

NORTH AMERICAN TWO-WINGED FLIES OF THE GENUS SPATHIMEIGENIA, WITH DESCRIPTIONS OF FIVE NEW SPECIES

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The present paper contains a discussion of the generic characters of the tachinid genus *Spathimeigenia*, keys for separating the species in both sexes, and descriptions of five new species, with notes on the six heretofore known.

I am under obligations to the authorities of the American Museum of Natural History and of the Massachusetts Agricultural College for the privilege of examining types of species not found in the United States National Museum; to Dr. Alfons Dampf, of the Oficina Federal para la Defensa Agricola, Mexico City, Mexico, for permission to retain for the National Museum a series of specimens of the new species *S. mexicana*; and to William Middleton, of the United States Bureau of Entomology, for revising the nomenclature of the sawflies involved.

Genus SPATHIMEIGENIA Townsend

Spathimeigenia TOWNSEND, Proc. Biol. Soc. Washington, vol. 28, p. 19, 1915.—

CURRAN, Can. Ent., vol. 62, p. 246, 1930.

Hylotomomyia TOWNSEND, Insecutor Inscitiae Menstruus, vol. 4, p. 31, 1916.

Townsend established the genus *Spathimeigenia* in 1915 by assigning as type the species which Coquillett had erroneously identified as *Tachina demylus* Walker (*Admontia demylus* Walker of Coquillett¹). Believing that Coquillett's species was not the true *demylus*, Townsend named it *spinigera*, designating one of the Coquillett specimens as type. On examining the type of *Tachina demylus* in the British Museum, I found it to be a *Cryptomeigenia*, leaving the name *spinigera* valid for Coquillett's species. Townsend gave no description of the genus and species.

¹ Revision of the Tachinidae of America north of Mexico, U. S. Dept. Agr., Div. Ent., Tech. Ser. No. 7, p. 54, 1897.

The type species of the genus *Hylotomomyia* is *Admontia hylotomae* Coquillett, by original designation. The genus was said to differ from *Spathimeigenia* in having no spines on the fourth segment of the ventral abdominal keel of the female. This is evidently of merely specific importance, and Curran combined the two genera in his revision cited above.

The genus is one of the easiest to recognize, from the presence on the lower part of the parafacial of an area bearing distinct hairs. The female has the abdomen keeled below and bearing stubby spines on the ventral margin of the keel, at least on the third segment. This female character is shared with *Lydella* and several other genera, which all have bare parafacials.

The genotype has the following additional characters among others: Hypopleural bristles and postscutellum present; one vertical bristle in male and female; ocellars proclinate; two upper frontals reclinate, the second pair largest; frontals extending to tip of second antennal joint; front slightly prominent at antennae, the face distinctly receding; facial ridges with several bristles above vibrissae, the latter at oral margin, which is considerably above the lower edge of the head behind; palpi and proboscis of ordinary form, the latter short; antennae extending about three-fourths of the way to the vibrissae, third joint about twice the second, at tip projecting slightly forward (not nearly so much as in *Acemyia*); arista bare. Acrostichal bristles, 3, 3 (one pair just before suture); dorsocentral, 3, 3; presutural, 2 (inner small); supraalar, 3; intraalar, 3; sternopleural, 2, 1; pteropleural small; infrascumal setules absent; scutellum with three lateral pairs and one small discal, the apicals small and upturned. First abdominal segment with a pair of median marginals, second to fourth with discals and marginals, the discals much better developed in male than female, the former having three irregular pairs of different sizes, the latter with usually one small pair. Apical cell ending a little before tip of wing, bend of fourth vein rounded and oblique; hind cross vein in normal position, joining fourth vein at three-fifths of the distance between small and bend.

The genus has a considerable degree of economic importance, and has been reared without exception from sawflies; many rearings are cited under the respective species. Several of the species, however, have not yet been reared.

Eleven species are now known. I have seen the types of all, and with the exception of two they were before me in the preparation of the present paper.

KEYS TO SPECIES OF SPATHIMEIGENIA

MALES

1. Scutellum without the usual pair of slender, upturned, apical bristles (British Columbia)----- *buckelli* Curran.
Scutellum with slender, upturned apicals----- 2.
2. Parafacial between eye and suture at least twice as wide as third antennal joint----- 3.
Parafacial decidedly less than twice as wide as third antennal joint----- 4.
3. Claws and pulvilli short (Kansas)----- *bridwelli*, new species.
Claws and pulvilli long (Massachusetts, Indiana, Florida).
hylotomae Coquillett.
4. Claws and pulvilli short; apical cross vein not very oblique (Texas)----- *texensis*, new species.
Claws and pulvilli long; apical cross vein quite oblique----- 5.
5. Parafacial narrower than the widest part of third antennal joint (Quebec)----- *aurifrons* Curran.
Parafacial wider than third antennal joint----- 6.
6. Calypters pale yellow or ivory white, opaque (Michigan).
erecta, new species.
Calypters dark and translucent in middle, hind edge yellow----- 7.
7. Abdomen black to tip; palpi a little longer than third antennal joint (Mexico)----- *obscura*, new species.
Fourth abdominal segment red or reddish at tip; palpi a little shorter than third antennal joint----- 8.
8. Legs black; facial ridges bristly about halfway from vibrissae; parafacial hairs numerous and rather long (Michoacan, Mexico)----- *mexicana*, new species.
Legs usually red or reddish; facial ridges less bristly; hairs of parafacials less numerous (Northeastern United States; Texas)----- *spinigera* Townsend.

FEMALES

1. Front with yellow or golden pollen----- 2.
Front with cinereous or silvery pollen----- 4.
2. Fourth abdominal segment wholly black----- *aurifrons* Curran.
Fourth abdominal segment red at apex----- 3.
3. Legs usually red or reddish; posterior orbit with whitish or silvery pollen----- *spinigera* Townsend.
Legs black; posterior orbit with golden pollen----- *mexicana*, new species.
4. Intermediate abdominal segments with discal bristles, small but distinct----- *hylotomae* Coquillett.
Abdomen without discals----- 5.
5. Tip of third antennal joint distinctly produced upward (Massachusetts)----- *nigriventris* Smith.
Tip of antennal joint not so produced (Mexico)----- *albopicta* Bigot.

SPATHIMEIGENIA SPINIGERA Townsend

- Spathimeigenia spinigera* TOWNSEND, Proc. Biol. Soc. Washington, vol. 18, p. 19, 1915.—GREENE, Proc. Ent. Soc. Washington, vol. 23, p. 42, 1921; Proc. U. S. Nat. Mus., vol. 60, p. 11, fig. 90, 1922.—MIDDLETON, Journ. Agr. Res., vol. 20, p. 757, 1921.—JOHNSON, List of the Diptera of New England, p. 186, 1925.—CURRAN, Can. Ent., vol. 62, p. 246, 1930.
- Admontia demylus* WALKER (misidentified) COQUILLET, Revision of the Tachinidae of America north of Mexico, pp. 9, 53, 1897.—JOHNSON, in Catalogue of the insects of New Jersey, p. 668, 1899; 1910, p. 776.—TOWNSEND, Proc. Ent. Soc. Washington, vol. 14, p. 165, 1912; Journ. New York Ent. Soc., vol. 21, p. 304, 1913.
- Hyperecteina demylus* WALKER (misidentified) SMITH, Proc. Ent. Soc. Washington, vol. 14, p. 126, 1912.—JOHNSON, Diptera of Florida, p. 70, 1913.
- Masicera demylus* WALKER (misidentified) JOHNSON, Diptera of Florida, p. 332, 1895.

The description has been given in part under the generic characters. The legs are usually red, but tend toward brown in some specimens and are black in a few. The pollen of the parafrontals, parafacials, cheeks, and posterior orbit is golden. In the male the abdomen is considerably flattened in good specimens and is more or less reddish at the sides, more so ventrally. The grayish pollen extends from the base beyond the middle on segments 2 and 3, and almost to tip in segment 4, which is red apically. The female has the apical third of the fourth abdominal segment and all the genital structures red; the keel has a strong double row of short, stout spines, beginning on the second segment and continuing well on the fourth.

The nearest related form is *mexicana*, under which I have discussed the rather slight differences.

The National Museum has 10 males and 12 females of *spinigera*, with the following data (the first two rearings were published by Coquillett, 1897, p. 9, and those by Rohwer, Middleton, and Knull by Greene, 1921, p. 42):

One male and one female reared from *Neodiprion abbottii* Leach, collected in Virginia near Washington, D. C., by E. A. Schwarz; the female of these is the one bearing Coquillett's label "*Admontia demylus* Wlk.," which was designated by Townsend as the type of *spinigera*.

One male reared from *Neodiprion lecontei* Fitch, taken in Virginia near Washington, D. C., by Theodor Pergande.

Three males and one female reared from the same host and one male reared from *Neodiprion* sp., all collected at Reading, Pa., by S. A. Rohwer.

One female from the same host, collected at Linglestown, Pa., by William Middleton.

One male and one female reared from same host, taken at Falls Church, Va., by S. A. Rohwer (Hopkins No. 10175, referred to *hylotomae* by Greene, cited above).

One male and four females reared from *Neodiprion americanus* Leach, taken at Falls Church, Va., by William Middleton.

One female reared from *Neodiprion affinis* Rohwer, taken at same place by J. N. Knull.

One female reared from *Neodiprion* sp., taken at same place by S. A. Rohwer.

One female pinned with sawfly cocoon, locality unknown.

Two males, Westfield, Pa., labeled "ex sawfly."

One female reared by J. D. Mitchell at Victoria, Tex., but the notes have been lost. It is a poor, shriveled specimen, but seems to belong here.

For a supposed specimen from California, see under *S. aurifrons*.

Johnson reported the species from Florida. Nearly all the records are within the area comprising New England, New York, New Jersey, Pennsylvania, and the vicinity of Washington, D. C.

Type.—Female, U.S.N.M. No. 19133.

SPATHIMEIGENIA MEXICANA, new species

Besides having all the characters mentioned as pertaining to the genotype, the following may be mentioned:

Male.—Front rather narrow, at narrowest about 0.21 of head width (three measured: 0.2, 0.22, 0.22); pollen deep golden on parafrontals, parafacials, and posterior orbits; face with yellow pollen; facial ridges bristly about halfway up; antennae black; palpi yellow. Thorax with gray pollen, on which are two pairs of inconspicuous stripes, ending considerably before the suture. Abdomen elongate; irregular discals of several sizes on last three segments, hairs large, sparse and erect on last two; pollen gray on last three segments, the apical third or thereabouts brown; generally in an oblique side view it will appear light on one side of the middle line, dark on the other, and these shades will reverse themselves in a different view. Tip of fourth joint red, sometimes a little red on sides of second, rarely on third. Legs black. Anterior tibia with a single outer posterior bristle; middle tibia with one on outer front side, one flexor, and two on outer hind side. Hind tibia with a scattering row of bristles of unequal size on outer hind side. Wings distinctly infuscated toward base, third vein with two or three hairs.

Female.—Front narrowest at extreme vertex, where it measures about 0.29 of head width (three measured: 0.27, 0.3, 0.3), thence very gradually widening, and quite prominent at antennae; facial ridges

with smaller bristles than in male, the uppermost not so high; hairy patch of parafacial reaching nearly to lowest frontals. Shining apical portion of second, third, and fourth abdominal segments narrower, the pollinose portion more uniform in color but still showing the median division in oblique light; fourth segment fully half red. One pair of erect discals on second, third, and fourth segments; keel red on third segment; spines of keel conspicuous on second, third, and fourth segments, but those of second are more slender than the others and somewhat longer.

Length of male, 7–9.5 mm.; of female, 6–7.5 mm.

Described from 19 males and 12 females, all reared from *Neodiprion vallicola* Rohwer, at Erongaricaro, Michoacan, Mexico, and sent to the National Museum by Dr. Alfons Dampf, of the Oficina para la Defensa Agricola of the Mexican Department of Agriculture. Eleven males and six females are returned to Doctor Dampf, the remainder retained in the National Museum. The host sawfly was also sent for determination.

The species is closely related to *spinigera*, but differs in the characters given in the keys, to which may be added that the ground color of the parafacials and cheeks is mostly yellow in the latter, quite black in *mexicana*. The males of *spinigera* have light yellow or grayish pollen on the posterior orbits.

Type.—Male, U.S.N.M. No. 43354.

SPATHIMEIGENIA OBSCURA, new species

This is a large Mexican species similar to *mexicana*, but differs as indicated in the key. It has a striking character, which may be an abnormality in the single specimen—there is a long bristle on each parafacial close to the suture, turned in across the face and appearing without careful scrutiny as one of the bristles of the ridge, but larger than the others. These bristles arise outside the suture but close to it, as stated, and are unlike anything I have ever seen in flies of this relationship.

One male, Mexico, without precise locality, donated by H. J. Reinhard.

Type.—Male, U.S.N.M. No. 43355.

SPATHIMEIGENIA AURIFRONS Curran

Spathimeigenia aurifrons CURRAN, Can. Ent., vol. 62, p. 246, 1930.

Described from eight specimens of both sexes, all reared from *Neodiprion* sp. at Mont Laurier, Quebec, by M. B. Dunn. Type in the Canadian National Collection, Ottawa; paratypes in American Museum of Natural History, New York. The latter institution has donated a female and lent a male, paratypes, to the National Museum.

With these for comparison I have identified three additional specimens in our collection: One male, reared along with several specimens of *spinigera* from *Neodiprion lecontei* Fitch taken at Reading, Pa., by S. A. Rohwer; one male, Redlands, Calif., bred from *Neodiprion edwardsii* Norton, collected by H. E. Burke; and one female from Snow Creek Crossing, Yosemite National Park, Calif., reared probably from a *Neodiprion* by J. M. Miller. The Redlands specimen was referred to *spinigera*, and the Yosemite one to *hylotomae*, by Greene.²

Curran has given a full description of both sexes, but he attached too much importance to the yellow pollen of the front. The fact that the material from Reading, Pa., yielded both this and *spinigera* looks suspicious, but there seem to be two fairly tangible differences when all the material of the two species is examined—the male of *aurifrons* has narrower parafacials, and both sexes have the fourth abdominal segment wholly black.

Paratype.—Female, U.S.N.M. No. 43359.

SPATHIMEIGENIA HYLOTOMÆ Coquillett

Admontia hylotomae COQUILLET, Can. Ent., vol. 30, p. 233, 1898.—JOHNSON, Catalogue of the insects of New Jersey, p. 776, 1909.—TOWNSEND, Journ. New York Ent. Soc., vol. 21, p. 304, 1912.—ESSIG, Insects of western North America, p. 579, 1926.

Hyperectoina hylotomae SMITH, Proc. Ent. Soc. Washington, vol. 14, p. 123, 1912.

Hylotomomyia hylotomae TOWNSEND, Insector Inscitiae Menstruus, vol. 4, p. 31, 1916.—GREENE, Proc. Ent. Soc. Washington, vol. 23, p. 42, 1921; Proc. U. S. Nat. Mus., vol. 60, art. 10, p. 11, fig. 57, 1922.—JOHNSON, List of the Diptera of New England, p. 188, 1925.

Spathimeigenia hylotomae CURRAN, Can. Ent., vol. 62, p. 246, 1930.

Male.—Front wider than in *spinigera* (the best two measuring 0.26 and 0.28 of head width), pollen of parafrontals, parafacials, cheek, and posterior orbit subsilvery; eye more diagonal, so that the lower part of the posterior orbit is wider; tip of third antennal joint usually not at all protruding forward; chaetotaxy as in *spinigera*, except that there is only a single large pair of discals on each of the last three abdominal segments; calypters almost pure white; abdomen mostly shining black, with silvery basal bands on last three segments, which in certain lights extend thinly over half or more of the length. Fourth segment wholly black.

Female.—Front about one-third of head width (three measured: 0.32, 0.32, and 0.33); discal bristles small but distinct, one pair to the segment; abdomen with narrower basal silvery bands than in male; keel usually not very prominent, the spines confined to the third segment, piercer as in *spinigera* but somewhat smaller.

² Proc. Ent. Soc. Washington, vol. 23, p. 43, 1921.

Redescribed from 8 males and 10 females in the National Museum collection. The type series consists of 3 males and 4 females, Woods Hole, Mass., bred from *Hylotoma humeralis* Beauvois by H. G. Dyar. Three additional males were bred from *Arge* sp. at East River, Conn., by C. R. Ely; 4 females bred at Falls Church, Va., from *Arge* sp., by Carl Heinrich; 1 female bred at Westerly, R. I., by workers at the Gypsy Moth Laboratory. One female was collected at Miami, Fla., by Townsend; 1 male at La Fayette, Ind., by myself; and 1 male from Massachusetts has no collector label.

Type.—Male, U.S.N.M. No. 4061.

SPATHIMEIGENIA NIGRIVENTRIS Smith

Spathimeigenia nigriventris SMITH, Psyche, vol. 24, p. 139, 1917.—JOHNSON, List of the Diptera of New England, p. 185, 1925.

Described from a single female in the collection of the Massachusetts Agricultural College, presumably from Massachusetts. The type has been generously loaned to the National Museum for my examination. The pollen of the front is cinereous, not yellow. There are absolutely no discal bristles, even minute ones. The fourth abdominal segment is wholly black; the keel is well developed, bearing on the third segment four pairs of blunt spines, and on the fourth segment two pairs, the second segment with about two somewhat longer and less blunt. The apical cross vein is not so oblique as in *spinigera* and the others, sharing this peculiarity with *texensis*. Infrascapular setules absent. For other characters, see original description.

SPATHIMEIGENIA ERECTA, new species

Male.—Front narrow (0.21 and 0.23 of head width in the two specimens); parafrontals light yellow pollinose, the parafacials, cheeks, and posterior orbits subsilvery; antennae black, third joint twice the second, slightly upturned and pointed at tip; last three abdominal segments with a one or two pairs of discals and several much smaller erect large hairs or very small bristles; a longitudinal area between the discals is changeable in color from the median line, one half looking dark when the other is light, and reversing when viewed at a different angle. Fourth segment very obscurely reddish at tip. Sides of abdomen reddish in ground color toward base. Otherwise as in *spinigera*.

Length, 7.4 mm.

Female.—Unknown.

Described from two males, reared at Kalamazoo, Mich., from *Neodiprion* sp. by R. A. Todd. Date of emergence, August 27, 1903.

Type.—Male, U.S.N.M. No. 43356.

SPATHIMEIGENIA BRIDWELLI, new species

Male.—Front narrowest at extreme vertex, where it is 0.35 of the head width by micrometer measurement—the widest of any of the species. The parafrontals and parafacials are also wider than in the others, the former being but little narrower on each side than the frontal stripe, the latter as wide as three-fourths the length of the third antennal joint; cheek wide, three-sevenths of the eye height. The pollen of the parafrontals, parafacials, cheeks, and posterior orbit is subsilvery, with no yellow tinge. Antennae black, rather short, third joint barely twice the second. Facial ridges with four or five small bristles, extending about one-fourth of the way to base of antennae. The parafacial has the usual group of black hairs, which are rather numerous and almost cover the lower two-thirds. Thoracic chaetotaxy as in genotype, except that there is no inner presutural. Abdomen shining black with very narrow silvery basal bands on segments 2, 3, and 4; on the sides of the last two a very delicate tomentum forms a grayish subopaque patch on each, rounded above and covering all but the anterior and posterior edges (this is a very characteristic feature, similar to the “sexual patch” that occurs in other male tachinids, and should readily identify the species).

Legs black; claws and pulvilli short. Front tibia with two bristles on outer hind side, middle tibia with two on outer front.

Wings slightly darkened toward base; calypters white.

Length, 7 mm.

One male, Baldwin, Kans., June, collected by J. C. Bridwell.

Type.—Male, U.S.N.M. No. 43357.

SPATHIMEIGENIA TEXENSIS, new species

Male.—Front rather wide, at vertex measuring in the single specimen 0.32 of head width, continuing at same width three-fourths of the way to antennae. Pollen subsilvery on parafrontals, parafacials, cheeks, and posterior orbits. Facial ridges bristly two-fifths of the way to base of antennae. Parafacial narrower than third antennal joint, with rather sparse dark hairs from the middle downward. Antennae black, second joint a little shorter than in the other species, hardly one-half the third, which is rounded at apex. Cheek one-fifth eye height. Thorax with subsilvery pollen, not so grayish as in other species; chaetotaxy as in genotype. Abdomen badly damaged, but the last three segments appear to be shining on posterior half, discals if present must have been minute. Legs black; claws and pulvilli small. Wings rather evenly pale brownish, apical cross

vein less oblique than in any of the other species except *bridwelli*, the bend might almost be called a rounded angle. Calypters white.

Length, about 8 mm.

One male, Brownsville, Tex., collected by C. H. T. Townsend.

Type.—Male, U.S.N.M. No. 43358.

SPATHIMEIGENIA BUCKELLI Curran

Spathimeigenia buckelli CURRAN, Can. Ent., vol. 58, p. 216, 1926.

Described from a single male, collected at Osoyoos, British Columbia, by E. R. Buckell. The type is in the Canadian National Collection. It was in my possession several years ago for determination, and was labeled by me "*Hylotomomyia*, n. sp." I have not seen it since and have no notes on its characters. Curran has given a complete description, which is readily accessible. The absence of the small apical scutellars, with the well-developed outer verticals, silvery head pollen, and wide parafacials will make it easily recognizable. It is not represented in the National Museum, and there is no record of any specimens except the type.

SPATHIMEIGENIA ALBOPICTA Bigot

Chaetolyga albopicta BIGOT, Ann. Soc. Ent. France, 1888, p. 258.

Gymnostylia albopicta BRAUER, Sitz. Kais. Akad., vol. 106, p. 351, 1897.

Briefly described by Bigot from two females, locality "Mexico." Brauer saw the types and referred them to *Gymnostylia*. I saw the types in Mr. Collin's collection at Newmarket, comparing them with an authentic specimen of *hylotomae* that I had with me. There is no question about the generic reference; my notes state that the species is "a *Spathimeigenia*, having fine hairs on the lower part of parafacial, no infrascumal setules, piercer in female, etc. Differs from *hylotomae* in having cheek one-fifth of eye height, no discals on second, third, and fourth abdominal segments. Very similar in other characters." I know of no other specimens in collections.