

# REVIEW OF THE AMERICAN XYLOTINE SYRPHID- FLIES

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## INTRODUCTION

A revised synopsis of all of the American species of the tribe Xylotini is here presented. It is based primarily upon the extensive collection in the United States National Museum and studies made upon the type material of Syrphidae in the British Museum (Natural History) and the Museum of Comparative Zoölogy, Cambridge, Massachusetts, further supplemented by the loan of material from various sources.

The writer wishes to cordially thank the following gentlemen: Maj. E. E. Austen for permission to examine the collection of Diptera in the British Museum in which the types of the species described by Walker, Bigot, and Williston (the *Biologia Centralia Americana Syrphidae*) are located, for the free use of his manuscript notes pinned in the collection with the specimens and also for the loan of undescribed material; Samuel Henshaw and Nathan Banks for the facilities they afforded the writer while examining the Osten Sacken-Loew collection in the Museum of Comparative Zoölogy, Cambridge, Mass.; Prof. J. Herve-Bazin, Prof. J. S. Hine and C. W. Johnson for the loan of material; and Dr. E. A. Schwarz and Dr. J. M. Aldrich for kindly criticism and suggestions.

Citations relating to synonymy and new species are given only where they are subsequent to the Aldrich (*North American Diptera*, 1905) and the Kertész (*Catalogus Dipteriorum*, vol. 7, 1910) catalogues. References are several times made to "The Genitalia of Male Syrphidae" by C. L. Metcalf<sup>1</sup> and papers illustrating pupae of various species of Syrphidae by C. T. Greene.<sup>2</sup> Locality records are so numerous for Syrphidae, that in order to reduce the space required for them, they have been listed by state only, except in the case of new or little known species.

<sup>1</sup> *Ann. Ent. Soc. Amer.*, vol. 14, p. 169, 1921.

<sup>2</sup> *Proc. Ent. Soc. Wash.*, 1920-1923.

The Xylotine tribe of Syrphidae is characterized by a dorsal arista on a usually suborbicular third antennal joint; face more or less flat or raised to a median keel, in profile ranging from straight to concave; epistoma truncated; face bare except for sparse hairs along eye margins; marginal cell open; discal crossvein joining discal cell at or beyond its middle, rarely before; hind femur usually enlarged, frequently greatly swollen, and spinose along lower surface; body without black and yellow wasplike markings; males with protuberances on hind legs, which may occur on metasternum, trochanters, femora, or tibia, very rarely on coxae; males with only four visible abdominal segments.

The name Xylotini and the definition of the tribe has been used in rather a broad sense in order to include *Teuchocnemis*, *Pterallastes*, *Tropidia*, *Syritta*, *Xylota*, *Brachypalpus*, *Calliprobola*, and *Pocota*. Four additional genera are also recognized and included in the North American fauna: *Xylotomima*, new genus (*Xylota*, in part); *Xylotodes*, new genus (*Brachypalpus*, in part); *Hadromyia* Williston (*Pocota*, in part); *Planes* Rondani (*Syritta*, in part, tropical).

The South American genera consist of *Tropidia* (*Ortholophus* Bigot), *Acrochordonodes*, *Stilbosoma*, *Planes*, *Sterphus*, *Crepidomyia* (new genus), *Philippimyia* (new genus), *Tatuomyia* (new genus), and *Eriophora* Philippi.

Because of the great difference between the faunas of South America and the rest of America, including the West Indies, the faunas of the two regions have been treated separately. It is of interest to note that in America the genera *Xylota* and *Xylotomima* (*Xylota*, in part), as here understood, occur only in the Nearctic region (several Mexican species occur at high altitudes) while other genera *Planes*, *Crepidomyia*, *Sterphus*, presumably take their place in tropical America.

#### NORTH AMERICAN AND WEST INDIAN XYLOTINI

The four additional genera, noted above, *Planes* Rondani (tropical), *Xylotomima*, new genus (*Xylota*, in part), *Xylotodes*, new genus (*Brachypalpus*, in part), and *Hadromyia* Williston (*Pocota*, in part) are recognized and included in the North American fauna on the following grounds: *Planes* was made a synonym of *Syritta* by Williston; but the type species and its congeners (all tropical) have been assigned to *Xylota* and *Syritta*. It proves to be intermediate between *Xylota* and *Syritta* but is a well-defined group.

The characters here used to define the different groups of Xylotini bring about the division of *Xylota* and *Brachypalpus* into two genera each, *Xylota* and *Xylotomima*, *Brachypalpus* and *Xylotodes*, respectively. These four groups are fully equivalent to the other

genera in the tribe. The change in generic concept is based on a character found on the metasternum. The tribe Xylotini may be divided into six genera according to whether the metasternum bears pile or is faintly pubescent or bare. *Xylotimima* and *Xylotodes* have the metasternum pilose; *Xylota* and *Brachypalpus* have it pubescent or bare. Supplementary characters are given in the generic descriptions. It seems unfortunate to divide such well-known genera as *Xylota* and *Brachypalpus* but in view of the method of treatment for the Xylotini as given here, there would be only one other alternative. This would be to make *Syritta*, *Planes*, *Brachypalpus*, and *Calliprobola*, as well as *Xylotomima* and *Xylotodes*, subgenera of *Xylota*. In either case there would be the same number of groups; and seemingly the plan adopted is the better of the two.

*Hadromyia* Williston was established for an American species, *grandis* Williston, but was subsequently made a synonym by Williston of the European genus *Pocota*. *Pocota bombiformis* Hunter was described at a later date. The latter is congeneric with *Pocota apiformis* Schrank (genotype of *Pocota*). In both species the apical cross-vein joins the third longitudinal vein at the very edge of the wing; the head is small and narrower than the width of the thorax. *Hadromyia grandis* differs noticeably in the wing venation and the head is somewhat broader than the anterior of the thorax; furthermore the metasternum is normal in *Hadromyia*, but greatly reduced in *Pocota apiformis* and *bomboides*. *Pocota* (*sensu stricto*) appears to be more closely allied to the Criorrhini than to the Xylotini.

Observations on certain Helophilini (Eristalinae) which were described under *Pterallastes* are given in the discussion of that genus.

The tribe Xylotini is one of admitted difficulty. Confusion, in some cases of a very great degree, exists among the majority of the species, particularly in *Xylota* and *Xylotomima*. Thirty-two species of these two genera, five of which are new, are here definitely recognized. Forty-seven names have been previously applied to North American material, of which types and authentic specimens of twenty-seven species have been examined. Of the remainder nine are synonyms and nine Nearctic species have been transferred to other genera.

The examination of Walker's and Bigot's types produced several surprising results. A number of well established names in modern literature will have to give way to their names. The failure of the attempts of Dipterists to unravel the species proposed by them prove how untrustworthy are the generic locations and descriptions of their species.

The chief, confusion, aside from the misunderstanding of the Walker and Bigot types, has come about through the use of color

markings for specific characterization, particularly the yellow abdominal spots in certain species. These have proved very variable, especially in the female, where they may be completely obscured by the bluish-black coloration. The following remarks pertain to the most involved tangle that has arisen in this study.

In Williston's "Synopsis of North American Syrphidae" he described *elongata* as a new species and recorded two positive specimens from New Hampshire and Pennsylvania. Later Williston<sup>3</sup> placed *elongata* as a synonym of *angustiventris* Loew. These two specimens, now in the National Collection, prove to be two species. The New Hampshire one is a female of *angustiventris* and is most probably the specimen upon which Williston based the synonymy. At this time he evidently redetermined the Pennsylvania specimen as *anthreas*, for this specimen now stands in the collection with the label "*Xylota anthreas* Walk." in Williston's handwriting. (This specimen and others like it are treated here under the name *ejuncida*, variety *elongata*. See *Xylota ejuncida* two paragraphs below.) Subsequent writers, however, have not accepted Williston's synonymy and have continued to recognize *elongata* (=female *angustiventris*) as a valid species. Metcalf in his "Syrphidae of Ohio" separates "*elongata*" from *angustiventris* on the ground that it lacks the yellow spots which are present in *angustiventris*. But, as Williston writes and as the material at hand shows, only the male *angustiventris* has yellow spots, whereas the female has the abdomen entirely dark; furthermore in Metcalf's records he has only males for *angustiventris* and females for *elongata*. The large third antennal joint which Metcalf notes for "*elongata*" is a striking characteristic of both sexes of *angustiventris*.

The real *Xylota anthreas* Walker, incorrectly described from a single male, proves to be the same species that Coquillett later described as *Xylota fascialis*. The type specimen of *anthreas* is somewhat discolored but the yellow face and yellow abdominal markings (which typify the type of *fascialis*) are easily discernible. Walker, however, makes no mention of the partly yellow face and states that the sides of the abdomen are "adorned with large steel blue spots." This mischaracterization has proved very misleading; while at the same time Williston's conception of *anthreas* has given rise to the so-called *anthreas* of subsequent publications. It may be that Walker had some other species before him at the time he described *anthreas*, but this hardly seems to be the case as no North American species fits his description.

*Xylota anthreas*, in Williston's sense, as already indicated, proves to be a different species. Williston determined a female *Xylota* as

<sup>3</sup> Ent. News, vol. 3, p. 146, 1892.

this species, and based his description of *anthreas* in his "Synopsis of Syrphidæ" upon this specimen. Walker wrote that the arista of *anthreas* was black; Williston stated that the arista of his specimen was yellow at the base. The yellow base of the arista has been taken as the chief point of diagnosis for *anthreas* in subsequent keys of the species of this genus. A certain specimen of the Williston collection bearing the locality "White Mountains, Jackson, N. H." (Williston gives only "New Hampshire" in his Synopsis) and standing under the species *anthreas*, is in all probability, the same as that upon which Williston based his description. But, in this specimen, the arista is not yellow at base but dark brown along its entire length. Finally, it proves to be conspecific with the "Pennsylvanian" specimen, which Williston described under *elongata* and subsequently re-determined as *anthreas*. Williston's *anthreas* then becomes *ejuncida elongata* Williston.

In *Xylota ejuncida* Say, the yellow abdominal markings appear to be very variable, especially in the female, at times becoming entirely obscured by a bluish-black metallic coloration. As the "Pennsylvanian" specimen of "*elongata*" and Williston's specimen of "*anthreas*" differ from *ejuncida* only in the color of the abdomen—a variable character—it is here proposed to consider them as a variety of *ejuncida*. Since the "Pennsylvanian" specimen was one of the types of *elongata*, the name *elongata* is retained for the varietal name for the dark-bodied form of *ejuncida*.

*Xylota baton* Walker, formerly placed as a synonym of *ejuncida* Say, proves to be *Xylota fraudulosa* Loew, over which it has priority.

The status of the species involved in this complication is as follows:

*Xylota ejuncida* SAY, Amer. Entom., vol. 1, pl. 8; compl. Works, vol. 1, p. 15.

A species recognized in this paper.

*Xylota anthreas* WALKER, List III, 1849, p. 556. Synonym, *Xylota fascialis* Coquillett.

*Xylota angustiventris* LOEW, Centuries 6, 58. A recognized species. Female usually determined as *elongata* Williston.

*Xylota subfasciata* LOEW, Centuries, 6, 57. A recognized species. Sometimes determined as *ejuncida* Say.

*Xylota quadrimaculata* LOEW=*ejuncida* Say.

*Xylota annulifera* BIGOT=*ejuncida* Say.

*Xylota elongata* WILLISTON=*angustiventris* Loew and dark-bodied *ejuncida* Say, recorded here as *Xylota ejuncida elongata* Williston.

*Xylota anthreas* WILLISTON (not Walker)=*ejuncida elongata* Williston.

*Xylota elongata* of authors=female *angustiventris* Loew.

*Xylota anthreas* of authors=female *baton* Walker? and *ejuncida* Say.

*Xylota flavifrons* WALKER.

Synonyms: *Xylota communis* Walker and *obscura* Loew.

Williston thought *flavifrons* might be *elongata*=*angustiventris*.

## EXPLANATION OF NEW OR LITTLE USED CHARACTERS OF XYLOTINI

*Metasternum pilose or pubescent.*—This character in the Syrphidae may be of specific, subgeneric, or generic value. The metasternum (posterior antecoxal piece) located between the middle and hind coxae is either faintly pubescent or clothed with pile which approximates the length of the pile on the hind coxae.

*Metasternal sclerite divided.*—In *Tropidia* each metasternal sclerite is divided on its lower portion by a fairly distinct, narrow band of membrane.

*Metasternal sclerites spurred.*—The middle portion of each sclerite is produced into more or less well-defined spur. Occurs in certain males of *Planes*.

*Hind trochanter with spur.*—This character occurs in the males of certain species of *Helophilus*, *Tropidia*, *Xylota*, etc. It is usually spoken of in keys and descriptions as "hind coxa with a spur," which is erroneous, as the coxa is simple in all American forms of Xylotini except in *Aerochordonodes* and *Stilbosoma*.

*Hind tibia toothed.*—The hind tibia at apex on lower side may be produced into a single median tooth (*Planes*) or may be developed into two teeth-like projections, one at each corner (*Tatuomyia*). In other cases the lower apex may have a single tooth on the inner corner (*Crepidomyia*) or may be truncate (*Eriophora*) or there may be a gentle concavity (*Sterphus*).

*Pleurotergite with ridge.*—The pleurotergite is the sclerite which lies between the attachment of the lower squama and the metathoracic spiracle. The ridge is a sharp one extending diagonally from the spiracle upwards and backwards towards the anterior lower corner of the scutellum. Occurs in *Syritta* and certain tropical species of *Planes* and to some extent in some species of *Tropidia*.

*Fifth abdominal segment of female submembranous.*—The females of *Tropidia* appear to have the fifth abdominal segment reduced in size, and much less chitinized than the preceding ones and more or less retracted within the fourth. *Syritta pipiens* also shows this condition to some extent and *Syritta oceanica* has it still more pronounced.

*Head broadly elliptical or triangular.*—The frontal aspect of the head should be viewed.

*Face concave.*—Face taken in profile.

*Lower face.*—That part of the face lying between the lower eye margin and oral margin.

*Arista longer than width of face.*—The width of the face taken is that across its middle.

*Metathoracic spiracle smaller or larger than third antennal joint.*—It may be noted that the two extremes occur in *Xylotomima pigra* (smallest) and *Xylota barbata* (largest).

*Lower face.*—The region between the lower margin of the eye and the lateral mouth margin.

*Apical cross vein.*—That part of the third vein beyond the point of juncture of the posterior cross vein and the fourth vein. It may be in line with the posterior cross vein or it may have a basal angle which throws it out of alignment with the posterior cross vein.

KEY TO THE GENERA OF NORTH AMERICAN XYLOTINI

- A<sup>1</sup>. Sixth vein, beyond anal cell, evanescent some distance from wing margin; stigmatical cross vein fairly distinct; metasternum pilose—**Teuchocnemis**.
- A<sup>2</sup>. Sixth vein attaining wing margin.
- B<sup>0</sup>. Mesonotal tegument ochraceous; stigmatical cross vein present; metasternum bare; length of petiole beyond anal cell a little longer than discal cross vein—**Pterallastes**.
- B<sup>2</sup>. Mesonotal tegument not ochraceous; stigmatical cross vein absent; anal cell petiole shorter than discal cross vein.
- C<sup>1</sup>. Metasternum pilose; hind trochanters of male not spurred (except rarely in *Tropidia*).
- D<sup>1</sup>. Hind femur on outer side with an apical saw-toothed process; each metasternal sclerite divided by a membranous band; fifth tergite of female small, membranized and nearly hidden under fourth tergite; face subcarinate to carinate—**Tropidia**.
- D<sup>2</sup>. Hind femur without saw-tooth process, etc.
- E<sup>1</sup>. Face subcarinate; sternites very narrow; hind femur greatly enlarged; anal furrow usually much shortened; pleurotergite with sharp ridge; ocellar triangle of male unusually long and narrow.
- F<sup>1</sup>. Wings nearly devoid of villi, glassy in appearance; arista shorter than width of face—**Syritta**.
- F<sup>2</sup>. Wings villose, not glassy; arista distinctly longer than width of face (Tropical)—**Planes**.
- E<sup>2</sup>. Face without any semblance of carina; sternites not unusually narrow; anal furrow not shortened; pleurotergite without ridge; ocellar triangle of male normal.
- F<sup>1</sup>. Head broadly elliptical; body pile inconspicuous (*Xylota*, in part, type *Xylota vecors* Osten Sacken)—**Xylotomima**.
- F<sup>2</sup>. Head triangular; pile usually fairly long and rather dense (*Brachypalpus*, in part, type *inarmatus* Hunter)  
**Xylotodes**.
- C<sup>2</sup>. Metasternum faintly pubescent or bare (hind trochanters of male spurred in *Xylotodes* and *Xylota* except in *X. bicolor*).
- D<sup>1</sup>. Not bumble-bee-like; without contrasting yellow and black mesonotal pile.
- E<sup>1</sup>. Abdomen and sometimes the thorax bright brassy aeneous; face largely yellowish—**Calliprobola**.
- E<sup>2</sup>. Abdomen not bright brassy aeneous; face rarely with yellow.
- F<sup>1</sup>. Head triangular; arista much shorter than width of face; metathoracic spiracle distinctly smaller than third antennal joint; hind femur swollen and with obtuse spur apically and ventrally; front of female broad. (*Brachypalpus*, *sensu stricto*)—**Brachypalpus**.

F<sup>2</sup>. Head broadly elliptical; arista as long or longer than width of face; metathoracic spiracle as large or larger than third antennal joint; hind femur without spur and usually slender (type *X. segnis* (Linnaeus))

**Xylota.**

D<sup>2</sup>. "Bumble-bee flies" with dense yellow pile on anterior half and black pile on posterior half of mesonotum.

E<sup>1</sup>. First posterior cell closed some distance before wing margin, a distinct petiole beyond; metasternum fully developed

**Hadromyia.**

E<sup>2</sup>. First posterior cell closed practically at wing margin; metasternal sclerites much narrower than long----**Pocota.**

### Genus TEUCHOCNEMIS Osten Sacken

#### TEUCHOCNEMIS BACUNTIUS Walker

Usually a more robust species than *lituratus*, thorax and abdomen rather heavily marked with reddish brown. A rather rare species found in the early spring. New Jersey, Maryland, Virginia, North Carolina, Georgia, Texas.

*Type.*—In Museum Comparative Zoölogy, Cambridge, Mass.

#### TEUCHOCNEMIS LITURATUS Loew

Differs from *bacuntius* by its entirely bluish-black abdomen. Fairly common throughout northeastern America. Not reported south of Virginia.

*Type.*—In Museum Comparative Zoölogy, Cambridge, Mass.

### Genus PTERALLASTES Loew

Four North American species have been assigned to this genus, but from the present study it is evident that it should be restricted to the original species, *thoracicus* Loew. The other species, *curvipes* Wiedemann (*Polydontomyia*), *perfidiosus* Hunter and *borealis* Cole belong to the tribe Helophilini, subfamily Eristalinae and not to the Xylotinae. Characters which these three non-*Pterallastes* species possess which ally them to Helophilini are: Face pilose, in profile concave below the antennae, raised to an inconspicuous tubercle and thence straight and slightly receding to the epistoma; third vein deeply bent; hind femora greatly thickened, hind tibia arcuate.

*P. perfidiosus* and *borealis* were described from females only. No material is at hand for either species. They may prove to be conspecific with certain species of *Helophilus*, and if *borealis* proves to belong to the genus *Helophilus* the name would have to be changed as *borealis* is preoccupied in that genus.

Other characters which ally *Polydontomyia curvipes* to the Helophilini and which may be shared by *perfidiosus* and *borealis* are: Males broadly dichoptic; front of female unusually broad and ocelli





- D<sup>2</sup>. Fourth tergite shining bronze; wings nearly hyaline; third joint narrower than front across ocelli; 8 mm.-----*mamillata* Loew.
- C<sup>2</sup>. Frontal aspect of face partly yellow.
- D<sup>1</sup>. Hind femur reddish at base; front unusually long and narrow.  
albistylum Macquart.
- D<sup>2</sup>. Hind femur entirely black; front not unusually long and narrow (sometimes 8 mm., usually 10-12)-----*quadrata* (Say).

**TROPIDIA INCANA** Townsend

Described from Fort Collins, Colorado. Specimens at hand: 2 males, 2 females, Florissant, Colorado, June 24, 1907 (S. A. Rohwer).

*Type*.—Location unknown.

**TROPIDIA MONTANA** Hunter

*Type locality*.—Moscow, Idaho. Has been taken subsequently, same locality, April 30–May 17 (J. M. Aldrich).

*Type*.—University of Nebraska.

**TROPIDIA COLORADENSIS** (Bigot)

*Xylota coloradensis* BIGOT, Ann. Soc. Ent. France, ser. 6, vol. 3, 1883, p. 544.

Very closely allied to *T. montana* Hunter. Described from Colorado. Not since recorded.

*Type*.—In British Museum.

**TROPIDIA PYGMAEA**, new species

*Male*.—Unusually small, dark species with yellow abdominal markings. Ocellar triangle black with rather short, sparse pile; frontal triangle and face black with white pollinosity; antennae small, first two joints dark brown, third yellowish brown; arista about length of antenna, brown; face very prominent, with rather gentle slopes, keel not sharp, straight from antennae to oral margin. Thorax entirely shining black, mesonotum with very short, light pile; legs black except extreme apices of femora and bases of tibiae; legs slender hind femur although swollen is less so than any of its congeners; abdomen black, second and third tergites with large yellow markings extending over the sides; hind margin of fourth tergite yellow; wings slightly smoky; squamae white; halteres faintly yellow. Length 4.5 mm.; wing 3.75 mm.

Holotype, male, Soldiers Summit, 7,454 feet, Utah, July 6, (J. M. Aldrich).

*Type*.—Cat. No. 27311, U.S.N.M.

The unusual size, the very short thoracic pile, slender tarsi and abdominal markings easily identify this species.

**TROPIDIA MAMILLATA** Loew

*Type locality*.—Illinois; published records: Nebraska (Hunter, Jones); Kansas (Snow, Hine); North Carolina (Brimley); additional record: Chicago, Illinois, September 7, 1914 (A. Kwiat).

*Type*.—In Museum of Comparative Zoölogy.

**TROPIDIA CALCARATA** Wiliston

*Type locality*.—Galesburg, Michigan (Dimmock); published records: New Jersey (Smith, Johnson); Northern Indiana (R. M. Smith); material at hand: Swansea, South Carolina, on flowers of yellow water lily, August 9, 1911 (F. Knab); Ann Arbor, Michigan, June 26, 1917, on *Crataegus* (E. G. Anderson).

*Type*.—In United States National Museum.

**TROPIDIA ALBISTYLUM** Macquart

*Type locality*.—North America: published records: New Jersey (Smith); Florida (Johnson); flowers of *Cephalanthus*, Lake Forest, Illinois (Needham); District of Columbia, Maryland, Virginia (Banks, Greene, McAtee, Shannon); North Carolina (Metcalf); additional records: Georgia (H. K. Morrison); White Springs, Florida, October 18 (C. H. T. Townsend); Louisiana; Wolf City, Texas, April 12, 1906 (F. C. Bishopp); Durant, Oklahoma, June 2, 1905 (C. R. Jones, F. C. Bishopp).

*Type*.—In Natural History Museum, Paris. (?)

**TROPIDIA QUADRATA** (Say)

*Type locality*.—Pennsylvania. The commonest species of this genus apparently occurring throughout the United States and southern Canada.

*Type*.—Lost.

**Genus SYRITTA** St. Fargeau and Serville**SYRITTA PIPIENS** (Linnaeus)

A cosmopolitan species, widely distributed throughout North America.

*Type*.—Linnaean Society of London (?)

**SYRITTA OCEANICA** Macquart

May be found eventually to occur in southern America.

*Type*.—In Natural History Museum, Paris (?).

AMERICAN SPECIES INCLUDED IN THE KERTESZ CATALOGUE UNDER SYRITTA, WHICH ARE  
HERE REFERRED TO OTHER GENERA

*S. americana* Schiner=*Planes vagans* (Wiedemann)?

*S. mexicana* Bigot=*Planes vagans* (Wiedemann)?

*S. transversa* Walker=*Zonemyia transversa* (Walker).

*S. vagans* (Wiedemann)=*Planes vagans* (Wiedemann).

## Genus PLANES Rondani

*Planes* RONDANI, Archivio per la Zoolog., vol. 3. (sep.) p. 9, 1863. For *Xylo:a vagans* Wiedemann.

*Syrirta* of AUTHORS. Genotype, *Syrirta vagans* (Wiedemann), Aussereur, zweifl. Ins., vol. 2, p. 101. *Planes vagans* (Wiedemann) RONDANI, Archivio per la Zoolog., vol. 3, p. 9, 1863.

*Syrirta americana* SCHINER, Reise de Novara, Diptera, p. 367.—WILLISTON, Trans. Amer. Ent. Soc., vol. 15, p. 285, 1888.

*Syrirta mexicana* BIGOT, Ann. Soc. France, 1883, p. 539.

The species belonging to this group, as far as known, are confined to Tropical America; whereas the species of *Xylota* and *Xylotomima* apparently are entirely of Nearctic distribution. The genus is clearly an intermediate group between *Xylotomima* (*Xylota*, in part) and *Syrirta*.

*Description*.—General appearance similar to that of the Xylotae possessing yellow abdominal markings. Head broadly elliptical; front of female very narrow; ocellar triangle of male very narrow and elongate; ocelli well advanced of the occipital margin; antennae usually rather elongate; arista longer than width of face across middle; face subcarinate, slightly concave in profile; usually yellowish above anterior oral margin and well covered with silvery pollen; eyes very large, lower face, between side oral margin and eyes, narrow; body pile short and inconspicuous; metasternum unusually developed, pilose, the male sometimes with spur-like protuberances, hind margin truncate; hind femur remarkably thickened, keeled and spinose along lower surface; hind tibia at ventral apex produced into a usually long obtuse tooth; abdomen usually elongate and constricted at second and third segments; sternites extremely long and narrow; discal cross vein before or at middle of wing, fairly oblique; wing villosity normal.

The following key includes all the species known to the writer. In several cases one of the sexes is missing and this combined with the sexual dimorphism which occurs in the genus makes it advisable to key the sexes separately.

## KEY TO SPECIES OF PLANES

A<sup>1</sup>. Males.B<sup>1</sup>. Metasternum with a pair of spurs.

C<sup>1</sup>. Second tergite largely yellow; third entirely black.

D<sup>1</sup>. Fourth tergite with dense, appressed, golden yellow pile (Mexico)-----pauvilla (Williston).

D<sup>2</sup>. Fourth tergite with normal whitish pile (Mexico).

willistoni, new species.

C<sup>2</sup>. Second and third tergites each with a pair of yellow spots.

D<sup>1</sup>. Face greenish bronze (Cuba)-----pretiosa (Loew).

D<sup>2</sup>. Face black, anterior oral margin yellowish (Costa Rica).

rondanii, new species.

B<sup>2</sup>. Metasternum without spurs; tergites 2 and 3 with yellow spots.

C<sup>1</sup>. Third tergite longer than the fourth (Costa Rica).

schildi, new species.

C<sup>2</sup>. Third tergite equal to the fourth.

D<sup>1</sup>. Antennal prominence strongly developed; face decidedly retreating (Brazil)-----vagans (Wiedemann).

D<sup>2</sup>. Antennal prominence less developed; face less retreating (Bolivia)-----boliviensis, new species.

A<sup>2</sup>. Females.

B<sup>1</sup>. Front and mid tibiae, except the whitish base, fuscous black (Cuba).

pachymera (Loew).

B<sup>2</sup>. Front and mid tibia whitish to yellow brown.

C<sup>1</sup>. Width of front at vertex equal to length of third antennal joint (Bolivia)-----boliviensis, new species.

C<sup>2</sup>. Width of front at vertex much less than length of third antennal joint.

D<sup>1</sup>. Length of posterior cross vein much longer than distance between tips of second and third veins-----vagans (Wiedemann).

D<sup>2</sup>. Posterior cross vein equal to distance between second and third veins.

E<sup>1</sup>. Length of front two and a half times the length of arista (Costa Rica)-----schildi, new species.

E<sup>2</sup>. Length of front less than twice the length of arista (Bolivia)-----minor, new species.

#### PLANES PACHYMERA (Loew)

*Xylota pachymera* LOEW, Cent. VI, 54.

Only the type, a female, is known. Notes based on type specimen.

Face keeled; front rather narrow, a broad pollinose band below middle; vertex swollen; ocelli well advanced; arista as long as distance between ocelli and antennal base and nearly three times as broad as distance across antennal base; third joint more than twice as long as broad; face pollinose; body pile very short and pale; fore legs short, tarsi shorter than tibia; basitarsus without spines on basal ventral surfaces. Recorded from Cuba.

*Type*.—In Museum of Comparative Zoölogy.

#### PLANES PRETIOSA (Loew)

*Xylota pretiosa* LOEW, Wien. Ent. Monat-schr., vol. 1, p. 39.

Only the male is known (said to be female, Williston). Ocelli well in advance of occipital margin; frontal triangle shining green, bordered with pollen and clothed with very fine pile; face pollinose except for greenish jowls; metasternum pilose and with a pair of spur-like processes. Recorded from Cuba.

*Type*.—Museum of Comparative Zoölogy.

#### PLANES PAUXILLA (Williston)

*Xylota pauxilla* WILLISTON, Biol. Cent. Amer., D'ptera, vol. 3, p. 71, 1903.

Notes based on the type. Face rather indistinctly carinate; antenna rather long; metasternum of male with a pair of spurs; abdo-

men moderately constricted basally, the apex with dense, appressed golden yellow pile. Recorded from Mexico.

*Type*.—In British Museum.

**PLANES WILLISTONI, new species**

*Male*.—Antenna blackish, reaching nearly to oral margin; third joint fairly broad; arista yellow, slightly longer than antenna; lower part of face in front yellowish; legs black, the bases and apices of tibiae and first three tarsal joints of all tarsi yellow, hind basitarsus brownish; hind femur greatly swollen; hind tibia arcuate; metasternum pilose and with pair of rudimentary spurs; abdomen elongate, constricted at second and base of third segments; second tergite largely yellow; apex of abdomen with normal pale pile. Length, 12 mm.

*Type locality*.—Sierra Madre, Chih., Mexico, about 7,300 feet altitude, flowers of *Rhus glabra* (C. H. T. Townsend).

*Type*.—Cat. No. 28675, U.S.N.M.

Differs from *pauzilla* chiefly in the broader third antennal joint and lack of dense yellow pile on fourth tergite.

**PLANES RONDANII, new species**

*Male*.—A much larger species than *vagans*. Head large, broader than thorax; ocellar triangle more than three times as broad as its greatest width, ocelli midway; antennae black, reaching to oral margin; arista brownish; face black except yellowish above anterior oral margin; femora black; tibia yellowish basally, brownish beyond; two basal joints of fore and mid tarsi yellowish, remaining joints and hind tarsi brown; metasternum with obtuse spurs; abdomen elongate, constricted medianly; the second and third tergites each with a pair of small yellowish spots; discal cross vein slightly before middle of discal cell, fairly oblique, wings smoky. Length 13 mm., wing 9 mm.

*Type locality*.—Higuito, San Meteo, Costa Rica (Pablo Schild).

*Type*.—Cat. No. 27740, U.S.N.M.

**PLANES VAGANS (Wiedemann)**

*Syrirta americana* SCHINER?

*Syrirta mexicana* BIGOT?

*Male*.—Fairly large species; ocellar triangle very narrow and elongate; frontal triangle shining bluish-black, bordered with silvery pollinosity; antennal prominence well developed and projecting; antennae brownish; fairly elongate, third joint nearly twice as long as wide; face yellowish white, densely coated with silvery pollen; jowls blackish; yellowish pollinose mesonotal stripes rather indistinct; fore and mid tibiae yellowish; two basal joints of fore

and mid tarsi yellowish; hind legs blackish except for yellowish base of tibiae; second and third tergites each with a pair of yellowish spots; third and fourth tergites of equal length; metasternum pilose without spurs; wings subhyaline.

*Female*.—Front very long and narrow, width at vertex distinctly less than length of third antennal joint; abdomen somewhat broader and shorter than in the male. Length 12 mm.; wing 8.5 mm.

Originally described from Brazil. Specimens at hand: Para, Brazil (H. W. Bates); Ega, Brazil (H. W. Bates); Taboga Island, Panama, February 22, 1912 (A. Busck); Trinidad River, March 29, 1912 (A. Busck); Cano Saddle, Gatun Lake, August, 1923 (R. C. Shannon). The specimens from Panama have a somewhat different appearance from that of the Brazilian specimens but this is not sufficient for specific differentiation.

Sufficient data is not at hand to determine whether *S. americana* Schiner (= *mexicana* Bigot) is a synonym of *vagans* Wiedemann or the species described below, *schildi*.

*Type*.—Location unknown.

#### PLANES SCHILDI, new species

*Male*.—Rather small, slender species; ocelli well advanced of occipital margin; ocellar triangle elongate; antennal prominence moderately developed; face blackish, becoming yellowish in front of oral margin, entirely covered with silvery pollen; mesonotal pollinose stripes fairly developed; fore and mid tibiae yellowish; fore and mid tarsi, except terminal three joints, yellowish white; metasternum without spurs; abdomen rather slender, tergites 2 and 3 with small yellow spots; fourth tergite shorter than the third.

*Female*.—Front very narrow, much less than length of third antennal joint and two and one-half times longer than the arista; front and mid tibia yellowish. Length, 7.5 mm.; wing, 6.5 mm.

*Type locality*.—Higuito, San Mateo, Costa Rica (Pablo Schild.)

*Type*.—Cat. No. 28674, U.S.N.M.

Male type, female allotype, male paratype. A very closely allied species to *vagans*.

#### Genus XYLOTOMIMA, new genus

*Type*.—*Xylota vecors* Osten Sacken.

Metasternum with pile approximately the length of the pile on hind coxa (sparse in *pigra*); head broadly elliptical; metathoracic spiracle approximately the size of second antennal joint; arista usually shorter than width of face; hind femur greatly enlarged; male with frontal triangle almost entirely shining (pollinose in *baton*





arista shorter than width of face; legs sometimes brownish, never yellow; pile on metasternum sparse; abdomen with first tergite black; anterior border of second with black median triangular projection, remainder of abdomen red; metathoracic spiracle unusually small, smaller than second antennal joint. Greene has figured the puparium.

*Distribution*.—A common species in Europe and North America, sometimes occurring in immense numbers.

*Type*.—Location unknown.

#### XYLOTOMIMA LIBO (Walker)

*Xylota libo* WALKER.

*Xylota marginalis* WILLISTON. (In U. S. Nat. Mus.)

*Xylota libo* Walker, JOHNSON, List of New England Diptera, 1925.

Fairly large and robust species 10–13 mm. Mesonotum dark brassy; abdomen purplish red; metasternum pilose; metathoracic spiracle about the size of second antennal joint. A rather rare species of northern and eastern North America.

*Distribution*.—Originally described from Nova Scotia (Walker). Recorded from New Hampshire (Williston); Axton, New York (Macgillivray and Houghton); Chapel Pond, Essex County, New York, June 28, 1923 (M. D. Leonard); Duncun, British Columbia (Osburn); Cincinnati, Ohio (Metcalf); North Carolina (Metcalf); Maryland and Virginia (Banks, Greene, McAtee, Shannon).

#### XYLOTOMIMA CURVIPES, variety SATANICA (Bigot)

*Xylota curvipes* LOEW, of authors.

*Xylota satanica* BIGOT. (Type in British Museum.)

Professor Hervé-Bazin has suggested to me the possibility that the American form going under the name of *curvipes* Loew is a different species from the European *curvipes* and gave me a specimen for comparison. This specimen, a female, differs from the American form in having the fore and mid trochanters black (reddish yellow in American female specimens) and the apex of the hind femur two-fifths black, one-fourth black in American specimens. The front is also slightly wider. A comparison of the male genitalia may prove the American form to be a distinct species. Meanwhile it is tentatively called a variety.

*Male*.—Frontal triangle shining black, silvery pollinose on sides; antennae brownish red, first joint darkest; arista brownish, a little longer than width of face; coxae black, remainder of four fore legs reddish yellow; hind legs black except basal three-fourths of femur which is reddish yellow; halteres yellow. Cerci unusually large and apparently inflated; styles fairly stout, straight; basal lobe nearly separated from rest of style by a deep narrow cleft; beyond cleft the

style is expanded into a rather obtuse tooth and following the tooth the style is constricted and partly twisted; apex obtusely pointed.

*Female*.—Front fairly narrow, but little narrowed above; fifth tergite sharply flattened on posterior corners.

*Distribution*.—Specimens at hand from White Mountains, New Hampshire (Williston collection); Vermont (H. A. Cutting); Keene Valley, Adirondacks, New York, June 24, 1920 (H. Notman); Wilmington Notch, Adirondacks, New York, June 29, 1922 (J. M. Aldrich); Colorado, 9,000 feet altitude. Apparently confined to northern latitudes or high altitudes farther south.

#### XYLOTOMIMA PLESIA (Curran)

*Xylota plesia* CURRAN, Can. Ent., vol. 57, 1925, p. 44.

*Male*.—Differs from *curvipes* Loew in being much smaller, 11 mm.; face narrower, more shining black; black spines at apex of mid tibia and on underside of mid tarsi (red and fewer in *curvipes*, var. *satanica*); the transverse swelling of the fourth tergite occurring at the middle (at basal third in *curvipes*, var. *satanica*); halteres darkened; cerci much smaller and flat, black in color (yellowish brown in *curvipes*, var. *satanica*); styles bowed; a deep and very broad cleft between basal lobe and remainder of style, the style beyond basal lobe simple in outline, narrowed basally, broadening apically and with obtuse point.

*Distribution*.—New York; Whiteface Mountain, Adirondacks, July 7, 1922 (J. M. Aldrich). Recorded by Curran from Bathhurst, New Brunswick; Meganic, Quebec; Hastings, Ontario.

*Type*.—In Canadian National collection.

#### XYLOTOMIMA VECORS (Osten Sacken)

Arista brownish, shorter than width of face; all parts of legs reddish yellow except black apex of hind femora and beyond; halteres darkened; fourth tergite of male swollen on basal third, and immediately following depression is another swollen area; fifth tergite of female not flattened on posterior corners. Male with moderate, unmodified cerci; no cleft between basal lobe and rest of style, styles beyond the lobes flattened, their inner edges opposed and together they form a somewhat hollow saucer-shaped structure. Metcalf<sup>4</sup> figures male genitalia. Specimens at hand show the same range of distribution as *curvipes*, apparently a mountain-loving species.

*Distribution*.—Recorded from Ottawa, Ontario, New England, New York, North Carolina, Minnesota, Colorado, Saskatchewan. Specimens at hand also from Pullman, Washington (V. Argo).

<sup>4</sup> Ann. Ent. Soc. Amer., vol. 14, 1921, pl. 17, fig. 104.

(*Xylota*) *Xylotomina femorata* (Linnaeus) (European) has genitalia very similar to *vecors*. However it has a black coxae as in *curvipes*.

*Type*.—In Museum of Comparative Zoölogy.

XYLOTOMIMA METALLICA (Wiedemann)

*Xylota subtropica* CURRAN, Can. Ent., vol. 57, p. 44, 1925. In Canadian National Collection.

This species has rarely been recorded since it was described. Banks lists it in the "District of Columbia Diptera: Syrphidae" and states, "In general resembles *X. ejuncida*, but the pale femora will separate it." A number of specimens have been found in collections, by the writer, usually confused with *ejuncida*. The description is based upon these specimens.

A rather small, slender species, 10 mm.

*Male*.—Frontal triangle shining except along the margins, which are silvery pollinose; upper part of triangle with rather numerous hairs; arista yellowish brown; four fore legs reddish yellow, femora sometimes brownish through the middle, tips of tarsi darkened; hind legs mostly black, bases of femur and tibia and ventral surface of tarsus yellowish; hind trochanters with a trace of a spur; second and third tergites with large yellow spots; discal cross vein joining discal cell slightly before the middle; posterior cross vein shorter than section of fourth vein above it; metathoracic spiracle noticeably smaller than third antennal joint.

*Female*.—Arista about two and one-half times width of front across ocelli. Abdominal spots more obscured, sometimes quite small.

Originally described from Georgia.

Curran states in his description of *subtropica* that "this species is smaller and much more slender than *metallica* and has the oral margin decidedly less produced." His description was based on two males, from Memphis, Tennessee, in the Canadian National Collection. These characteristics are covered by material of *metallica* at hand and apparently are not sufficient for specific differentiation.

*Distribution*.—Georgia, Type locality (recorded by Wiedemann); Maryland: Bladensburg, September 23 (R. C. Shannon), Plummer Island, September 17 (R. C. Shannon); Virginia: Great Falls (McAtee), Dead Run, reared from rotten maple log, June 29, 1915 (R. C. Shannon), Falls Church, June 7 (N. Banks); Tennessee: Memphis, June 12, 1922 (Recorded by Curran); Florida: Jacksonville (Mrs. A. T. Slosson); Texas: Paris, April 4, 1904 (C. T. Brues).

*Type*.—Location unknown.

## XYLOTOMIMA ANTHREAS (Walker)

*Xylota fascialis* COQUILLET, Proc. Ent. Soc. Wash., vol. 12, p. 126. (In U. S. National Museum.)

A fairly large and robust species, 12 mm.

*Male*.—Frontal triangle silvery pollinose; arista shorter than width of face; face partly yellow; anterior basitarsus without long apical hair but with basal ventral spines; metasternum pilose; hind trochanter without spur; hind legs entirely black except base of tibia; second and third tergites opaque black with large subquadrate black spots; fourth tergite shining bronze green; discal cross vein joining discal cell at middle; metathoracic spiracle a little smaller than third antennal joint.

*Female*.—Ocelli placed well back; front rather broad, across ocelli about one-half the length of arista.

The female has not been previously recorded.

The specimen which bears the type and name label "*Xylota anthreas* Walker" in the British Museum is in good condition except for some slight discoloration. The principal characters in Walker's description call for: Body brassy; antennae brown; arista black; mouth black; sides of abdominal segments adorned with large steel blue spots; legs bronze black; tibia yellow at base; four fore tibiae piceous, tawny at base and tips; tarsi tawny. Length about 9 mm., wing about 4.5 mm.

The type specimen does not agree with Walker's description in two important respects. The face is partly yellow and the abdominal spots are yellow instead of being steel blue. The possession of these two characteristics correlated with certain other characters, definitely prove it to be the same species as *Xylota fascialis* Coquillet.

It seems quite certain that Walker had this specimen before him at the time he described *anthreas* as the description he gives for *anthreas* does not fit any other North American species and nowhere else in his publications does he give a description in which the essential characters of *anthreas* are mentioned.

*Distribution*.—Michigan, Pequaming, July 12, 1903, male, type (M. Hebard); Maine, (C. W. Johnson); New York: Ithaca, June, 1922, female (R. C. Shannon), Mount Skylight, Adirondacks, 4,900 feet, July 22, 1920, male (J. Bequaert collection); Maryland, Beltsville, June 25, 1915, male (R. C. Shannon); Virginia, Dead Run, Fairfax County, May 19, 1916, female (R. C. Shannon).

*Type*.—In British Museum.

## XYLOTOMIMA BATON (Walker)

*Xylota baton* WALKER, List 3, 1849, p. 554.

*Xylota fraudulosa* LOEW, (Museum of Comparative Zoölogy).

For many years this species has been standing as a synonym of *ejuncida* Say. An examination of the type shows that the metasternum is pilose (pubescent in *ejuncida*) and other characters show it to be conspecific with *fraudulosa*.

One of our most common species in eastern North America. Apparently this species is very closely related to the European *nemorum* Fabricius, differing chiefly in the more yellowish antennae and yellow base of arista.

A small rather robust species, 8-9 mm.

*Male*.—Frontal triangle silvery pollinose; arista yellowish at base, darker beyond, shorter than width of face; femora black except extreme apices; hind tibia black except base; hind tarsi black dorsally, yellowish ventrally; second and third tergites with quadrate spots; postthoracic spiracle smaller than third antennal joint.

*Female*.—Front fairly broad, arista a little more than twice width of front across ocelli; abdominal spots small, sometimes obsolete.

*Distribution*.—Has been reported (under the name *fraudulosa*) from nearly all parts of the United States except Arizona. The western records probably should be applied to *nemorum americana*.

*Type*.—In British Museum.

## XYLOTOMIMA NEMORUM (Fabricius)

*Xylota dascon* WALKER. (In British Museum).

It is uncertain whether typical *nemorum* occurs in America. Until this can be ascertained the writer proposes calling our closest allied form a variety of *nemorum*. The specimen described by Walker as *dascon* appears to be a synonym of *nemorum*. Country unknown.

*Type*.—Location unknown.

## XYLOTOMIMA NEMORUM AMERICANA, new variety

This form differs from *baton* by having the arista dark brown throughout or yellowish brown at base and gradually merging into darker color beyond; and in the male the basal lobe of the style is smaller.

The two forms are very closely allied but according to the material at hand *baton* is a species of the Eastern United States while *nemorum americana* is of western distribution. The latter differs from European *nemorum* chiefly in having the mesonotal pile black whereas it is pale in typical *nemorum*.

*X. nigromaculata* Jones may prove to be a dark-bodied variety of this species. (Type, in University of Nebraska).

*X. nemorum* has been recorded from Montreal, California, Oregon, New Hampshire and Massachusetts.

*Type locality*.—Walnut Creek, California.

*Type*.—Cat. No. 27317, U.S.N.M.

Holotype male; allotype female; five paratypes.

*Distribution*.—California, Walnut Creek, April (W. M. Davidson); Sausalito, July 13 (J. C. Thompson); Washington, Seattle; Colorado, Locality? 7,800 feet; British Columbia, Kaslo, June 15 (R. P. Currie).

#### XYLOTOMIMA DUBIA, new species

*Male*.—Head broadly subtriangular; ocellar triangle rather broad, fore ocellus farthest removed; ocellar triangle clothed with fairly long, sparse, pale pile; frontal triangle and face heavily coated with white pollen; antennae yellowish brown; third joint subquadrate; arista shorter than width of face; mesonotum dark aeneous with four obscure stripes, clothed with short pale pile, darker posteriorly and longer, sparse black hairs; metasternum pilose; hind femur enlarged, spinose on its entire lower surface; second tergite with opaque anterior and posterior margins connected by a median opaque band, with a pair of large quadrate dark aeneous spots which extend over the sides; third tergite similarly marked but the aeneous spots border onto the anterior margin; fourth entirely dark aeneous; basal lobes of styles large, the styles small, rounded, about the size of the cerci; wings nearly hyaline; discal cross vein joining discal cell a little beyond middle; squamae white; halteres yellow; metathoracic spiracle distinctly smaller than third antennal joint. Length, 9 mm.; wing, 7 mm.

A female specimen, North Westminster, British Columbia, determined by Coquillett as *X. metallifera* Bigot is closely related if not the same. It has a broader than long third antennal joint and the fourth tergite is opaque black on front and hind margin with a slight opaque band extending between.

*Type locality*.—Juliaetta, Idaho.

*Type*.—Cat. No. 27318, U.S.N.M.

*Distribution*.—Idaho; Juliaetta (J. M. Aldrich).

#### XYLOTODES, new genus

*Type*.—*Brachypalpus inarmatus* Hunter.

Metasternum pilose; head triangular; metathoracic spiracle distinctly smaller than third antennal joint; arista much shorter than width of face at middle; third antennal joint broader than long; face, below eye, broader than length of third antennal joint; hind

trochanters unspurred; hind femur, both sexes, enlarged, without protuberances, irregularly spinose beneath; frontal triangle of male densely silvery pollinose; front of female broad; abdomen with more or less well developed opaque markings.

The genus *Xylotodes* is hardly separable from *Xylotomima*. The shape of the head offers a better means of separating them than the pilosity; also the width of the lower face (jowl) between the lower margin of the eye and the side oral margin is broader in *Xylotodes* than in *Xylotomima*.

## KEY TO SPECIES OF XYLOTODES

(Brachypalpus, in part)

- A<sup>1</sup>. Pile very short and inconspicuous; wings without definite clouding.  
brevipilosus, new species.
- A<sup>2</sup>. Pile fairly long and conspicuous; wings with discal crossvein clouded.
- B<sup>1</sup>. Fourth tergite entirely blackish.
- C<sup>1</sup>. Third tergite shining bluish black.....pigra (Lovett).
- C<sup>2</sup>. Third tergite bluish black on anterior half, subopaque posteriorly.
- D<sup>1</sup>. Third antennal joint distinctly broader than long; ocellar pile and tarsi black.....metallifera (Bigot).
- D<sup>2</sup>. Third antennal joint about as long as broad.
- E<sup>1</sup>. Ocellar pile grayish; tarsi brownish; arista yellowish; wings clouded on crossveins.....parvus (Williston).
- E<sup>2</sup>. Ocellar pile and legs black; arista black; all wing veins clouded.....sacawajaeae, new species.
- B<sup>2</sup>. Fourth tergite with bright yellowish hind margin.  
inarmatus (Hunter).  
inarmatus apicaudus (Curran).

## XYLOTODES BREVIPILOSUS, new species

*Female*.—Medium size, dark species with very short pile. Head triangular; front rather broad; ocelli placed well backward; front dark brassy, a pollinose band across middle; first two antennal joints longer than third, black; third joint broader than long, brownish; arista 1.5 times length of antenna but much shorter than width of face, dark brown; face covered with grayish pollen; face between oral margin and eye much broader than width of third antennal joint; mesonotum dark aeneous, pollinose anteriorly with semblance of two median stripes which quickly fade into very dark non-pollinose stripes; pile very short; legs black with bases of all tibiae yellowish, anterior tarsi somewhat brownish; metasternum pilose; hind femur moderately swollen, spinose posteriorly on lower side; abdomen dark aeneous, subopaque medianly and posteriorly on second and third tergites; wings diffusely clouded; squamae white; plumula and halteres pale yellow. Length 9.5 mm., wing 7.5 mm.

*Type locality*.—Blue Mountains, Washington, June, 1924 (V. Argo).

*Type*.—Cat. No. 27742, U.S.N.M.

## XYLOTODES INARMATUS (Hunter)

Four males at hand; the female, as yet, unrecorded. Idaho, Maine, Ontario.

*Type*.—In University of Nebraska.

## XYLOTODES INARMATUS APICAUDUS (Curran)

*Brachypalpus apicaudus* CURRAN, Can. Ent., vol. 54, 1922, p. 119.

According to description, the only difference this form possesses that is not overlapped by the material of *inarmatus* at hand, is the absence of a distinct opaque spot on the second tergite which is present in *inarmatus*. Described from Cranbrook, British Columbia.

*Type*.—In Canadian National collection.

## XYLOTODES FIGRA (Lovett)

*Brachypalpus pigra* LOVETT, Proc. Cal. Acad. Sci., vol. 9, 1919, p. 241.

A species well characterized by its dark aeneous mesonotum, with four subopaque black vittae; shining black abdomen, the first and basal half of second segments aeneous; legs with yellowish knees; wings with a cloud across the forks of the veins and on discal cell. Previously known only from a single female, recorded from Mount Jefferson, Oregon (Lovett). V. Agro took this species, both sexes, in the Blue Mountains, Washington, June, 1924. Walla Walla. April 12, 1924, and Pullman, April–May, 1923.

*Type*.—In University of Oregon.

## XYLOTODES METALLIFERA (Bigot)

*Xylota metallifera* BIGOT.

*Brachypalpus rileyi* WILLISTON.

An early spring species, usually found resting on logs. Has been reared from debris at base of a cedar stump. The pupa has been figured by Greene. Originally recorded from Colorado, but has not been reported from there since. Other records from Quebec, New York, Virginia, North Carolina, and Ohio.

*Type*.—In British Museum.

## XYLOTODES PARVUS (Williston)

The type specimen appears to be an unusually small specimen, 8.5 mm. Other specimens are 10–11 mm. Occurs in Colorado, Oregon, Idaho (Kendrick, J. M. Aldrich); British Columbia.

*Type*.—In U. S. National Museum.

## XYLOTODES SACAJAWEAI, new species

*Male*.—A small, dark species with wing veins extensively clouded. Head distinctly triangular; occiput with pale pile; ocellar triangle with black pile; eyes barely separated; ocellar triangle black, lightly dusted with whitish pollen; antennae small, third joint a trifle longer



than broad; arista scarcely longer than length of antenna; third joint and arista dark brown; face black, lightly dusted in front, well produced downwards, broader between lower eye margin and oral margin than length of arista; thorax aeneous, with a pair of inconspicuous subopaque dorsal vittae and a pair of sublateral vittae which are distinctly broader; legs black, the knees dark brown; abdomen shining dark aeneous, the second and third tergites with opaque black posterior bands which have a median forward extension; wing veins extensively clouded. Length 8.5 mm., wing 7.5 mm.

Distinguished from *parvus* by its darker color and wing clouding.

*Type locality*.—Pullman, Washington, April, 1924 (V. Argo).

*Type*.—Cat. No. 27316, U.S.N.M.

#### Genus BRACHYPALPUS Macquart

*Genotype*.—*Brachypalpus valgus* (Panzer).

Metasternum faintly pubescent; head distinctly triangular; metathoracic spiracle distinctly smaller than third antennal joint; arista much shorter than width of face at middle; hind femur swollen in both sexes, and with a very obtuse and apical protuberance on inner, ventral surface; hind trochanters of male spurred; hind tibia, except in female *oarus*, with subbasal projection; frontal triangle of male covered with silvery pollen; front of female broad, about twice as broad as in genus *Xylota*; abdomen black, opaque markings very weak.

With the exclusion of all the American species, with the exception of *B. oarus* (*frontosus*) which have been hitherto placed in this genus, *Brachypalpus* remains a well-characterized genus.

#### BRACHYPALPUS OARUS (Walker)

*Xylota oarus* WALKER, List 3, 1849, p. 558.

*Brachypalpus frontosus* LOEW. (In Museum of Comparative Zoology).

This, our only species in *Brachypalpus*, agrees remarkably well with the genotype *valgus* (Panzer), in possessing a number of well-defined generic characteristics noted above. It is a fairly common early spring species. Larvae live in decaying trees and logs. Larva and pupa have been described by Malloch.<sup>5</sup> Eastern North America.

*Type*.—In British Museum.

#### AMERICAN SPECIES HEREIN TRANSFERRED FROM BRACHYPALPUS TO OTHER GENERA

*Brachypalpus apicaudus* Curran=*Xylotodes inarmatus apicaudus* (Curran).

*Brachypalpus inarmatus* Hunter=*Xylotodes inarmatus* (Hunter).

*Brachypalpus metallifera* (Bigot)=*Xylotodes metallifera* (Bigot).

*Brachypalpus parvus* Williston=*Xylotodes parvus* (Williston).

*Brachypalpus pigra* Lovett=*Xylotodes pigra* (Lovett).

*Müesia amithaon* Walker=?*Brachypalpus* (Osten Sacken)=?*Crioprora* (Williston).=*Crioprora amithaon* (Walker).

<sup>5</sup> Bull. Ill. St. Lab., p. 343, 1915.

## Genus XYLOTA Meigen, sensu stricto

The Xylotae proper, represented by the genotype *Xylota segnis* (Linnaeus), are characterized by: Metasternum with faint pubescence which is very much shorter than the length of the pile on hind coxae; head broadly elliptical; metathoracic spiracle as large or larger than third antennal joint; arista usually longer than width of face at middle; hind femora usually fairly slender; male with frontal triangle covered with silvery pollinosity (except *viridaenea*); hind trochanter with spur (except *bicolor*); fore basitarsus with a long light-colored hair on inner apical corner; ventral surface with short black spines near base. Female: Front rather narrow.

In the following key *scutellarmata* Lovett has been omitted.

## KEY TO THE SPECIES OF XYLOTA, SENSU STRICTO

(Metasternum faintly pubescent; type, *Xylota segnis* (Linnaeus))

- A<sup>1</sup>. Arista pubescent; antenna black; second and third tergites chiefly reddish or yellowish brown.
- B<sup>1</sup>. Second and third tergites with median dark line-----*subfasciata* Loew.
- B<sup>2</sup>. Second and third tergites without median line-----*notha* Williston.
- A<sup>2</sup>. Arista bare.
- B<sup>1</sup>. Abdomen largely purplish red; legs entirely reddish brown.  
*rufipes* Williston.
- B<sup>2</sup>. Abdomen not purplish red.
- C<sup>1</sup>. Abdomen chiefly reddish orange beyond first tergite, rarely darkened apically (see *segnis*).
- D<sup>1</sup>. Hind tibia entirely black; arista longer than width of face; abdominal pile entirely white and yellow; male without spur (eastern species)-----*bicolor* Loew.
- D<sup>2</sup>. Hind tibia yellow at base; arista about as long as width of face; male with spur, always? (western species).
- E<sup>1</sup>. Hind tarsi mostly bright yellow-----*flavitibia* Bigot.
- E<sup>2</sup>. Hind tarsi entirely black-----*argoi*, new species.
- C<sup>2</sup>. Abdomen black, second and third tergites may have more or less reddish or yellowish color.
- D<sup>1</sup>. Second and third tergites brassy red; mesonotum green aeneous; ocelli placed well forward of occipital margin of eyes.  
*segnis* (Linnaeus).
- D<sup>2</sup>. Second and third tergites not brassy red, but with or without yellowish spots.
- E<sup>1</sup>. Abdomen with fourth tergite bright metallic green; second tergite with pair of brassy yellow spots.
- F<sup>1</sup>. Arista shorter than width of face----- *analis* Williston.
- F<sup>2</sup>. Arista longer than width of face.
- G<sup>1</sup>. Face yellow; antennae black; third tergite without yellow spots-----*nebulosa* Johnson.
- G<sup>2</sup>. Face black; antennae yellow; third tergite with yellow spots-----*viridaenea*, new species.

E<sup>2</sup>. Abdomen with fourth tergite dark metallic green and without yellow spots on second tergite, or fourth tergite black and yellow spots present or absent on second tergite.

F<sup>1</sup>. Upper pleural pile coarse and black; second tergite without, third with, yellow spots; arista a little longer than width of face-----naknek Hine.

G<sup>1</sup>. Third antennal joint as long as broad  
naknek naknek, sensu stricto.

G<sup>2</sup> Third antennal joint longer than broad  
naknek atlantica, new variety.

F<sup>2</sup>. Pleural pile entirely pale.

G<sup>1</sup>. Arista shorter than width of face.

H<sup>1</sup>. Second tergite with yellow spots.

I<sup>1</sup>. Arista yellowish-----rainieri, new species.

I<sup>2</sup>. Arista black-----confusa, new species.

H<sup>2</sup>. Abdomen without yellow spots; face less than twice the width of third joint.flavifrons Walker.

G<sup>2</sup>. Arista longer than width of face.

H<sup>1</sup>. Second and third tergites both with decided yellow markings.

I<sup>1</sup>. Face more or less yellowish; apical cross vein joining third vein acutely; robust species (*bivittata* Lovett)-----lovetti Curran.

I<sup>2</sup>. Face black; distal portion of apical cross vein forming right angle with third vein.

J<sup>1</sup>. Rather slender species; male with distinct spur on trochanter-----ejuncida Say.

J<sup>2</sup>. Robust species; male with spur barely suggested (Mexico)

brachygaster Williston.

H<sup>2</sup>. Either the second or third tergites without yellow spots, or both.

I<sup>1</sup>. Metathoracic spiracle distinctly larger than third antennal joint; robust species (western)-----barbata Loew.

I<sup>2</sup>. Metathoracic spiracle not larger than third antennal joint; rather slender species.

J<sup>1</sup>. Abdomen steel blue, hind margins of tergites two and three opaque (Mexico)

stenogaster Williston.

J<sup>2</sup>. Abdomen not steel-blue.

K<sup>1</sup>. Fourth tergite longer than broad; third antennal joint of female much longer than width of lower, side face.  
angustiventris Loew.

K<sup>2</sup>. Fourth tergite broader than long; third joint slightly longer than width of lower face.

ejuncida, variety  
elongata Williston.

## XYLOTA SEGNIS (Linnaeus)

*Xylota segnis* Linnaeus, genotype of *Xylota*, and a well-known species in Europe, was first recorded from North America in 1915. In Aldrich's card index is a note: "A male specimen, agreeing exactly with Verrall, was sent me by Arthur Gibson for identification; locality, MacNabs Island, N. S." This is followed by "Gibson, Record, 1915, occurring in Halifax, N. S. Same specimen as preceding."

Description based on European material: Rather large and fairly slender species, 10–13 mm. Antennae black; third joint rounded; arista black, longer than width of face; mesonotum distinctly brassy; fore basitarsal joint of male with long light hair at apical inner corner and black spines on under side near base; mid basitarsus with black spines only at apex; metasternum pubescent; hind trochanters of male spurred; second and third tergites chiefly brassy red, remainder of abdomen black; wings hyaline; discal cross vein joining discal cell well beyond middle; posterior cross vein shorter than section of fourth vein above it; metathoracic spiracle slightly smaller than third antennal joint.

*Distribution in America.*—Nova Scotia, MacNabs Island, Halifax, 1915. (A. Gibson.)

*Type.*—In Linnaean Society, London.

## XYLOTA SUBFASCIATA Loew

*Xylota subfasciata* Loew is closely related to *ejuncida* Say. The description was based on material from "Red River of the North, Canada," 1857. Since then it has rarely been correctly identified. In the National Collection there are three specimens (New Hampshire) of the Williston collection of Syrphidae which Williston determined as *Xylota ejuncida* Say. They differ from *ejuncida*, however, and as they agree perfectly with Loew's description of *subfasciata* and possess in common with Loew's type certain other characters recorded in the notes of the writer, they have been designated as this species. Other specimens from New England are at hand which are conspecific.

Medium sized, rather slender species, 9–11 mm. Antenna very dark brown to black, third joint slightly excavated on upper margin, a little longer than broad; arista black, longer than width of face, noticeably pubescent under a 27X hand lens or medium power of the binocular (a minute but good character for both sexes; the color of the abdomen heretofore used for specific diagnosis is too variable for exact specific purposes); mesonotum dark aeneous; last two fore tarsal joints black; anterior tarsus of male with a long hair on apex of first and second joints, black spines on lower side of basitarsus;

metasternum pubescent; hind trochanter of male with longer spur than *ejuncida*; discal crossvein joining discal cell beyond middle; second and third tergites chiefly reddish yellow, a dark narrow median line (more or less definite) extending down through the lighter color, and also present on the hind margins.

*Distribution*.—Maine, Bar Harbor, August 16, one male (C. W. Johnson); New Hampshire, Franconia, July 18, 1915, 1 male (C. H. T. Townsend, White Mountains, 2 females, 1 male (Williston collection)); Alaska, Fairbanks, July 7, 1924 (J. M. Aldrich), Anchorage, June 13, 1924 (J. M. Aldrich), Savonoski, Naknek Lake, July (J. S. Hine).

*Xylota subfasciata* Loew has been recorded (correctly so?) from Virginia, District of Columbia, Maryland, Wisconsin, and Oregon.

This species probably will prove to be of northern distribution. Metcalf figures the male genitalia and Cole and Lovett state that it has been reared from the decayed heart of fir.

*Type*.—In Museum of Comparative Zoölogy.

#### XYLOTA NOTHA Williston

Very closely related to *X. subfasciata* Loew. It differs in averaging a little larger, 10–12 mm.; mesonotum more brassy, and the second and third tergites entirely red except for anterior border of the second and posterior margin of the third. A female from New Mexico has the dark markings as in *subfasciata*. Male with well developed spur on hind trochanter, said by Williston to be absent.

*Distribution*.—Colorado, Locality? one male, type (Williston Collection). Locality?, 8,000 feet altitude, one male; New Mexico: White Mountains, North Fork Ruidoso, 8,200 feet, flowers of *Solidago trinervata*, 1 male (C. H. T. Townsend); Beulah, July 11, 1902, female (T. D. A. Cockerell); Chusca Mountains, 8,800 feet, June 30, 1918 (A. Wetmore, Biological Survey Collection).

This species has been recorded from Vineland, Ontario, Canada (A. Gibson). Perhaps it will be found to be confined chiefly to high altitudes in the southern Rocky Mountains.

*Type*.—In U. S. National Museum.

#### XYLOTA EJUNCIDA Say

A discussion of this and allied species has been given in the introduction.

Medium size, rather slender, 9–11 mm. Third antennal joint somewhat variable, a little longer than broad, rounded, yellowish to blackish in color; arista entirely black, bare, longer than width of face; mesonotum dark aeneous; last three tarsal joints of fore tarsi black; only basitarsal joint of fore tarsus with long hair; meta-

sternum pubescent; spur on hind trochanter of male small, pointed; hind femora but little thickened, regular in outline, spinose beneath on nearly entire length, more slender in female; discal cross vein joining discal cell beyond its middle. Some variation occurs in this species besides that noted under *ejuncida elongata*. Two males, Waldoboro, Maine, and Big Moose, New York, are somewhat more robust in appearance, have more black on the second and third tergites and only the last two tarsal joints of fore tarsus black. One male and female, Falls Church, Virginia, and Washington, District of Columbia, besides the differences noted above, have a yellow arista. Two females, Washington State, have brighter and more quadrate abdominal markings. A male, El Paso County, Colorado, agrees very closely to typical *ejuncida*. In some material sent by Mr. Johnson are a number of specimens from New England which are also more robust in appearance. One normally colored female and three of the *elongata* variety are amongst them. The latter may easily be mistaken according to original descriptions for *obscura* (= *flavifrons*) or *anthreas*.

*Distribution*.—Common throughout the eastern United States and Canada. Has been recorded from Alaska and a number of western States.

*Type*.—Lost.

XILOTA EJUNCIDA, variety ELONGATA Williston

This variety is based on Williston's Pennsylvania specimen of *elongata*, which he later redetermined (but did not publish), as *anthreas* Walker. A full discussion is given in the introduction.

This variation is rather a rare one occurring apparently only in the female. It is characterized by having the yellow abdominal markings entirely obscured by bluish-black metallic coloration. A female of the type series of Loew's *quadrifasciata* (= *ejuncida*) has an entirely dark abdomen. Three specimens sent by Mr. Johnson and one from New York are rather large and robust, corresponding to the large males noted under *elongata*.

*Distribution*.—Pennsylvania: locality? (Williston); Perdix, May 27, 1911 (W. S. Fisher); New York, Wells, July 26, 1918 (D. B. Young); New Hampshire, White Mountains (Williston); Maine: Bar Harbor, June 6 (C. W. Johnson), Capens, July 7 (C. W. Johnson).

*Type*.—In U. S. National Museum.

XILOTA CONFUSA, new species

*Male*.—Very similar to *Xylota ejuncida* in appearance. Differs chiefly in its somewhat larger ocellar triangle; less pollinose frontal triangle; short arista and broad face, arista being a little shorter

than width of face across middle; hind tarsi entirely blackish-brown; abdominal spots rather small and well defined; spur on hind trochanter distinctly smaller. Length 11 mm; wing 8.5 mm.

*Type locality*.—Princeton, Maine, July 12 (C. W. Johnson).

*Type*.—In collection Boston Society Natural History.

One male from North Westminster, British Columbia, June 3, 1909, except for its more elongate appearance, agrees fairly well with *confusa*.

#### XYLOTA SCUTELLARMATA Lovett

*Xylota scutellarmata* LOVETT, Proc. Calif. Acad. Sci., vol. 9, p. 241, 1919.

The following description is taken from Lovett.

*Female*.—Length 8 mm. Shining black; thorax with short golden pile; margin of scutellum with four elongate black bristles; abdomen opaque black, tergites two and three, with small yellow triangular spots. Face short, moderately concave, brownish, lighter about the oral margin; antennae brownish; arista dark brown, twice as long as antenna. Legs brown, base of all and tips of middle and front tibiae and basal joints of tarsi of front and middle legs light yellow. Collected at Hood River, Oregon, June 6, 1917 (F. R. Cole). Near *nemorum*; varies in bristles of scutellum, etc.

According to the description, this species probably belongs to the subgenus *Xylota*, whereas *nemorum* is located in *Xylotomima*. Long marginal hairs of varying length occur on the scutellum in nearly all of the species of *Xylota*. Because of this it is difficult to estimate the value of marginal bristles as a specific character. However, there are in the collection a male and female (Colorado) which bear on the scutellar margin four unusually strong and dark bristles. These may be *scutellarmata* or a form closely allied. They are closely related to *ejuncida*, which has strong scutellar bristles, but these are yellowish in color. The male has the yellow spots obscured by bluish-black metallic spots.

*Type*.—In University of Oregon.

#### XYLOTA LOVETTI Curran

*Xylota bivittata* LOVETT, Proc. Calif. Acad. Sci., vol. 10, p. 52, 1920. Name preoccupied by *Xylota bivittata* Bigot (Chile). This species, however, belongs to *Tropidia*.

*Xylota lovetti* CURRAN, Can. Ent., vol. 67, p. 44, 1925.

*Xylota oregona* CURRAN, Can. Ent., vol. 67, p. 44, 1925. (In Canadian National Collection.)

*Male*.—Fairly large, robust species, 11 mm. Antennae yellowish; arista black, longer than width of face; face yellowish to brownish; mesonotum dark aeneous; anterior basitarsus without long hair; metasternum pubescent; hind femur but little thickened; yellow spots on second and third tergites large, quadrate; discal cross vein

joining discal cell at its middle; apical cross vein joining third vein at an acute angle; metathoracic spiracle approximates the size of third antennal joint.

*Female*.—Not at hand. Described by Curran under the name *oregona*.

*Distribution*.—California: Huntington Lake, Fresno, July 21, 1919, type locality, one male (E. P. Van Duzee); Summerdale, July 1, 1906, one male (H. E. Burke); Oregon, Mount Jefferson, July 15, 1907, one male (J. C. Bridwell); Washington, Lake Cushman, Mason County, August 6, 1919 (F. M. Gaige; collection J. S. Hine).

*Type*.—In University of Oregon. (As *Xylota bivittata* Lovett.)

#### XYLOTA ANALIS Williston

Fairly large and robust species, 12–13 mm. Antennae brownish; third joint as broad as long; arista yellowish brown, shorter than width of face; frontal triangle of male bare and shining anteriorly, broadly pollinose posteriorly; front of female rather broad, its width across ocelli about half the length of arista, a rather broad pollinose band across middle; face partly yellowish brown: male without long hair on basitarsus; metasternum bare; hind trochanter of male with spur; second and third tergites with yellowish spots; fourth tergite bright greenish aeneous; discal cross vein joining discal cell beyond middle; posterior cross vein longer than section of fourth vein above it; post thoracic spiracle a little smaller than third antennal joint.

Records from the eastern United States may prove to belong to *Xylota viridaenea*.

California, New Mexico, Colorado. Has also been recorded from New Jersey, Florida, Ohio, Nebraska and British Columbia.

*Distribution*.—Washington, Lake Cushman, Mason County, June 29, 1919 (F. M. Gaige); California, Locality? Williston Collection); New Mexico, Locality? (Williston Collection); Mexico, Sierra Madre, 7,300 feet (C. H. T. Townsend); Colorado, Locality?

*Type*.—In U. S. National Museum.

#### XYLOTA NEBULOSA Johnson

*Xylota nebulosa* JOHNSON, Psyche, vol. 28, p. 58, 1921.

Medium sized, fairly slender species, 9 mm. Known only in the male. Frontal triangle covered with yellowish pubescence; face yellow, cheeks brown; mesonotum bronze black; second tergite only with yellow spots; fourth tergite bright metallic green with dense yellow tomentum; outer half of wing clouded.

*Distribution*.—Texas. Locality? One male.

*Type*.—In collection of C. W. Johnson, Boston, Mass.



## XYLOTA VIRIDAENEA, new species

This species has probably been confused with *X. analis* Williston, which may account for some of the records of *analis* from the eastern United States.

*Male*.—Medium sized, fairly robust, 10.5 mm., wing 7.5 mm. Head broadly elliptical in frontal aspect; ocellar triangle shining black, with black pile; frontal triangle shining, pollinose only at vertex; antenna brownish yellow; third joint a little longer than broad; arista concolorous with antenna on basal third, darker beyond, a little longer than width of face; face greenish black; coated with white pollen; mesonotum greenish aeneous with short yellow pile, very few longer hairs present; scutellum rather large, rimmed, colored and clothed as mesonotum; pleurae darker in color, pollinose and with rather dense golden, coarse pile; femora dark except their apices; tibiae yellow, the posterior ones more brownish; tarsi yellow except last two joints in all cases; anterior basitarsus with black ventral basal spines and long yellow hair at dorsal apex, mid basitarsus with very few black spines on under side, more numerous apically; all pulvilli darkened; metasternum pubescent; hind trochanters with spur; hind femora fairly large with equal spines along nearly the entire length of under side; first tergite aeneous; second and third with a pair of large brassy yellow spots on each which extend full width over the sides of abdomen; third tergite rather extensively black posteriorly; fourth tergite greenish aeneous with bright yellow pile on sides, black in middle; wings slightly smoky; third vein nearly straight; discal cross vein joining discal cell a little beyond middle; posterior cross vein noticeably shorter than section of fourth vein above it; squama with cilia and halteres yellowish; post-thoracic spiracle a little smaller than third antennal joint.

*Type*.—Cat. No. 27312, U.S.N.M.

Holotype, male.

*X. nebulosa* Johnson differs from *viridaenea* by its yellow face, black antennae, a single pair of abdominal spots, fourth tergite with entirely yellow tomentum and clouding of wings.

*X. analis* Williston differs in having a shorter arista, more pollinose frontal triangle, gently curved third vein, and posterior cross vein longer than upper outer section of discal cell.

*Distribution*.—Georgia, Thomasville, one male (Mrs. A. P. Taylor).

## XYLOTA NAKNEK Hine

*Male*.—Head broadly elliptical; frontal triangle pollinose, except anterior margin; ocelli placed nearly the length of their altitude before hind-eye margins; first two antennal joints black; third dark brown, slightly longer than broad; arista black, bare, a little longer-

than width of face; mesonotum very dark aeneous, clothed with short, appressed, pale pile, with rather numerous and long black hairs intermixed chiefly posteriorly; scutellum as the mesonotum, the marginal hairs unusually long, black; upper posterior corner of mesopleura and upper pteropleura with coarse black hairs, remaining pleural pile white; fore basitarsus with long pale apical hair; group of black spines on ventral surface near base; femora black, four fore tibiae an tarsi brown; hind legs nearly entirely black, tips of tibia dark brown; femora moderately enlarged and with rudimentary apical process on inner ventral surface; second tergite with pair of shining aeneous spots; third with pair of yellow spots tinged with dark aeneous; first tergite with pale pile, remaining tergites with pale pile on anterior corners, black medianly and posteriorly; wings faintly smoky; discal cross vein joining discal cell little beyond middle; posterior cross vein subequal to upper outer section of discal cell; squamae white; halteres yellowish; length 9 mm.; wing 8 mm.

*Type locality*.—Naknek, Alaska (J. Hine); Anchorage, Alaska, June 16, 1921 (J. M. Aldrich).

*Type*.—In collection of J. S. Hine, Columbus, Ohio.

Holotype male; paratype male.

This species is related to the *ejuncida* group. The black mesonotal pile and black hairs on the pleurae and abdominal markings distinguish it.

**XYLOTA NAKNEK ATLANTICA, new variety**

*Xylota hesperia atlantica* SHANNON, nomen nudum, Fauna of New England, vol. 15, 1925, p. 176.

Two male specimens, Bar Harbor, Maine (C. W. Johnson), and Franconia, New Hampshire, agree with the specimens from Alaska in practically all details. They differ by having the third antennal joint longer than broad, while it is as broad as long in Alaskan specimens.

*Type*.—In collection Boston Society Natural History.

*Paratype*.—Cat. No. 27743, U.S.N.M.

**XYLOTA RAINIERI, new species**

*Male*.—Ocelli set nearly their altitude from hind-eye margin; frontal triangle pollinose except small anterior area; antennae yellowish brown, third joint subquadrate; arista somewhat lighter, distinctly shorter than width of face; mesonotum with dark blue and greenish reflections, pile mostly pale with sparse, rather long, black hairs intermixed posteriorly; pleurae with white and some yellowish pile; fore basitarsus without long pale hair at apex; ventral basal spines present; spur of average size; second tergite with fairly

large triangular spots, the apices obtuse and directed inwards; third with rather obscured yellowish spots; fourth tergite dark metallic green with mostly yellowish pile, black medianly and posteriorly; discal cross vein joining discal cell a little beyond middle; posterior cross vein a little longer than section of fourth vein above it; squamae white, faintly tinted with yellow; halteres yellow. Length 11.5 mm., wing 9.5 mm.

*Type locality*.—Mount Rainier, above Longmire's, 5,000 feet, Washington.

*Type*.—Cat. No. 27314, U.S.N.M.

Holotype male; paratype male.

This species is closest to *flavifrons*. Besides the presence of the yellow abdominal spots and difference in position of discal cross-vein it differs further by having the forceps in the male much less curved and stouter.

Distribution.—Washington, Mount Rainier, above Longmire's, 5,000 feet, August 3, 1905 (J. M. Aldrich).

#### XYLOTA FLAVIFRONS Walker

*Xyloa communis* WALKER. (In British Museum.)

*Xyloa obscura* LOEW. (In Museum of Comparative Zoölogy.)

*Male*.—Ocelli less than their altitude from hind-eye margins; frontal triangle pollinose, except anterior margin; antennae brown, third joint more yellowish, as broad as long, rounded apically; arista dark brown, distinctly shorter than width of face; mesonotum with dark aeneous blue reflection, pile pale anteriorly, dark posteriorly with fairly dense and long hairs; pleural pile pale; fore basitarsus without long pale hair; ventral basal spines present; spur small; second and third tergites opaque black, each with a pair of large metallic bluish-green triangular spots with their apices directed inwards; fourth tergite dark metallic bluish-green; opaque regions of abdomen with dark pile, metallic areas with pale yellow pile; discal cross vein joining discal cell well beyond middle; posterior cross vein distinctly longer than section of fourth vein above it; wings smoky; squamae white, halteres pale yellow. Forceps of usual type, dark brown, a little swollen basally, strongly curved and tapering outwardly, apex obtuse. Length, 11.5–13 mm.; wing, 9–9.5 mm.

*Female*.—Similar to male. Front moderately narrowed, black, very lightly pollinose on upper half, broadly silvery pollinose on lower except immediately above antennae; antennae reddish brown, third joint slightly longer than broad; arista black, distinctly shorter than width of face; face very moderately excavated, coated with grayish pollen; a whitish pollinose spot on inner side of humerus,

hind femora but slightly thickened, spinose on posterior two-thirds of ventral surface; discal cross vein of moderate length, but little oblique.

Walker's description of this species states that the abdomen is linear, a little narrower than the thorax and "fully thrice its length." In Williston's quotation, it is stated "fully twice its length." However, the abdomen is not unusually long. In form and size it is an average species of *Xylota*. The unusual length of the abdomen, as given by Walker, led Williston to believe that it might be the same as his species *elongata* = (female *angustiventris*).

Metcalf has figured the genitalia of *flavifrons* under the name *Xylota obscura* Loew.

*Distribution*.—Walker's material of *flavifrons* and *communis* came from St. Martins Falls, Canada. *X. obscura* Loew was recorded from the Red River of the North, Canada. The species has been recorded under the name *obscura* from Washington, Oregon, and California (Williston; but all three of these records=*barbata* Loew); Nebraska (Hunter); Wisconsin (Graenicher); Connecticut (Britton); Oregon (Lovett and Cole); Colorado (Jones). Material at hand: Franconia, New Hampshire (Mrs. A. T. Slosson), North Mountain, June 8, 1898 (C. W. Johnson), Lake Tear, Mount Marcy, 4,300 feet, July 12, 1918 (W. T. M. Forbes).

*Type*.—In British Museum.

#### XYLOTA BARBATA Loew

Rather large, robust species, 10–13 mm. Antennae black, third joint rounded, arista black. Longer than width of face; fore basitarsus of male without long hair, ventral surface with 4–5 spines basally and 2–3 apically; metasternum pubescent; hind trochanters of male with short spur; second and third tergites opaque black, each with a pair of large bluish-black metallic spots; discal cross vein joining discal cell beyond middle; posterior cross vein longer than section of fourth vein above it; metathoracic spiracle unusually large, larger than third antennal joint.

*Distribution*.—Apparently a common species west of the Rocky Mountains. Has been taken at Kaslo, British Columbia, and is reported from Quebec (Gibson).

*Type*.—In Museum of Comparative Zoölogy.

#### XYLOTA ANGUSTIVENTRIS Loew

*Xylota elongata* WILLISTON, in part.

A fairly large, elongate species, 9–13 mm.

Antennae and arista black, third joint large, longer than broad and longer than front in female, measured across ocelli; arista longer than width of face; pale parts of legs very light yellow; fore basitarsus of male without long hair, ventral spines present; metasternum

pubescent; hind trochanter of male with spur; abdomen elongate, fourth tergite longer than broad; male with a pair of oblong yellow spots on second tergite, female with second tergite dark, sometimes with a trace of the yellow spots; discal cross vein joining discal cell beyond its middle; metathoracic spiracle fairly large, but smaller than third antennal joint.

Occasional males have the yellow spots almost obscured.

*Distribution*.—A fairly common species in eastern North America, not recorded south of North Carolina. Has been recorded from Nebraska (Hunter, Jones).

*Type*.—In Cambridge Museum Comparative Zoölogy.

#### XYLOTA BICOLOR Loew

This species and *flavitibia* have the same abdominal coloration, chiefly reddish orange. There would be no difficulty determining these species from the other Xylotae except that the fourth tergite is sometimes obscured by dark, diffuse markings, in which case they may be confused with *segnis* and *notha*. Unfortunately, no better character than color seems available for separating these two from the other Xylotae, but on the whole the coloration is sufficiently characteristic so that there should be little difficulty in identifying them.

Large, fairly robust species, about 13 mm. Antenna large, noticeably longer than width of front of female, black; arista yellowish, darkened on outer half, longer than width of face; anterior basitarsus of male without long hair or black spines on ventral side; metasternum pubescent; hind trochanter of male without spur; abdomen, except first tergite, reddish orange; male genitalia entirely reddish orange, styles but little longer than broad; discal cross vein joining discal cell at middle; metathoracic spiracle distinctly smaller than third antennal joint. Metcalf has figured the male genitalia and Greene has figured the puparium.

*Distribution*.—A fairly common species east of the Mississippi. Not reported south of North Carolina. Recorded from Colorado (Jones), probably a misidentification for *flavitibia* Bigot.

*Type*.—In Museum of Comparative Zoölogy.

#### XYLOTA FLAVITIBIA Bigot

A rather large, robust species, about 12 mm.

Antennae black, rather small, in female distinctly shorter than width of front at middle, third joint rounded; arista black, a little shorter than width of face; anterior basitarsus of male with long hair and ventral spines; metasternum pubescent; hind trochanter of male with spur; abdomen reddish orange beyond first tergite, sometimes marked with diffuse dark spots; discal cross vein joining discal

cell beyond middle; metathoracic spiracle about size of third antennal joint.

Because of coloration and distribution this species can only be confused with *notha*. Its broader head, with corresponding broadening of front and face, and its comparatively short antenna and arista serve to distinguish it from *notha*.

*Distribution*.—A fairly common species in the West: Nebraska, Colorado, New Mexico, Idaho, and Washington. Townsend recorded it from the District of Columbia—probably a specimen of *bicolor* with dark apical markings.

*Type*.—In British Museum.

XYLOTA ARGOI, new species

*Female*.—Medium sized, blackish species with the abdomen largely yellowish brown. Head broadly elliptical, tending to be flattened on outer sides; front rather narrow, shining black with pollinose band just below middle; ocelli a little advanced before hind margins of eyes; antennae black; third joint as broad as long, rounded; arista black, about equal in length to width of face; face between eye and lateral oral margin slightly narrower than width of third antennal joint; mesonotum with very inconspicuous pale pile, a few longer hairs intermixed; femora black; fore and mid tibiae yellowish basally and apically; hind tibia yellowish basally; fore and mid tarsi dark brown, paler basally; hind tarsi blackish; first tergite black, the second tergite with a median posteriorly produced black mark; remainder of second, the third and anterior half of fourth yellowish brown, their sides briefly darkened, remainder of abdomen blackish; wings smoky; squamae and plumula whitish; halteres yellowish. Length 10 mm., wing 7.5 mm.

*Type locality*.—Blue Mountains, Washington, June, 1924 (V. Argo).

*Type*.—Cat. No. 27741, U.S.N.M.

XYLOTA RUFIPES Williston

(Notes based on type in British Museum.) Arista distinctly longer than width of face; metathoracic spiracle distinctly smaller than third antennal joint; metasternum merely pubescent; abdomen, except for the black basal segment, purplish red; legs reddish brown, hind tarsi darker; hind femur long and slender; hind trochanter of male spurred. Length 10–11 mm.

*Type locality*.—Omiteme in Querrero, 8,000 feet, Mexico (H. H. Smith).

*Type*.—In British Museum.

XYLOTA STENOGASTER Williston

(Notes based on type in British Museum.) Antennae blackish brown; third joint large; abdomen deep shining steel-blue, hind

margins of tergites 2 and 3 opaque black; metathoracic spiracle as large as third antennal joint. The constricted abdomen which Williston noted for the male of this species is an abnormality due to shrinkage in drying. Male with a well developed spur.

*Type locality*.—Omiteme in Querrero, 8,000 feet, Mexico (H. H. Smith).

*Type*.—In British Museum.

**XYLOTA BRACHYGASTER Williston**

Tergites 2 and 3 each with a pair of small yellow spots; anterior border of wing brown, hyaline behind; metathoracic spiracle large; spur on male trochanter barely suggested.

*Type locality*.—Omiteme in Querrero, 8,000 feet, Mexico (H. H. Smith).

*Type*.—In British Museum.

LIST SHOWING SYNONYMY AND CHANGES MADE IN GENERIC ASSIGNMENT OF SPECIES DESCRIBED UNDER XYLOTA

(Subsequent to the Kertesz Catalogue)

<i>arquata</i> Say	= <i>Syrphus arquata</i> (Say).
<i>pachymera</i> Loew	= <i>Planes pachymera</i> (Loew).
<i>pauzilla</i> Williston	= <i>Planes pauzilla</i> (Williston).
<i>pretiosa</i> Loew	= <i>Planes pretiosa</i> (Loew).
<i>vagans</i> Wiedemann	= <i>Planes vagans</i> (Wiedemann).
<i>anthreas</i> Walker	= <i>Xylotomima anthreas</i> (Walker).
<i>baton</i> Walker	= <i>Xylotomima baton</i> (Walker).
<i>chalybea</i> Wiedemann	= <i>Xylotomima chalybea</i> (Wiedemann).
<i>curvipes</i> Loew	= <i>Xylotomima curvipes</i> (Loew).
<i>dascon</i> Walker	= <i>Xylotomima nemorum</i> (Fabricius)?
<i>fascialis</i> Coquillett	= <i>Xylotomima anthreas</i> (Walker).
<i>fraudulosa</i> Loew	= <i>Xylotomima baton</i> (Walker).
<i>libo</i> Walker	= <i>Xylotomima libo</i> (Walker).
<i>marginalis</i> Williston	= <i>Xylotomima libo</i> (Walker).
<i>nemorum</i> (Fabricius)	= <i>Xylotomima nemorum</i> (Fabricius).
<i>metallica</i> Wiedemann	= <i>Xylotomima metallica</i> (Wiedemann).
<i>plesia</i> Curran	= <i>Xylotomima plesia</i> (Curran).
<i>pigra</i> (Fabricius)	= <i>Xylotomima pigra</i> (Fabricius).
<i>purpurea</i> Walker	= <i>Xylotomima chalybea</i> (Wiedemann).
<i>rubiginigaster</i> Bigot	= <i>Xylotomima recors</i> (Osten Sacken).
<i>subtropica</i> Curran	= <i>Xylotomima metallica</i> (Wiedemann).
<i>recors</i> Osten Sacken	= <i>Xylotomima recors</i> (Osten Sacken).
<i>bivittata</i> Bigot	= <i>Tropidia bivittata</i> (Bigot).
<i>coloradensis</i> Bigot	= <i>Tropidia coloradensis</i> (Bigot).
<i>metallifera</i> Bigot	= <i>Xylotodes metallifera</i> (Bigot).
<i>oarus</i> Walker	= <i>Brachypalpus oarus</i> (Walker).
<i>aepalius</i> Walker	= <i>Calliprobota aepalius</i> (Walker).
<i>coarctata</i> Wiedemann	= <i>Tatuomyia coarctata</i> (Wiedemann).
<i>plagiata</i> Wiedemann	= <i>Crepidomyia plagiata</i> (Wiedemann).
<i>ventralis</i> Walker	= <i>Crepidomyia ventralis</i> (Walker).
<i>subcostalis</i> Walker	= <i>Quichuana subcostalis</i> (Walker).

Genus **CALLIPROBOLA** Rondani

*Calliprobola* Rondani, SHANNON, Proc. Ent. Soc. Wash., vol. 18, p. 108, 1916.  
Table of species given.

The genotype, *C. speciosa* Rossi, differs considerably from the American species in the shape of the head. The antennal prominence is above the middle of the head and is very noticeably projecting; the face has a gentle tubercle-like swelling and the epistoma projects downwards. In the American species the head is distinctly elliptical; the antennal prominence is but little projecting; the face is concave and the epistoma truncate—just as in *Xylota*.

**CALLIPROBOLA AEPALIUS** (Walker)

*Calliprobola aepalius* (WALKER).  
*Brachypalpus sorosis* WILLISTON.

Walker's type specimen of *Xylota aepalius* is in excellent preservation. The species has been recorded from New Jersey, North Carolina, and Georgia.

*Type*.—In British Museum.

**CALLIPROBOLA CRAWFORDI** Shannon

Male genitalia has been figured by Metcalf. Idaho, Washington, Oregon, British Columbia, California.

*Type*.—In U. S. National Museum.

**CALLIPROBOLA ALDRICHI** Shannon

Male genitalia figured by Metcalf. Mount Ranier, Washington (Aldrich); Moscow Mountains, Idaho, June 10, 1920 (Shannon); Gold Lake Camp, Plumas County, California, July 19, 1916 (H. G. Dyar).

*Type*.—In U. S. National Museum.

**CALLIPROBOLA OPACUS** Shannon

Washington, Alaska.

*Type*.—In U. S. National Museum.

**CALLIPROBOLA PULCHER** Williston

Washington, Oregon, Idaho, British Columbia.

*Type*.—In U. S. National Museum.

Genus **POCOTA** St. Fargeau and Serville

Two North American species have been assigned to this genus, *grandis* Williston and *bomboides* Hunter. However, the two prove to be very distinct generically. A comparison of *bomboides* with



*apiformis* (genotype of *Pocota* European) shows the two to be congeneric and *bomboides* is therefore retained in *Pocota*. The first posterior cell in *Pocota* is closed at the wing margin; the legs are simple and the hind femur slender. These characteristics combined with the dense pubescence allies *Pocota* to certain of the Criorrhini. *Hadromyia* is of a Xylotine character.

**POCOTA BOMBOIDES** Hunter

The venation and metasternum in this species differ from those in all other Xylotini. The shape of the face is the same as in *Xylota* and *Hadromyia*, but the venation and pubescence indicates a relationship to certain of the Criorrhini. Anterior half of mesonotum yellow pilose; posterior half black; scutellum intermixed black and yellow pilose; abdomen chiefly black pilose; yellow on anterior half of fourth and sometimes along lateral margins of abdomen; fourth tergite blackish, dark green, aeneus on anterior half; metasternum pubescent, greatly reduced, each sclerite being about the size of metathoracic spiracle and longer than broad; mid femora of male simple; first posterior cell but little longer than broad, the apex acute and very close to wing margins. The genitalia are strikingly different from those of *grandis*. The basal lobe of the style in *grandis* is small, swollen, and but little differentiated from the style; the style acutely pointed. The basal lobe of the style of *bomboides* is very large, deeply sunken, saucerlike, and well differentiated from the style; style obtusely pointed, spinose.

*Type locality*.—Summit Sierra Nevada, California. Has also been collected on summit of Mount Moscow, Idaho. The males are swift fliers and love to poise in midair.

*Type*.—In University of Nebraska.

**Genus HADROMYIA** Williston

*Hadromyia* WILLISTON.

*Hadromyia*, as synonym of *Pocota*, WILLISTON.

**HADROMYIA GRANDIS** (Williston)

One of the largest of Syrphidae. Anterior half of mesonotum yellow pilose, posterior half and anterior two-thirds of abdomen black pilose; fourth tergite bright green-aeneous with yellow pile; metasternum pubescent, of normal development; base of middle femora of male with long curved spine; first posterior cell twice as long as wide; apical cross vein joining third vein acutely, a distinct petiole beyond the angle; posterior cross vein twice as long as upper outer section of discal cell (venation like that of *Xylota* in general aspect). Length 20–23 mm.

This species is of northwestern distribution: British Columbia, Vancouver Island, Washington, Oregon, Idaho.

*Type*.—In U. S. National Museum.

### SOUTH AMERICAN XYLOTINI IN THE NATIONAL COLLECTION

#### KEY TO GENERA OF SOUTH AMERICAN XYLOTINI

#### A<sup>1</sup>. Metasternum pilose.

B<sup>1</sup>. Hind femur with one or two apical toothlike processes ventrally.

C<sup>1</sup>. Hind femoral process consisting of one tooth; hind coxa without spur (*Ortholophus* Bigot?)-----*Tropidia* Meigen.

C<sup>2</sup>. Hind femoral process bidentate; hind coxa with small spur.

D<sup>1</sup>. Body very elongate; discal cross vein simple; males holoptic.

-----*Acrochordonodes* Bigot.

D<sup>2</sup>. Body broad; discal cross vein with a free-ending branch; males dichoptic-----*Stilbosoma* Philippi.

B<sup>2</sup>. Hind femur without apical process; face subcarinate.

C<sup>1</sup>. Wings nearly devoid of villi, glassy in appearance; arista shorter than width of face-----*Syritta* St. Fargeau & Serville.

C<sup>2</sup>. Wings villose, not glassy; arista distinctly longer than width of face.  
-----*Planes* Rondani.

#### A<sup>2</sup>. Metasternum pubescent or bare.

B<sup>1</sup>. Body dark colored.

C<sup>1</sup>. Face black, with a longitudinal median ridge and two oblique ridges.

D<sup>1</sup>. Abdomen strongly constricted basally---*Tatuomyia*, new genus.

D<sup>2</sup>. Abdomen of nearly uniform width-----*Crepidomyia*, new genus.

C<sup>2</sup>. Face bright yellow with an obtuse longitudinal ridge; metathoracic spiracle distinctly larger than third antennal joint; hind trochanters of male spurred-----*Sterphus* Philippi.

C<sup>3</sup>. Face bluish-black, gently concave in profile; metathoracic spiracle much smaller than third antennal joint; hind trochanters simple.

-----*Philippimyia*, new genus.

B<sup>2</sup>. Body entirely reddish yellow; very large and robust---*Eriophora* Philippi.

#### Genus *ORTHOLOPHUS* Bigot

The type specimen of *Ortholophus notatus*, was described by Bigot as having the hind femur less swollen than in *Syritta* and not spinose beneath. This character would be sufficient to exclude the species from *Tropidia*.

The same specimen now lacks the legs, which presumably were broken off since the time the species was described, as definite mention was made of the legs. The head was also broken off but glued onto the specimen again. It is of the same type found in *Tropidia nigricornis* Philippi (described below) and certain other characteristics of the body definitely ally it to *Tropidia*.

#### *ORTHOLOPHUS NOTATUS* Bigot

Description based on type specimen.

*Male*.—The facial carina is more sharply defined than in any other species of Syrphidae except *T. nigricornis* Philippi. A small por-

tion of the face below the antennae is flat and in line with the frontal triangle; the keel begins very abruptly and continues as a strong ridge to the oral margin; thorax black with rather long pile; abdomen blackish with large bluish white pollinose spots on sides of second and third tergites, the fourth entirely pollinose; metasternum divided as in *Tropidia* and pilose; stigmatal cross vein present; apical cross vein in line with posterior cross vein; anal vein rather prolonged beyond anal cell. Length, 7 mm.

Only the type specimen is known. Habitat, Chile.

*Type*.—In British Museum.

### Genus TROPIDIA Meigen

#### TROPIDIA NIGRICORNIS Philippi

The facial carina is developed as described under *Ortholophus*. Frontal triangle and face, except keel, silvery pollinose, upper sides of face yellowish; hind femur greatly swollen, the saw-tooth projection moderate; base of abdomen with large black triangle, the apex extending backward to beyond middle of second tergite; remainder of second tergite and the third reddish yellow; fourth tergite shining black with opaque reddish posterior margin; stigmatal cross vein absent.

One male; Chile (A. Faz). Determined by J. M. Aldrich.

*Type*.—Santiago, Chile (?)

#### TROPIDIA BIVITTATA (Bigot)

*Xylota bivittata* BIGOT.

A typical species of *Tropidia*. Face yellow on the sides; scutellum black; legs black; abdomen mostly reddish yellow on tergites two and three; fourth with anterior and posterior margins yellow.

*Type*.—In British Museum.

### Genus ACROCHORDONODES Bigot

*Genotype*.—*Acrochordonodes dentipes* (Fabricius).

*Acrochordonodes* at one time regarded a member of the New York State fauna (under *Senogaster comstocki* Williston) as strictly tropical. It is a close relative of the *Syritta* group. The head is very similar to the *Syritta* type; the abdomen is constricted at the third segment and the hind femur has an outer apical projection.

#### ACROCHORDONODES DENTIPES (Fabricius)

*Senogaster comstocki* WILLISTON, Proc. Amer. Philos. Soc., vol. 20, p. 326, (1882).

A male and female from Georgetown, British Guiana (H. W. B. Moore), at hand. (Determined by F. Knab.) Special features

worth noting are: The very elongate front of the male and very narrow front of the female about six times as long as broad across ocelli; the spur on the hind coxa in both sexes (only one other case, *Stilbosoma*, is known to the writer where a spur actually occurs on the coxa in the Syrphidae; usually the trochantal spur, which is frequent in Syrphidae, is called the coxal spur); the trochanter bears an obtuse spur; the hind femur has a long tooth and a shorter one subapically and the hind tibia has a subapical spur. The abdomen of the male is peculiar in that it is constricted at the third segment, whereas the second is large, only narrowed behind. This as far as known is found in only one other genus of Syrphidae, the genus *Rhopalosyrphus* of the Microdontinae. The general rule in Syrphidae when the abdomen is constricted is to have the main constriction at the second segment and the third broadened.

*Type*.—Location unknown.

#### Genus PLANES Rondani

A discussion of this genus with a key to all the known species is given in the section dealing with the North American fauna. Two South American species are here described.

#### PLANES BOLIVIENSIS, new species

*Male*.—Somewhat smaller than *vagans*, and differs otherwise in having the ocellar triangle much broader in proportion to its length; the antennal prominence less developed; the face nearly straight in profile and less retreating; the mesonotal stripes more apparent; fore and mid tibiae brownish; and the abdomen more aeneous.

*Female*.—The female has the front decidedly broader than is the case in *vagans* and the abdominal spots much less developed, being quite absent on the third tergite (this may be a variation of typical specimens). Length, 9 mm.; wing, 7.5 mm.

*Type*.—Cat. No. 28673, U.S.N.M.

*Type locality*.—Huachi Beni, Bolivia, September (W. M. Mann, while on the Mulford Biological Expedition, 1921–22).

Male type, female allotype, male paratype.

#### PLANES MINOR, new species

*Female*.—Small, slender species. Front narrowed above, at vertex but little broader than width of third antennal joint, more than twice as wide below, greenish black, with a rather broad, faintly pollinose stripe at middle; antennae yellowish brown; third joint longer than first two together and a little more than twice as long as broad; arista slightly longer than length of antenna; face shining black, yellowish brown at oral margin, concave in profile, the keel inconspicuous;

mesonotum flat, bronzy black with short yellowish pile and a pair of faint median stripes; fore and mid legs with femora black, yellow at bases and tips; tibiae brownish yellow; tarsi pale yellow, the last two joints blackish; hind femur black, moderately swollen for the genus; tibia brownish, arcuate with apical spur; tarsus pale brown, last joints darker; abdomen slightly constricted at second and third segments, each of which bears a pair of small yellow spots; wings smoky; discal cross vein at middle of discal cell, but little oblique; petiole beyond first posterior cell as long as discal cross vein; squamae and halteres pale. Length, 6.5 mm.; wing, 5 mm.

*Type locality*.—Ivon Beni, Bolivia (February, 1922, William M. Mann, while on the Mulford Biological Expedition).

*Type*.—Cat. No. 27859, U.S.N.M.

Nearest related to *vagans* (recorded above). The front is narrower, the mesonotal stripes much less distinct, and the hind femur less swollen.

#### Genus *STILBOSOMA* Philippi

*Genotype*.—*Stilbosoma rubiceps* Philippi (by present designation).

#### *STILBOSOMA RUBICEPS* Philippi

Several peculiar features characterize this species. The body is entirely dark except for the reddish yellow front and face; the antenniferous projection is very prominent, causing the face to be deeply concave; the eyes of the male are nearly as widely separated as in the female; the antennae are large, the third joint much larger than the metathoracic spiracle; arista as long as width of face; thorax and abdomen broad; metasternum bare; hind coxa with small spur; hind trochanter simple; hind femur enlarged with a bidentate projection at apical, ventral, and outer position; all the puvilli and bases of claws whitish, the posterior ones large; discal cross vein joining discal cell far beyond middle and bearing a free-ending branch; first posterior cell closed practically at the wing margin.

The presence of a spur on the discal vein is unique in the Syrphidae, and Mr. Curran has opened an interesting question concerning its origin. Mr. Curran writes:<sup>6</sup> "The anterior cross vein in the Syrphidae, or at least some of them, is not wholly a cross vein but is a fusion of what is termed the fifth radius and the cross vein. This may not be true in the Muscoid groups, but we have no proof that it is or is not, but it is certainly true in the Syrphid genus *Stilbosoma* Philippi from Chile."

The discal cross vein leaves the third vein in a very diagonal direction which gives it the appearance of a typical  $R_5$  forking in

<sup>6</sup> 54th Report Ent. Soc. Ontario, p. 21, 1923.

a normal manner from  $R_4$ . The discal ( $r-m$ ) cross vein is then forked beyond its middle, one branch ending free in the first posterior cell and the other joining the discal cell. The general appearance given is that of a normal  $R_5$  which ends shortly after its origin and which has a short cross vein extending between it and the discal cell. This may be a modification of the spurious vein. But it would seem that we have here a relic of  $R_5$ ; and perhaps the "adventitious" branch on the third vein in most Microdontinae and Ceriodinae is also a relic of  $R_5$ .

One male and one female, Valparaiso, Chile (A. Faz); one female, Santiago, Chile (A. Faz). Determined by J. M. Aldrich. Two other species have been described in this genus—*cyaneum* Philippi; *nigrinerve* Philippi.

*Type*.—Santiago, Chile (?).

#### Genus STERPHUS Philippi

*Genotype*.—(*Sterphus antennalis* Philippi) (by original inclusion) = *Xylota coerulea* Rondani.

#### STERPHUS COERULEA (Rondani)

*Xylota coerulea* RONDANI, Archivio per la Zoolog., vol. 3 (sep.), p. 8, 1863.

*Sterphus antennalis* PHILIPPI, Verh. Zool.-bot. Ges. Wien., vol. 15, 1865, p. 737.

*Sterphus coerulea* possesses all of the essential features of *Xylota* (*sensu stricto*): Metasternum faintly pubescent; head broadly elliptical; arista as long as width of face; metathoracic spiracle larger than third antennal joint; hind trochanter of male spurred; venation of the same type. It differs in having the face and frontal triangle golden yellow, the face raised to a broad median ridge, appearing inflated; width of lower face—that is, between oral margin and lower margin of eye—nearly three times as broad as width of third antennal joint (about equal in width in *Xylota segnis*); the prothoracic spiracle enlarged and yellowish; the body broader with distinctly longer pile; abdomen shining, very dark blue.

One male, Chile (E. C. Reed); two males, Valparaiso, Chile (A. Faz). Determined by J. M. Aldrich.

*Type*.—Location unknown.

#### STERPHUS AURIFRONS, new species

Mesonotum largely obscured by brownish pollinosity, pile brownish; all the tibiae are more or less reddish brown; abdomen largely shining very dark metallic green, opaque on posterior margins of second and third tergite, black pilose, rather long and dense on apex of abdomen, rather long and yellowish on anterior corners of second,

third, and fourth tergites; abdominal venter shining black with yellow pile; wings brownish. Length, 14 mm.; wing, 11 mm.

*S. coerulea* differs in being entirely shining very dark blue, the mesonotum rather sparsely brownish pollinose; the legs entirely black; the abdomen mostly black pilose, pale pilose on anterior corners of tergites and on the venter; wings dark infuscated anteriorly, subhyaline behind.

*Type locality*.—Chile (J. Fernz).

*Type male*.—In British Museum.

#### Genus PHILIPPIMYIA, new genus

Entirely shining, dark blue with purplish reflections; head broadly elliptical, evenly rounded; antennae moderate; face narrow, the moderate length of the arista much longer than facial width; face protruding in profile, moderately concave; metasternum bare; hind trochanters simple; hind femur slender; claws small and entirely black; third vein curved downward; first posterior cell closed nearly at wing margin; alar lobe narrow.

*Genotype*.—? *Sterphus cyanocephala* Philippi.

#### PHILIPPIMYIA CYANOCEPHALA (Philippi)

? *Sterphus cyanocephala* PHILIPPI, Verh. Zool.-bot. Ges. Wien, vol. 15, 1865, p. 738.

One male, Chile (E. C. Reed); one female, Santiago, Chile (A. Faz). Determined by J. M. Aldrich.

*Type*.—Santiago, Chile (?).

#### Genus CREPIDOMYIA, new genus

Of rather large and linear form and dark color. Face with three ridges, a longitudinal one and a lateral pair which extend obliquely from the oral margin to the eyes; metasternum bare, hind trochanter spurred in both sexes; petiole beyond first posterior cell one-half as long as discal crossvein.

*Genotype*.—*Crepidomyia tricrepis*, new species.

#### CREPIDOMYIA TRICREPIS, new species

*Male*.—Frontal triangle large, flat, and densely covered with pale yellow pollen; antennae black, moderate, third joint about one and one-half times as long as broad; arista a little longer than width of face across middle, yellowish basally, becoming whitish outwardly; face black with rather broad stripes of pollen within the lateral ridges; lower face more than twice as broad as third antennal joint; mesonotum black, a pollinose spot mesad of humerus and the trans-

verse suture pollinose; the pile very short and black, a few longer black hairs posteriorly; scutellum with short stout black marginal bristles; legs black, mid tarsi brownish; abdomen black, second tergite with pair of elongate yellowish spots; wings smoky. Length, 14 mm.; wing, 11 mm.

*Female*.—Front moderate, an inconspicuous pale pollinose band across middle; pollinose stripes on face very inconspicuous.

*Type locality*.—Rio Charape, Peru.

*Type*.—Cat. No. 27860, U.S.N.M.

*Holotype male*, Rio Charape, Peru, September 14 (C. H. T. Townsend); *allotype* and one male and one female *paratypes*, Piches and Perene, Vs., 2,000–3,000 feet, Peru (Sec. Georg de Lima).

#### CREPIDOMYIA PLAGIATA (Wiedemann)

*Xylota plagiata* WIEDEMANN, AUSS. ZW. INS., VOL. 2, 1830, p. 92.

An easily characterized species by means of the golden yellow frontal triangle in the male, entirely blackish in the female; the three well developed facial ridges; the lateral mesonotal stripes of yellow pile, beginning behind the transverse suture and connecting posteriorly with the marginal scutellar fringe of yellow pile; and the fairly even infuscated stripe extending lengthwise through the middle of the wing. The male is spurred, female without spurs.

Originally described from Brazil. Material at hand from the Amazon, Brazil (H. W. Bates). In the British Museum.

#### TATUOMYIA, new genus

Rather large, shining black with a strongly constricted abdomen. Face with three longitudinal ridges; the lateral one less developed than in *Crepidomyia*; metasternum bare; trochanters unspurred; hind femur much enlarged, spinose beneath; hind tibia bidentate at apex below; anterior margins of wings black, on posterior half hyaline.

*Genotype*.—*Tatuomyia batesi*, new species.

#### TATUOMYIA BATESI, new species

*Male*.—Head subelliptical; frontal triangle fairly large, extending well forward; ocelli well advanced of occipital margin; frontal triangle flat, shining black. Antenna dark brown; third joint nearly three times as long as broad; arista about twice the width of the face; median facial ridge very prominent, straight; face black, lightly dusted with silvery pollen; thorax black, very inconspicuously pilose; legs, including tarsi, black, the basal half of mid tibia and posterior half of hind femur brownish; second abdominal segment greatly



constricted, four times as long as its narrowest width; brownish on the constricted portion, opaque black on the expanded posterior portion.

*Female*.—Front at vertex narrower than length of third antennal joint; at base of antennae it is equal to length of an antenna. Length, 15 mm.; wing, 11.5 mm.

*Type locality*.—Ega, Brazil (H. W. Bates).

Described from two specimens, male type, female allotype, both in British Museum Natural History.

"*Xylota*" *coarctata* Wiedemann, congeneric with *batesi*, differs as follows: Mouth margin whitish, humeri yellow; petiole of second segment bright yellow; legs black; inner half of wings yellowish.

Williston<sup>7</sup> recognized that *Xylota coarctata* Wiedemann on the basis of the keeled face and petiolate abdomen, should be placed in some other genus. The species bear a very marked resemblance to certain tropical American wasps of the genera *Polybia* and *Tatua*.

*T. batesi* has been named for H. W. Bates, the famous early naturalist of the Amazon.

#### Genus ERIOPHORA Philippi

This genus was erected for a curious species of Chilean Syrphidae, but was later made a synonym of *Criorrhina* by Williston.<sup>8</sup> The writer finds that although it possesses certain characteristics which tend to ally it to *Criorrhina*, there are other peculiarities which well warrant keeping it as a distinct genus. The venation shows a marked difference from that of the genotype of *Criorrhina*, *asilica*. The apical cross vein has an unusually broad basal angle in *Eriophora* while in *Criorrhina* the apical cross vein is in alignment with the posterior cross vein. In *asilica*, the posterior cross vein is twice the length of the section of the fourth vein above it, while in *Eriophora* the posterior cross vein is only one-half the length of this section of the fourth vein. The antennae also show a marked difference between the two. In *asilica* the two basal joints are each much longer than broad and the arista is placed on the upper outer corner of the third joint. In *Eriophora* the basal joints are as broad as long and the arista is of the basal type, also the scutellum is nearly twice as broad as long, and truncate on posterior margin.

#### ERIOPHORA AUREORUFA Philippi

Only one species is known for this genus, which is entirely bright orange in color, clothed with dense, stiff pile except for the black

<sup>7</sup> Trans. Amer. Ent. Soc., vol. 13, 1886, p. 321.

<sup>8</sup> Idem, p. 322.

jowls and the shining black abdominal venter clothed with black pile. The apex of the wing is infuscated. Length, about 20 mm.; wing, 17 mm. One female, Chile, in the British Museum.

SPECIES OF XYLOTINI FROM SOUTH AMERICA NOT SEEN BY WRITER

The generic position of some of these species may be erroneous.

*Tropidia flavimanna* Philippi (Chile).

*Tropidia rubricornis* Philippi (Chile).

*Xylota aurifacies* Bigot (Chile).

*Xylota chloropyga* Schiner (Colombia).

*Xylota coarctata* Wiedemann=*Tatuomyia coarctata* (Wiedemann).

*Xylota genuina* Williston=*Crepidomyia*?

*Cerogaster fuscithorax* Williston. A genus apparently closely allied to *Tatuomyia*. Differs in having the face gently convex in profile; abdomen broadest on the fourth segment; discal cross vein joining discal cell shortly before the middle.

Williston described another species at a later date in the *Biologia Centralia Americana* calling it *Cerogaster auricaudata*. This species, the type examined by the writer, apparently belongs to the *Temnostomini* and it is doubtful if it is actually congeneric with the genotype of *Cerogaster*.

The type specimen of *Xylota ventralis* Walker, described from the Aru Islands, Malay Archipelago, apparently belongs to the genus *Crepidomyia*.

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