

NOTES ON FRANCIS WALKER'S TYPES OF NORTH AMERICAN FLIES OF THE FAMILY TACHINIDAE

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The well-known British entomologist Francis Walker described numerous North American flies of the family Tachinidae in two publications: List of the Specimens of Dipterous Insects in the Collection of the British Museum, part 4, 1849; and *Insecta Saundersiana, or Characters of Undescribed Insects in the Collection of William Wilson Saunders, Esq.*, 1852.

At that early time but little was known of the classification of the group, and Walker's descriptions were poor, even for the period. The first attempt to place his species in more restricted genera was by Osten Sacken, in his *Catalogue of North American Diptera* (Smithsonian Institution, 1878). Osten Sacken had the advantage of having examined many of the types in the British Museum, where Walker's were all deposited. He was not a specialist in the group, and but little advance in its classification had been made since the time of Walker, except in the works of Rondani and Schiner, which pertained only to the European members, with a few exceptions on the part of Rondani.

The first serious attempt to identify Walker's North American species was by Coquillett, in his *Revision of the Tachinidae of America North of Mexico* (Technical Series No. 7, Division of Entomology, United States Department of Agriculture, 1897). Coquillett had not seen Walker's types, but he studied the descriptions very carefully and believed that he had identified most of them. The nomenclature that he accepted has been adopted quite generally since that time, at least as to the species, although Townsend in various papers expressed the opinion that Coquillett had misidentified many of them.

Maj. E. E. Austen reported the results of an examination of many of Walker's types in *Annals and Magazine of Natural History*, ser. 7, vol. 19, pp. 326-347, 1907.

In 1929 I had the opportunity to examine most of Walker's type specimens, although in the time at my disposal I did not see all of them. The object of the present paper is to report the results of this work and to indicate as far as possible the available names of the species Coquillett had before him, in those cases where he erred in his identification of Walker. Species of which I did not see the types are also included, with such explanations as I can offer from the much larger collections now available and the advances in classification that have been made in recent decades. They are listed under Walker's names, and in the order of Coquillett's work, although in this arrangement I am obliged to begin with a series in which I did not see the types.

I am under obligation to the authorities of the British Museum, especially to Maj. E. E. Austen, D. S. O., keeper of the division of insects, for the privilege of examining this important material.

Only species from the region north of Mexico are here discussed.

Gymnosoma par WALKER, List, p. 692. Coquillett (p. 43) made this a synonym of *G. fuliginosa* Robineau-Desvoidy. Type not seen. The genus is a striking one, and but one species is known from the Eastern States; no one has questioned the correctness of Coquillett's identification.

Gymnosoma occidua WALKER, List, p. 692. Coquillett (p. 43) placed this as a synonym of *Cistogaster immaculata* Macquart. Townsend¹ discussed *immaculata* and thought he could make out a division of the abundant material into two forms, but left *occidua* as a synonym of *immaculata* as it had been placed by Coquillett. Later² he decided that *occidua* is the valid name for one of the forms, *immaculata* for the other. He took up the subject again in his 'Taxonomy of the Muscoidean Flies,'³ where he redescribed *occidua* in both sexes and referred it to the genus *Gymnoclytia* Brauer and Bergenstamm. The type of the genus is *divisa* Loew, the only included species, which is believed to be a synonym of *occidua*. The generic characters are slight, and there is room for difference of opinion as to whether it is not a synonym of *Cistogaster*. The genotype of the latter is the European *globosa* Fabricius, which has the petiole of the apical cell ending in the exact tip of the wing, and also has a less protuberant oral margin. Walker's description of the abdomen seems ample to fix the form he had. I did not see his type.

Hyalomyia occidentis WALKER, Insecta Saundersiana, p. 260. The description is less than five lines long. I did not see the type. Coquillett (p. 44) believed he had recognized the species and referred

¹ Trans. Amer. Ent. Soc., vol. 22, p. 66, 1895.

² Ann. Mag. Nat. Hist., ser. 6, vol. 19, p. 31, 1897.

³ Smithsonian Misc. Coll., vol. 51, p. 127, 1908.

it to *Phorantha*, with several supposed synonyms. He mentioned 12 localities and probably included at least 25 specimens, including a type of *Hyalomyia aldrichi* Townsend. His series has been rearranged and mixed with other material in the attempt to make out the various forms included as synonyms and some specimens have apparently been used in exchange. Townsend⁴ separated one specimen as type of *Phoranthella morrisoni*, new genus and species, but it remains totally undescribed. Robertson⁵ expressed the view that Coquillett included at least three species and that *occidentis* can not be recognized from the description. Without publishing on the matter, Townsend later separated a female unlike Coquillett's from Los Angeles County, Calif., and labeled it as *occidentis* "typical."

It may be assumed that Coquillett misidentified *occidentis*, as his specimens do not agree with Walker's statement, "Abdomen hoary, black toward the base and with two black bands," especially as to the black bands. If we leave the true *occidentis* aside until the type is seen, the question of the identity of Coquillett's species remains for consideration. He undoubtedly included *aldrichi*, and this name is the valid one for most of his specimens; some of his other synonyms may be distinct species. The genus should be *Hyalomyia*, as first given by Townsend. *H. aldrichi* is a widespread species, with the first abdominal segment black, all the following with glistening white pollen and with indications of a median black stripe.

Trichopoda histrio WALKER, List, p. 697. No locality, but the type must have been from tropical America; I did not see it. Coquillett (p. 48) made it a synonym of *plumipes* Fabricius. Townsend published notes on the group in *Taxonomy of the Muscoidean Flies*,⁶ in which he seemed to show *histrio* as a distinct form in his genus *Polistomyia*; but in his later work on the National Museum collection he apparently gave this up, as he left no specimens labeled with Walker's name. As to the status of *Polistomyia*, it is obvious from the specimens labeled by Townsend that the apical cell has a very short petiole and the hind tibiae are strongly ciliate, in the type species *trifasciata* Loew; other characters are very slight, hence I do not accept the genus, and should call the species *Trichiopoda plumipes* Fabricius, as Coquillett did, merely amending the spelling of the genus to agree with its original form.

Phyto clesides WALKER, List, p. 757. Coquillett (p. 51) identified this as a species that he had described two years before⁷ as *Phyto setosa*. Austen⁸ stated that Walker's type belongs to the genus *Phorichaeta* Rondani, a genus that has been regarded by later Euro-

⁴ Proc. Biol. Soc. Washington, vol. 28, p. 23, 1915.

⁵ Can. Ent., vol. 33, p. 285, 1901.

⁶ Smithsonian Misc. Coll., vol. 51, p. 134, 1908.

⁷ Journ. New York Ent. Soc., vol. 3, p. 99, 1895.

⁸ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 336, 1897.

pean authors as a synonym of *Wagneria* Robineau-Desvoidy. On examining the type I at first agreed with this disposition of it, but further examination showed that it belongs to *Eutrichogena* Townsend.⁹ It is, in fact, the species on which Townsend based the genus, *Trichogena setipennis* Coquillett, which becomes a synonym. Townsend¹⁰ had stated that *Neophorichaeta johnsoni* Smith is a synonym of *setipennis*, a conclusion later accepted by Smith. There is no doubt of the validity of *Eutrichogena*; hence Walker's species should be called *Eutrichogena clesides*. Meanwhile Townsend¹¹ had proposed the new genus *Neophyto* for Coquillett's *setosa*, which is not a *Phyto*. This has been generally accepted for years; Coquillett's species is therefore *Neophyto setosa*. It has no postscutellum, and I think it belongs to the family Sarcophagidae.

Tachina theutis WALKER, List, p. 778. Coquillett (p. 52) placed this in its proper genus, *Cryptomeigenia* Brauer and Bergenstamm. I took full notes on the type, a male from Nova Scotia. The genus contains several North American species, which show modifications of the ovipositor in the female available for specific distinction in at least a part of the series. A revision of the genus is now in progress and will probably be published shortly after the present paper; hence it is not desirable to discuss the specific characters here.

Tachina prisca WALKER, List, p. 780. Coquillett (p. 52) placed this as a synonym of the preceding, and it certainly belongs to the same genus. The type is a female from Nova Scotia, different from *theutis*, on which I took notes that will be used in the forthcoming work just mentioned.

Tachina convecta WALKER, Insecta Saundersiana, p. 276. Walker had already, page 264, established the genus *Schizotachina* for this and his *Tachina exul*, immediately following it. Coquillett (p. 55) made *exul* a synonym of *convecta*, which was a very natural course, as the descriptions are almost exactly the same. Both were from "United States." I was surprised on examining the type of *convecta* to find that it did not match the specimens I had with me. My notes run:

One male, United States. It is in good condition as to antennae and abdomen. I note first an absence of the interruptions of the basal silvery bands on second and third abdominal segments. The band seems entire on the second and only interrupted in the middle on the third; although narrow in a certain light, they are not so sharply limited as in my two males. The band is indistinct on the fourth segment laterally, perhaps on account of condition. The discal row of bristles on the fourth segment is distinctly behind the middle; not so in mine. The narrowest part of the parafacial is much wider than in my males, and the bristles of the facial ridges are only four, on lowest one-third or two-sevenths. Wings a little milky.

⁹ Proc. Biol. Soc. Washington, vol. 28, p. 23, 1915.

¹⁰ Insector Insidae Menstruus, vol. 3, p. 116, 1915.

¹¹ Smithsonian Misc. Coll., vol. 51, p. 55, 1908.

The specimens I had with me had the narrow basal silvery bands of the second, third, and fourth abdominal segments three times interrupted; in other words, a row of four silvery spots, the outer wider than the inner. This is the species referred to by Townsend when he says¹² that *Clausicella usitata* Coquillett (p. 56) and *Neaera longicornis* Coquillett¹³ are synonyms of *convecta*. The discovery that there are two species of *Schizotachina* would seem to indicate *usitata* for the name of the second, but I have found a peculiar complication here. Coquillett described *usitata* from three males and four females, collected in the White Mountains, N. H. (Morrison), and at New Bedford, Mass. (Hough). Later he decided that there were two species and removed those from the White Mountains, leaving only a female from New Bedford under the species label. Townsend's note on synonymy was based on this female, and he apparently knew nothing of the whereabouts of the males. I have had the good fortune to find the three males, and they belong to a species not named in our collection, which I place provisionally in the genus *Plectops*. Since no one has published anything about the occurrence of two species under the name *usitata*, it remains to decide which shall bear the name. I therefore designate the males as the true *usitata*, letting the female go into *longicornis*. This course preserves all the names, while the designation of the female would leave us with two names for one species and none for the other. The effect of this designation is to leave *Schizotachina longicornis* Coquillett as the valid name for the second species of the genus, differing from *convecta* in having the basal abdominal bands three times interrupted, in having much narrower parafacials in the male, and in being decidedly smaller.

Coquillett had three specimens that he called *convecta*; one from Horse Neck Beach, Mass., has no abdomen, but is probably the true *convecta*; while the other two, from Waco, Tex., and Colorado, are *longicornis*.

Tachina exul WALKER, *Insecta Saundersiana*, p. 277. See note under preceding. Unfortunately I have no note on the type. There is very slight doubt that it is a synonym of *convecta*, as the two descriptions are so nearly identical. Walker thought the specimen a female, but as it has the third antennal joint divided it was certainly a male.

Dexia pedestris WALKER, *Insecta Saundersiana*, p. 313. Placed in *Hypostena* by Coquillett (p. 51). The type is a male of the genus *Cryptomeigenia*, and is the same species as Walker's *Tachina demylus*, 1849.

¹² Ent. News, vol. 26, p. 366, 1915.

¹³ Proc. U. S. Nat. Mus., vol. 25, p. 106, 1902.

The species identified as *pedestris* by Coquillett was described by Townsend as *Meigenielloides cinerea*.¹⁴ As Townsend did not connect his species with that of Coquillett, I failed to observe that they were the same, and redescribed it as *Synoris coquilletti*.¹⁵ No other species of the genus is known.

Dexia pristis WALKER, List, p. 841. Coquillett (p. 64) placed the species in *Macquartia*, following an identification by Brauer and Bergenstamm. Before seeing the type I had accepted Coquillett's identification of the species, but had removed it from *Macquartia* to the genus *Pseudeuantha*, which Townsend¹⁶ had erected for *linelli*, new, from Mexico. An examination of the type showed that Coquillett had identified it correctly. Brauer and Bergenstamm erred, however, in the genus to which they assigned the specimen sent them for identification. Townsend did not accept Coquillett's species as the true *pristis*; in 1892 he had described it as *Aporia limacodis*, and he later¹⁷ made this the type of the new genus *Anaporia*. This genus I do not consider distinct from *Pseudeuantha*.

Tachina areos WALKER, List, p. 766. Placed in *Polidea* by Coquillett (p. 64), a genus now regarded as synonymous with *Lydina* Robineau-Desvoidy. Townsend had in 1892 described *Tryphera americana*, *T. polidooides*, and *Polidea americana* in a single paper¹⁸; all these Coquillett placed as synonyms of *areos*. In my Catalogue of North American Diptera,¹⁹ I separated *Tryphera americana* Townsend as a distinct species of *Polidea*, from an examination of the type.

As I did not see Walker's type, and as the large collection available for study shows much variation among the specimens, I can at present only indicate the nature of the problem here. There appears to be in Europe only one species of *Lydina*, the genotype, *aenea* Meigen. It differs from the common form in this country most obviously in having black palpi. I had regarded this as a sufficient distinction for *areos* until obliged to review the matter for the present paper. I now find that Walker stated that *areos* has "palpi black." There is now in the National Museum a series of five males and three females of *Lydina*, collected by me at Hammond, Ill., June 24, 1915, all of which have black palpi; there is also a female from Viola, Idaho, collected by me. A male and a female of *aenea* from Italy (Bezzi) show some differences, but hardly more than our series shows within itself. If the black palpi are specific, and our specimens with that character belong to *aenea*, then Walker's *areos* is probably a synonym,

¹⁴ Proc. U. S. Nat. Mus., vol. 56, p. 574, 1919.

¹⁵ Proc. U. S. Nat. Mus., vol. 69, art. 22, p. 12, 1926.

¹⁶ Proc. U. S. Nat. Mus., vol. 49, p. 416, 1915.

¹⁷ Proc. U. S. Nat. Mus., vol. 56, p. 560, 1919.

¹⁸ Can. Ent., vol. 24, pp. 78, 79, and 82, respectively, 1892.

¹⁹ Smithsonian Misc. Coll., vol. 46, no. 1444, p. 436, 1905.

and one of Townsend's names will apply to the species with yellow palpi. With only a single pair from Europe I am in doubt. We have 42 specimens of *Lydina* from North America, and they show remarkable variations in antennal form and in the degree of hypertrophy of the front tarsi in the females. It would not be feasible to attempt a further analysis here.

Tachina masuria WALKER, List, p. 753. Coquillett (p. 72) identified this as the species that he had previously described²⁰ as *Clytiomyia exilis*, making it the type of a new genus, *Eutrixa*. Austen²¹ published the following note on Walker's type: "Is an *Aeemyia*, Rob.-Desv., apparently distinct from *A. dentata* Coq. and *A. tibialis* Coq." As I did not see the type, I can add nothing to this. Coquillett's species is easily disposed of by reviving his *exilis*, which is not a synonym; for some years it has been correctly known as *Eutrixa exilis* Coquillett.

Tachina corythus WALKER, List, p. 797. Coquillett (p. 73) placed it as a synonym of *Xanthomelana atripennis* Say. The descriptions agree very well, and no one has proposed a different disposition of *corythus*. I did not see the type.

Tachina aelops WALKER, List, p. 796. Coquillett (p. 73) placed this in the genus *Beskia* Brauer and Bergenstamm, which was erected for a new species named *cornuta*, from Brazil. Coquillett placed *cornuta* as a synonym of *aelops*, and I²² agreed with this on examining the type of *cornuta*, but without seeing the type of *aelops*. Austen²³ referred Walker's type to *Beskia*. Townsend²⁴ still thinks the two species distinct; this, however, does not interfere with the correctness of the name used by Coquillett, *Beskia aelops* Walker, as he refers the species to that genus. I did not see Walker's type.

Tachina insolita WALKER, Insecta Saundersiana, p. 277. Coquillett (p. 85) placed this in the genus *Melanophrys*, along with the type species of the genus, *flavipennis* Williston. Later²⁵ he placed *flavipennis* as a synonym of *insolita*. The specimen now bearing his label as *insolita* is correctly named, but his specimen now bearing the name *flavipennis* is also *insolita*. He attempted to separate the two species by the abdominal bristles, which are somewhat variable and do not lend themselves to the purpose. In *insolita* the third antennal joint is hardly longer than the second; in *flavipennis* it is fully twice as long in the female and even longer in the male. The male of *insolita* has a striking, thick median

²⁰ Journ. New York Ent. Soc., vol. 3, p. 53, 1895.

²¹ Ann. Mag. Hist., ser. 7, vol. 19, p. 366, 1907.

²² Ann. Ent. Soc. Amer., vol. 18, p. 120, 1925.

²³ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 345, 1907.

²⁴ Ent. News, vol. 39, p. 150, 1928.

²⁵ Proc. U. S. Nat. Mus., vol. 37, p. 567, 1910.

horn projecting downward on the second genital segment, and the parafrontal and parafacial are smoothly silvery down to the large brownish "transverse impression" near the vibrissae; the male of *flavipennis* has no horn on the genital segment, and the parafrontal and parafacial are shining black, except a narrow silvery band extending from the eye to the suture at the level of the second antennal joint. The female of *flavipennis* has a silvery pollinose stripe from eye to antenna about as in its male, while that of *insolita* has a more diffuse, wider stripe beginning higher up at the eye and sloping downward as it approaches the antenna—it also has a rather faint spot of pale pollen on the parafacial resting against the eye at its lower curve. In both sexes, *flavipennis* has a clump of bristles at the vibrissa, while *insolita* has only one row.

I examined the type of *insolita*; it is a female with characters as indicated. Coquillett had the species, but erred in trying to make two of it. I have also examined the types of *flavipennis* in the University of Kansas.

Townsend²⁶ described *Atropharista jurinoides*, new genus and new species, which is a synonym of *Melanophrys insolita*, as pointed out by Coquillett, Townsend himself²⁷ having admitted the synonymy of the species.

Ocyptera dotadas WALKER, List, p. 694. Coquillett (p. 86) placed this as a synonym of *Ocyptera carolinae* Robineau-Desvoidy. The type, according to my notes, is "one male, a fragile and damaged specimen that I dare not spread." It is from Jamaica. In my revision of the genus, to which I applied the prior name *Cylindromyia*,²⁸ I placed both *dotadas* and *carolinae* among the unidentified species.

Walker's description states that the antennae are shorter than in the European forms; the abdomen is red, with base and tip black. These are the only characters given that seem of value in identifying the species. Perhaps specimens from Jamaica may ultimately justify a specific determination.

Ocyptera epytus WALKER, List, p. 694. Coquillett (p. 86) placed this as a synonym of *carolinae* Robineau-Desvoidy. I did not find the type in the British Museum. Townsend²⁹ expressed the opinion that it is the same species as *euchenor*, but he made out the synonymy only from the description, and his *euchenor* was not the same as Walker's. I listed *epytus* as unidentified in my revision, noted under the preceding species. It was described from Georgia.

Ocyptera euchenor WALKER, List, p. 696. Coquillett (p. 86) placed this with the two preceding as synonyms of *carolinae* Robineau-Desvoidy. In my revision of the genus, noted above, I

²⁶ Trans. Amer. Ent. Soc., vol. 19, p. 92, 1892.

²⁷ Trans. Amer. Ent. Soc., vol. 22, p. 72, 1895.

²⁸ Proc. U. S. Nat. Mus., vol. 68, art. 23, p. 26, 1926.

²⁹ Journ. New York Ent. Soc., vol. 5, p. 177, 1897.

placed the species by the aid of Major Austen, to whom I sent my manuscript key and some numbered specimens before publishing. The type, which I have since seen, is a female and agrees with the species accepted by me. The supposed *euchenor* of Townsend³⁰ is *vulgaris*, new species of my revision.

Ocyptera dosiades WALKER, List, p. 695. Coquillett (p. 86) identified this correctly. The type is a female. Major Austen had assisted me in placing it in my revision before I saw the type. I refer it to the genus *Cylindromyia*, like the others.

Tachina ampelus WALKER, List, p. 732. Coquillett (p. 88) placed the species as a synonym of *Panzeria radicum* Fabricius. Later, however, he separated specimens under the name *ampelus*, which agree with the type, as I found by sending some to Major Austen for comparison. I failed to see the type myself, but there are good external characters. Tothill³¹ revised the genus and adopted *Ernestia* as the proper generic name, redescribing *ampelus* (p. 273). It is a very common species. Coquillett apparently identified the species correctly in 1897, but erred in making it a synonym of a European species not now believed to occur in North America.

Curran³² has proposed to refer all our American species of *Ernestia* to *Mericia* Robineau-Desvoidy, since ours have infrasquamal setules absent in the genotype of *Ernestia*. Two questions arise here: Is the character of generic value, and is it possessed by the genotype of *Mericia*? As to the first point, there seem to be no North American species of *Ernestia* without infrasquamal setules, and they are absent in the European *E. rudis*, type of the genus. They are, however, present in the European *E. connivens* Zetterstedt and *E. pudicus* Rondani (specimens determined by Doctor Villeneuve). Curran has proposed as a supplementary character that the posterior forceps of *Ernestia* are simple (or flat), while in *Mericia* they are keeled. Our American species have them keeled, and so does *connivens*, but *pudicus* has them simple, thus dividing the two characters. As the infrasquamal setules are sometimes very few as well as minute, I hesitate to give them generic weight in the absence of other characters. As to my second question, it appears that *Mericia erigonea* Robineau-Desvoidy, the sole original species of the genus, can not be identified and is unknown. Stein³³ says as much. It seems impossible to assume that it has the characters indicated by Curran, who in response to an inquiry informed me that he did not know the species. Hence I should continue to call Walker's species *Ernestia ampelus*.

³⁰ Journ. New York Ent. Soc., vol. 5, 176, 1897.

³¹ Can. Ent., vol. 54, pp. 199 ff., 1921.

³² Ent. News, vol. 35, p. 214, 1924.

³³ Arch. f. Naturg., vol. 90, p. 53, 1924.

Tachina pyste WALKER, List, p. 754. Coquillett (p. 93) placed this in *Exorista*. The type is a female and agrees with the determination of Coquillett. Aldrich and Webber³⁴ make *pyste* a synonym of *maculosa* Meigen of Europe, which Stein³⁵ puts as a synonym of *floralis* Fallen. Brauer and Bergenstamm had referred American specimens to the genus *Nemorilla* Rondani for Coquillett, and this genus is now generally accepted for the species. Hence *Tachina pyste* Walker should be called *Nemorilla floralis* Fallen.

Tachina epicydes WALKER, List, p. 786. Coquillett (p. 94) placed this as a synonym of *Exorista affinis* Fallen. The type is a male from Martins Falls, Albany River, Canada; it runs in the key of Aldrich and Webber to *Zenillia coerulea*, new species, and agrees with the description perfectly except that it appears to have true discals. The abdomen is rubbed and this point is not clear, but I accept the synonymy, sinking *coerulea*.

Eurygaster septentrionalis WALKER, in Lord's "Naturalist in Vancouver Island," vol. 2, p. 339, 1847. Coquillett (p. 102) placed this as a synonym of *Euphorocera claripennis* Macquart. I did not find the type in the British Museum. The description is vague and incomplete, but reads like a *Phorocera*. It is as follows:

Eurygaster septentrionalis, N. S. *Foem.*—Nigra, setosa, latiuscula; capite argenteo-cinereo; vertice aurato; frontalibus atris; palpis rufescentibus; antennis aristae dimidio incrassato; thorace vittis quinque cinereis; scutelli apice piceo; abdomine cinereo subtessellato; alis cinereis.

Female.—Black, setose, rather broad. Head silvery cinereous, gilded above; frontalia deep black, widening in front; facialia bordered with bristles along most of the length from the epistoma. Palpi reddish. Antennae extending to the epistoma; third joint linear, rounded at the tip, full six times the length of the second; arista incrassated for half its length from the base. Thorax with five cinereous stripes; scutellum piceous at the tip. Abdomen slightly tessellated with cinereous, very bristly toward the tip, a little longer than the thorax. Wings cinereous; veins black; prebrachial vein forming an obtuse angle at its flexure, straight from thence to its tip. [Length omitted.]

Tachina melobosis WALKER, List, p. 743. Coquillett (p. 105) could not identify any specimens as belonging to this species, and placed it doubtfully as a *Phorocera*. I saw the type, a male from Florida, but had nothing with me to match it, nor can I find the species in the National Museum; hence I quote the description I made from the type:

Much resembles *Lypha dubia* Fallen in having hairy eyes, large pteropleurals, abdomen thick apically and with discals, the first genital segment shining black and rather large and conspicuous. However, *melobosis* has much longer antennae, and the penultimate joint of the arista is elongate.

Outer vertical larger than a hair; ocellars proclinate and divergent; 2 reclinate frontals, 10 others to second fifth of third antennal joint, fully meeting

³⁴ Proc. U. S. Nat. Mus., vol. 63, art. 17, p. 5, 1924.

³⁵ Arch. f. Naturg., vol. 90, p. 83, 1924.

the bristles on facial ridges. Third antennal joint long and wide, five times the second, upper angle prominent; arista straight, thickened to beyond the middle. Antennal groove deep with sharp edges. Palpi blackish. Pollen of the narrow parafacial rather dark, very thin pollen on parafrontals, which look black. Mesonotum with indistinct stripes. Dorsocentral 3; sternopleural 2, 1; scutellum with 3 lateral, one rather long apical in poor condition. Abdomen shining black, bases of second, third, and fourth segments with band of whitish pollen; venter almost wholly shining in side view, as deep close to the apex as at base. Mid tibia with two very distinct bristles on outer front side; hind tibia with sparse bristles on outer side, not ciliate. Wing subhyaline, fourth vein with rounded, rectangular bend, then very concave, just closing the apical cell barely before the extreme apex; hind cross vein erect, almost in middle between anterior and bend; first vein bare, third with two hairs.

Tachina addita Walker is the female of this, and is so placed by Major Austen.

The species may be left in *Lypha* until further material is found or the related forms revised.

Tachina addita WALKER, *Insecta Saundersiana*, p. 290. Placed by Coquillett (p. 105) as a synonym of the preceding, and I found that Major Austen had made out the same synonymy from the types, with which I fully agreed. The locality was "United States."

Tachina antennata WALKER, *Insecta Saundersiana*, p. 298. Coquillett (p. 105) lists this as unrecognized, perhaps a *Phorocera*. I did not see the type, and nothing has been published upon it as far as I know. The description indicates a very recognizable and remarkable form, if the statements can be relied upon; briefly, it has the eyes hairy, facial ridges bristly, and third antennal joint greatly widened, twice as wide as long; palpi and antennae black. Several species of North American Tachinidae are known with very wide third antennal joint in the male, but all of them that I can find in the collection have bare eyes and bare facial ridges.

Tachina ancilla WALKER, *Insecta Saundersiana*, p. 299. Coquillett (p. 106) placed this in the genus *Frontina*, but he had the wrong species. I found the type to be the same species that Townsend described as *Pseudomyothyria indecisa*.³⁶ Townsend suggested this synonymy in 1918.³⁷ Major Austen³⁸ referred Walker's type to the genus *Frontina*. I referred *indecisa* to the genus *Tachinophyto* (regarding *Pseudomyothyria* as a synonym of the latter).³⁹

Coquillett's species, which he mistook for *ancilla*, has been provided for by Townsend,³⁷ who named it *Frontiniella parancilla*, new genus and species (by misprint *pararcilla*). Townsend compared the new genus with the European genotype of *Frontina*; if he had compared with *Achaetoneura* his differences would have disappeared

³⁶ Trans. Amer. Ent. Soc., vol. 19, p. 132, 1892.

³⁷ Proc. Ent. Soc. Washington, vol. 20, p. 21, 1918.

³⁸ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 337, 1907.

³⁹ Insecutor Inscitiae Menstruus, vol. 12, pp. 147, 149, 1924.

except a few very slight ones. Webber, however, in revising the genus *Achaetoneura*,⁴⁰ has left this out; it may stand for the present.

Tachina violenta WALKER, List, p. 788. Coquillett (p. 108) identified this as a species of *Frontina*. The type is a male from Nova Scotia, and is the same species described on an earlier page by Walker as *panaetius*, which I take for the valid name. It is the same species described by Townsend as *Tachinomyia robusta*.⁴¹ In Curran's key to the species of *Tachinomyia*,⁴² the type runs to couplet 3, but I did not venture to spread the genitalia and could not positively exclude *variata* Curran, which, however, seems at most not more than a subspecies of *robusta*. The genus *Tachinomyia* is a distinct one, hence *violenta* in my opinion is a synonym of *Tachinomyia panaetius* Walker.

As to the species misidentified as *violenta* by Coquillett, the specimen with Coquillett's label on was included in *Achaetoneura testacea*, new species, by Webber.⁴³ Coquillett placed *Masicera dubia* Williston⁴⁴ and *Masicera sphingivora* Townsend⁴⁵ as synonyms of his supposed *violenta*. Webber has discussed these on pages 36 and 37 of his recent revision.

Tachina irrequieta WALKER, List, p. 788. Coquillett (p. 108) placed what he identified as this species in *Frontina*. The type is a female of *Tachinomyia panaetius* Walker.

The species misidentified by Coquillett as *irrequieta* is included as *Achaetoneura rileyi* Williston by Webber in his revision of *Achaetoneura*;⁴⁶ Coquillett had already indicated the synonymy of this species with the supposed *irrequieta*.

Tachina dydas WALKER, List, p. 748. Coquillett had no specimens which he could identify as this species, and placed it (p. 108) as a doubtful species of *Frontina*. Major Austen⁴⁷ published a note on the type, making it a synonym of *Eutachina rustica* Meigen. I agree with this disposition after examining the type; but it seems that *simulans* Meigen has some years priority for the species, and the genus *Eutachina* has little to stand on as against *Tachina* of authors (= *Exorista* Meigen according to strict rules, as *larvarum* Linnaeus was the only species originally included in *Exorista*). On this basis the species becomes *Exorista simulans* Meigen.

Tachina obconica WALKER, Insecta Saundersiana, p. 296. Coquillett (p. 110) placed this as a synonym of *Sturmia albifrons* Walker. The type is a female, not a male as Walker thought, and is

⁴⁰ Proc. U. S. Nat. Mus., vol. 78, art. 10, pp. 3, 35, 1930.

⁴¹ Trans. Amer. Ent. Soc., vol. 19, p. 96, 1892.

⁴² Trans. Roy. Soc. Canada, 1926, sec. 5, p. 168.

⁴³ Proc. U. S. Nat. Mus., vol. 78, art. 10, p. 25, 1930.

⁴⁴ Scudder's Butterflies of New England, vol. 3, p. 1924, 1889.

⁴⁵ Trans. Amer. Ent. Soc., vol. 19, p. 286, 1892.

⁴⁶ Proc. U. S. Nat. Mus., vol. 78, art. 10, p. 32, 1930.

⁴⁷ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 336, 1907.

the species included by Coquillett on page 115 of his Revision as *Masicera eufitchiae* Townsend, which, however, is not the true *eufitchiae* of Townsend. Director Gillette, of the Colorado Experiment Station, has generously deposited in the National Museum five remaining specimens of the reared lot from which the type of Townsend's species came; I find it almost if not quite the same species that was described later by Tothill⁴⁸ as *Lydella hyphantriae*. Curran⁴⁹ has noted the same point about *hyphantriae*. This, however, does not affect the Walker species, which I refer to *Anetia* Robineau-Desvoidy (*Lydella* of authors).

Tachina albifrons WALKER, Insecta Saundersiana, p. 283. Coquillett (p. 110) placed the species in *Sturmia*, and identified it correctly, according to my examination of the type, which is a female. Walker preoccupied the name *Tachina albifrons* in 1837; hence Townsend⁵⁰ has proposed the name *ricinorum* for the present species and makes it the type of the new genus *Gymnocarcelia*, but without indicating any characters except "quite bare eyes." Without a fuller study than has yet been made of the American forms related to *Sturmia*, it is difficult to estimate the value of some of the characters, but I should call this species *Sturmia ricinorum* Townsend.

Tachina panaetius WALKER, List, p. 767. Coquillett (p. 119) placed this as a synonym of *mella* Walker in the genus *Tachina* of authors. The type is a female from Nova Scotia, and Townsend's *Tachinomyia robusta* is a synonym, which is the next species in Coquillett's Revision. I take *Tachinomyia panaetius* Walker as the valid name for the species, which includes as synonyms Walker's *Tachina pansa*, *T. violenta*, and *T. irrequieta*. Major Austen had placed the four Walker species together as one in the British Museum a long time ago, but had not published his conclusion.

Tachina pansa WALKER, List, p. 787. Coquillett (p. 119) placed this with the preceding under *mella* Walker. The type is a male of *panaetius*.

Tachina mella WALKER, List, p. 767. Coquillett (p. 119) placed this in *Tachina* in the current sense. I did not find the type, the only *mella* that I discovered being one named by Townsend, agreeing with Coquillett's interpretation. There is little doubt that Coquillett had the right species, and no serious question has arisen on the point. The species is a very common northern one, and I think identical with *Exorista larvarum* Linnaeus of Europe, commonly referred to *Tachina* (see note under *Tachina dydas*).

Tachina hybreas WALKER, List, p. 785. Coquillett (p. 119) could not identify the species, but placed it as probably a *Tachina*.

⁴⁸ Can. Dept. Agr. Bull. 3, Tech. Ser., p. 43, 1922.

⁴⁹ Can. Ent., vol. 59, pp. 12, 13, 1927.

⁵⁰ Proc. U. S. Nat. Mus., vol. 56, p. 582, 1919.

Major Austen⁵¹ stated that the type is headless and unrecognizable, perhaps a *Ceromasia*. My notes on it may be of little use, but I quote them:

Female from Martins Falls, Canada. A robust specimen now headless and with several legs gone as well as most of the bristles. Black with yellowish apex of scutellum. Postscutellum well developed. Calypters clear pale yellow. Dorsocentral 4; sternopleural 2, 1, in almost equilateral triangle; scutellum with long and strong apicals like laterals. Abdomen with discals, gray pollinose on whole dorsal surface, but the hind edges of the segments subshining in some lights. Claws small. Third vein with five stout setules; apical cross vein straight, bend oblique.

Tachina helymus WALKER, List, p. 795. Coquillett (p. 126) placed the species in his genus *Metachaeta*. His identification of the species is correct. The type is a female from Maine. Recent authors have combined *Metachaeta* Coquillett and *Phorichaeta* Rondani in the genus *Wagneria* Robineau-Desvoidy, of which the type species is *Musca carbonaria* Panzer. From the key and descriptions given by Stein⁵² and from a single palaeartic specimen in the National Museum, I believe *helymus* is identical with *carbonaria* Panzer and should, therefore, call the species *Wagneria carbonaria* Panzer.

Tachina trixoides WALKER, List, p. 760. Coquillett (p. 138) placed the species as a synonym of *Microphthalma disjuncta* Wiedemann. This was correct, according to information that I received from Major Austen while preparing my revision of the genus *Microphthalma*.⁵³ I did not see Walker's type.

Tachina punctifera WALKER, List, p. 728. Coquillett (p. 141) placed this as a synonym of *Peleteria tessellata* Fabricius, a European species not now believed to occur in North America, and superseded here by *Peleteria iterans* Walker. I saw the types of both and made *punctifera* a synonym of *iterans* Walker.

Tachina anaxias WALKER, List, p. 726. Coquillett (p. 141) placed this as a synonym of *Peleteria robusta* Wiedemann. Curran⁵⁴ has identified it as a distinct species of the same genus. The type is a female from Nova Scotia, hard to identify in a group where the male genitalia are so important; it certainly shows little difference from the type of *apicalis* Walker, also a female, and from California, not Colombia as published. The latter dates from 1852, and I suspect that *confusa* Curran is a synonym of it.

Tachina apicifera WALKER, List, p. 718. Coquillett (p. 142) erroneously made this a synonym of *Archytas analis* Fabricius. Curran redescribed this species as *Archytas vulgaris*, new species,

⁵¹ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 336, 1907.

⁵² Arch. f. Naturg., vol. 90, p. 123, 1924.

⁵³ Proc. U. S. Nat. Mus., vol. 69, art. 13, p. 4, 1926.

⁵⁴ Trans. Roy. Soc. Canada, 1925, sec. 5, p. 245.

in his revision of the genus⁵⁵; the species that he called *apicifera* is *californiae* Walker. The type of *apicifera* is a male from "North America"; that of *californiae* is a male from California.

***Tachina californiae* WALKER**, *Insecta Saundersiana*, p. 270. Coquillett (p. 142) erroneously placed this as a synonym of *Archytas analis* Fabricius. See note under *apicifera*.

***Tachina atra* WALKER**, *Insecta Saundersiana*, p. 273. Placed by Coquillett (p. 143) as a synonym of *Archytas aterrima* Robineau-Desvoidy. Major Austen⁵⁶ agrees with Coquillett, from the type, with which I agree also. Two other Walker species are synonyms of *aterrima*, but have escaped notice from being described without locality. These are *Tachina metallifera* Walker, List, p. 719; and *Tachina carbonifera* Walker, List, p. 721. Austen thought the two were a single species.⁵⁷ I saw the types of the three.

***Tachina candens* WALKER**, List, p. 720. Placed by Coquillett (p. 143) as a synonym of *Archytas lateralis* Macquart. A female supposed to be from Nova Scotia, but I surmise is neotropical. My notes are as follows:

Female, considerably rubbed; head has been off and glued on, but seems genuine. Has the characters of *Archytas* except that it has, or had, a pair of discals far forward on the second abdominal segment, and still has a single discal on the corresponding part of the third, its mate not developed. Rather large for *Archytas*, the abdomen shining mahogany red or a little darker except fourth segment, which is entirely pollinose above and below. Hairs of face and cheek yellow, abundant; antennae red, third antennal joint black except for two-thirds of the length below, one and one-fourth times the second. The pleurae had yellow hair almost exclusively, and the remaining hairs around edge of dorsum indicate that the mesonotal hairs were yellow. Legs black. Length, 15 mm.

I have been unable to find a specimen in the National Museum agreeing with this description, nor do I know what genus to put it in if the discals exclude it from *Archytas*. At any rate, it should be recognizable hereafter.

***Tachina iterans* WALKER**, p. 727. Coquillett placed this (p. 143) as synonymous with *Archytas lateralis* Macquart. I was able to match the type with a male that I had with me, so took no notes. Curran has the species correctly in his revision of *Peleteria*.⁵⁸ It is properly *Peleteria iterans* Walker. Coquillett was misled by the express statement of Walker, "no bristles on the side of the face," which Austen⁵⁹ says is "precisely the opposite of the fact." A

⁵⁵ Can. Ent., vol. 60, p. 276, 1928.

⁵⁶ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 336, 1907.

⁵⁷ Ibid., pp. 337, 338.

⁵⁸ Trans. Roy. Soc. Canada, 1924, sec. 5, p. 238.

⁵⁹ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 328, 1907.

synonym is *Tachina punctifera* Walker, List, p. 728, as I saw from the type. *Peleteria iterans* takes the place of *Peleteria tessellata* Fabricius in North American literature.

Tachina decisa WALKER, List, p. 715. Coquillett (p. 143) placed this in the genus *Echinomyia*. The species is almost unmistakable, and he undoubtedly had the right one, and I think it belongs to the genus *Jurinella*. The generic reference requires a rather long discussion, which I postpone for another occasion. I saw the type.

Tachina degenera WALKER, List p., 732. Coquillett (p. 144) placed this in his *Echinomyia* (= *Fabriciella* Bezzi of Tothill's revision) as a synonym of *E. algens* Wiedemann. Major Austen,⁶⁰ however, examined the type and placed it in *Ernestia*, finding the eyes to be hairy. I did not see the type and am unable to add further details.

Tachina signifera WALKER, List, p. 708. Coquillett (p. 145) referred the species to the genus *Epalpus* Rondani. I did not see the type, but it is hardly necessary, for of all Walker's species this is the easiest to identify. It would be almost impossible to mistake it within the area where the type was taken (Nova Scotia). As to the proper genus for *signifera*, Townsend in his Peruvian collecting and later has brought to light a world of related forms without palpi. He has reported on his examination of the type of *signifera* in *Revista Ent.*, vol. 1, p. 167, 1931, where he refers the species to his genus *Argentoepalpus*, of which the type species is *Epalpus niveus* Townsend, from the Peruvian Andes. The genus was described in *Insecutor Inscitiae Menstruus*, vol. 6, p. 178, 1918, and the type species in the same journal, vol. 2, p. 136, 1914. I have compared *niveus* and *signifera* and agree with this reference.

Tachina finitima WALKER, List, p. 707. Placed by Coquillett (p. 146) as a synonym of *Bombyliomyia abrupta* Wiedemann. I did not see the type, and it has not been reported upon; it is, however, a very recognizable species, which could hardly be mistaken, so I accept Coquillett's specific determination. Townsend⁶¹ has made *abrupta* (of which I have seen the type) the type of *Bombyliopsis*, new genus. I find, however, that the species is so much like the genotype of *Hystricia* that it may very well be left there, so I call the species *Hystricia abrupta* Wiedemann.

⁶⁰ Ann. Mag. Nat. Hist., ser. 7, vol. 19, p. 335, 1907.

⁶¹ Proc. Biol. Soc. Washington, vol. 28, p. 23, 1915.