   Face yellow ..... *bombylans plumata* DeGeer.
5. Abdomen wholly black pilose beyond the second segment.
   bombylans americana Johnson.
   Apical one or two abdominal segments reddish or yellowish pilose.
   bombylans evecta Walker.

Volucella vesiculosa Fabricius

Syrphus vesiculosa FABRICIUS, 1805, 'Syst. Antl.,' p. 226.

Male, June 30.

Volucella bombylans evecta Walker

Volucella evecta WALKER, 1852, 'Dipt. Saundersiana,' p. 251.
Volucella evecta sanguinea, WILLISTON, 1886, 'Synopsis N. Amer. Syrph.,' p. 137.

Female, July 30.

Chrysotoxum pubescens Loew

LOEW, 1860, Wien. Ent. Monatschr., IV, p. 84.

Two males and three females, June 30, July 1, 23, and 24.

Chrysotoxum radiosum Shannon

SHANNON, 1926, Proc. U. S. N. M., LXIX, Art. 11, p. 10.

Female, June 26.

Didea fuscipes Loew

LOEW, 1863, 'Cent.,' IV, No. 82.

Female, August 28.

This species very closely resembles *fasciata* Macquart but the genitalia of the two are very different. I have not seen *fasciata* from America.

Xanthogramma flavipes Loew

Doros flavipes LOEW, 1863, 'Cent.,' IV, No. 83.

Male and two females, June 30, July 10 and 24.

This is the only American species referable to the genus.

EPISTROPHE Walker

I have published a key to the American species in Kansas University Science Bulletin, Volume XV.

Epistrophe grossulariæ Meigen

Syrphus grossulariæ MEIGEN, 1822, 'Syst. Beschr.,' III, p. 306.

Eighteen males and two females, June 26 to August 24.

This species was very common during the months of July and August.

Epistrophe xanthostomus Williston

Syrphus xanthostomus WILLISTON, 1886, 'Synopsis N. Amer. Syrph.,' p. 86.

Three females, June 30 to July 1.

Epistrophe cinctellus Zetterstedt

Scæva cinctellus ZETTERSTEDT, 1848, 'Dipt. Scand.,' II, p. 742.

Fifteen males and four females, July 11 to August 26.

Very common during July.

SYRPHUS Fabricius

The following key includes all the species recorded from New York, but not all of those from North America. Owing to lack of representatives of many of the species it is not possible at present to prepare a complete synopsis, and, since some of the species are included from description only, this key should not be regarded as final but subject to revision.

1. Lower lobe of squamæ pilose above ..... 2.
   Lower lobe of squamæ bare ..... 13.
2. Eyes bare ..... 3.
   Eyes pilose ..... *torvus* Osten Sacken.
3. Female with posterior femora black at base (♀ only) ..... *vitripennis* Meigen.
   Female with posterior femora pale basally ..... 4.
4. Second and third pale abdominal fasciæ reach the lateral margins ..... 5.
   These bands separated from lateral margins ..... *opinator* Osten Sacken.
5. First segment of middle tarsi with black spicules beneath ..... 6.
   First segment of middle tarsi with only yellow spicules ..... *knabi* Shannon.
6. Antennæ reddish, the third segment narrowly brownish above ..... *bigelowi* Curran.
   Antennæ mostly blackish ..... 7.
7. Abdomen with the sides strongly reflexed downward the apical segments all visible from above ..... *transversalis* Curran.
   Abdomen of normal shape ..... 8.
8. Face with median blackish or brown vitta ..... *ribesii vittafrons* Shannon.
   Face without median blackish or brown vitta ..... 9.

9. Femora with the base yellowish (females)....10.
Femora with the base broadly black (males)....11.
10. The yellow band on the second abdominal segment reaches the side margin in almost its full width; posterior femora with a broad, brown preapical band. *rectus* Osten Sacken.
The yellow band reaches the side margin in not more than half of its greatest width; posterior femora rarely brown preapically....*ribesii* Linné.
11. The yellow band on the second segment reaches the lateral margin in only about one-fourth its greatest width....12.
The yellow band extends over the side margins in half its greatest width. *rectus* Osten Sacken.
12. Venter unicolorous; tiny black hairs on end of posterior femora sparse. *vitripennis* Meigen.
Venter usually with transverse blackish markings; tiny black hairs on posterior femora very numerous and extending over the apical third..*ribesii* Linné.
13. Eyes pilose....14.
Eyes bare....25.
14. Abdominal spots very narrow, those on the second segment small and elongate oval....*limatus* Hine.
Abdominal spots wider, those on the second segment large....15.
15. The bands on the third and fourth segments are broadly connected in the middle....16.
These bands interrupted....17.
16. Spots on third segment narrowing toward the middle....*lotus* Williston.
Spots on third segment widest, or not narrowed, medianly..*laxa* Osten Sacken.
17. At least one pair of spots extends over the lateral margins....20.
None of the spots extend over the lateral margins....18.
18. Basal antennal segments reddish yellow....19.
Basal antennal segments black....*pauxillus* Williston.
19. The basal yellow spots extend at least weakly to the side of the second abdominal segment....*laticaudus* Curran.
The yellow spots do not reach the sides of the segment....*pacificus* Lovett.
20. Abdominal spots not arcuate or deeply excised....*laxa* Osten Sacken.
Abdominal spots arcuate or very deeply excised....21.
21. Abdomen very broad and flat, the spots concave posteriorly and reaching the bases of the 3rd and 4th segments laterally; abdomen shining; length, 12 mm....*laticaudatus* Curran.
Abdomen not unusually broad, the spots scarcely concave posteriorly, or if so, the abdomen not shining....22.
22. The first pair of spots extends over the lateral margins....23.
The first pair of spots never extends over the lateral margins. *amalopis* Osten Sacken.
23. The third pair of spots does not extend over the lateral margins. *laticaudus* Curran.
All the spots extend over the lateral margins....24.
24. Abdominal spots almost transverse (10 to 12 mm.)....*venustus* Meigen.
Abdominal spots decidedly oblique (8 mm.)....*osburni* Curran.
25. Sides of the mesonotum yellow in ground color....26.
Sides of the mesonotum not yellow in ground color....28.

26. The yellow markings on the second abdominal segment extend over the lateral margins ..... *emarginatus* Say.
The yellow markings do not reach the lateral margins ..... 27.
27. Second abdominal band entire ..... *felix* Osten Sacken.
All the bands interrupted ..... *divisa* Williston.
28. All the abdominal bands interrupted ..... 29.
One or more bands entire ..... 36.
29. Abdominal spots narrow, tapering outwardly, not at all arcuate; very broadly separated from the lateral margins and each other .... *rufipunctatus* Curran.
Abdominal spots wide, at most narrowly separated from the lateral margins, usually arcuate ..... 30.
30. Face with median black stripe ..... 33.
Face without median black stripe ..... 31.
31. Abdominal spots not concave in front ..... *divisa* Williston.
Abdominal spots arcuate ..... 32.
32. The spots extend over the lateral margins ..... *palliventris* Curran.
The spots do not extend over the lateral margins ..... 35.
33. Apical cell very strongly widened on apical part ..... *lapponicus* Zetterstedt.
Apical cell but little widened apically ..... 34.
34. Apical abdominal segment mostly reddish ..... *montanus* Curran.
Apical abdominal segment black, the tip narrowly pale .... *perplexus* Osburn.
35. Ventral abdominal bands on posterior of segments, three in number. *neoperplexus* Curran.
Ventral abdominal bands on middle of segments, two in number .. *snowi* Wehr.
36. Face with median dark vitta ..... 37.
Face without median dark vitta ..... 49.
37. Abdominal bands blood-red ..... *montivagus* Snow.
Abdominal bands yellowish ..... 38.
38. Third vein very strongly curved forward, widening the apical cell. *aberrantis* Curran.
Third vein at most slightly curved ..... 39.
39. The band on the second abdominal segment does not reach the lateral margin ..... 40.
The band on the second segment reaches the lateral margin ..... 47.
40. Abdominal bands strongly undulate ..... 41.
Abdominal bands but weakly undulate ..... 43.
41. Face wholly black pilose; frontal triangle from dorsal view very thinly yellow pollinose ..... *pingreensis* Fluke.
Face yellow pilose at least on the broad sides ..... 42.
42. Front of female pollinose ..... *meadii* Jones.
Front of female without pollen; venter wholly pale ..... *palliventris* Curran.
43. Females ..... 44.
Males ..... 46.
44. Posterior femora yellow on basal half ..... *wiedemanni* Johnson.
Posterior femora black to the base ..... 45.
45. Smaller, 7 to 8 mm. (Larvæ grayish) ..... *pomus* Curran.
Larger, 9 to 10 mm. (Larvæ green) ..... *vinelandi* Curran.
46. Yellow bands wider than intervening black bands ..... *wiedemanni* Johnson.
Yellow bands much narrower than intervening black bands ..... 45.

47. Front of female with blackish inverted Y above antennæ.....*medius* Jones.
Front of female without such marking, yellow on lower fourth.....48.
48. Front of female destitute of pollen.....*pingreensis* Fluke.
Front largely pollinose.....*venablesi* Curran.
49. First and third abdominal bands interrupted, the second entire.
invigorus Curran.
Third band entire.....50.
50. Venter wholly yellow.....*palliventris* Curran.
Venter with black crossbands.....51.
51. Fourth sternite with black fascia.....52.
Fourth sternite wholly pale.....*pallifrons* Curran.
52. Third antennal segment almost twice as long as wide.....*lebanoensis* Fluke.
Third antennal segment not one-half longer than wide...*latifasciatus* Macquart.

Syrphus rectus Osten Sacken

Osten Sacken, 1875, Proc. Bost. Soc. Nat. Hist., XVIII, p. 140.

Six males and seven females, June 27 to August 28.

Syrphus emarginatus Say

Scæva emarginata Say, 1823, Journ. Acad. Sci. Phila., III, p. 91.

Seventy specimens of both sexes June 26 to August 28.

Common during August on bloom of goldenrod and occurring also on wild aster and other flowers.

Syrphus divisa Williston

Xanthogramma divisa Williston, 1882, Proc. Amer. Phil. Soc., XX, p. 311.

Syrphus disjunctus Williston (not Macquart) 1882, Proc. Amer. Phil. Soc., XX, p. 314.

Syrphus disjectus Williston, 1886, 'Synopsis N. Amer. Syrph.,' p. 73.

Two males, August 2 and 28.

The male and female were originally described as distinct species, the former having the yellow lateral margins of the mesonotum weak and therefore being placed in the genus *Syrphus* by Williston.

Syrphus latifasciatus Macquart

Macquart, 1827, Soc. Sci. Lille, p. 242.

Scæva abbreviatus Zetterstedt, 1849, 'Dipt. Scand.,' VIII, p. 3136.

Two males, June 27 and August 24.

Syrphus wiedemanni Johnson

Johnson, 1919, Can. Ent., LI, p. 32.

Female, August 28.

Usually common in all parts of its range but singularly scarce during the season.

Syrphus lapponicus Zetterstedt

Scæva lapponicus ZETTERSTEDT, 1838, 'Ins. Lapp.,' p. 598.
Syrphus arcuatus of authors, not Fallén.

Female, July 1.

BACCHA Fabricius

Four species are recorded from New York State.

1. Wings almost all hyaline..... *obscuricornis* Loew.
   Wings largely brown, with a large median fascia or the costa broadly brown..2.
2. Wings with large median brown fascia..... *fascipennis* Wiedemann.
   Wings with the costal border wholly brown.....3.
3. The brown color extends over most of the wing..... *fuscipennis* Say.
   The brown color is limited to the costal border..... *costata* Say.

Baccha obscuricornis Loew

LOEW, 1863, Berl. Ent. Zeitschr., VI, p. 15.
Baccha cognata LOEW, 1863, Berl. Ent. Zeitschr., VI, p. 15.
Baccha angusta OSTEN SACKEN, 1877, Bull. U. S. Geol. Surv., III, p. 332.

Two males, July 9 and 16.

This species is found in deep moist woods and is seldom abundant. The sexes differ in the amount of wing coloration, hence their description under different names by Loew. I have seen specimens from various localities in Canada, as well as from the Pacific Coast as far south as Oregon, and have examined the types.

Recorded in the 'New York State List' as *cognata* Loew.

Baccha fascipennis Wiedemann

WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 96.

Three females, July 1, 17 and 25.

All three are the very large form so often met with in this sex.

Baccha fuscipennis Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 100.
Ocyptamus fuscipennis of authors.

Three males and five females, July 1 to August 6.

Not at all rare and very widely distributed. This species is usually placed in the genus *Ocyptamus* Macquart but is certainly a *Baccha* even in the strict interpretation of the two groups, which I do not consider separable.

SPHÆROPHORIA St. Fargeau and Serville

There are three species occurring commonly in New York State. The key which follows distinguishes the eastern species.

1. Face with a deep black median vitta, the mesonotum not yellow above the wings. *novæangliæ* Johnson.
   Face without black median vitta or mesonotum yellow above root of wings..2.
2. Pile on genital forceps forming dense anteriorly directed mass; sides of mesonotum not wholly yellow.....*cylindrica* Say.
   Pile erect or sub-erect, not dense; sides of mesonotum wholly yellow.....3.
3. Sides of abdomen entirely yellow, the bands forming isolated transverse spots, the posterior one interrupted.....*cleoæ* Metcalf.
   Sides of abdomen not entirely yellow, or the bands reach the lateral margins in the female or are all interrupted.....4.
4. Tarsi wholly yellowish (Europe).....6.
   Posterior tarsi black or brown.....5.
5. Apical three segments of anterior four tarsi black.....*robusta*, new species.
   Anterior tarsi reddish.....*menthastri* Linné.
6. Swollen part of male genitalia much longer than wide; abdomen slender; yellow spots on fifth abdominal segment of female very strongly widened at inner ends (Europe)..... *scripta* Linné.
   Swollen part of male genitalia scarcely longer than wide; abdomen robust; yellow spots on fifth segment of female not or but scarcely widened inwardly (Europe, Asia, America).....*menthastri* Linné.

Sphærophoria novæangliæ Johnson

JOHNSON, 1916, Psyche, XVI, p. 76.

Not in the collection but undoubtedly occurs here. It is usually common early in the season, during May and June, and I have taken it in Quebec during these months. The male genital forceps are almost bare, which at once distinguishes it from other species, with the exception of *sulphuripes* Thomson, in which the forceps are very long and directed forward instead of curving inward as in *novæangliæ*.

Sphærophoria cylindrica Say

Syrphus cylindricus SAY, 1824, Amer. Ent., I, p. 22.

Three males, June 27, July 11, August 28.

This species has the abdomen unusually pale, the apical segments usually being all reddish or yellowish and the mesonotum is not clear yellow above the roots of the wings, which serves to distinguish the female from forms having the face yellow. The dense apical tufts of pile on the posterior forceps or claspers of the male are quite characteristic.

The Slosson Collection contains a specimen from Niagara determined as *Sphærophoria* species.

Sphærophoria menthastri Linné

Musca menthastri LINNÉ, 1758, 'Syst. Nat.,' 10th Ed., p. 594.

Two males and one female, June 28 and August 28.

The short and broad basal genital segment of the male will serve to distinguish *menthastri* from *scripta* Linné; the abdomen is shorter and in fresh specimens more robust. There is a great deal of variation in color and several varieties are recognized in Europe, some of them really representing distinct species. The face is often blackish or darkened in the middle as in *novæangliæ*, but the wholly pale mesonotal margins distinguish this species in the female.

This species was in the Slosson collection, determined as *scripta*. It occurs over the greater part of the Nearctic region.

Sphærophoria scripta Linné

Musca scripta Linné, 1758, 'Syst. Nat.,' 10th Ed., p. 594.

This species has not yet been found in North America. It has been very frequently recorded but all such records are erroneous for I have seen most of the specimens upon which the records are based. The name is included here in order to call attention to the characters.

S. scripta is an unusually elongate and slender species and the swollen portion of the genitalia is in keeping with the long abdomen, being very conspicuously longer than wide, while the hair on the posterior forceps is fairly thick though more or less erect. The following species is the one usually mistaken for *scripta* but it is much more robust and has quite different genital characters.

The single undamaged specimen in the Slosson Collection bearing this label is *menthastri* Linné; the second specimen lacks head and abdomen. Both are from Franconia.

Sphærophoria robusta, new species

Large, rather robust species, the face yellow, the basal genital segment of the male little longer than wide. Length, 9 to 10.5 mm.

Male.—Face, frontal triangle and cheeks pale yellow. Vertical triangle and occiput greenish black, grayish pollinose. Pile of front and upper half of occiput yellow, of lower half of occiput and cheeks, whitish, rather silvery, of the vertical triangle, black. Antennæ reddish yellow, the third segment more or less brownish tinged above, the arista shining brown.

Thorax greenish black, with yellow markings, the mesonotum rather æneous, obscurely pale pollinose with traces of two sub-median grayish vittæ in front of the suture and outside these with a darker rather dull vitta on either side, abbreviated in front and behind. Broad sides of the mesonotum, scutellum wholly, large spots on the sternopleura above, hypopleura and spot above the front coxæ, the mesopleura mostly and the upper two-thirds of the pteropleura, pale yellow. Pile yellowish, more or less black on the posterior half of the scutellum.

Legs, including all the coxæ, yellowish; second tarsal segment more or less brown, the apical three segments brown or black, the basal two segments of the posterior

tarsi brownish red to reddish brown. Hair of legs black, on the anterior four tibiæ and their tarsi, yellow.

Wings with only slight cinereous tinge; halteres, squamæ and squamal fringe yellow.

Abdomen dull black with extensive yellow or orange markings, the lateral margins wholly yellow, inside the pale border shining black, the segmental incisures also shining. Second segment with a moderately broad, anteriorly convex, curved pale fascia situated a little behind the middle, the band usually more or less excised in the middle on anterior and posterior borders; band on third segment wider, not excised and almost transverse on its posterior border, situated somewhat in front of the middle of the segment, broadly notched in the middle anteriorly; band on fourth segment of similar shape but a little narrower and situated near the front margin of the segment. Fifth segment reddish, with five sub-opaque blackish spots, the median one forming an incomplete median vitta which is narrowest at its basal third, a sub-oval or sub-triangular spot near the posterior border: in dark specimens these outer spots may be connected and sometimes the posterior spots are connected with the median vitta. Genitalia reddish or reddish yellow, the swollen part distinctly longer than wide, the hairs on the posterior forceps erect and scattered fairly well over the surface.

FEMALE.—Front shining black with the yellow color extending up the sides almost or quite half way to the vertex, the black median vitta often tapering anteriorly but always reaching the lunula broadly or it may be broadened immediately above the lunula and have the sides almost parallel. The tarsi are usually all reddish yellow or but little darkened. The pale abdominal bands are much narrower, the first three entire, the median one but little wider than the others. On the fifth segment there is a medianly interrupted yellow fascia which is separated from the base by a black, transverse triangle, touches the base broadly toward the middle and is usually very strongly widened on the inner ends of the spots and also widened on the outer ends but more gradually so. The sixth segment bears three black spots, the outer ones large, the median basal one small.

TYPES.—Holotype, male, Rangeley, Maine, August 8, 1925, (H. F. Schwarz); allotype, female, Rangeley, July 23, 1925. Paratypes: male and 4 females, Rangeley, Maine, July 23 and August 15, 1925, (H. F. Schwarz); male, Mt. Washington, N. H., (Mrs. Slosson), determined as *cylindrica* Say[1]; three males, three females, Mosholu, N. Y., June 12, 1919, Aug. 30, 1919, September 1, 1919, and September 10, 1919, (F. E. Watson); female, Crugers, N. Y., June 23, 1912, (Hans Sauter); male, Hastings, N. Y., June 25, 1922, (F. E. Watson); two females, Stony Cove, Catskill Mts., N. Y., July, 1910, (F. E. Watson); female, Oliverea, Catskill Mts., N. Y., August 31, (E. L. Dickerson); male, Westport, N. Y., May 20-22, 1927, (E. F. Lutz); three males, Ramsey, N. J., June 12, 1912, May 17, 1917, and June 21, 1917, (F. E. Lutz); male, South River, N. J., July, 1917, (E. L. Dickerson); female, Lakehurst, N. J., August 16, 1912, (F. E. Lutz); male, Greenwich, Conn., July 7, 1918, (E. L. Bell); thirteen males, four females, Provo, Utah, July 29, August 1, 1920, about 4547 ft., (F. E. Lutz); male and female, Glenwood Springs, Colo., August 5, 1920, about 5800 ft., (F. E. Lutz); male, Monte Vista, Colo., June 16, 1919, about 7650 ft., (F. E. Lutz); two males and female, South Fork of the Rio Grande, Colo., June 17, 1919, about 8500 ft., (F. E. Lutz).

[1]Both the two remaining specimens in the Slosson Collection determined as *cylindrica* are this species. The female lacks head. The third specimen is represented by the pin and thorax only.

MELANOSTOMA Schiner

There are many species belonging to this genus in America but no key is available for aid in their determination. At the present time, I have but few of the described species before me and am therefore unable to present a complete synopsis. However, several years ago a key was prepared dealing with all the species then known to me and I take this opportunity to publish it in order that the more common species may be readily determined.

At the same time, I present a key for the identification of the females of this and related genera but this, like the key to the males of *Melanostoma*, was prepared many years ago and is therefore incomplete. Inasmuch as the key to *Platycheirus* in the American Museum Novitates, No. 247, includes all the species belonging to the genus, the publication of these keys should render identification of the eastern forms much easier.

TABLE OF SPECIES

Males

1. Abdomen with quadrate or semi-quadrate reddish spots.....2.
   Abdomen with metallic, oval or transverse spots, rarely purely reddish yellow.4.
2. The second pair of spots, (on the third segment), distinctly longer than broad, when the abdomen is not curved under.....3.
   Second pair of spots scarcely longer than broad; (unless abdomen is curved under).....9.
3. Thorax and scutellum pale yellow pilose; anterior four femora sometimes brownish basally, not black; venter largely yellowish.....*angustatum* Williston.
   Thorax and scutellum black pilose (brownish in some lights), anterior four femora black except the ends; venter chiefly brassy green; face more receding; abdominal spots distinctly separated from margins. *melanderi* Curran.
4. Face rather broad, the dense grayish white pollen thickly large punctate leaving the black ground color showing.....5.
   Face broad or narrow, densely or thinly pollinose or almost all shining, the pollen sometimes rippled, but never with large shining spots.....6.
5. Face receding below the tubercle.....*stegnum* Say.
   Face not receding below tubercle.....*stegnum* variety.
6. Cilia of the front femora ending in a peculiar long curved hair, abdomen with hoary spots.....7.
   Cilia not present or without such hair.....11.
7. The ground color beneath the abdominal hoary spots is reddish and forms a subtriangular-oval spot, its pointed end directed obliquely outward; middle femora with three strong or weak basal ciliate hairs.....8.
   The ground color is not clearly reddish; smaller species; middle femora lacking the basal ventral ciliate hairs.....*ambiguum* Fallén.

8. Face metallic bluish; the ciliate hairs strong and black.... *cærulescens* Williston.
   Face black, in ground color; the ciliate hairs finer, white, but distinct. *cærulescens* variety.
9. Anterior femora with two long, peculiarly curved hairs apically; abdomen broad, face projecting..... *kelloggi* Snow.
   Anterior femora with no peculiar apical hairs..... 10.
10. Face very shining black, the abdominal bands usually narrowly separated from the blackish or metallic margins in front, always more broadly separated behind..... *mellinum* Linné.
    Face moderately dusted so that the tubercle and cheeks are much more shining; abdominal bands usually touching the margins which are more metallic and usually but little different in color (this species has gone under the name *mellinum* in North America, but is undoubtedly distinct). *pictipes* Bigot.[1]
11. Ground color metallic blue; abdomen with three pairs of narrowly separated subtriangular hoary spots; no peculiar hairs or bristles anywhere and no cilia; dorsum of thorax sometimes a little bronzed on disk; pile of front black, of face and thorax white; of abdomen chiefly white, short, inconspicuous black on opaque part..... *concinnum* Snow.
    Not with all these characters..... 12.
12. Pile of head, thorax and abdomen rather long, black; squamæ dark, with brownish fringe; abdominal markings cupreous; wings smoky brownish; face very thinly pollinose on sides..... *squamulæ* Curran.
    Not with all these characters..... 13.
13. Small species, (6–7 mm.); pollen of face light, but scarcely striate; none of the cupreous bands are complete..... *confusa* Curran.
    Larger, (9–10 mm.); pollen of face striate, except in *rufipes*..... 14.
14. Legs chiefly reddish, the femora with sub-median darker bands; all the metallic abdominal spots complete, pollen of face not striate.... *rufipes* Williston.
    Legs more largely blackish..... 15.
15. Inner ends of metallic spots hoary, face metallic blue..... 16.
    Inner ends of metallic spots not hoary..... 17.
16. Anterior four tarsi all reddish..... *rostratus* Bigot.
    Anterior four tarsi brown on last three segments..... *trichopus* Thomson.
17. Median shining facial stripe definitely limited and a little narrowed below the tubercle; face less peaked..... *chætopoda* Davidson.
    Median shining facial stripe less sharply limited and not narrowed, but broadened below the tubercle..... 18.
18. Face moderately "pinched"; apical metallic bands usually cupreous; wings usually somewhat luteous..... *obscurum* Say.
    Face decidedly "pinched" below; all metallic spots greenish; wings hyaline (Pacific Coast)..... *obscurum* variety.

[1] I have given the name first used by Bigot for what is undoubtedly this species.

MELANOSTOMA, PLATYCHEIRUS, PYROPHAENA AND XANTHANDRUS

TABLE OF SPECIES

Females

1. Humeri pilose ..... CHILOSINÆ.
   Humeri bare; face never with well developed side margins, the facial pits ending before the middle of the face; abdomen of male with 5, of female with 5 or 6 visible segments, facial tubercle variable ..... 2.
2. Abdomen wholly shining metallic, without any opaque markings or reddish bands ..... 3.
   Abdomen in part opaque or with reddish bands or spots ..... 7.
3. Legs almost all brownish black; front wide, wholly without pollen and wholly black pilose; facial tubercle very prominent; oral margin less prominent than the tubercle; wings hyaline ..... *Melanostoma chilosia* Curran.
   Legs very largely reddish, at least on the basal half of the front four tibiæ .... 4.
4. Pollinose band of the front complete or very narrowly interrupted; legs all black except the basal half of the front four, and one half of the hind tibiæ. *Melanostoma dubium* Zetterstedt.
   Pollinose band not complete, but broadly interrupted; tarsi largely or all red except the hind basitarsi ..... 5.
5. Face not salient; front wholly black pilose, broad and short. *Melanostoma parva* Williston.
   Face salient; front narrower than long ..... 6.
6. Face very salient, the tubercle adding to the effect as it is low and long; vertex brassy; apical cross-vein not joining the third vein at a right angle. *Melanostoma atra* Curran.
   Face less salient, the tubercle short and oval; vertex more purplish bronzed and wider; apical cross-vein joining the third vein at a right angle, being somewhat sinuous, and not longer than the last section of the fifth vein. *Melanostoma luteipennis* Curran.
7. Margin of the thorax behind the wings and the margin of the scutellum yellowish. *Xanthandrus bucephalus* Wiedemann.
   Margin of scutellum not yellow ..... 8.
8. Legs wholly black; just the first one and a half abdominal segments opaque, the second segment with the base and a broad, short median stripe opaque black; face almost perpendicular; front broad, black pilose; antennæ wholly black, third segment broader than long, rather large (Europe). *Melangyna quadrimaculata* Verrall.
   Not with this combination of characters ..... 9.
9. Abdomen with the second segment opaque except the sides (more widely shining anteriorly); third segment with a pair of broad, basal yellow bands which are hardly interrupted in front on the median line, very narrowly so behind, fourth segment opaque black ..... *Pyrophæna rosarum* Fabricius.
   Abdomen with the second segment less extensively opaque or with markings on the fourth segment ..... 10.
10. Similar to the preceding but with a pair of narrower, more widely separated spots on the base of the fourth segment .... *Pyrophæna rosarum-duplicata* Fluke.
    Second segment not wholly opaque; and more or less extensively shining, metallic or red ..... 11.

11. Antennæ wholly dull black, rarely very obscurely reddish or yellowish beneath the third segment ..... 12.
Antennæ distinctly reddish or yellowish beneath the third segment ..... 19.
12. Abdomen not at all reddish ..... 13.
Abdomen with reddish or metallic reddish markings ..... 14.
13. Face and front wholly shining, the tubercle small but prominent.
Platycheirus discimanus Loew.
Face largely, the front narrowly across the lower third, grayish white pollinose; tubercle elongate ..... *Melanostoma chætopoda* Davidson.
14. Front tarsi wholly reddish yellowish ..... 17.
Front tarsi practically all black or brownish ..... 15.
15. Face very prominent below; legs chiefly black.
Platycheirus manicatus Macquart.
Face receding; legs chiefly yellow ..... 16.
16. Abdomen all reddish except a slender median line and apices of the segments which are black ..... *Pyrophæna granditarsis apicula* Curran.
Abdomen with the hind margins of the segments more broadly black, the color very variable; usually the apical half of the fourth segment and most of the fifth segment is black ..... *Pyrophæna granditarsis* Fabricius.
17. Hind femora with about the middle half shining black; elsewhere orange.
Platycheirus scutatus Meigen.
Hind femora with at most a narrow blackish band beyond the middle ..... 18.
18. Fifth segment all black or only the anterior angles narrowly reddish; abdomen rather pointed at the end ..... *Melanostoma angustatus* Zetterstedt.
Fifth segment all black; abdominal spots not quite so long; frontal dust spots larger; abdomen more rounded apically .. *Platycheirus clypeatus* Meigen.
19. Yellowish dusted sides only a little broadened at the middle of the front; hind femora beyond the middle, middle of their tibiæ, the first tarsal segment dorsally, and the apical segment wholly, blackish; median black vitta on fifth abdominal segment broad and complete .. *Platycheirus scambus* Stæger.
Fifth abdominal segment seldom with entire median black vitta, or if so, the frontal pollen grayish or whitish ..... 20.
20. Face grayish or grayish white pollinose with the ground color showing as rounded, more or less confluent spots, but not ripple-like.
Melanostoma stegnum Say.
Face not with the ground color showing as rather large round spots, but sometimes ripple-like; or the face practically all shining ..... 21.
21. Orange spots on second abdominal segment very large ..... 22.
Orange spots small, oval, transverse, or absent ..... 24.
22. Black markings of the abdomen extremely narrow; often somewhat obsolete.
Platycheirus perpallidus Verrall.
Black markings never obsolete in any part; pollen of the front conspicuously broadened ..... 23.
23. Pollen of the front expanded more triangularly as the inner end is pointed; pollen grayish ..... *Platycheirus quadratus* Say.
Pollen of the front expanded more broadly, the inner end broadly rounded; pollen more grayish yellow ..... *Platycheirus immarginatus* Zetterstedt.

24. Abdomen with three pairs of hoary, metallic bluish spots; face somewhat prominent below, concave above; anterior tibiæ with the apical half, except the tip, brownish; front and thorax metallic bluish; pile of thorax and scutellum white, short..... *Platycheirus albimanus* Fabricius.
Not with this combination of characters.....25.
25. Abdomen with four pairs of yellow spots, the first three pairs of about equal size (first a pair a little the largest), their inner ends widest.
Platycheirus peltatus Meigen.
Abdomen not with such markings.....26.
26. Abdomen with bright yellow spots.....27.
Abdomen with metallic reddish or metallic spots or bands.....31.
27. When viewed from posteriorly the yellow spots are overlaid with white pollen.
Platycheirus erraticus Curran.
Abdominal spots not white pollinose.....28.
28. The spots of the abdomen do not normally reach the side margins.....29.
The abdominal spots normally reach the side margins in front or are so narrowly separated by a metallic area that they appear to do so.....30.
29. Face distinctly pollinose; abdominal spots on the second segment elongate oval, longitudinally placed; legs all pale..... *Melanostoma angustatum* Williston.
Face very slightly pollinose; abdominal spots on second segment more roundish and much smaller; smaller species..... *Melanostoma mellinum* Linné.
30. Abdominal spots broader than long, or scarcely longer than broad in some individuals..... *Melanostoma pictipes* Bigot.
Abdominal spots much longer than broad, the first pair elongate oval.
Melanostoma scalare Fabricius.
31. Femora rather robust; legs chiefly reddish except on the femora and an obscure band on the hind tibiæ..... *Melanostoma rufipes* Williston.
Femora of usual size, not stout.....32.
32. Small species (6–7 mm.), the front only a little narrowed above; abdominal bands not with metallic reddish spots appearing in them; pollen of face a little rippled, but it is thin..... *Melanostoma confusa* Curran.
Larger (8–10 mm.), the abdominal bands sometimes with reddish spots appearing in them.....33.
33. Face shining, very thinly pollinose even toward the sides; squamæ darkened; wings clouded with brownish yellow..... *Melanostoma squamulæ* Curran.
Face with ripple-like dark areas due to confluent small spots in the pollen.
Melonostoma obscurum Say.

Melanostoma pictipes Bigot

Bigot, 1884, Ann. Soc. Ent. France, p. 80.

Two females, July 24 and August 1.

Appears in the 'State List' as *melinum* Linné.

Toxomerus geminatus Say

Scæva geminata Say, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 92.

Seven males, June 26 to August 28.

Mesogramma marginata Say

Scæva marginata SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 92.

Observed commonly in grassland during the whole summer.

Mesogramma polita Say

Scæva polita SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 88.

Two females, August 25, 28.

Paragus tibialis Fallén

Pipiza tibialis FALLÉN, 1817, 'Dipt. Suec.,' Syrphici, p. 60.

Male and female, July 6.

Paragus bicolor Fabricius

Syrphus bicolor FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 297.
Paragus angustifrons LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 309.

Male and female, July 4 and August 28.

P. angustifrons is merely a color form, being the predominating and normal color form of the females.

Pipiza femoralis Loew

LOEW, 1865, Berl. Ent. Zeitschr., IX, p. 152.

Thirty specimens of both sexes, June 26 to July 19.

Several of these specimens belong to the variety *albipilosa* Williston.

Heringia salax Loew

Pipiza salax LOEW, 1865, Berl. Ent. Zeitschr., IX, p. 152.

Male and five females, June 26 to July 28.

Chrysogaster pulchella Williston

WILLISTON, 1886, 'Synopsis N. Amer. Syrph.,' p. 35.

Two males, June 26, August 28.

Chrysogaster nigripes Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 307.

Five females, June 26 to July 19.

Cartosyrphus pallipes Loew

Chilosia pallipes LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 311.

Twenty-four specimens of both sexes June 26 to August 24.

Common on bloom during the summer, especially on goldenrod and elder.

Myiolepta nigra Loew

Loew, 1872, Berl. Ent. Zeitschr., XVI, p. 84.

Four females, June 27 to July 18.

Myiolepta varipes Loew

Loew, 1869, Berl. Ent. Zeitschr., XIII, p. 174.

Two females, June 27, July 8.

Rhingia nasica Say

Say, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 94.

Male, July 11.

Condidea lata Coquillett

Coquillett, 1907, Can. Ent., XXXIX, p. 75.

Three specimens of each sex, June 30 and July 1.

Sericomyia chrysotoxoides Macquart

Macquart, 1842, 'Dipt. Exot.,' II, part 2, p. 19.

Two males and four females, June 26 to August 28.

Milesia virginiensis Drury

Musca virginiensis Drury, 1773, 'Illustr. of Nat. Hist.,' II, p. 73.

Nine specimens, July 16 to August 20.

Xylota Meigen

Shannon, Proc. U. S. N. M., LXIX, Art. 9, has published a review of this and related genera.

Xylota bicolor Loew

Loew, 1864, Berl. Ent. Zeitschr., VIII, p. 70.

Eight males and seven females, June 26 to July 23.

Xylota angustiventris Loew

Loew, 1865, Berl. Ent. Zeitschr., IX, 164.

Six specimens of each sex, June 26 to July 27.

Xylota subfasciata Loew

Loew, 1865, Berl. Ent. Zeitschr., IX, p. 164.

Male and female, July 20 and 26.

In addition to the records cited by Shannon for this species are those in the Entomological Record of the Entomological Society of Ontario,

listing the species from Manitoba (the type locality), northern Ontario and Quebec. The record of *X. notha* Williston from Vineland, Ontario, refers to this species.

Xylota ejuncida Say

SAY, 1824, Amer. Ent., I, p. 15.

Eighteen specimens of both sexes, June 26 to July 31.

Xylotomima chalybea Wiedemann

Xylota chalybea WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 98.

Twelve males and two females, June 26 to August 2.

Xylotomima anthreas Walker

Xylota anthreas WALKER, 1849, 'List Dipt. Brit. Mus.,' III, p. 556.

Three females, July 1, 11, 12.

Xylotomima baton Walker

Xylota baton WALKER, 1849, 'List Dipt. Brit. Mus.,' III, p. 554.

Three males, July 23, 30 and August 2.

SPILOMYIA Meigen

The species from New York State are separable as follows:

1. Second abdominal segment with pale fascia.....2.
   Second abdominal segment wholly black or with only the tip pale..*fusca* Loew.
2. Hypopleura with a yellow spot.....3.
   Hypopleura wholly black.....*quadrifasciata* Say.
3. Apex of second abdominal segment wholly yellow.....*longicornis* Loew.
   Apex of second abdominal segment with an interrupted, rather broad posterior black fascia.....*hamifera* Loew.

Spilomyia fusca Loew

LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 67.

Thirteen specimens, July 5 to August 3.

Spilomyia hamifera Loew

LOEW, 1864, Berl. Ent. Zetischr., VIII, p. 66.

Twenty-two specimens, June 26 to July 18.

Spilomyia longicornis Loew

LOEW, 1872, Berl. Ent. Zeitschr., XVI, p. 82.

Male and six females, July 17 to August 28 and female, August 30, (F. E. Watson).

Spilomyia quadrifasciata Say

Six specimens of both sexes, August 24 to 28.

All the specimens were taken on goldenrod.

Temnostoma St. Fargeau and Serville

The species belonging to this genus may be distinguished by means of the following key.

1. Suture of the thorax with two yellow pollinose spots on either side.....2.
   Suture of the thorax with only one yellow spot on either side.....3.
2. Scutellar pile black.....*venustum* Williston.
   Scutellar pile yellow.....*alternans* Loew.
3. Abdomen with three or four yellow cross-bands of nearly equal width.....4.
   Abdomen with more than four pale cross-bands not all of which are of nearly the same width.....6.
4. Apical abdominal segments with pale yellow hair dorsally..*obscurum* Loew.
   Apical abdominal segments with black hair.....5.
5. Posterior femora black almost or quite to the base, at most narrowly reddish (Europe).....*bombylans* Fabricius.
   Posterior femora yellow on basal fourth.....*trifasciata* Robertson.
6. Prescutellar pollinose spot entire.....7.
   Prescutellar pollinose spot interrupted by a narrow black line..*pictulum* Williston.
7. Scutellum yellow pilose.....8.
   Scutellum black pilose.....*nipigonensis* Curran.
8. Femora wholly yellow.....*excentricum* Harris.
   Femora or at least the front pair black on basal third or more.
   apiforme Fabricius.

Temnostoma obscurum Loew

?*Syrphus* (*Doros*) *balyras*, Walker, 1849, 'List Dipt. Brit. Mus.,' III, p. 577.
Temnostoma obscurum Loew, 1864, Berl. Ent. Zeitschr., VIII, p. 67.

A single female, July 1.

I use Loew's name for this species because Walker's type needs to be critically examined in order to establish the identity of his species. In his 'Diptera of the Harris Collection,' Johnson states that *obscura* is a synonym of *bombylans* Fabricius, but I do not agree. Perhaps there are two species in Europe: one northern, the other occurring in the central area. At any rate, the specimens in my collection, which are from Austria, do not agree with specimens of *obscurum* but are more like *trifasciata* Robertson. The color of the antennæ is variable. If Johnson is correct in his statement that the apical tarsal segments of *bombylans* are black or brown he furnishes evidence that there are two species in Europe since this is not the case in the specimens from Austria. The apical tarsal segments are black in *trifasciata* but not in the form I have called

obscurum, which Johnson believes to be *balyrus*. *T. obscurum* is the only one of the three species before me having the tarsi wholly pale.

I have not seen *bombylans* from North America.

Temnostoma trifasciatum Robertson

ROBERTSON, 1901, Can. Ent., XXXIII, p. 285.

Four males and one female, June 26 and 30.

Temnostoma excentricum Harris

Milesia excentrica HARRIS, 1862, 'Insects of New England,' 3d Ed., p. 609.

Three males and two females.

I doubt if this is more than a variety of *apiforme* Fabricius in which the femora are wholly pale.

Temnostoma apiforme Fabricius

Syrphus apiforme FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 300.
Temnostoma æquale LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 68.

No specimens from Tuxedo, but the species should occur in the region. The name should be changed from *æquale* to *apiforme* in the 'State List.'

I have hesitated in suggesting this synonymy for many years, but I have no doubt of its correctness and cannot find the slightest genitalic differences to support the retention of the name proposed by Loew.

Temnostoma alternans Loew

LOEW, 1864, Berl. Ent. Zeitschr., VIII, p. 68.

Five males and two females June 26 to July 19.

Somula decora Macquart

MACQUART, 1847, 'Dipt. Exot.,' Suppl., II, p. 57.

Thirteen males and two females, June 26 to 30.

Teuchocnemis lituratus Loew

Pterallastes liturata LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 317.

Eight males and five females, June 26 to July 18.

Pterallastes thoracicus Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 317.

Male, June 29.

MALLOTA Meigen

The following key separates the Nearctic species.

1. Eyes short pilose.....*posticata* Fabricius.
   Eyes bare.....2.
2. Abdomen entirely black pilose except a few hairs on anterior angles of the second segment.....3.
   Abdomen more or less yellow pilose beyond the second segment.....4.
3. Wings with a conspicuous brown spot at the middle in front, squamæ brownish (*colombiæ* Curran, not *colombii* Macquart).....*sackeni* Williston.
   Wings with a small, linear, irregular brown spot; squamæ white. *cimbiciformis* Fallén.
4. Last segment in male, last two in female chiefly or all (rarely less than half the hairs), yellow to orange pilose (*flavoterminalis* Jones).....*facialis* Hunter.
   All the segments largely pale pilose.....5.
5. Abdomen brownish, second to fifth segments each with a pair of lighter brown spots (Colorado).....*palmeræ* Jones.
   Abdomen black, not with brown spots.....6.
6. Posterior femora all black except just the apex; thoracic pile pale yellow. *albipila* Snow.
   Posterior femora with the broad apex (at least) reddish.....7.
7. Mesonotum chiefly orange pilose.....*illinoiensis* Robertson.
   Mesonotum with pale yellow pile.....*diversipennis* Curran.

Mallota posticata Fabricius

Eristalis posticata FABRICIUS, 1805, 'Syst. Antl.,' p. 237.

Male and five females, June 26 to July 15.

Mallota cimbiciformis Fallén

Syrphus cimbiciformis FALLÉN, 1817, 'Dipt. Suec.,' Syrphici, p. 27.

Four specimens of each sex, June 26 to July 28.

Parhelophilus rex Curran and Fluke

CURRAN AND FLUKE, 1926, Trans. Wis. Acad. Sci., XXII, p. 234.

Three males, June 29, July 1.

These were taken on or around bloom of the yellow water-lily and I know of no specimens taken at any distance from this plant.

Helophilus fasciatus Walker

WALKER, 1849, 'List Dipt. British Mus.,' III, p. 605.

Female, July 23.

This species appears in the 'State List' as *similis* Macquart.

Eristalis saxorum Wiedemann

WIEDEMANN, 1830, 'Ausser. Zweifl.,' III, p. 158.

Male and three females, July 3 to August 24.

CONOPIDÆ

Six species belonging to this family were collected at the Field Station.

Stylogaster neglecta Williston

WILLISTON, 1883, Trans. Conn. Acad. Sci., VI, p. 91.

Two males and one female, July 25, 28.

Physocephala tibialis Say

Conops tibialis SAY, 1829, Journ. Acad. Nat. Sci., Phila., VI, p. 171.

Three specimens of each sex, July 17 to August 24.

Zodion fulvifrons Say

SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 83.

Male, July 11.

Myopa clausa Loew

LOEW, 1865, Berl. Ent. Zeitschr., IX, p. 101.

Four of each sex, June 26 to July 11.

Thecomyia abbreviata Loew

Oncomyia abbreviata LOEW, 1865, Berl. Ent. Zeitschr., IX, p. 101.

Male and two females, July 11, August 24.

Thecomyia modesta Williston

WILLISTON, 1883, Trans. Conn. Acad. Sci., VI, p. 96.

Male, August 28.

ORTALIDÆ

Tritoxa incurva Loew

LOEW, 1873, 'Mon. N. Amer. Dipt.,' III, p. 104.

Male, July 30.

Rivellia pallida Loew

LOEW, 1873, 'Mon. N. Amer. Dipt.,' III, p. 95.

Eight males and four females, June 27 to July 23.

Rivellia viridulans Desvoidy

DESVOIDY, 1830, 'Essai sur Myodaires,' p. 629.

Female, July 6.

Rivellia flavimana Loew

LOEW, 1873, 'Mon. N. Amer. Dipt.,' III, p. 92.

Male and three females, July 1 to 10.

Rivellia metallica Van der Wulp

Herina metallica VAN DER WULP, 1867, Tijdschr. v. Ent., X, p. 154.

Male and two females.

Camptoneura picta Fabricius

Musca picta FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 355.

Male, July 6.

Seioptera vibrans Linné

Musca vibrans LINNÉ, 1761, 'Fauna Suec.,' p. 1867.

Female, June 26.

TRYPANEIDÆ

Straussia longipennis Wiedemann

Trypeta longipennis WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 483.

Male and female, June 25, July 23.

Procecidochares atra Loew

Trypeta atra LOEW, 1862, Berl. Ent. Zeitsch., VI, p. 89.

Male and three females, July 6 to 23.

Eutreta sparsa Wiedemann

Trypeta sparsa WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 492.

Eight males and twelve females, July 1 to August 28.

Eurosta elsa Dæcke

DÆCKE, 1910, Ent. News, XXI, p. 341.

Male, September 17, (F. E. Watson).

Euaresta bella Loew

Trypeta bella LOEW, 1862, 'Mon. N. Amer. Dipt.,' I, p. 86.

Female, July 20.

PIOPHILIDÆ

Two species belonging to this family were collected.

TABLE OF NORTH AMERICAN GENERA

1. Second antennal segment with dorsal bristle, the third segment rounded apically.....2.
   Second antennal segment setose above, without distinct bristle; the third segment rather truncate apically.....*Prochyliza* Walker.
2. Two pairs of dorsocentrals; two sternopleurals.....*Mycetaulus* Loew.
   One pair of dorsocentrals; no sternopleurals.....*Piophila* Fallén.

Piophila affinis Meigen

MEIGEN, 1830, 'Syst. Beschr. Eur. Zweifl.,' VI, p. 383.

Two females, July 23, 24.

Piophila pusilla Meigen

MEIGEN, 1838, 'Syst. Beschr. Eur. Zweifl.,' VII, p. 360.

Female, August 6.

SEPSIDÆ

Only one species was collected although several others occur in the region.

Nemopoda cylindrica Fabricius

Musca cylindrica FABRICIUS, 1774, 'Ent. Syst.,' IV, p. 336.

Four males and five females, July 6.

Very common.

EPHYDRIDÆ

Two of the five species are evidently undescribed. With the exception of *Ochthera mantis* De Geer, all the species were taken on the flowers or leaves of yellow water-lily.

Ochthera mantis De Geer

Musca mantis DE GEER, 1782, 'Mem. Hist. Ins.,' IV, p. 61.

Male, August 10.

Notiphila vittata Loew

LOEW, 1862, 'Mon. N. Amer. Dipt.,' I, p. 136.

Male, June 29.

Notiphila latelimbata, new species

Related to *vittata* Loew but lacking median stripes on the mesonotum and the lower pleural vitta, the upper vitta on the pleura represented by only two or three spots. Length, 3.75 mm.

FEMALE.—Head densely cinereous pollinose; palpi yellowish; antennæ black; arista with ten or eleven rays. Face with many microscopic hairs laterally and two or three coarser and longer ones; cheeks with a bristle in front.

Mesonotum yellowish-cinereous, on either side with a broad brown vitta extending from inside the humeri to above the wings, and behind with a triangular brown spot which is continuous with the broadly brown sides of the scutellum. Pleura grayish with faint yellow tinge, a large brown spot surrounding the anterior spiracle and one or two very small brown spots toward the posterior border of the mesopleura.

Coxæ and femora black, gray pollinose; tibiæ and tarsi reddish yellow, the posterior tibiæ with indications of a broad brown or blackish band, the middle pair with three dorsal bristles.

Wings with luteous or brownish tinge along the veins. Halteres yellow.

Abdomen cinereous with a row of rather large, triangular brown spots on either side of segments three to five, the third and fourth with shorter, transverse brown spots on either side basally. There are indications of brown tips to the segments but these are apparently not constant.

TYPE.—Female, June 29.

Notiphila loewi Cresson

CRESSON, 1917, Trans. Amer. Ent. Soc., XLIII, p. 44.

?*Notiphila unicolor* LOEW (not Walker), 1862, 'Mon. N. Amer. Dipt.,' I, p. 137.

Two males and three females, June 29.

I refer these specimens here with considerable doubt. The second costal section is more than twice as long as the third but otherwise there seems to be no real means of distinguishing these specimens from those described by Cresson. The middle tibiæ of the male are ciliate on the basal three-fifths while the middle femora are heavily haired beneath anteriorly on the apical three-fifths and less so on the posterior edge.

Hydrellia prudens, new species

Opaque black with brown and gray pollen. Legs wholly black; halteres pale lemon-yellow. Length, 1.5 to 1.75 mm.

MALE.—Face gray below, grayish brown above; front grayish or brown in the middle; occiput brownish or grayish below, black above, the face and front opaque black. Palpi and antennæ deep black; arista with six rays above.

Thorax densely grayish brown pollinose, the pleura paler. Two pairs of dorsocentral bristles; acrosticals in two rows; four scutellar bristles; one sternopleural.

Legs black, brownish gray pollinose; middle tibiæ strongly widened, on the ventral apex with conspicuous short fine hair.

Wings cinereous hyaline; second costal division one-sixth longer than the third.

Abdomen black, brownish pollinose, in some views shining.

FEMALE.—Similar but the middle tibiæ are not larger than the others.

TYPES.—Two males and five females, June 29. The holotype is a male.

The bicolored face, broadened tibiæ, and general coloration at once distinguish this species from those already described. None of the North American species seems to be closely allied.

CHLOROPIDÆ

Ten species, one of them undescribed, are in the collection.

Meromyza americana Fitch

FITCH, 1855, First Rep't. Nox. Ben. and other Ins. of N. Y., p. 299.

One specimen, July 27.

Diplotoxa versicolor Loew

Chlorops versicolor LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 155.

Male and female, June 28, July 1.

Parectecephala eucera Loew

Chlorops eucera LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 147.

Female, July 6.

Chloropisca glabra Meigen

Chlorops glabra MEIGEN, 1830, 'Syst. Beschr. Eur. Dipt.,' VI, p. 149.

Female, July 6.

Chlorops certima Adams

ADAMS, 1904, Ent. News, XV, p. 303.

One specimen, June 29.

Chlorops rufescens Coquillett

COQUILLETT, 1910, Can. Ent., XLII, p. 45.

Female, July 25.

Chlorops surda, new species

Related to *rubrivittata* Adams but at once distinguished by the spotted pleura, reddish scutellum, etc. Reddish, the palpi black. Length, 3 mm.

FEMALE.—Head yellowish, the frontal triangle and occiput reddish, the former with lateral and median stripes blackish, the median stripe weak immediately before the ocelli. Palpi black; basal two antennal segments yellowish, the third wholly black; arista reddish.

Thorax rust-reddish, the five mesonotal vittæ slightly darker; pleura with about five black spots; pectus shining black. Hair of thorax reddish, the bristles black. Scutellum pale reddish with black hair and bristles.

Legs dark reddish; apical tarsal segment brownish. Wings cinereous hyaline; subcostal cell pale luteous. Knob of halteres whitish.

Apical half or more of the second and following abdominal segments brownish; venter ferruginous reddish.

TYPE.—Female, July 5.

The three described species of *Chlorops* with reddish vittate thorax and black palpi are separated as follows:

1. Pleura immaculate.....2.
   Pleura with about five blackish spots.....*surda* Curran.
2. Third antennal segment wholly black.....*rubrivittata* Adams.
   Third antennal segment mostly reddish.....*rufescens* Coquillett.

Oscinella coxendix Fitch

FITCH, 1856, Sec. Rep't. Nox. Ben. and other Ins. of N. Y., p. 533.

One specimen, July 24.

Hippelates plebejus Loew

LOEW, 1863, Berl. Ent. Zeitschr., VII, p. 138.

One specimen, July 11.

Hippelates nitidifrons Malloch

MALLOCH, 1913, Proc. U. S. N. M., XLVI, p. 243.

Two specimens, July 25, August. 6.

PSILIDÆ

Loxocera collaris Loew

LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 222.

Female, August 26.

Loxocera cylindrica pleuritica Loew

Loxocera pleuritica LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 152.

Female, June 27.

Pseudopsila collaris Loew

Psila collaris LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 153.

Male, June 26.

Chyliza notata Loew

LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 223.

Female, August 6.

Chyliza erudita Melander

MELANDER, 1920, Psyche, XXVII, p. 99.

Male, June 30.

MILICHIIDÆ

Two species are in the collection from the Field Station, for one of which a new genus is erected.

Mallochiella halteralis Coquillett

Desmometopa halteralis COQUILLETT, 1900, Proc. U. S. N. M., XXII, p. 267.

Two females, June 27 and July 6.

DESMOMETOPINA, new genus

Differs from *Desmometopa* Loew in the shape of the frontal lunule and the presence of one or more bristles on the pteropleura. The frontal lunule is long and reaches quite to the oral margin forming a strong facial carina.

GENOTYPE.—*Agromyza latipes* Meigen.

In Melander's key to the Milichiinæ (1913, Journ. N. Y. Ent. Soc., XXL, p. 234), traces to couplet 15. It disagrees in part with both alternatives. If, in this couplet, use is made of the presence of one or more bristles on the pteropleura the genera *Hypaspistomyia* Hendel and *Desmometopina* will fall into one group, while *Desmometopa* Loew and *Mallochiella* Melander (*Madiza* of this key) will fall into the other.

The separation of *Hypaspistomyia* and *Desmometopina* can be based only on the shape of the head. In *Hypasistomyia* the lower border of the cheeks is convex while in *Desmometopina* it is straight, or almost so.

Desmometopina latipes Meigen

Agromyza latipes MEIGEN, 1830, 'Syst. Beschr. Eur. Dipt.,' VI, p. 177.
Madiza annulitarse ZETTERSTEDT, 1848, 'Dipt. Scand.,' VII, p. 2674.
Mallochiella orillia CURRAN, 1927, Can. Ent., LIX, p. 49.

There is a single specimen taken on stones at the side of a small pond on July 23.

AGROMYZIDÆ

Agromyza posticata Meigen

MEIGEN, 1820, 'Syst. Beschr. Eur. Zweifl.,' VI, p. 172.

Three males and two females, June 25 to August 18.

Agromyza longipennis Loew

LOEW, 1869, Berl. Ent. Zeitschr., XIII, p. 162.

One specimen, July 20.

BORBORIDÆ

Only two species, belonging to the genus *Leptocera*, were collected.

Leptocera ferruginata Stenhammer

Limosina ferruginata STENHAMMER, 1855, 'Coprom. Scand.,' p. 397.

Two females, July 5, 14.

Leptocera fontinalis Fallén

Copromyza fontinalis FALLÉN, 1826, 'Dipt. Suec.,' Suppl., II, p. 16.

Male, July 8.

MICROPEZIDÆ

The single species belongs to the genus *Tanypoda* Rondani.

Tanypoda antennæpes Say

Calobata antennæpes SAY, 1823, Journ. Acad. Nat. Sci. Phila., III, p. 97.

Female, July 11, 1928.

CLUSIIDÆ

Clusia lateralis Walker

Helomyza lateralis WALKER, 1849, 'List Dipt. Brit. Mus.,' IV, p. 1095.

Two females, June 27, August 2, one at light.

TETANOCERIDÆ

There are five species in the collection.

Sciomyza aristalis Coquillett

Dryomyza aristalis COQUILLETT, 1901, Proc. U. S. N. M., XXXIII, p. 617.

Female, August 28.

Tetanocera valida Loew

LOEW, 1862, 'Mon. N. Amer. Dipt.,' I, p. 110.

Female, June 25.

Tetanocera clara Loew

LOEW, 1862, 'Mon. N. Amer. Dipt.,' I, p. 109.

Three of each sex, June 25 to August 1.

Tetanocera rotundicornis Loew

LOEW, 1861, Berl. Ent. Zeitschr., V, p. 38.

One pair, June 30.

Sepedon fuscipennis Loew

LOEW, 1859, Wien. Ent. Monatschr., III, p. 299.

Two females on flowers of yellow water-lily, June 29.

HELEOMYZIDÆ

TABLE OF NORTH AMERICAN GENERA

1. Propleural bristle absent; anal vein not reaching wing margin.....2.
   Propleural bristle present; anal vein reaching wing margin.....4.
2. Humeral bristle absent.....3.
   Humeral bristle present.....*Allophyla* Loew.
3. Five pairs of dorsocentrals.....*S uillia* Desvoidy.
   One pair of dorsocentrals.....*Porsenus* Darlington.
4. Middle tibiæ with several bristles on dorsal surface.....5.
   Middle tibiæ with only the preapical bristle dorsally.....6.
5. Two pairs of fronto-orbitals; one pair of presutural dorsocentrals; wings usually mutilated.....*Criddleria* Curran.
   One pair of fronto-orbitals; no presuturals; wings entire....*Œcothea* Haliday.
6. Pteropleura in part bristly or hairy.....7.
   Pteropleura bare.....9.
7. Mesopleura hairy.....8.
   Mesopleura bare.....*Pseudoleria* Garrett.
8. Prosternum with one pair of bristles.....*Scoliocentra* Loew.
   Prosternum with several bristles.....*Trichochlamys* Czerny.
9. Humeral bristle present.....10.
   Humeral bristle absent; 3 pairs of scutellars.....*Orbellia* Desvoidy.
10. Without prosternal bristles.....13.
    With one or more pairs of prosternals.....11.
11. With one pair of prosternals.....12.
    With two or more pairs of prosternals.....*Heleomyza* Fallén.
12. Anterior orbital bristle as long as the posterior.....*Anypotacta* Czerny.
    Anterior orbital bristle much shorter than the posterior....*Amœbaleria* Garrett.
13. Middle tibiæ with several apical bristles on ventral surface.....15.
    Middle tibiæ with only one apical bristle on ventral surface.....14.
14. First vein ending distinctly beyond the small cross-vein....*Heteromyza* Fallén.
    First vein ending opposite or before the small cross-vein.*Tephrochlamys* Loew.
15. Second vein joining the costa far beyond the tip of the first.....16.
    Second vein joining the costa only a little beyond the tip of the first.
    Lutomyia Aldrich.
16. Third antennal segment more or less angulate dorsally; middle femora with several partial rows of bristles anteriorly; middle tarsi with spines at apices of segments.....17.
    Third antennal segment evenly rounded; otherwise different.....18.
17. One frontal bristle; eyes very small.....*Eccoptomera* Loew.
    Two frontals; eyes of moderate size.....*Viatica* Garrett.
18. Anterior frontal bristle much shorter than the posterior.....19.
    Anterior frontal bristle as long as the posterior (*Postleria* Garrett).
    Neoleria Malloch.
19. Mesopleura wholly bare.....20.
    Mesopleura with some bristles posteriorly.....*Anorostoma* Loew.
20. Antennal grooves distinct.....*Schræderella* Enderlein.
    Antennal grooves not distinctly outlined.....21.

21. Antennæ separated by about half the width of the first antennal segment.
Morpholeria Garrett.
Antennæ separated by more than the width of the first antennal segment.
Acantholeria Garrett.

Œcothæa fenestralis Fallén

Heleomyza fenestralis Fallén, 1820, 'Dipt. Suec.,' Hetermyz., p. 5.

Female, August 10.

Muscidæ

Scatophaginæ

Achætella varipes Walker

Lissa varipes Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 1046.

Female, June 30.

Americina adusta Loew

Cordylura adusta Loew, 1863, Berl. Ent. Zeitschr., VI, p. 124.

Female, July 27.

Scatophaga pallida Walker

Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 981.

Female, July 27.

Hydromyza confluens Loew

Loew, 1863, Berl. Ent. Zeitschr., VI, p. 129.

Two males, three females, July 1, on leaves of yellow water-lily.

Muscinæ

Cœnosia lata Walker

Walker, 1852, 'Dipt. Saundersiana,' p. 368.

Three males and seven females, July 4 to August 10.

Cœnosia antennalis Stein

Stein, 1897, Berl. Ent. Zeitschr., XLII, p. 272.

Three females, June 25 to August 18 are referred here.

Hoplogaster mollicula Fallén

Musca mollicula Fallén, 1825, 'Musc.,' p. 90.

Four females, June 25 to July 23.

Xenocœnosia calopyga Loew

Cœnosia calopyga Loew, 1872, Berl. Ent. Zeitschr., p. 270.

One female, August 2.

Anthomyia pluvialis Linné

Musca pluvialis Linné, 1761, 'Dipt. Suec.,' 2d Ed., p. 455.

Two males, August 6, 25.

Eustalomyia vittipes Zetterstedt

Anthomyza vittipes Zetterstedt, 1845, 'Dipt. Scand.,' IV, p. 1649.

Male, July 28.

Hylemyia alcathoë Walker

Anthomyia alcathoë Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 937.

Male, July 20.

Hylemyia cilicrura Rondani

Rondani, 1866, Atti. Soc. Milano, IX, p. 165.

Eight specimens of each sex, June 25 to August 10.

Hylemyia trivittata Stein

Pegomyia trivittata Stein, 1897, Berl. Ent. Zeitschr., XLII, p. 246.

Six males and two females, August 6 to 24.

Pegomyia lipsea Walker

Anthomyia lipsea Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 928.

Six males, July 20 and August 25 and male, September 23, (F. E. Watson).

Pegomyia nigritarsis Zetterstedt

Anthomyza nigritarsis Zetterstedt, 1838, 'Ins. Lapp.,' p. 696.

Two females, August 6, 18.

Pegomyia winthemi Meigen

Anthomyia winthemi Meigen, 1826, 'Beschr. Europ. Dipt.,' V, p. 186.

Two males and one female, June 27 to July 11.

Pegomyia luteola Malloch

Malloch, 1920, Trans. Amer. Ent. Soc., XLVI, p. 175.

Two males, one female, June 26 to August 28.

Pegomyia vittigera Zetterstedt

Anthomyza vittigera Zetterstedt, 1838, 'Ins. Lapp.,' p. 697.

Two males, June 26, July 14.

Pegomyia affinis Stein

STEIN, 1897, Berl. Ent. Zeitschr., XLII, p. 286.

Four males, July 16 to August 20.

Fannia scalaris Fabricius

Musca scalaris FABRICIUS, 1794, 'Ent. Syst.,' IV, p. 332.

Three males, one female, July 23 to August 24.

Fannia canicularis Linné

Musca canicularis LINNÉ, 1761, 'Fauna Suec.,' 2d Ed. p. 454.

Female, August 10.

Fannia pretiosina, new species

Traces to *conspicua* Malloch, in Malloch's key, but differs in having black palpi, darker coloration, etc. Abdomen grayish-yellow pollinose with three series of dull blackish spots. Length, 5 mm.

MALE.—Eyes closely approximated, the orbits blackish with a trace of gray below; face and occiput gray pollinose; antennæ black, the basal segments more brown; palpi black.

Thorax dull black, the pleura with brownish gray pollen visible in some views; metanotum gray pollinose; mesonotum with the very broad sides and posterior third brownish yellow in some views, the scutellum with the apex similarly colored. The two pairs of presutural acrosticals are but little stronger than the adjacent hairs.

Legs black, the tibiæ reddish. Middle femora with a single strong ventral bristle near the basal third, a row of short but conspicuous bristly hairs behind and one or two posterior preapical bristles; middle tibiæ with a weak posterodorsal bristle a little beyond the middle, the basal segment of their tarsi simple. Posterior femora without posteroventral bristles; with three anterodorsal bristles on the apical third and a row of six or seven anteroventral bristles which decrease rapidly in length from the apex to the apical third, those toward the base very weak. Posterior tibiæ with four or five weak bristles on the apical half of the anteroventral surface, with fairly long fine hair on the anterodorsal surface and shorter fine hair on the posterodorsal surface, their tarsi simple.

Wings brownish. Squamæ and their fringe brownish. Halteres yellow.

Abdomen with the basal two segments dull brownish except the posterior corners of the second, the apical three segments with grayish yellow pollen which has a golden tinge, the third and fourth with a broad median vitta and a transverse oval spot on either side of the posterior half dull blackish, the basal part of the third appearing brownish except laterally, the fifth segment with only the lateral spots which are roundish.

HOLOTYPE.—Male, August 6, at honeydew secreted by "coxcomb gall" on witch-hazel.

Fannia abrupta Malloch

MALLOCH, 1924, Ann. Mag. Nat. Hist., XIII, p. 422.

Male, August 6, at honeydew.

Fannia curvipes Malloch

Malloch, 1924, Ann. Mag. Nat. Hist., XIII, p. 421.

Three males and one female, August 6, at honeydew.

Ophyra leucostoma Meigen

Anthomyia leucostoma Meigen, 1818, Zoöl. Mag., I, p. 82.

Male, August 6.

Dendrophaonia hilariformis Stein

Spilogaster hilariformis Stein, 1897, Berl. Ent. Zeitschr., XLII, p. 196.

Male, July 5.

Phaonia apicata Johannsen

Johannsen, 1916, Trans. Amer. Ent. Soc., XLII, p. 396.

Eight males, ten females, June 26 to August 28.

Phaonia soccata Walker

Anthomyia soccata Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 941.

Female, June 26.

Phaonia errans Meigen

Anthomyia errans Meigen, 1823, 'Beschr. Europ. Dipt.,' V, p. 112.

Three males and one female, July 24 to August 24.

Phaonia serva Meigen

Anthomyia serva Meigen, 1826, 'Beschr. Europ. Dipt.,' V, p. 86.

Six males and four females, June 26 to July 1.

Helina lucorum Fallén

Musca lucorum Fallén, 1823, 'Musc.,' p. 55.

Two specimens of each sex, August 10 to 28.

Helina uniseta Stein

Spilogaster uniseta Stein, 1897, Berl. Ent. Zeitschr., XLII, p. 192.

Male, August 18.

Mydæa neglecta Malloch

Malloch, 1920, Trans. Amer. Ent. Soc., XLVI, p. 136.

Two females, July 11 and 23.

Limnophora torreyæ Johannsen

JOHANNSEN, 1916, Trans. Amer. Ent. Soc., XLII, p. 391.

Male and two females, July 1 and 23.

Limnophora suspecta Malloch

MALLOCH, 1920, Trans. Amer. Ent. Soc., XLVI, p. 154.

Male, June 26.

Trichopticus maculiventris Malloch

MALLOCH, 1918, Trans. Amer. Ent. Soc., XLIV, p. 276.

Male and female July 9 and August 24.

The male is quite dark with infuscated wings and pale brownish squamæ.

Lispa albitarsis Stein

STEIN, 1897, Berl. Ent. Zeitschr., XLII, p. 277.

Two females, July 24 and August 20.

Lispa palposa Walker

Anthomyia palposa WALKER, 1849, 'List Dipt. Brit. Mus.,' IV, p. 926.

Male, June 27.

Myospila meditabunda Fabricius

Musca meditabunda FABRICIUS, 1781, 'Spec. Ins.,' II, p. 444.

Male, June 26.

Stomoxys calcitrans Linné

Conops calcitrans LINNÉ, 1763, 'Fauna Suec.,' 2d Ed., p. 467.

Female, July 28. Fairly common.

Musca domestica Linné

LINNÉ, 1761, 'Fauna Suec.,' 2d Ed., p. 453.

Eight specimens of both sexes, July and August.

Graphomyia maculata Scopoli

Musca maculata SCOPOLI, 1763, Entom. Carn., p. 326.

Four males and one female, July 25 to August 28.

Muscina stabulans Fallén

Musca stabulans FALLÉN, 1823, 'Musc.,' p. 52.

Male, July 16.

Muscina assimilis Fallén

Musca assimilis Fallén, 1823, 'Musc.,' p. 56.

Male, August 28.

Pyrellia serena Meigen

Musca serena Meigen, 1826, 'Beschr. Europ. Dipt.,' V, p. 59.

Two specimens of each sex, July 1 and 23.

Sarcophagidæ

Calliphora vomitoria Linné

Musca vomitoria Linné, 1758, 'Syst. Nat.,' 10th Ed., p. 595.

Two males, July 26, August 2.

Calliphora erythrocephala Meigen

Musca erythrocephala Meigen, 1826, 'Beschr. Europ. Dipt.,' V p. 62.

Male and female, July 26, 27.

Lucilia australis Townsend

Townsend, 1908, Smithsonian Misc. Coll., LI, p. 122.

Male and female, August 6, 28.

These specimens are much smaller than southern forms although agreeing with the original description in other respects.

Lucilia cæsar Linné

Musca caesar Linné, 1758, 'Syst. Nat.,' 10th Ed., p. 595.

Male and female, July 15, 25.

Helicobia latisetosa Parker

Ravinia latisetosa Parker, 1914, Proc. Bost. Soc. Nat. Hist., XXXV, p. 63.

Three males, July 20 to August 28.

Helicobia helicis Townsend

Sarcophaga helicis Townsend, 1892, Psyche, VI, p. 220.

Four males and five females, July 20 to August 28.

Sarcophaga peniculata Parker

Ravinia peniculata Parker, 1914, Proc. Bost. Soc. Nat. Hist., XXXV, p. 58.

Seven males and two females, June 25 to August 28.

Sarcophaga cimbicis Townsend

Townsend, 1892, Can. Ent., XXIV, p. 126.

Three males and two females, July 20 to August 24.

Sarcophaga species

Five specimens of each sex, July 6 to 30.

Sarcophaga species

One female, July 26.

Sarcophaga assidua Walker

WALKER, 1856, 'Dipt. Saundersiana,' p. 328.

Four males and one female, July 23 to August 6.

Sarcophaga cingarus Aldrich

ALDRICH, 1916, 'Sarc. and Allies,' p. 288.

Male and four females, July 11 to August 2.

Sarcophaga pallinervis Thomson

THOMSON, 1868, 'Eugenies Resa,' p. 535.

Four males, July 24 to August 2.

Recorded in the 'State List' as *communis* Parker.

Sarcophaga scoparia Pandellé

PANDELLÉ, 1896, Rev. Entom., XV, p. 198.

Six males, July 20 to August 2.

Sarcophaga hæmorrhoidalis Fallén

Musca hæmorrhoidalis FALLÉN, 1816, Vet. Akad. Handl., p. 236.

Four males, July 24 to 28.

Sarcophaga species

One female, July 20.

Amobia confundens Townsend

Amobiopsis confundens TOWNSEND, 1915, Proc. Biol. Soc. Wash., XXVIII, p. 20.

Two females, July 26, 31.

Amobia aurata Coquillett

COQUILLETT, 1902, Proc. U. S. N. M., XXV, p. 119.

Male and seventeen females, June 26 to August 28.

Pachyophthalmus distortus Allen

ALLEN, 1926, Proc. U. S. N. M., LXVIII, Art. 9, p. 15.

Nineteen males and eleven females, June 26 to August 28.

This species is variable in size, the smallest specimen measuring less than 5 mm., the largest almost 8 mm. Allen states that the species has been reared from *Trypoxylon politum* Say and that it was observed commonly on the porch of a deserted cabin in Pennsylvania. It occurs quite commonly in the same habitats as Allen records for *P. signatus* Meigen, that is, on flowers, foliage, stones along the edge of water, etc. The adults frequent board buildings in which solitary wasps make their nests, and they were common on the porch of the lodge at Tuxedo, evidently awaiting favorable opportunities of larvipositing in the nests of the wasps. None of the flies were observed to enter the nests but they were seen to be very active about nests where food was being stored. It seems probable that this species lives upon the food stored by the wasps and is not parasitic.

Senotainia trilineata Van der Wulp

Miltogramma trilineata VAN DER WULP, 1888, 'Biol. Cent. Amer.,' II, p. 89.

One male, July 31.

Phrosinella fumosa Allen

ALLEN, 1916, Proc. U. S. N. M., LXVIII, Art. 9, p. 74.

Male and two females, July 23, 24.

Gymnoprosopa filipalpus Allen

ALLEN, 1916, Proc. U. S. N. M., LXVIII, Art. 9, p. 100.

Female, July 4.

Metopia campestris Fallén

Tachina campestris FALLÉN, 1820, 'Dipt. Suec.' Musc., p. 8.

Eight specimens of each sex, July 20 to August 6.

Metopia leucocephala Rossi

Musca leucocephala ROSSI, 1790, 'Fauna Etrusca,' II, p. 306.

Four males and three females, July 23 to August 30.

TACHINIDÆ

ATELOGOSSA Coquillett

There are three described species belonging to this genus, all known from the northeastern states.

TABLE OF SPECIES

1. Mesonotum with five black vittæ.....2.
   Mesonotum with three broad shining black vittæ.....*trivittata*, n. sp.
2. Apical cell closed.....3.
   Apical cell open.....*cinerea* Coquillett.
3. Squamæ brownish.....*wheeleri* West.
   Squamæ whitish.....*glabra* West.

Atelogossa trivittata, new species

Black, the apex of the abdomen and genital segments sometimes reddish. Length, 9 to 10 mm.

MALE.—Head cinereous pollinose with yellowish tinge on the sides of the face and front; soft part of face and cheeks reddish brown; cheeks black-haired; two rows of black cilia behind the eyes. Front almost or quite three times as wide as the ocellar triangle; frontal vitta blackish; no orbitals. Palpi absent; proboscis shining black, half as long as the head-height. Antennæ brown; arista plumose.

Thorax thickly cinereous pollinose with three broad black vittæ, the median one extending over the scutellum. Acrosticals 2–2 or 3; dorsocentrals 3–4; posterior sublateral absent; scutellum with three pairs of marginals, the apical pair weakest and cruciate; sternopleurals 2–1; propleura black-haired; infrasquamal setules absent.

Legs black; femora thinly grayish pollinose; tibiæ obscurely brownish red; pulvilli long; anterior four tibiæ with one or two posterior bristles; posterior tibiæ not ciliate.

Wings with brownish tinge, the veins at the base narrowly clouded with black; bend of fourth vein broadly rounded. Lower squamal lobe brownish, the upper lobe yellowish white. Halteres yellow.

Abdomen, from posterior view, wholly cinereous pollinose, from dorsal view with a median vitta and the segmental apices subshining, in some lights slightly tessellate. Hair wholly black; marginal bristles on second segment not over half as strong as those forming the rows on the third and fourth segments. Sometimes the apex of the abdomen and the basal one or two genital segments are reddish.

TYPES.—Holotype, male, July 20; paratypes, three males, July 15, 20 and 24.

In the male taken on July 24 the apical cell is short petiolate but there is no doubt that it belongs with the other specimens. In view of this, it seems likely that *A. wheeleri* West (Psyche, 1924, XXXI, p. 186) is the same as *cinerea* Coquillett, since the only difference West notes is in the petiolate apical cell. On page 187 of the same paper West establishes his species *glabra* by a simple comparison with *wheeleri*. The differences are given in the key. West had still another species but no distinctive character was given. I have not been able to locate the description. I vainly tried to match my specimens with material in the United States National Museum but, since I was searching for a species with trivittate thorax, I failed to find the genotype (*cinerea*). However, I do not doubt that I have correctly placed my species which bears a superficial resemblance to species of *Eutheresia*.

RHYNCHIODEXIA Bigot

BIGOT, 1885, Bull. Soc. Ent. France, p. xi.

Ptilodexia BRAUER AND BERGENSTAMM, 1889, Zweifl. der Kaiserl Mus., Vienna, part 4, p. 119.

There are three species from Tuxedo. The table which follows will aid in the separation of the described Nearctic species. The presence or absence of hair on the face or infrasquamal setules does not appear to be of generic importance in this group.

1. Infrasquamal setules present....2.
   Infrasquamal setules absent....13.
2. Hairs extending onto the face to well below the lowest frontals....3.
   At most a few hairs immediately below the lowest frontals....9.
3. Femora reddish....4.
   Femora black except the apex....6.
4. Pleura black or with large brown areas; facial hair black....5.
   Pleura yellowish; facial hair mostly yellow....*hucketti* West.
5. Antennæ wholly reddish....*leucoptera* West.
   Third antennal segment and arista black....*ponderosa* West.
6. Scutellum and abdomen wholly black....*mathesoni* West.
   Scutellum reddish on at least the apical half....7.
7. Facial hairs not or only weakly connected with those of the front; apical cell short petiolate....*Dinera robusta* West.
   Facial hairs continuous with those of the front....8.
8. Scutellum with black base and median vitta, length not over 10.5 mm. *neotibialis* West.
   Scutellum with black base; length over 12.5 mm....*obscura* West.
9. Sides of abdomen broadly red....10.
   Abdomen wholly black....11.
10. Middle tibiæ with only one anterodorsal bristle (West Indies)..*sororia* Williston.
    Middle tibiæ with two strong anterodorsal bristles....*arida* West.
11. Epaulet red....12.
    Epaulet blackish....*confusa*.
12. Legs of male black....*leucoptera* West.
    Legs rusty yellowish (male and female)....*dubia* West.
13. Parafacials bare....15.
    Parafacials with hairs....14.
14. Scutellum reddish, the base narrowly black....*rufipennis* Macquart.
    Scutellum blackish with a large reddish spot on either side apically. *harpasa* Walker.
15. Scutellum and abdomen entirely black....*translucipennis* West.
    Scutellum rusty reddish; sides of abdomen reddish....16.
16. Four equally strong post-sutural dorsocentrals....*proxima* West.
    Three post-sutural dorsocentrals....17.
17. A single anterodorsal bristle on middle tibiæ....*incerta* West.
    Three anterodorsal bristles on middle tibiæ....*levata* West.

Rhynchiodexia obscura West

Two females, September 17 and 27, (F. E. Watson).

Rhynchiodexia species

One female, July 12.

This species is close to *obscura* but has the epaulet black and is much smaller. It may prove to be undescribed.

Rhynchiodexia dubia West

Sixteen males and seven females, July 23 to August 28, mostly taken on flowers of goldenrod.

Thelaira nigripes Fabricius

Musca nigripes Fabricius, 1794, 'Ent. Syst.,' IV, p. 319.

Eleven males and five females, June 25 to August 25.

Phyllophilopsis nitens Coquillett

Chætona nitens Coquillett, 1899, Journ. N. Y. Ent. Soc., VII, p. 221.

Three males and four females, July 4 to August 2.

Arrhinomyia barbata Coquillett

Hypostena barbata Coquillett, 1895, Journ. N. Y. Ent. Soc., III, p. 57.
Hypostena pusilla Coquillett, 1895, Journ. N. Y. Ent. Soc., III, p. 58.

Two males, August 18, female, August 2.

Pseudeuantha Townsend

Two of the three species recorded from the United States occur in New York State.

Table of Species

1. Legs black.....2.
   Legs reddish, the tarsi black (Florida).....*rubripes* Aldrich.
2. Intermediate abdominal segments with a singe pair of discals..*pristis* Walker.
   Intermediate segments with several discal bristles and bristle-like hairs.
   coquilletti Aldrich.

Pseudeuantha pristis Walker

Dexia pristis Walker, 1849, 'List. Dipt. Brit. Mus.,' IV, p. 841.
Dexia basalis Walker, 1852, 'Dipt. Saundersiana,' p. 281.
Aporia limacodis Townsend, 1892, Psyche, VI, p. 275.

Two males and eight females, July 20 to August 18.

Pseudeuantha coquilletti Aldrich

ALDRICH, 1921, Ins. Ins. Mens., IX, p. 90.

Three males, July 11, 20, 23.

Genea analis Say

Dexia analis SAY, 1829, Journ. Acad. Nat. Sci. Phila., VI, p. 177.

Two males and four females, July 10 to August 6.

Myobiopsis similis Townsend

TOWNSEND, 1916, Proc. U. S. N. M., XLIX, p. 628.

Two males and nine females, August 6 to 28.

The exact generic position of this species is rather doubtful. It differs very slightly from the type of *Stomatodexia* Brauer and Bergenstamm and should probably be placed in that genus.

CYLINDROMYIA Meigen

Aldrich has recently revised the species belonging to this genus. The species recorded from New York State are separable as follows:

TABLE OF SPECIES

1. Scutellum with two or three pairs of bristles.....2.
   Scutellum with only one pair of bristles.....*dosiades* Walker.
2. Scutellum with three pairs of marginals.....3.
   Scutellum with two pairs of marginals.....*pusilla* Aldrich.
3. Propleura haired.....*euchenor* Walker.
   Propleura bare.....4.
4. Two sternopleurals.....*decora* Aldrich.
   Three sternopleurals.....*argentea* Townsend.

Cylindromyia argentea Townsend

Ocyptera argentea TOWNSEND, 1891, Proc. Ent. Soc. Wash., II, p. 144.

Seven specimens of both sexes, June 27 to July 30.

This is probably the species most commonly recorded as *carolinæ* Desvoidy from New York State.

Cylindromyia pusilla Aldrich

Cylindromyia nigra ALDRICH, 1926, Proc. U. S. N. M., LXVIII, Art. 23, p. 11, (nec Villeneuve).

Cylindromyia pusilla ALRDICH, 1927, Bull. Brooklyn Ent. Soc., XXII, p. 18.

Male and female, July 23 and female, July 20.

Alophora fumosa Coquillett

COQUILLETT, 1897, 'Rev. Tachin.,' p. 46.

One male, July 12.

Gymnosoma fuliginosa Desvoidy

DESVOIDY, 1830, 'Essai sur Myodaires,' p. 237.

Male, July 30; female, July 12.

Cistogaster divisa Loew

LOEW, 1863, Berl. Ent. Zeitschr., p. 205.

Male, July 31.

In the 'State List' as *immaculata* Macquart.

Xanthomelana arcuata Say

Ocyptera arcuata SAY, 1823, Journ. Acad. Sci., Phila., VI, p. 173.

Four males and six females on flowers of goldenrod, August 24 and 28.

Myiophasia metallica Townsend

Phasioclista metallica TOWNSEND, 1891, Trans. Amer. Ent. Soc., XVIII, p. 370.

Twenty-seven specimens of both sexes on flowers of goldenrod, August 18 to 28.

Clistimorpha triangulifera Loew

Hyalomyia triangulifera LOEW, 1863, Berl. Ent. Zeitschr., p. 203.

Eighteen specimens of both sexes, July 12 to August 28. One female, at light, August 10, (F. M. Brown).

ELEPHANTOCERA Townsend

Townsend described this genus in 1915 (Ins. Ins. Mens., III, p. 98) with *greenei* as the type. This species is known from a single female from Wenonah, N. J. In many respects the genus resembles *Plectops* Coquillett but there are two or three small bristles at the base of the third vein, while in *Plectops* there is a single strong bristle at this point. The characters given below will serve to distinguish the two species:

a. Third antennal segment subtriangular, sharply rounded at lower apex, the lower edge straight; abdominal segments narrowly white pollinose basally. *angulicornis*, n. sp.

b. Third antennal segment convex below, broadly rounded apically; abdomen with faint bloom in oblique light..... *greenei* Townsend.

Elephantocera angulicornis, new species

Black; squamæ dull yellowish; halteres yellow. Length, 3 mm.

MALE.—Head cinereous pollinose; hair black, cinereous below the neck. Front wider than long, the blackish brown frontal vitta wider than either parafrontal; one or two pairs of proclinate orbitals on upper half of front (one on one side, two on the other); five pairs of frontals, the upper two pairs reclinate, the upper pair smallest; verticals strong, outer verticals scarcely half as long. Antennæ large, reaching almost to the oral margin, at their apex slightly more than half as wide as the length of the head at the middle of the face; arista thickened on basal half, tapering, the penultimate segment not twice as long as wide.

Thorax rather thinly cinereous pollinose, the mesonotum in some lights with three poorly defined brownish vittæ. Presutural acrosticals rather small, arranged in three pairs; dorsocentrals, 2–3; posterior sublateral absent; posthumeral weak; three pairs of marginal scutellars, the apical pair gently divergent and with one or two hairs between them; sternopleurals, 2–1, the lower anterior one very weak. Propleura bare; no infrasquamal setules; prosternum bare.

Legs black; anterior tibiæ with a single posterior bristle and two weak anterodorsals; middle tibiæ with one anteroventral, one anterodorsal bristle and two or three weak posterodorsals; posterior tibiæ with one anteroventral, two anterodorsal and three posterodorsal bristles. Claws and pulvilli small.

Wings cinereous hyaline; apical cell ending in tip of wing, the fourth vein broadly curved; three bristles at base of third vein.

Abdomen shining black, the bases of the segments with narrow whitish or cinereous pollinose fasciæ, the pollinose bands widening laterally and expanding on the venter to cover most of the tergites toward the middle line. The second to fourth segments bear marginal bristles, the second with a pair of dorsal ones, the others each with a row; hair depressed.

HOLOTYPE.—Male, July 16.

Actia autumnalis Townsend

Actiopsis autumnalis TOWNSEND, 1916, Ins. Ins. Mens., IV, p. 122.

Female, August 28.

Actia americana Townsend

Thryptocera americana TOWNSEND, 1892, Can. Ent., XXIV, p. 69.

Two males and two females, July 6 to 28.

Bucentes cristata Fabricius

Stomoxys cristatus FABRICIUS, 1805, 'Syst. Antl.,' p. 281.

Male and female, July 5 and August 28.

Polidea areos Walker

Tachina areos WALKER, 1849, 'List Dipt. Brit. Mus.,' IV, p. 766.

Two males, August 24.

Admontia degeerioides Coquillett

Hypostena degeerioides Coquillett, 1895, Journ. N. Y. Ent. Soc., III, p. 58.

Female, August 28.

Exorista rustica Fallén

Tachina rustica Fallén, 1810, Vet. Acad. Handl., XXXI, p. 282.

Four males and one female, June 28 to August 20.

Exorista species

There are two representatives of another species closely related to *rustica* but the male genitalia are different.

Exorista mella Walker

Tachina mella Walker, 1849, 'List Dipt. Brit. Mus.,' IV, p. 767.

Male, August 18.

Lixophaga Townsend

There has been considerable confusion in regard to the identity of the described species in this genus. Aldrich (Ins. Ins. Mens., 1924, XII, p. 146) has dealt with the generic synonymy but, inasmuch as the type of *Hypostena variabilis* Coquillett is a female, there is still doubt as to the correct identity of the male. The question of the genotype rests upon the correct identification of this sex. When he established the genus, Townsend based it upon a species occurring in Texas which he called *parva*. This species he described as having the front one-third as wide as the head and with cinereous pollen on the mesonotum. *Hypostena variabilis* was described as being yellowish pollinose. The two females have been considered synonymous by Aldrich.

There appears to be very good grounds for considering *parva* distinct from *variabilis*. While there is naturally some variation in the width of the front, I feel that it could not be sufficient to account for the very apparent difference between males of what I believe to be *variabilis* and those of *parva*. Both species have a wide distribution.

In the genus, Aldrich recognizes six species dividing them into two groups. They may be catalogued as follows.

Group I.—Males Without Orbital Bristles or With Only One Pair

1. *Lixophaga parva* Townsend

   Townsend, 1908, 'Tax. Musc. Flies,' p. 86.

2. *Lixophaga variabilis* Coquillett

   Hypostenia variabilis Coquillett, 1895, Journ. N. Y. Ent. Soc., III, p. 57.

Euzenillia aurea TOWNSEND, 1912, Journ. N. Y. Ent. Soc., XX, p. 111.

Euzenillia variabilis TOWNSEND, 1915, Ins. Ins. Mens., IV, p. 122.

Tachinophyto variabilis GREENE, 1922, Proc. U. S. N. M., LX, p. 35, (puparium figured).

Lixophaga variabilis ALDRICH, 1924, Ins. Ins. Mens., XII, p. 146; 1925, Proc. Ent. Soc. Wash., XXVII, p. 133.

Hypostena alberta CURRAN, 1925, Can. Ent., LVII, p. 154.

3. *Lixophaga nigribasis*, new species

4. *Lixophaga diatrææ* Townsend

Euzenilliopsis diatrææ TOWNSEND, 1915, Ins. Ins. Mens., IV, p. 76; HOLLOWAY, 1919, Journ. Ec. Ent., XII, p. 176; VAN ZWALUWENBERG, 1923, Journ. Ec. Ent., XVI, p. 227.

Lixophaga diatrææ ALDRICH, 1924, Ins. Ins. Mens., XII, p. 146; 1925, Proc. Ent. Soc. Wash., XXVII, p. 134.

5. *Lixophaga impatiens* Curran

Hypostena impatiens CURRAN, 1925, Can. Ent., LVII, p. 154.

This may be the same as *parva*. However, the male has a single orbital bristle so it serves to connect the two groups.

Group II.—Males With Two Pairs of Orbital Bristles

6. *Lixophaga plumbea* Aldrich

ALDRICH, 1925, Proc. Ent. Soc. Wash., XXVII, p. 134.

7. *Lixophaga mediocris* Aldrich

ALDRICH, 1925, Proc. Ent. Soc. Wash., XXVII, p. 136.

8. *Lixophaga fasciata*, new species

9. *Lixophaga orbitalis* Aldrich

ALDRICH, 1926, Proc. U. S. N. M., LXIX, Article 22, p. 17.

10. *Lixophaga jennei* Aldrich

ALDRICH, 1926, Proc. U. S. N. M., LXIX, Article 22, p. 18.

Lixophaga variabilis Coquillett

Two specimens of each sex, July 6 to August 6.

These specimens are placed here on the presumption that the males of *variabilis* have the front very little more than one-fourth the width of the head.

Lixophaga parva Townsend

One male, July 31.

This specimen agrees with males from Louisiana except that the pollen has a yellowish tinge and the apices of the segments are more broadly shining.

Lixophaga diatrææ Townsend

Two females, July 27 and August 6.

The species has not been recorded north of the Gulf States and I do not feel certain that the identification is correct. However, the sides of the basal three abdominal segments are broadly reddish and I could find no difference between these and specimens in the United States National Museum.

Lixophaga nigribasis, new species

Nearest *variabilis* but much darker with the veins at the base of the wings brown instead of yellow and the wings brownish, becoming paler behind. Length, 6 mm.

MALE.—Head argenteous white pollinose; parafrontals at the middle not wider than the black frontal vitta, with brownish pollen on upper fourth; eleven pairs of frontals the upper two or three reclinate; outer verticals absent. Front two-ninths of width of head. Pile of occiupt white; orbital cilia long above, an irregular row of black setulæ behind the upper ones. Parafacials narrowing below, about half as wide as the third antennal segment. Five or six bristles above the vibrissæ. Palpi reddish. Antennæ black; third segment of moderate width; arista thickened on basal fourth, quite noticeably pubescent.

Thorax with grayish white pollen. In most views the mesonotum appears to be shining black but when viewed from behind it is whitish with five black vittæ, the outer pair broad and entire, the inner pair extending back to well beyond the suture, the median vitta extending forward from the scutellum to the suture. The scutellum is black with the border broadly cinereous pollinose except basally. The bristling of the thorax is normal for the genus; there is a pair of cruciate hairs between the apical scutellars.

Legs black; anterior tibiæ with a single posterior bristle; middle tibiæ with one ventral, one anterior and two posterior bristles. Claws and pulvilli longer than the fifth tarsal segment.

Wings brownish in front, becoming gray posteriorly; two or three bristles on base of third vein; apical cell ending a little before the tip of the wing. Squamæ brownish. Halteres yellow.

Abdomen black; the basal half or slightly less of the second to fourth segments gray pollinose, the gray pollen merging with the brown of the posterior half; each hair arises from a round black spot. First and second segments each with a pair of marginals, the third and fourth with a row; third with a pair of discals behind the middle, the fourth with a row.

HOLOTYPE.—Male, August 6.

Lixophaga fasciata, new species

Related to *mediocris* Aldrich but at once distinguished by the very narrow, sharply defined whitish abdominal fasciæ. Length, 5 to 7 mm.

MALE.—Head whitish pollinose the front and upper orbits golden. Front two-thirds as wide as either eye, two-sevenths as wide as head; parafrontal about as wide as the blackish frontal vitta; about seven pairs of frontals, the upper two pairs reclinate, the upper reclinate small and in line with the two pairs of strong orbitals.

Outer verticals distinct; some scattered black setulæ above behind the occipital cilia; occipital pile white. Cheeks almost one-fourth as wide as eye-height. Parafacials of almost equal width, about half as wide as the broad third antennal segment; four or five bristles above the vibrissæ. Palpi reddish. Antennæ black, reaching quite to the oral margin, the third segment broad, sub-truncate apically, six times as long as the second segment; arista thickened on basal fourth, short pubescent.

Mesonotum and scutellum yellowish gray pollinose, frequently rather golden, the black vittæ very narrow. Acrosticals and dorsocentrals 3–3; three pairs of marginal scutellars and usually a pair of small, cruciate apicals which may be more or less upturned; sternopleurals, 2–1. Infrasquamal setulæ present or absent.

Legs black; pulvilli of medium length, much shorter than in *nigribasis*, the bristles of the legs as in that species.

Wings cinereous hyaline; apical cell ending a little before the apex of the wing; two or three bristles on base of third vein. Squamæ with luteous tinge. Halteres yellow.

Abdomen shining black; basal fourth or less of the second and third segments and third to half of the fourth, whitish pollinose, the pollinose bands widened laterally, often with strong yellow tinge. First and second segments with pair of marginals, the third and fourth with a row, the second with long, appressed apical bristle-like hairs between the median and lateral marginals. Abdominal hair appressed or subappressed.

FEMALE.—Front four-fifths as wide as eye; third antennal segment narrower, scarcely one and a half times as wide as parafacial; pollen of front and thorax always more golden, the abdominal pollen usually with more of a golden tinge.

TYPES.—Forty-nine specimens of both sexes, July 20 to August 18. The holotype and allotype are a pair taken on July 20.

Dexodes exilis Coquillett

Masicera exilis COQUILLETT, 1897, 'Rev. Tachinidæ,' Revised Index, p. 156.
Masicera tenthredinarum COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 114.

Seven males and one female, July 15 to 26.

In my key to *Dexodes* (Can. Ent., LXI, p. 20), this species traces to *epilachnæ* Aldrich but it is at once distinguished by the almost wholly shining black fourth abdominal segment, the pollen on the basal fourth being so thin as to be readily overlooked. The species is evidently rare and it seems probable that all previous records refer to a different species. In the United States National Museum it is represented by the type and one other specimen. As a rule, the acrosticals are arranged 2–3 but there may be an additional one present just before the suture; none of my specimens show a pair here. However, the dorsocentrals are normally 2–3 which is a character more in keeping with *Dexodes* than with *Erycia*.

Dexodes chætoneura Coquillett

Masicera chætoneura COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 115.

Female, July 30.

Erycia tuxedo, new species

A small species somewhat resembling *Dexodes exilis* Coquillett but with the dorsocentrals 3–4 and the fourth abdominal segment cinereous pollinose on basal half, except in the middle. Length, 5.25 mm.

MALE.—Head black, whitish pollinose, the front with yellow tinge, four-sevenths as wide as greatest width of eye; frontal vitta deep black, at its middle two-thirds as wide as parafrontal opposite the same point; eleven or twleve pairs of frontals, the lower five below the base of the antennæ, the upper two reclinate; two rows of hairs outside the frontals; ocellars long, outer verticals not developed. Behind the black occipital cilia there are two or three rows of black hairs on the lower half of the head and these extend backward onto the occiput although the usual whitish pile is present below the neck; cheeks scarcely one-fifth as wide as eye-height, black-haired; parafacials narrowing below, at their middle much narrower than the third antennal segment; facial ridges with about four small bristles above the vibrissæ. Palpi reddish yellow. Antennæ brown, the arista brownish red basally, thickened on its basal third; third antennal segment between four and five times as long as the second, moderately narrow, rounded apically.

Thorax grayish pollinose, the pleura somewhat argenteous; mesonotum with four narrow shining black vittæ, not heavily pollinose, scutellum with the basal half brownish pollinose, with four pairs of marginals, the apical cruciate pair small; sternopleurals 2–1, the lower one weak.

Legs black; anterior tibiæ with two posterior bristles, the middle pair with one anterodorsal; posterior tibiæ sparsely ciliate. Pulvilli elongate.

Wings cinereous hyaline, darker costally; fourth vein very sharply curved; third vein with a single basal bristle. Squamæ whitish, the lower lobe largely browned. Halteres yellow.

Abdomen rather shining black; basal third or more of the second to fourth segments grayish pollinose, the posterior part with brownish pollen, the pale bands all broadly interrupted in the middle. No discals; second segment with pair of marginals the third and fourth each with a row, the fourth with erect bristly hair, the hair on the other segments appressed. On the under surface the third and fourth tergites bear weak patches of more abundant, finer brownish hair.

HOLOTYPE.—Male, August 2.

Erycia celer Coquillett

Masicera celer COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 114.

One female, July 30.

Erycia arator Aldrich

Masicera arator ALDRICH, 1925, Proc. U. S. N. M., LXVI, Art. 18, p. 32.

Thirty specimens of both sexes, July 23 to August 6.

Erycia delecta Curran

CURRAN, 1927, Can. Ent., LIX, p. 16.

Three females, July 23 and 26.

Erycioides, new genus

Related to *Lydella* Desvoidy but the abdomen is short, and rather oval and the female lacks the abdominal keel. It bears strong superficial resemblance to some of the species of *Erycia* Desvoidy, but there are strong infrasquamal setulæ. The general characters of the genus will be found in the specific description.

Genotype.—*Erycioides thoracica*, new species.

Erycioides thoracica, new species

Pollen dorsally brownish ochreous; abdomen with shining black fasciæ. Length, 6 to 7 mm.

Male.—Head white pollinose, the front and upper part of the occiput with strong golden tinge; nine pairs of frontals the lower three below the base of the antennæ, the upper two reclinate; ocellars long; outer verticals scarcely developed. Front a little more than half as wide as greatest width of eye, the opaque black frontal vitta hardly half as wide at its middle as either parafrontal, strongly widening on the anterior half. Occipital pile white; a few scattered black setulæ above behind the occipital cilia. Cheeks about one-fifth as wide as eye-height, finely haired. Parafacials gently narrowing below, much narrower than the third antennal segment; facial ridges with three or four bristles above the vibrissæ which are level with the oral margin. Face in profile moderately retreating, below, straight. Palpi of usual shape, yellowish. Antennæ black, reaching almost to the vibrissæ, the third segment hardly five times as long as the second, moderately wide, subtruncate apically. Arista long, gently thickened on basal fourth, the basal segments short; distinctly pubescent.

Thorax black in ground color, brownish ochreous, in some lights with a golden tinge, the pleura grayish white with strong golden tinge on upper parts; hair black. Acrosticals and dorsocentrals 3–3; 3 sublaterals and intra-alars; 4 pairs of marginal scutellars the apical pair weak, cruciate and rather strongly upturned; one pair of discals. Sternopleurals 2–1; infrasquamal setulæ present; propleura bare; prosternum haired laterally.

Legs black; anterior tibiæ with one posterior bristle; middle tibiæ with one anterior, one ventral and two posterodorsals; posterior tibiæ with a row of anterodorsal bristles, one of which is long and strong. Pulvilli elongate.

Wings cinereous hyaline, with a slight brownish tinge especially noticeable anteriorly. Bend of fourth vein rather sharp; apical cell ending moderately before wing tip; posterior cross-vein oblique, doubly curved, joining posterior side of apical cell at two-thirds the distance from the anterior cross-vein; third vein with two or three bristles basally. Squamæ with luteous tinge. Halteres yellow.

Abdomen shining black; second segment on the basal two-thirds, third on the basal half to two-thirds the fourth on the basal half, strongly widening laterally, dull ochreous pollinose, the pollinose bands almost intersected by a narrow vitta extending forward. Pollen of under surface grayish white. First and second segments each with a pair of marginals, the third and fourth with a row, the fourth with two or three irregularly placed discals and erect hair, the hair elsewhere appressed.

Female.—Front about eleven-sixteenths as wide as either eye, gently widening anteriorly; two pairs of strong orbitals, the upper reclinate frontal small and situated directly above the upper orbital; there are five pairs of strong and one or two weak

pairs of frontals. The abdominal pollen is more extensive, covering almost the basal three-fourths of each segment.

TYPES.—Holotype, male, August 1; allotype, female, August 2; paratypes, two females, July 30 and August 2.

Lydella lathami Curran

CURRAN, 1925, Can. Ent., LVI, p. 284.

Male, August 6.

Lydella hyphantriæ Tothill

TOTHILL, 1922, Bull. 3, new series (Technical), Canadian Dept. of Agriculture, p. 43.

Seven males, July 24 to 28.

Lydella eufitchæ Townsend

Masicera eufitchæ, TOWNSEND, 1892, Trans. Amer. Ent. Soc., XIX, p. 286.

Twenty-five males and one female, July 23 to August 18.

Compsilura concinnata Meigen

Tachina concinnata MEIGEN, 1824, 'Syst. Beschr. Eur. Zweifl.,' IV, p. 412.

Very common, July 23 to August 25.

Sturmia schizuræ Coquillett

COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 112.

Eight males and three females, July 24 to August 18.

Sturmia fraudulenta Van der Wulp

Masicera fraudulenta VAN DER WULP, 1890, 'Biol. Centr. Amer.,' Dipt. I, 110.

One female, July 24, is referred doubtfully to this species.

Sturmia phyciodis Coquillett

COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 109.

One female, August 28.

Sturmia protoparcis Townsend

Masicera protoparcis TOWNSEND, 1892, Journ. Jamaica Inst., I, p. 70.
Atacta geminata CURRAN, 1926 in Gowdey, 'Cat. Ins. Jam.,' p. 113.
Sturmia distincta of authors, not Wiedemann.

One male, July 28.

I do not see how this can possibly be *Tachina distincta* Wiedemann. In the first place, Wiedemann gives the length as "2 lines" which, being less than 4.5 mm. is not more than half the length of specimens of

protoparcis of less than the average size. *Protoparcis* specimens are usually about 10 mm. long. Moreover, Wiedemann states that the third antennal segment is "very long." This cannot apply to the present species and the parafrontals are not "snow white." There are many other discrepancies between this species and Wiedemann's description. Two or three of the conspicuous characters agree with Wiedemann's description but there are dozens of species occurring in the tropics and several from the Virgin Islands which will be found to agree in these same characters. A careful comparison of specimens at present going under the name of *distincta* in collections, with Wiedemann's description, should furnish sufficient evidence to prove that Wiedemann had a quite different species before him and that the name proposed by Townsend should be used for the species occurring in Jamaica and the United States.

Hypertrophomma opaca Townsend

TOWNSEND, 1915, Ins. Ins. Mens., III, p. 100.

One female, July 23.

Phrynofrontina discalis Coquillett

Sturmia discalis COQUILLETT, 1902, Proc. U. S. N. M., XXV, p. 114.
Phrynofrontina convexa TOWNSEND, 1919, Proc. U. S. N. M., LIV, p. 580.

Female, August 28.

Tachinomyia variata Curran

CURRAN, 1926, Trans. Roy. Soc. Canada, p. 169.

Male and six females, June 27 to July 30.

Cryptomeigenia dubia Curran

CURRAN, 1926, Trans. Roy. Soc. Canada, p. 164.

One female, July 9.

Cryptomeigenia menapis Walker

Tachina menapis WALKER, 1849, 'List. Dipt. Brit. Mus.,' IV, p. 769.
Cryptomeigenia ontario CURRAN, 1926, Trans. Roy. Soc. Canada, p. 159.

Female, July 8.

Blepharipeza leucophrys Wiedemann

Tachina leucophrys WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 308.

Two males, July 23 and 30.

These specimens appear quite the same as others from Brazil.

Blepharipeza species

A male and female differing from *leucophrys* in having much stronger frontal bristles and erect bristle-like hair on the intermediate abdominal segments. The genus is badly in need of revision.

Voria ruralis Fallén

Tachina ruralis FALLÉN, 1810, Kongl. Svensk. Vet. ak. Handl., XXXI, p. 265.

Male and female, June 26 and July 6.

Chætogædia crebra Van der Wulp

Prospherysa crebra VAN DER WULP, 1890, 'Biol. Cent. Amer. Dipt.,' II, p. 120.

Two specimens of each sex, July 24 and 26.

Chætogædia analis Van der Wulp

Baumhaueria analis VAN DER WULP, 1867, Tijdschr. v. Ent., X, p. 148.

Two males and three females, July 23 to August 2.

Paralispe aldrichi Curran

CURRAN, 1926, Can. Ent., LVIII, p. 217.

Three males and one female, July 20 to 26.

Eupelecotheca celer Townsend

TOWNSEND, 1918, Ins. Ins. Mens., VI, p. 169.

Two males, July 20 and 23.

Exoristoides slossonæ Coquillett

COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 90.

Female, August 6.

WINTHEMIA

The species belonging to this genus are badly in need of revision and identifications are impossible at the present time. There are seven species from Tuxedo.

Nemorilla maculosa Meigen

Tachina maculosa MEIGEN, 1824, 'Syst. Beschr. Eur. Zweifl.,' IV, p. 265.

Five males and two females, July 5 to August 6.

ZENILLIA Desvoidy

The 'New York State List of Insects' contains records of fourteen species of *Zenillia*. Two additional species were taken at Tuxedo. For

key to the species see Aldrich and Webber, 1924, Proc. U. S. N. M., LXIII, Art. 17.

Zenillia amplexa Coquillett

Exorista amplexa Coquillett, 1897, 'Rev. Tachinidæ,' p. 97.

One female, August 2.

Zenillia helvina Coquillett

Exorista helvina Coquillett, 1897, 'Rev. Tachinidæ,' p. 96.

Seven males and three females, July 23 to 28.

Zenillia valens Aldrich and Webber

Aldrich and Webber, 1924, Proc. U. S. N. M., LXIII, Art. 17, p. 20.

A single female, August 2.

This specimen is referred here with some doubt. Females have not been definitely associated with the males but a specimen in the National Museum probably belongs here. It has the fourth abdominal segment mostly pollinose, agreeing with the males in this respect. In my specimen the fourth segment is shining black on the apical half but I can see no other difference.

Zenillia cœrulea Aldrich and Webber

Aldrich and Webber, 1924, Proc. U. S. N. M., LXIII, Art. 17, p. 23.

Four specimens of each sex, July 15 to August 18.

Zenillia formosa Aldrich and Webber

Aldrich and Webber, 1924, Proc. U. S. N. M., LXIII, Art. 17, p. 23.

Five males and two females, July 25 to 28.

Zenillia inflatipalpis Aldrich and Webber

Aldrich and Webber, 1924, Proc. U. S. N. M., LXIII, Art. 17, p. 24.

One female, July 23.

Zenillia vulgaris Fallén

Tachina vulgaris Fallén, 1810, Kongl. Svensk. Vet. ak. Handl., XXXI, p. 275.

A single male, July 24.

Zenillia cæsar Aldrich

Exorista cæsar Aldrich, 1916, Can. Ent., XLVIII, p. 20.

Male and five females, July 23 to August 2.

Zenillia affinis Fallén

Tachina affinis Fallén, 1810, Kongl. Svensk. Vet. ak. Handl., XXXI, p. 260.

Thirty-four specimens, July 5 to August 2.

Zenillia futilis Osten Sacken

Exorista futilis Osten Sacken, 1887, Can. Ent., XIX, p. 161.

Three males, July 24, 25 and 26.

Phorocera Desvoidy

Aldrich and Webber have revised this genus (1924, Proc. U. S. N. M., LIII, Art. 17). In view of the fact that the species recorded from New York State are rather common, it seems advisable to present a key for their separation.

Table of Species

1. Genital opening in both sexes slit-like and usually concealing the genitalia; abdomen deep.....2.
   Genital opening more or less triangular, the genitalia easily seen; abdomen much broader than deep.....3.
2. Middle tibiæ with a single anterodorsal bristle.....*leucaniæ* Coquillett.
   Middle tibiæ with two or three strong anterodorsals.
   pachypyga Aldrich and Webber.
3. Three or four sternopleurals.....4.
   Two sternopleurals.....11.
4. Middle tibiæ with two or three strong anterodorsal bristles.....6.
   Middle tibiæ with a single strong anterodorsal.....5.
5. Scutellum with four pairs of marginals, the apical pair upturned.
   erecta Coquillett.
   Scutellum with three pairs of marginals, the apical pair absent....*mitis*, n. sp.
6. Palpi reddish or yellowish.....7.
   Palpi deep black.....*sternalis* Coquillett.
7. Mesonotum golden or ochreous yellow.....*tuxedo*, n. sp.
   Mesonotum grayish yellow or cinereous pollinose.....8.
8. Abdomen with erect, bristle-like hairs or true discals.....9.
   Abdomen with appressed hair on intermediate segments.....10.
9. Parafacial at narrowest part only half as wide as the third antennal segment.
   tenuiseta Aldrich and Webber.
   Parafacial fully as wide as the broad third antennal segment.
   slossonæ Townsend.
10. Posterior tibiæ evenly ciliated anterodorsally..*imitator* Aldrich and Webber.
    Posterior tibiæ very unevenly ciliated.....*claripennis* Macquart.
11. Thorax and front golden or ochreous yellow.....*tuxedo*, n. sp.
    Thorax not yellow, at most the pollen grayish yellow.....12.
12. Mesonotum and scutellum thickly grayish yellow pollinose; large species.
    einaris Smith.
    Mesonotum and scutellum thinly cinereous pollinose, rather shining; small species with oval, flattened abdomen.....*tortricis* Coquillett.

Phorocera mitis, new species

A small black species the wings tinged with brownish; only three pairs of marginal scutellars, the apicals absent. Length 3.5 mm.

MALE.—Front seven-tenths as wide as greatest width of eye, gradually widening anteriorly; about eight pairs of frontals, the upper two reclinate. Head cinereous white pollinose, the front yellowish and becoming brownish at the vertex; a row of black setulæ behind the occipital cilia, the occiput white pilose. Cheeks one-ninth as wide as eye-height; parafacials gently narrowing below, not half as wide as third antennal segment. Facial ridges bristled on lower two-thirds, gently convex in profile; vibrissæ level with oral margin. Palpi rather slender, black. Antennæ black, the third segment large and broad, six times as long as the second segment, obtusely rounded at the apex; arista thickened on basal half, the two basal segments each a little longer than wide. Eyes with rather short luteous pile.

Thorax grayish pollinose, on the dorsum with rather thin brownish yellow pollen and with five black vittæ in some views. Acrosticals and dorsocentrals 3–3; sternopleurals 2–1; three pairs of marginal scutellars, the apical pair absent.

Legs black; anterior tibiæ with a single posterior bristle; middle tibiæ with one anterior bristle situated beyond the middle and two posterodorsal bristles; posterior tibiæ sparsely ciliate anterodorsally. Pulvilli of medium size.

Wings tinged with brown; apical cell ending moderately before apex of wing, the fourth vein rounded at the bend; posterior cross-vein strongly bowed inward; third vein with two basal bristles. Squamæ whitish with yellow tinge. Halteres yellow.

Abdomen with bands of cinereous yellow pollen on the apical three segments, the band on the second segment narrow, occupying not more than the basal third but expanding strongly on the sides; on the third segment the band occupies more than the basal half and is indistinctly separated from brown pollen on the posterior half; the fourth segment is pale pollinose on its whole length; there is a shining black median vitta extending the whole length of the abdomen and expanding apically on the fourth segment; under surface mostly grayish pollinose. Second and third segments each with a pair of discals, the fourth with a median row; second with a pair, third and fourth with row of marginals. Hair subappressed. Genitalia conspicuous, partly exposed, the second segment with a pair of apical upturned bristles.

TYPES.—Holotype, male, July 26. Paratype, male, same data. Both specimens were taken at honeydew.

This species differs in several respects from other members of the genus but I hesitate to establish a new genus for it. The absence of apical scutellars, bristling of the middle tibiæ, and shape and position of the genitalia are quite different from any species of *Phorocera* I have seen, but extensive collections might establish connections in these respects.

Phorocera tortricis Coquillett

COQUILLETT, 1897, 'Rev. Tachinidæ,' p. 103.

Three males and one female, July 23 to 28.

Phorocera erecta Coquillett

COQUILLETT, 1902, Proc. U. S. N. M., XXV, p. 112.

Three males, July 23 and 25.

Phorocera sternalis Coquillett

COQUILLETT, 1902, Proc. U. S. N. M., XXV, p. 112.

Two males, July 23 and 28.

Phorocera tuxedo, new species

Belongs to the subgenus *Parasetigena* Brauer and Bergenstamm; differs from all the described North American species by the thickly dull ochreous pollen of the mesonotum. Length, 7 to 8 mm.

MALE.—Head white pollinose, the front yellow or golden yellow; frontal vitta black, narrower than either parafrontal; nine or ten pairs of frontals, the upper two pairs reclinate; frontal hair fairly long but not abundant; ocellars long; outer verticals absent; a single row of black occipital cilia. Pile of occiput yellowish above, white below. Cheeks black-haired, about one-seventh as wide as eye-height; parafacials narrowing below, at their middle not half as wide as third antennal segment; facial ridges strongly bristled on lower three-fourths. Palpi reddish. Antennæ deep black, the third segment broad, obtusely rounded apically, scarcely four times as long as the second segment; arista thickened on less than basal third, the penultimate segment short. Eyes with long pale yellowish hair.

Thorax above dull golden yellow to dull ochreous, the vittæ narrow and weak; pleura gray pollinose; hair black. Acrosticals 3–3; dorsocentrals 3–4, sternopleurals 2–1 or 1–1; four pairs of marginal scutellars, the apical pair weaker and cruciate; one or two pairs of discals.

Legs black; anterior tibiæ with two posterior bristles and an entire row of shorter, fine bristles just above them; middle tibiæ with two anterodorsal bristles on basal half and two strong posterodorsals; posterior tibiæ sparsely ciliate. Pulvilli long, grayish brown.

Wings cinereous hyaline, a little darkened anteriorly and slightly clouded with brown along the veins; bend of fourth vein sharp but without a fold; third vein with three basal bristles. Squamæ with faint yellow tinge, their inner edge yellow. Halteres yellow.

Abdomen with the apical three segments yellowish-gray to grayish-yellow pollinose; on the second segment the posterior border is narrowly shining laterally but this widens toward the middle where at least one-third is shining; third segment with the apical half in the middle and one-third at the sides shining, the fourth segment shining except the basal third, the pollinose band on this segment widening laterally. First and second segments each with a pair of marginals, the third and fourth with a row, the fourth with a row of discals and a few smaller ones; hair subappressed, on the fourth segment a little more erect. Under surface with gray pollen. Basal section of posterior forceps with dense yellowish or brownish yellow hair in the depression.

TYPES.—Three males, July 25 and 31 and August 2. The holotype was taken on July 31 at honeydew. The specimen taken on August 2 has only two sternopleurals.

Phorocera tenuiseta Aldrich and Webber

ALDRICH AND WEBBER, 1924, Proc. U. S. N. M., LXIII, Art. 17, p. 82.

Seventeen specimens of both sexes, June 30 to August 2.

Phorocera claripennis Macquart

MACQUART, 1849, 'Dipt. Exot.,' Suppl. 3, p. 209.

Two males, July 24, 25.

Phorocera einaris Smith

SMITH, 1912, Proc. Ent. Soc. Wash., XIV, p. 119.

Fifteen males and one female, July 20 to August 2.

Macromeigenia chrysoprocta Wiedemann

Tachina chrysoprocta WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 309.

Female, August 28.

Mericia ampelus Walker

Tachina ampelus WALKER, 1849, 'List. Dipt. Brit. Mus.,' IV, p. 732.

Male and two females, July 31 and August 2.

Mericia platycarina Tothill

Ernestia platycarina TOTHILL, 1921, Can. Ent., LIII, p. 270.

Four males, July 23 to 28.

Mericia arcuata Tothill

Ernestia arcuata TOTHILL, 1921, Can. Ent., LIII, p. 248.

Two females, June 25 and 27.

Linnæmya hæmorrhoidalis Fallén

Tachina hæmorrhoidalis FALLÉN, 1810, Vet. Acad. Handl., XXXI, p. 284.

Two males, July 23 and 24.

Chrysotachina alcedo Loew

Gymnochæta alcedo LOEW, 1869, Berl. Ent. Zeitschr., p. 150.

A single female, July 23.

Belvosia unifasciata Desvoidy

Latreillia unifasciata DESVOIDY, 1830, 'Essai sur Myodaires,' p. 105.

Six specimens, June 27 to July 28.

Peleteria anaxias Walker

Tachina anaxias WALKER, 1849, 'List Dipt. Brit. Mus.,' IV, p. 726.

Male, July 8.

Peleteria confusa Curran

CURRAN, 1925, Trans. Roy. Soc. Canada, p. 253.

Twenty-five specimens of both sexes, July 6 to September 14. The specimens taken in September were collected by F. E. Watson.

ARCHYTAS Jænnicke

There are three species in the collection. For key to species see Curran, 1928, Can. Ent., LX, p. 202.

Archytas pilosa Drury

Musca pilosa DRURY, 1773, 'Illus. Nat. Hist.,' Ed. 2, I, Pl. XLV, fig. 4.

Female, August 28.

Archytas aterrima Desvoidy

Jurinia aterrima DESVOIDY, 1830, 'Essai sur Myodaires,' p. 35.

Twenty specimens, July 12 to August 28. Common.

Archytas californiæ Walker

Tachina californiæ WALKER, 1852, 'Dipt. Saundersiana,' p. 270.

One female, August 28.

Dr. Aldrich has recently examined the types of *apicifera* and *californiæ* Walker and informs me that *apicifera* is the same as *vulgaris* Curran. The above name should be used for *apicifera* of my revision, at least until the status of *amethystina* Macquart is established.

Epalpus signiferus Walker

Tachina signifera WALKER, 1849, 'List Dipt. Brit. Mus.,' IV, p. 708.

Female, July 15.

Bombyliopsis abrupta Wiedemann

Tachina abrupta WIEDEMANN, 1830, 'Ausser. Zweifl.,' II, p. 293.

Male, July 26.

APPENDIX

TIPULIDÆ AND PTYCHOPTERIDÆ

By Charles P. Alexander, Amherst, Mass.

The following record of the crane-flies of Tuxedo is based on collections made at and near the station in June, July, and August, by Mr. C. Howard Curran; on August 27 and 28, by Mr. Fred W. Edwards; and in September, by Mr. F. E. Watson. Among the rarities are included three species that are not known from elsewhere in the State. They are as follows:

Limonia (*Limonia*) *novæ-angliæ* Alexander
Limonia (*Dicranomyia*) *iowensis* (Rogers)
Adelphomyia pleuralis Dietz.

The complete record of this group of flies is as follows:

TIPULIDÆ

TIPULINÆ

Tipula abdominalis (Say), August 18, (Curran).
Tipula algonquin Alexander, August 27–28, (Edwards).
Tipula apicalis Loew, June 26–28, at light, (Curran).
Tipula bella Loew, August 26–28, (Curran and Edwards).
Tipula caloptera Loew, June 28, (Curran).
Tipula filipes Walker, June 28, (Curran). Several specimens were observed (attached to the trunks of trees) that were killed by fungus.
Tipula fuliginosa (Say), June 26, (Curran).
Tipula hebes Loew, June 29, (Curran).
Tipula hermannia Alexander, August 27–28, (Edwards).
Tipula mingwe Alexander, August 27–28, (Edwards).
Tipula monticola Alexander, June 26–30, (Curran).
Tipula sayi Alexander, August 26–28, (Curran and Edwards).
Tipula submaculata Loew, July 9–19, (Curran).
Tipula tephrocephala Loew, June 26, (Curran).
Tipula tricolor Fabricius, July 18, (Curran).
Tipula trivittata Say, June 25–28, (Curran).
Tipula unimaculata (Loew), August 27–28, (Edwards).
Tipula ultima Alexander, September 29, (Watson).
Nephrotoma breviorcornis (Doane), July 18, (Curran); August 27–28, (Edwards).
Nephrotoma ferruginea (Fabricius), June 28, at light, (Curran); August 25–28, (Curran and Edwards); September 13, (Watson).
Nephrotoma incurva (Loew), June 27, (Curran).
Oropeza albipes Johnson, June 25, July 5–27, (Curran); August 27–28, (Edwards).
Oropeza obscura Johnson, August 26–28, (Curran and Edwards).

LIMONIINÆ

Limoniini

Limonia (*Limonia*) *fallax* (Johnson), August 27–28, (Edwards).

Limonia (*Limonia*) *immatura* (Osten Sacken), June 29, (Curran); August 27–28, 1928, (Edwards).

Limonia (*Limonia*) *indigena* (Osten Sacken), August 27–28, (Edwards); September 18, (Watson).

Limonia (*Limonia*) *novæ-angliæ* Alexander, August 27–28, (Edwards), paratypes. (See Ent. News XL, pp. 44–45, 1929.)

Limonia (*Limonia*) *parietina* (Osten Sacken), September 18, (Watson).

Limonia (*Limonia*) *pubipennis* (Osten Sacken), June 28, (Curran); August 27–28, 1928, (Edwards).

Limonia (*Limonia*) *rara* (Osten Sacken), August 27–28, (Edwards).

Limonia (*Limonia*) *triocellata* (Osten Sacken), August 1, (Curran); August 26–28, (Curran and Edwards).

Limonia (*Dicranomyia*) *gladiator* (Osten Sacken), August 27–28, (Edwards).

Limonia (*Dicranomyia*) *humidicola* Osten Sacken (*badia* auct., nec Walker), August 27–28, (Edwards).

Limonia (*Dicranomyia*) *iowensis* (Rogers), August 27–28, (Curran and Edwards).

Limonia (*Dicranomyia*) *liberta* (Osten Sacken), August 27–28, (Edwards).

Limonia (*Dicranomyia*) *longipennis* (Schummel), June 29, 1928, July 16, (Curran); August 27–28, (Edwards).

Limonia (*Dicranomyia*) *morioides* (Osten Sacken), August 27–28, (Edwards).

Limonia (*Dicranomyia*) *stulta* (Osten Sacken), June 28, (Curran).

Limonia (*Rhipidia*) *maculata* (Meigen), August 26–28, (Curran and Edwards).

Limonia (*Discobola*) *argus* (Say), August 27–28, (Edwards).

Antocha opalizans Osten Sacken, June 28–29, (Curran); August 27–28, (Edwards).

Pediciini

Pedicia albivitta Walker, August 27–28, (Edwards); September 17, (Watson). Common during late August and September.

Tricyphona inconstans (Osten Sacken), August 27–28, (Edwards); September 20, (Watson).

Amalopina flaveola (Osten Sacken), June 28, (Curran); September 20, (Watson).

Rhaphidolabis (*Rhaphidolabis*) *cayuga* Alexander, August 27–28, (Edwards).

Rhaphidolabis (*Rhaphidolabis*) *tenuipes* (Osten Sacken), August 27–28, (Edwards).

Adelphomyia pleuralis Dietz, June 30, (Curran).

Hexatomini

Epiphragma fascipennis (Say), June 25, (Curran).

Epiphragma solatrix Osten Sacken, August 27–28, (Edwards).

Pseudolimnophila contempta (Osten Sacken), August 27–28, (Edwards).

Limnophila (*Lasiomastix*) *tenuicornis* Osten Sacken, June 25, (Curran).

Shannonomyia lenta (Osten Sacken), August 27–28, (Edwards).

Penthoptera albitarsis Osten Sacken, August 27–28, (Edwards).

Eriopterini

Gonomyia (*Gonomyia*) *subcinerea* (Osten Sacken), August 27–28, (Edwards).

Gonomyia (*Gonomyia*) *sulphurella* (Osten Sacken), August 27–28, (Curran and Edwards).

Cryptolabis (*Cryptolabis*) *paradoxa* Osten Sacken, July 16, (Curran).

Helobia hybrida Meigen, August 27–28, (Edwards).

Ormosia deviata Dietz, August 27–28, (Edwards).

Ormosia nigripila (Osten Sacken), August 27–28, (Edwards).

Erioptera (*Mesocyphona*) *caloptera* (Say), July 28, (Curran); August 27–28, (Edwards).

Erioptera (*Erioptera*) *chlorophylla* Osten Sacken, June 28–July 26, (Curran).

Erioptera (*Erioptera*) *septemtrionis* Osten Sacken, July 16–17, (Curran); August 27–28, (Curran and Edwards).

Ptychopteridæ

Bittacomorpha clavipes (Fabricius), August 1, (Curran); August 27–28, (Edwards).

I wish to express my deep thanks to my friend and colleague, Fred W. Edwards, for supplying a record of his captures at Tuxedo Park, as incorporated in the above record.