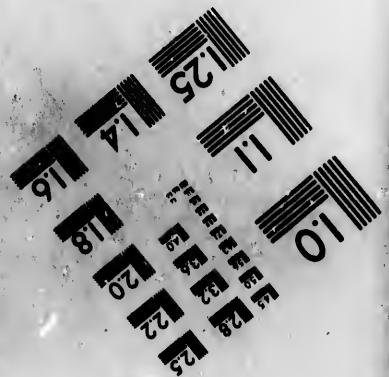
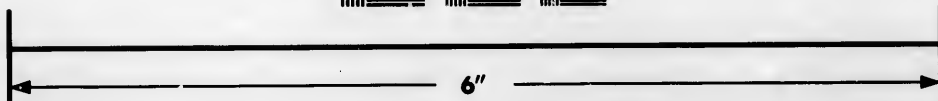
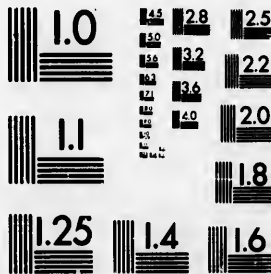


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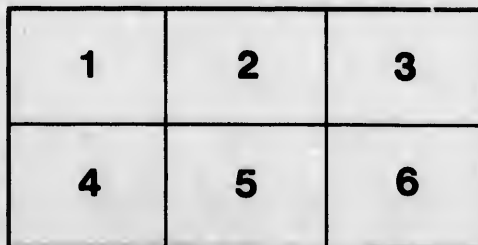
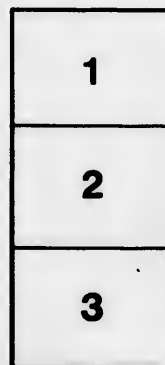
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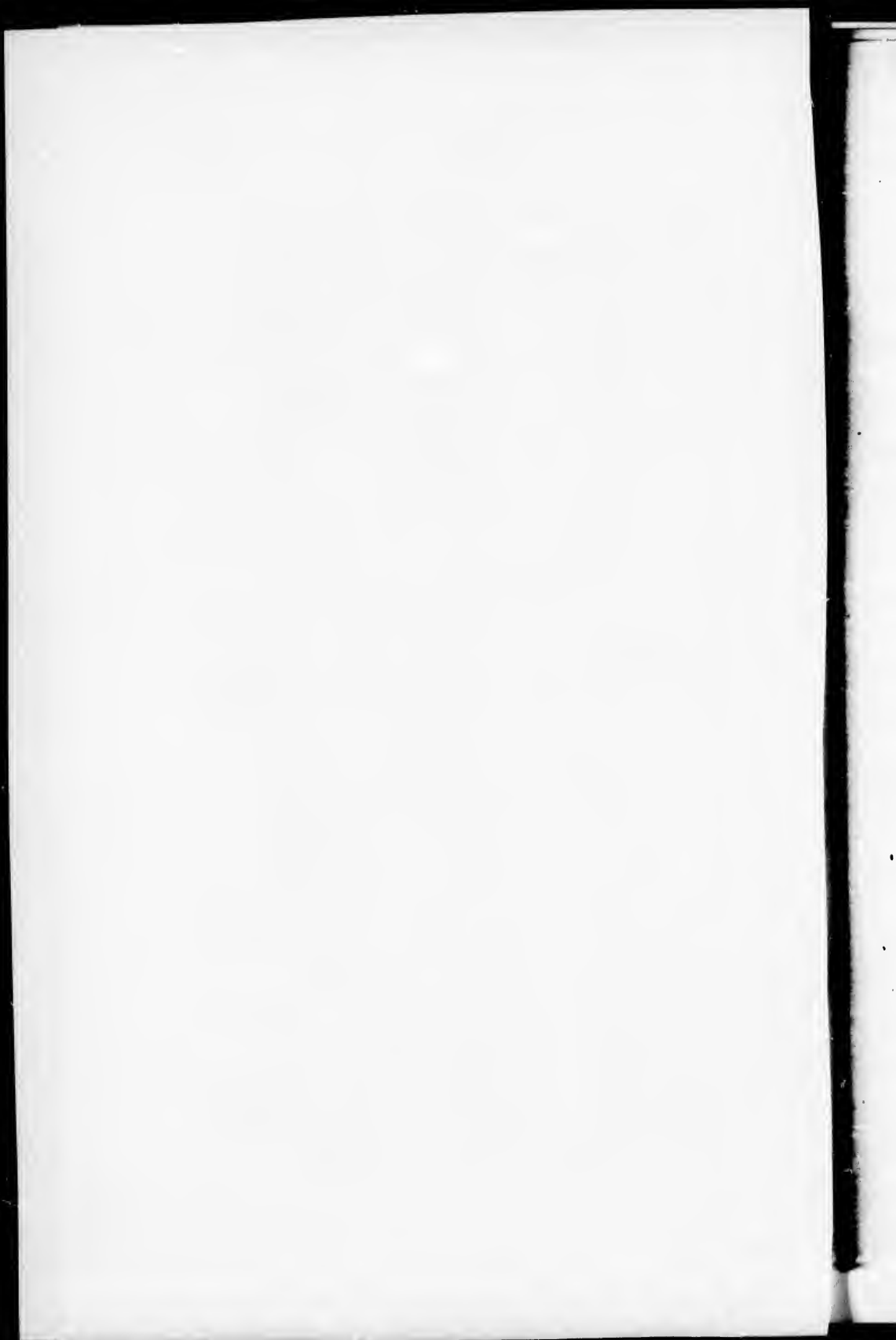
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TRANSACTIONS
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AMERICAN ENTOMOLOGICAL SOCIETY.

VOLUME XI.

On the North American ASILIDAE (Dasypogoninae, Laphrinae), with a new genus of SYRPHIDAE.

BY S. W. WILLISTON, M. D.

In the following pages I have endeavored to tabulate the genera of *Dasypogoninae* and *Laphrinae* from the United States. The genera *Sphageus* from Cuba, *Archilestris*, *Lastaurus*, *Megapodu* and *Pseudorus* from Mexico and *Psilocurus* from Texas are not included, all of which have but one known species each. *Dizonia* (1 sp. Tex. and Fla.) and *Blaecodes* (1 sp. Texas) are unknown to me and their positions have hence from necessity been wholly drawn from figures and descriptions. On the other hand there are added *Trictis*, *Habropogon*, *Hyperechia* and *Maria*, not hitherto recorded from North America; whether correctly or not the detailed descriptions I trust will show. A new generic name is also proposed, and the earlier name of *Deromyia* adopted for the species of *Diognites*. *Loparus? pictitarsis* Bigot from California does not belong in that genus, nor can it be well placed with *Cullinicus* to which it is most nearly allied. Moreover several species now placed under *Cyrtopogon* are provisional, and will some time require generic separation. Altogether then, with the genera and species herein added, thirty-five genera with one hundred and twenty-five species of *Dasypogoninae* and eleven genera with fifty species of *Laphrinae* represent the extent of our knowledge in these two sub-families in North America.

The *Asilinae* are but little known. From the Western regions I know three species of *Mallophora*, three of *Promachus*, three or four of *Proctacanthus*, five or six of *Erae*, with others of *Tolmerus*, *Machinus*, and a number whose positions I am in doubt about. *Ommatius*, two species of which I know from New England and Georgia, I have not yet seen elsewhere.

In using the table, the terminal spur of the front tibiae should be sought for with care; in some of the species it is very small. It lies across the inside of the joint between the tibia and metatarsus, and is more or less oblique and bent.

Table of genera of the N. A. DASYPOGONINAE and LAPHRINAE (north of Mexico).

A.

DASYPOGONINAE.—Marginal cell of the wing open

- | | | |
|--|---------------------|------------------|
| 1.—Front tibiae with a terminal claw like spur..... | 27. | |
| Front tibiae without such spur..... | 2. | |
| 2.—Pulvilli rudimentary or wanting..... | 3. | 15.— |
| Pulvilli normal..... | 4. | |
| 3.—Face very narrow; abdomen very long, slender, narrow on proximal part; hind legs elongate, slender..... | Leptogaster. | 16.— |
| Face moderately narrow; abdomen not unusually long, broader at base; hind legs not elongate..... | Ablautatus. | 17.— |
| 4.—Head narrow, about as high as broad; face narrow above, broader and swollen below, in large part covered with hair. Large elongate species..... | 5. | |
| Head very obviously broader than high..... | 7. | |
| 5.—Antennae with a terminal style..... | 6. | |
| Third joint of antennae very long, without style; fourth posterior cell closed before the border of the wing. Black species with or without red on the abdomen..... | Ospricerus. | 18.— |
| 6.—First posterior cell open, not closed before the border of the wing. | | |
| | Stenopogon. | |
| First and fourth posterior cells closed before the border of the wing; third joint of antennae shorter, style longer..... | Scleropogon. | 19.— |
| 7.—Fourth posterior cell closed before the border..... | 8. | 20.— |
| Fourth posterior cell wide open, rarely nearly closed..... | 12. | |
| 8.—Antennae elongate, of five joints (<i>Myelaphus</i>)..... | 13. | |
| Antennae not elongate, of three joints, and a terminal style..... | 9. | 21.— |
| 9.—Face bare, except on oral margin; abdomen elongate, cylindroidal; anterior intercalary vein continuous, or nearly so, with the fourth vein, the last section of fourth vein oblique, sinuous, closing or much narrowing the broad first posterior cell. Large, or very large species..... | Microstylum. | 22.— |
| Face pilose or hairy, more convex..... | 10. | |
| 10.—Abdomen cylindrical, not narrow at the tip, elongate; near the base of second and third segments with white pollinose emarginate cross-bands; wings blackish..... | Dizonias. | 23.— |
| Abdomen less elongate, with five or six white pollinose cross-bands..... | 11. | |
| 11.—First posterior cell open, scarcely narrowed, face broad..... | Laphystia. | 24.— |
| First posterior cell much narrowed, or closed..... | Trichis. | |
| 12.—Antennae elongate, composed of five joints; nearly bare species..... | 13. | |
| Antennae less elongate or short, of three joints, with or without a short or slender style..... | 14. | |
| 13.—First and second joints of antennae of nearly equal length, third elongate, fourth short, fifth elongate and densely pubescent, third and fourth not lobed at tip..... | Ceraturgus. | gib
abc
wi |

First joint about three times as long as the second, third elongate, fourth and fifth of nearly equal length, third and fourth at the tip with two lobes, or processes, reaching to about the middle of the following joint.

Myelaphus.

- 14.—Style of antennae short, thick, obtuse, not easily distinguished from the third joint, or if so, forming an apparent joint. Small or rather small species, nearly bare, shining or metallic black, with narrow or cylindrical abdomen and large wings; face flattened, bare except below, hind tibiae pilose on the inner side.....15.
 Terminal style small, more slender than the joint, apparent, antennae shorter if elongate and style indistinguishable; the species not bare but thickly pilose.....16.
- 15.—All the tibiae and the hind femora with short strong setae...**Ethodopa.**
 Hind femora without such setae.....**Dioctria.**
- 16.—Face distinctly convex in profile, swollen or gibbose*.....17.
 Face flattened or gently convex.....19.
- 17.—Head as broad or broader than the thorax, front at base of antennae flattened, not projecting in profile; terminal style of antennae slender or differentiated from the joint.....18.
 Head narrow. Antennae situated upon a convexity, thence receding to the facial tubercle which is at the lower part of the face; antennae elongate, style short, obtuse; abdomen short; thickly pilose species, the bristles few and hair-like.....**Dicolonus.**
- 18.—Thickly pilose species: the gibbosity of the face reaches to the base of the antennae; anal cell usually open*.....**Cyrtopogon.**
 Thinly pilose, more pollinose species, the convexity of the face on the lower part, anal cell usually closed.....**Daulopogon.**
- 19.—Abdomen elongate; front broad anteriorly, narrow behind...**Plesiomma.**
 Front not narrowed behind.....20.
- 20.—Hind tibiae toward the tip, and their metatarsi, much thickened.....21.
 Hind tibiae not, or but slightly, thickened toward the tip; metatarsi not thickened.....22.
- 21.—Head much broader than high, transverse, "goggle" like; abdomen short, wings large.....**Holcocephala.**
 Head only moderately broader than high, not at all spectacle-like in appearance.....**Holopogon.**
- 22.—Abdomen with thick recumbent pile above; thickly pilose species; antennae slender.....**Pycnopogon.**
 Abdomen without such pile above.....23.
- 23.—Slender, nearly bare species; face perpendicular, straight or gently concave, narrowed above, bare, except on oral margin.....24.
 Face gently rounded, not prominent below, in large part hairy, not or but slightly narrowed above.....25.
- 24.—Thickly whitish pollinose; abdomen flattened, usually reflected upward, third joint of antennae and style both slender.....**Stichopogon.**

* Several species are placed provisionally under *Cyrtopogon* in which the facial gibbosity is small, and the body thinly pilose. They may be distinguished by the abdomen not being broad, and having white pollinose cross-bands; in some the wings have small but distinct clouds on the cross-veins.

- Less thickly pollinose; abdomen cylindrical, a little broader at base; third joint of antennæ short, broad, style minute.....? **Habropogon**.
- 25.—Large, elongate species, style of antennæ short.....**Callinicus**.
Moderately large, not much elongate.....26.
- 26.—Abdomen broader at the base, depressed; thorax much convex above, antennæ slender, style long and slender (compare species of *Cyrtopogon*).

Anisopogon.

- Abdomen short, cylindrical, antennæ moderately long, style short. Black with bright golden yellow opaque pollinose markings on thorax and abdomen.....“**Laparus?**” (*pictitaris* Big.)
- 27.—Large species; face bare with bristles on the oral margin, in profile straight or concave, the oral margin projecting.....28.
Smaller species: face convex on lower portion, not projecting.....29.
- 28.—Elongate; fourth posterior cell closed, usually a considerable distance before the margin.....**Deromyia**.
Less elongate; fourth cell open or closed in the margin, rarely a little petiolate.....**Saropogon**.
- 29.—Head broad and flat, face not gibbose, third joint of antennæ slender, elongate.....30.
Head only moderately broader than high; face gibbose below; third joint of antennæ more or less dilated, style very short; thorax and legs with numerous bristles; abdomen broadest at the base, rather slender, subcylindrical.

Lestomyia n. g.

- 30.—Abdomen finely punctulate, of nearly equal width, hind tibiae at the tip and their tarsi only a little thickened; wings hyaline.....**Taracticus**.
Abdomen smooth; hind tibiae at their tip and their tarsi thickened (compare here *Nicoles?* *scitula*); antennal style slender, acuminate; wings variegated.....31.
- 31.—Abdomen flattened; in the female a little broader beyond the middle; in the male near the tip, the last two segments of which conspicuously silvery.

Nicoles.

- Abdomen of nearly equal width throughout, the last segment in the male not silvery, fourth posterior cell narrowed.....**Blacodes**.

B.

LAPHRINAE.—Marginal cell of the wing closed, antennæ without a terminal bristle.

- 1.—The veins at the distal ends of the discal and fourth posterior cells in the same straight line, continuous, or nearly so.....2.
The veins, etc., not in the same straight line, the vein closing the fourth posterior cell more or less remote and oblique.....3.
- 2.—First joint of antennæ elongate, slender; second posterior cell narrowed toward the margin of the wing.....**Cerotainia**.
First joint of the antennæ much shorter than the third; first posterior cell narrowed or closed, the second wide open.....**Atomosia**.
- 3.—First posterior cell narrowed or closed.....4.
First posterior cell wide open.....6.
- 4.—Three submarginal cells, i. e. the upper branch of the third vein is connected with the second by a short vein.....**Pogonosoma**.
Two submarginal cells.....5.

- 5.—Hind femora of nearly equal thickness throughout; antennæ with a distinct terminal style; very large, robust, thickly pilose species...**Hyperechia.**
 Hind femora thickened toward the end; antennæ without terminal style; more elongate, less pilose species.....**Andrenosoma.**
- 6.—Thorax and abdomen nearly or quite bare.....7.
 Thorax and abdomen thickly pilose, larger species.....8.
- 7.—Hind femora with spinous tubercles below.....**Lamprisa.**
 Hind femora without spinous tubercles below..**Maira.**
- 8.—Densely pilose species; the abdomen short, broad, usually broader beyond the middle, in the male sometimes more elongate; proboscis thick...**Dasyllis.**
 Less pilose, more elongate species; proboscis more elongate and slender. **Laphria.**

MYELAPHUS.

Bigot, Bulletin Soc. Ent. de France 1882, No. 9, p. 112.
Ceraturgus Osten Sacken (parte).

This proposed new genus of *Dasyypogoninae* has been insufficiently characterized by its author, with a very brief diagnosis of the type species as follows:

"**Myelaphus melas** ♂.—Long. 15 mm. *Totus niger, abdomine nitido; halteribus et pulvillis flavis; alis nigris, intus et apice parum dilutioribus. Oculis nudis.*—California."

I have before me a specimen which I believe to be this, together with two other species closely allied, and which appear to offer sufficient characters to justify their separation from *Ceraturgus*, under which one of them had been described by Baron Osten Sacken. From the light that these species afford on the value of the characters in this genus and *Ceraturgus* it seems desirable to give the structural and specific characters in detail.

Head broader than the thorax, considerably broader than high. Face a little less than a third as wide as the head, its sides very nearly parallel, diverging but very slightly below, bare, smooth and shining, on the oral margin in front with a thin row of moderately long bristles; in profile gently receding, above the middle with a moderately large obtuse tubercle (wanting in *M. lobicornis*), not reaching quite as far forward as the base of the antennae, between which it is gently concave, and below the tubercle to the oral margin considerably receding, nearly straight; the oral margin in front is distinctly above the lower borders of the eyes, so that the lateral margins of the mouth are considerably oblique, and straight. Antennæ situated upon a large obtuse tubercle, about as long as the dorsum of the thorax, composed of five joints as in *Ceraturgus*, all of which are distinctly separated from each other: first joint cylindrical, elongate, rather more than three times as long as the second; second joint short, but little longer than broad; third joint distinctly longer than the first two together, somewhat compressed, only a little broader, terminating in two lateral lobes, or processes, which extend as far as the insertion of the second joint of the style; fourth joint, or first joint of the style, somewhat Y shaped, the terminal lobes being rather more than one-half of the entire length of the joint, longer and more slender than those of

the third joint: fifth joint, or second joint of the style, longer than the entire length of the preceding, narrowed, almost pedicellate at the base, flattened beyond the tip of the lobes of the preceding joint, and then obtusely pointed, somewhat irregular in shape and shallowly sulcate, clothed with very fine short pile.

Thorax convex, nearly bare, wholly without macrochaetae except a few very short intra-alar ones. Legs rather stout, without macrochaetae except a few short ones at the tips of tibiae and the basal tarsal joints. Wings as in *Ceraturgus cruciatus*, but broader, marginal and first posterior cells open; the posterior intercalary vein arises from the posterior basal transverse vein a short distance from the base of the discal cell. In *M. melas* the type and *M. rufus* (new sp.) the fourth posterior cell is broadly open, in *M. lobicornis* closed and petiolate. Anterior cross-vein near middle of the discal cell.

Abdomen in structure rather like that of *Dioctria*, shorter than the wings, the sides nearly parallel, or gently concave, to the tip of the fifth segment in the male, in the female the fifth segment gently narrowed behind: a little narrower than the thorax in the male, in the female about as wide; flattened, so that transversely it is only gently convex above, gently grooved at the incisures, each segment being gently convex longitudinally; smooth, nearly bare, except sparse very short pile; segments of nearly equal length, the sixth a little shorter, the seventh very short. Hypopygium small.

This description is drawn from a male of *M. melas* and a female *M. rufus* which agree closely in structure. In *M. lobicornis* the antennal protuberance is more obtuse, and the face more flattened, in profile very narrow, and the prominence near the middle wholly wanting. The fourth posterior cell is also closed a little before the margin of the wing, and the first posterior cell strongly coarctate.

From the diagnosis of this genus given by Mr. Bigot, there are some differences, which might render the recognition doubtful. The antennae are not as long as the head and thorax combined, but considerably shorter, and the third joint is at least a half longer than the first; the third joint has two processes like the fourth joint. There are but two joints in the style, as in *Ceraturgus*. From the irregular shape of the last joint, it might be thought to be divided, but such is not the case. Three joints in the style would be anomalous I think.

1. *Myelaphus melas*.

† *Myelaphus melas* Bigot, l. c.

♂.—Black, abdomen shining; halteres and pulvilli yellow; wings black, more dilute behind and at the tip. Length, 14½ mm. Face smooth, shining, bare, in the middle on the tubercle broadly and indefinitely pitchy red; bristles on the oral margin yellowish white with one or two black ones on the sides; beard short, sparse, black. Front on the sides near the eye with a few short black bristles. Antennae wholly black; on the upper sides of the first and second joints, with a few short black hairs. Thorax deep shining black, above with a blue reflection, the dorsum wholly without markings, but covered with very short sparse black hairs; a minute spot on the humeri red, and the post-alar callosities pitchy black. Pleurae very smooth, shining, except on the upper part of the sternopleurae.

and on the mesopleurae, where it is moderately thickly covered with short pile, black above, whitish below. All the coxae on their outer sides with sparse whitish pile, and at their lower ends with a few short whitish bristles. Halteres yellow, the extreme base a little brownish. Abdomen shining black, with very short, rather sparse black hairs, slightly intermixed with whitish on the sides of each segment; on the hypopygium with longer light yellowish or whitish pile. Legs deep black, the front and middle knees very narrowly yellowish, the pulvilli and base of claws light yellow; on the front tibiae below, their tarsi and on the middle tarsi less so, with reddish pubescence. Wings blackish on the anterior portion toward the base, along the posterior and outer part more dilute, but still slightly tinged with brown or blackish; first posterior cell not at all narrowed at the margin, fourth posterior cell broadly open, the fifth vein at the tip slightly curved backward.

One specimen, Kern Co., California.

2. *Myelaphus rufus*, n. sp.

♀.—Yellowish red; third joint of antennae and the style, proboscis, occiput, three broad, abbreviated stripes on the dorsum of the thorax, two spots on the lower part of pleurae, and tips of claws black. Length 17 mm.

Face, front, and first two joints of antennae reddish yellow, shining, the face below, near the eyes, and on each side of the base of the antennae lightly yellowish dusted. Bristles of the oral margin yellowish white; on the sides of the front a few shorter ones yellow. Third joint of antennae and the style deep black. Proboscis black, the pulpi yellowish. Occiput black, thickly yellowish pollinose on the sides; occipito-orbital bristles short, thin, and like the sparse short beard below are yellow. Dorsum of thorax yellowish red, with three broad black stripes, separated from each other by linear intervals; the lateral ones begin some distance behind the humeri and extend to within a short distance of the scutellum, on the posterior part narrow; the middle one begins at the prothorax and has well defined edges to the transverse suture, immediately behind the suture the stripe becomes obsolete. The dorsum is clothed with short, not very abundant golden pile, and has three or four short, inconspicuous, yellow, intra-alar bristles. Pleurae yellowish red, except a large spot above the middle coxae, and another nearly confluent, smaller one above the hind coxae, which are smooth, shining, pitchy black. On the mesopleurae and upper part of the sternopleurae with golden yellow pile, moderately dense; just beyond this there is a smooth shining space. Halteres yellow. Abdomen wholly red, darker, somewhat ferruginous along the dorsum: very shining and clothed with sparse, short golden pile. Legs wholly reddish yellow, the tips of the claws only black; pulvilli and the base of the tibiae lighter colored, the coxae on their outer sides with whitish pile. Wings very distinctly blackish clouded on the outer part, the veins blackish, at the base the veins and cells are yellow. First and fourth posterior cells a little more narrow at their outer parts than in *M. melas*.

One specimen, Kern Co., California (H. K. Morrison).

It is probably that, as in the following species, the wings in the male may be, not yellow, but brown or blackish toward the base.

3. *Myelaphus lobicornis*.

Ceraturgus lobicornis Osten Sacken, Western Dipt. 287.

♂ ♀.—Head and thorax wholly black, coxae, trochanters, more or less of the base of the four front femora, tips of tarsi, narrow base and lateral margins of

abdomen black or blackish; legs and abdomen yellowish red. Wings in the male tinged with brown, darker, sometimes dark brown in front toward the base: in female the basal half yellowish, the posterior and distal half brownish." (Face nearly plane, without tubercle. Wings comparatively narrow; first posterior cell coarctate, fourth posterior cell closed and petiolate). Length 10-12 mm.

I have a single male specimen from Kern Co., that I believe to be this. It agrees very well indeed with the original description, except that all the femora from the very trochanters are reddish yellow, the venter is red and the wings are dark brown before the anterior cross-vein, beyond which there is a large space very nearly hyaline; the posterior portion for the whole length has a distinct blackish tinge. However, these differences are such as Baron Osten Sacken himself noted, or anticipated. The only reason that I am at all doubtful of the identity is that the author did not speak of the closed and briefly petiolate fourth posterior cell, a character, however, that is probably more or less variable. The hind femora in this species are stouter and more thickened on the proximal portion than in the preceding species.

DIOCTRIA.

4. *Dioctria nitida* n. sp.

♂ ♀.—Black shining, thorax yellow pilose and pollinose, mystax black; tibiae yellow, tips black. Length 11-13 mm.

Much like *D. albius* but larger and all the tibiae light reddish-yellow, except the tips. Face bright golden yellow, mystax and pile of the front black. Antennae in structure quite like those of *D. albius*, black. Thorax rather thickly clothed with golden-yellow pollen and pile. Pleurae shining black, with four rather small patches of dense yellowish-gray pollen, and similar ones on all the coxae, the front and middle coxae with white pile. Abdomen deep, shining, somewhat metallic, black. Legs black, front and middle tibiae except the immediate tips, and the hind pair a little more broadly, reddish-yellow. Wings nearly uniformly blackish, veins yellow at the base.

Four males and one female, Washington Territory.

5. *Dioctria albius* Walker.

From comparison of five specimens from Washington Territory with thirty from Connecticut, I am at a loss to find differences that will justify their separation.

6. *Dioctria Sackeni* n. sp.

♂.—Black, basal half of wings light yellow, distal half blackish; anterior femora below, tip of middle and hind femora, four front tibiae except their tip, and basal half of hind tibiae reddish-yellow. Length 7 mm.

Face yellow above, silvery below; mystax, pile of front, of antennae, and the beard white. Antennae black, rather scute at tip. Dorsum of thorax densely

covered with whitish-yellow pollen, the pile of nearly the same color. Pleurae shining black, with small patches of yellowish-white pollen. Abdomen slender, wholly shining. Legs black, the front femora on the under side, the tip of middle femora and more or less along the under side, the hind femora at tip, the four front tibiae except the immediate tip and the hind tibiae on rather more than the basal half, light reddish-yellow; hind femora much thickened. Wings on the basal half light yellow, from the cross-veins blackish.

Three specimens, Washington Territory.

This species must be very similar to the specimen mentioned by Baron Osten Sacken in his *Western Diptera* p. 288, from the White Mts. The hind femora are comparatively more thickened than in *T. albius*.

LAPHYSTIA.

7. *Laphystia sexfasciata*.

Dasypogon 6-fasciatus Say, J. Acad. Phil. iii, 50, 1; Compl. Wr. ii, 64; Wiedeman, Auss. Zw. Ins. i, 408, 68.

Laphystia sexfasciatus Schiner, Verh. Zool. Bot. Ges. 1866, 698.

Laphystia sexfasciata Loew, Berlin. Ent. Zeit. 1874; 373; Osten Sacken Cat. Dipt.; Bigot, Bull. Soc. Ent. Fr. 1879, 87.

Triclis notata Bigot, Annales Soc. Entom. France. 1878, 433; id. Bull. Soc. Ent. 1879, 87.

Laphystia subfasciata Bigot, ibid. Annales 1879, 236.

The genus *Laphystia* is intermediate in position between the *Dasypogoninae* and *Laphriinae*. Our single authenticated species seems to have more affinity with *Laphystia sabulicola* Lw. than with *Laphystia gigantella* Lw. and may therefore remain in this genus. In *L. sexfasciata* the marginal cell is not closed, but distinctly open. I have therefore placed the genus under the *Dasypogoninae*. It resembles the following species, but has a wider face, and open first posterior cell.

TRICLIS.

Loew, Bemerk über d. Fam. Asil. 17 (1851). *Gastrichelius* Rondani.

8. *Triclis tagax* n. sp.—(Plate I, figs. 6, 6a.)

♀.—Black, whitish pollinose; head wholly with light pollen and pile; segments of abdomen with a large semicircle in front and the anterior angles shining. Wings hyaline. Length 6½ mm.

Face thickly white pollinose, and with white hairs in the mystax, reaching nearly to the antennae; straight on the sides, in profile gently swollen below. Antennae black, first and second joints short, of nearly equal length, third broad, not longer than the first two together; style very small, short. Front faintly brownish; occiput thickly white pollinose on the sides; beard white. Thorax black, the dorsum thickly covered with short yellowish-white recumbent pile, along the middle in front a shining stripe; bristles slender, black. Pleurae thickly white pollinose, with a small shining black spot above the middle coxae; scutellum pilose with a row of thin bristles along its edge. Abdomen short, moderately broad, not much narrowed posteriorly; shining black, the posterior margins of the segments narrowly red, but obscured by the thick white pollen which leaves the black to form a large semioval spot, nearly reaching the hind margin in the

middle and only narrowly separated from the small black spot on the anterior angles which extends to, or nearly to, the hind margin. A circle of long bristly hairs near the tip black; otherwise the short, not abundant pile, is yellowish, whitish or white. Legs black, rather thickly clothed with short fine white pile, along the under side of the hind femora and tibiae a little longer and more thickly erect pilose, as in *Dioctria*; bristles mostly white. Wings pure hyaline, the first posterior cell closed a little before or at the tip, the fourth at a considerable distance before the border.

One specimen, Kern Co., California.

On account of the closed first posterior cell I place this species under *Trichia*, with which it seems to agree otherwise very well. *Psilocurus nudiusculus* Lw. is apparently related, but the first posterior cell is wide open.

HABROPOGON Loew.

Dactiliscus Rondani.

A single specimen of a species from California seems either to belong to this genus or is closely allied. I have no specimens for comparison. Whether the structure of the face is the same I do not know. In my specimen the mystax is confined to the oral margin as in *Stichopogon*. I give therefore briefly the structural characters of the present species. I believe the genus has never been recorded from this continent.

In structure, except the head, throughout like species of *Stenopogon*, but less pilose. Head considerably broader than high, but scarcely as wide as the thorax. Face very narrow, the eyes separated by an extremely narrow interval from the antennae; their inner margins above and below gently divergent, so that the distance between the angles below is a little greater than that above. Face in profile gently concave from antennae to oral margin, nearly perpendicular, wholly bare, except a thin short row of soft bristles on the oral margin, which is projecting as in species of *Stichopogon*, *Deromyia*, and *Suropogon*; front only gently excavated, widened above. Antennae short, first two joints of equal length, third a little longer than the first two together, broad, scarcely more than twice as long as wide, obtusely pointed at the tip and with a very small, almost microscopic style; beard short and thin. Thorax bare, except with very minute hairs, and moderately strong, not abundant bristles on the back part; scutellum with four bristles. Abdomen slender, elongate, cylindrical, broader at the base, bare. Front and middle femora with two posterior preapical, and the hind femora with an anterior row of bristles. Fourth posterior cell nearly closed.

The head and antennae may perhaps be like those of *Psilocurus*, but the face is much narrowed above, and wholly bare, except the bristles below; the abdomen is by no means "flach und gleich breit," and has a star of spines at the tip in the female.

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9. **Habropogon bilineatus** n. sp. (Plate I, fig. 8.)

♀.—Black, gray pollinose, mystax white; dorsum of thorax yellowish-gray, with two slender opaque black stripes; 1-5 abdominal segments with red borders; under side of all the femora and base of tibiae red. Length 15 mm., of wings 9 mm.

Face and mystax white, the former opaque; front a little yellowish gray, the few short bristles black. Antennae and proboscis both short black. Dorsum of thorax gray with a yellowish or brownish cast, the ground color of humeri, postalar callosities and scutellum appears to be yellowish red; in the middle two slender narrowly separated, but very distinct, opaque black stripes, obsolete in the posterior part; bristles wholly black. The ground color of the pleurae apparently in large part reddish, but concealed beneath dense, very light colored pollen, which also covers the coxae. Abdomen black, rather thinly yellowish grayish pollinose, the terminal segments more shining, the sides and posterior margins of the first-fourth segments and the sides of the fifth red; the pile is very short. Anterior and middle coxae thickly clothed with white pile. Legs black; the under side of all the femora broadly red, the base of hind tibiae and the four front tibiae, except their tip, red, or yellowish red. Wings nearly hyaline, veins black.

One specimen N. California (O. T. Baron).

DICOLONUS.10. **Dicolonus simplex** Loew, Centur. vii, 56. (Plate I, fig. 4.)

I recognize this species in two male and one female specimens from Southern California. The pile, however, appears to be lighter colored, and in only one specimen is there any black pile on the front, and none have any at the tip of the abdomen.

CYRTOPOGON.11. **Cyrtopogon dasylloides** n. sp.

♂.—Black, thickly black pilose; mystax thick, light yellow; coxae with white pile. Abdomen, except the tip, with long, dense, furry, erect, light yellow pile; tarsi red; wings hyaline, the distal half in front blackish. Length 17 mm.

Face very thickly light yellowish pilose, on the lowest portion somewhat black; beard white. Style of antennae short, thickened. Pile of the front, occiput, and of first two joints of antennae black. Thorax thickly black pilose, dorsum nearly opaque, on the sides of the middle in front a little brownish pollinose; bristles not strong. Scutellum thickly pilose, not pollinose, convex. Abdomen nearly parallel on the sides, shining, but its shape and color nearly concealed by the very long, erect, furry, yellow pile, the first segment with a very little black pile above on the sides, and the last segment and hypopygium wholly thickly black pilose. Coxae white pilose. Legs black, densely black pilose, hind tibiae deep red, all the tarsi lighter red, the front pair with white pile. Wings hyaline, the outer half in front from the margin of the third vein blackish, a little lighter at the tip, and fading out behind.

One specimen, Washington Territory.

This remarkable species falls into the group of I. A. aa. of Osten Sacken's synoptical table (West. Dipt. p. 294) and is allied to *C. aurifex* O. S. from which it will be readily distinguished by its much larger size,

blackish cloud on outer part of wings, red tarsi and the more abundant, denser and wholly yellow pilosity of the abdomen, except its tip.

12. **Cyrtopogon plausor** O. Sacken, West. Dipt. 297.

Four male and one female specimens from Colorado agree perfectly with the description.

13. **Cyrtopogon callipedilus** Loew, O. Sacken, West. Dipt. 296.

A female from Southern Wyoming (alt 8000) agrees throughout with the description.

14. **Cyrtopogon praeipes** n. sp.

♂ ♀.—Scutellum convex above, pilose; legs densely pilose, wholly black; front tarsi of the male with a single row of silvery pile from the very base and the terminal joints of middle tarsi with a disk of black pile, longer than broad; sides of the abdomen at base white pilose, shorter and black on distal portion. Length 11–12 mm.

♂.—Black, shining. Face thickly light yellowish pollinose, but concealed beneath the dense light yellow mystax, black on the oral margin. Beard, anterior and middle coxae, first two segments of the abdomen on the sides, and all the femora below, and on the posterior part, thickly, nearly white pilose; front, upper part of the occiput, basal joints of the antennae, dorsum of thorax and scutellum, dorsum of abdomen and sides from the second segment, upper surface of femora and all the tibiae black pilose. Dorsum of thorax with two large spots on each side of the middle in front, brownish pollinose; pleurae thickly light pollinose. Legs wholly deep black, the posterior tibiae at tip and their metatarsi with golden red pubescence. Legs not very stout, nor the bristles very strong; anterior tarsi slender, on their upper side for their whole length with a row of short, dense, silvery pile, not parted, except at the tip, the surface below is smooth, but along the sides there is a fringe of very short black bristles; two last joints of middle tarsi with the disk of black pile narrower than in the other species, longer than broad. Wings nearly hyaline.

♀.—Like the male, but the face is a little more bare upon the sides, the pile throughout somewhat shorter, the dorsum of the thorax more grayish pollinose in front leaving two slender medium dark stripes; the light pile of the abdomen is less abundant and extends on the sides to the fourth segment, and the black pile very short, on the posterior angles of the second, third and fourth abdominal segments there is a small silvery spot; the pile of the femora is more obscure, the silver pile of the front, and the black disk of the middle tarsi wanting.

Two ♂ and two ♀ specimens, Washington Territory.

This species is closely allied to *callipedilus*, *cymbalista*, *plausor* and the following:

15. **Cyrtopogon** n. sp.

Represented by three males and two females from Northern California.

The males throughout are nearly like *praeipes*, except in the tarsi, which are shorter, and the front and middle pairs are ornamented like *cymbalista* is described to be, that is the first joint of the front pair has but little silvery

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pile, and on the other joints it is parted so as to form two rows; the joints are wholly wanting in the black bristles, and the black disk of the middle pair is very broad. The female is difficult to distinguish from *praepes*, but the front tarsi are not so slender, and on the sides of the dorsum of the thorax, in front of the suture there is a large brown pollinose spot which is wholly shining in *praepes*. There can be scarcely a doubt of the distinction of the two species, but I do not give it a name till larger collections have been examined.

16. **Cyrtopogon profusus**, O. Sacken West. Dipt. 305.

A male from New Mexico (from Mr. E. Keen) agrees very well with the description.

17. **Cyrtopogon nugator** Osten Sacken, West. Dipt. 307.

A male and female from Mt. Hood. The male has the second and third abdominal pollinose cross-bands narrowed in the middle, but entire.

18. **Cyrtopogon** n. sp.

In size, shape and abdominal markings resembling *C. nugator*, but the markings of the thorax obscure and the unguis black. The body is almost wholly without pile, except the thin white beard; the face has sparse black bristles, the dorsum of thorax and scutellum bare, except a row of bristles on each side of the former, and two on the border of the latter; the abdomen wholly bare, black, shining except the interrupted cross-bands on segments 1-6, the femora are bare, the tibiae and tarsi only with black bristles. The fan-like row of bristles in front of the halteres is black, and the species would be sought for under *positivus* or *scutator* of Osten Sacken's synoptical table. Washington Territory.

19. **Cyrtopogon dubius** n. sp.

♀.—Scutellum flattened, gray pollinose above; abdomen shining black, first segment on the sides, and the four following with interrupted posterior cross-bands of gray pollen; femora black, tibiae and tarsi dark red; head, except the beard, wholly black pilose, antennae black; wings with narrow brown clouds on the cross-veins. Length 11 mm.

Face thickly whitish pollinose and densely black pilose, beard below white, on the sides and above black. Dorsum of thorax deep blackish brown with dense gray pollinose markings as follows: A slender median stripe obsolete behind; a large spot in front of the scutellum, slenderly prolonged on its anterior angles to the middle of the dorsum, the humeri, a spot on their inner sides, another large one behind, concave on its inner border, and a smaller one on the post-alar cilliosities. Pleurae gray pollinose; the fan-like fringe of hairs in front of the halteres black. Abdomen with white pile on the sides in front; the last two segments wholly shining. Anterior and middle coxae, and all the femora below towards the base with long soft white pile; front tibiae on their inner sides and their metatarsi with golden pubescence; hind tibiae at their tip and the tip of their metatarsi with white pubescence, femora black, tibiae and tarsi dark red,

the latter more brownish red. Wings hyaline in the basal half, distinctly clouded with brownish on the distal half; the veins from the margin of the second longitudinal to the beginning of the posterior basal transverse, narrowly but distinctly clouded with brown, the veins at base of the second submarginal, and the first and second posterior cells less distinctly clouded.

One specimen, Mt. Hood, Oregon.

This species will fall with *C. profusus* in Osten Sacken's synoptical table, but its relationship is apparently closer to *C. positivus* O. S.

20. **Cyrtopogon ? nebulo** Osten Sacken, West. Dipt., 309.

Two specimens from Washington Territory I believe belong here; they agree perfectly with the description, except that the style is a trifle shorter than the third joint.

21. **?Cyrtopogon** n. sp. (Plate I, fig. 11.)

Resembles *nebulo* very much, but has the third joint of the antennae and the style very slender, linear, the face less gibbose, deep shining greenish black abdomen, and the body more thickly pilose. The size and wings are the same. I identified it at first as *nebulo* before I had seen the Washington Terr. examples. Ten specimens, Como, Wyoming, (alt 8000 ft.).

22. **?Cyrtopogon (?Daulopogon)** n. sp. (Plate I, fig. 10.)

Has the wings of the two preceding, but the face more gibbose, the gibbosity rather lower, and the style of antennae a trifle shorter. The dorsum of thorax has the markings similar, but is more convex and compressed, and the median stripe from the very front thickly clothed with long, erect hair, giving the thorax a peculiar mane-like appearance, as in some species of *Asilinae*. The abdomen has apparently posterior cross-bands of gray pollen. The convexity of the face does not reach quite to the base of the antennae, and it may be the species would be better placed under *Daulopogon*.

One specimen, Como, Wyoming.

23. **?Cyrtopogon gibber** n. sp. (Plate I, fig. 9.)

?? *Holopogon ? appendiculatum* Bigot, Annales Soc. Ent. Fr., 1878, 438.

♀.—Dorsum of thorax strongly convex; front much excavated, facial gibbosity slight, hind tibiae and tarsi thickened.—Black; abdomen with narrow interrupted anterior cross-bands and small lateral spots, wings hyaline, cross-vein and costal cell at tip narrowly clouded with dark brown; anterior branch of the third vein angulated. Length 7 mm.

Face in profile only a little convex below, gray pollinose and with whitish bristles on the oval margin of the same color, but more pile-like above. Antennae black, the first two joints of nearly equal length, the third joint not twice as long as the first two together, not very slender, style acute, about half as long as the third joint, the tip with a bristle. Front much excavated on the sides of the ocellar tubercle which has a few black bristles, pile of the occiput below white.

above black. Thorax in profile remarkably convex and high, the convexity being greater on the front part, bare except with four rows of moderately strong bristles; of a rich brown color, with an irregular white stripe on the side in front. Pleurae dark brown, lightly pollinose. Scutellum small, bare except two erect, black bristles at the tip; metanotum thickly white pollinose. Abdomen gently convex, and gently and evenly tapering from the base to the tip, brownish black, shining, with distinct gray pollinose markings, as follows: on the anterior margin of the second segment with an interrupted narrow cross-band, and a little beyond it two narrow transverse spots forming an abbreviated interrupted cross-band, near the middle and touching the lateral margin another smaller spot; third, fourth, fifth and sixth segments with an interrupted abbreviated cross-band, and a smaller lateral spot near the middle. Legs black, femora with sparse white pile, tibiae with white bristles, the posterior tibiae considerably thickened gradually from the base, the metatarsi also somewhat thickened. Wings hyaline, all the cross-veins and base of first submarginal cell, and the costa from the tip of second to the tip of fourth vein narrowly clouded with dark brown, a similar cloud at the furcation of the third vein, the anterior branch of which is angulated and with a minute stump of a vein.

One specimen, California (Barou).

This species does not belong in *Cyrtopogon*, but may be provisionally placed here till a better place is found for it. It shows some relationship to *Holopogon*, but not as much as to several of the species from the West now placed under *Cyrtopogon*. The structure appears to be the same as the species described by Bigot as *Holopogon? appendiculatus* but it cannot be the same species, as will be seen by comparison of the description of the thorax, abdomen, legs and wings. *Cyrtopogon cerusatus* O. S., must also somewhat resemble this. The convexity of the thorax, which is "Kaputzenartig" resembles very much that of *Pseudoris bicolor* Bell as figured by Bellardi, and is seen in a less degree in our species of *Holcocephala*. The face in profile is gently convex from the antennae to the oral margin, but is most projecting below. The species is very thinly pilose.

PYCNOPOGON.

24. ***Pycnopogon cirrhatus*** Osten Sacken, West. Dipt. 293.

A single male specimen from Northern California. The dorsum of the thorax is short black pilose across the middle. This species seems to be rightly placed, but the difference between this genus and *Anisopogon* must be slight. The short abdomen and the thick pilosity on its dorsum will hardly allow the species to be placed under *Anisopogon*, but these are the sole differences.

ANISOPOGON.

25. ***Anisopogon senilis*** Bigot, Annales Soc. Ent. Fr., 1878, 423.

A female with the preceding species, from which it differs chiefly in the abdomen being nearly bare above, clothed only with short black pile,

and is a little more elongate. My determination of the species may, however, be incorrect; the dorsum of the abdomen is not glabrous, the pile on the under side is white, not yellow, the tibiae are wholly yellow, and the length is not more than 10 mm.

26. *Anisopogon lautus* Loew, Centur. x, 34.

Two female specimens from Washington Terr. and California. Wholly black, with thick white pile below. Abdomen nearly bare above, tibiae and tarsi red, the middle legs without the tufts of black pile, and the wings pure hyaline (in one specimen slightly clouded along the veins near the base). The specimens agree very well with Loew's description, still a comparison of the males is needed.

NICOLES.

? *Leptarthrus* Stephens, Cat. Brit. Ins., 1829.

? *Isopogon* Loew, Linnea Entom. ii, 384, 1847.

? *Aphamartania* Schiner, Verh. Zool. Bot. Ges., 1866, 671.

Pygostolus Loew, Centur, vii, 28, 1866, (Preoc.)

Nicoles Jaennicke, Neue Exot. Dipt. 47, 1867.

According to the researches of Prof. Brauer, (Ueber die Gattung *Isopogon*, Loew, Wien. Ent. Zeit. i, 53) it appears that the type of *Isopogon* Loew (*I. brevisrostris* Meig.) has terminal spurs on the front tibiae, a fact which had not only been overlooked by previous authors, but the absence was considered by both Loew and Schiner as a generic character! With the presence of this spur the genus presents strong relationship with *Nicoles*, and is by Brauer considered synonymous. This, however, to me seems somewhat doubtful. *I. brevisrostris* as Schiner describes it, differs too much in the structure of the hind legs, viz: "Die Hinterschienen sind an der Wurzel schmal, werden aber plötzlich breit und plump, und verschmälern sich wieder gegen die spitze zu; die hinteren Metatarsen des Männchens sind messerartig zusammengedrückt, viel länger als die Schienen, fast fünfmal so lang als die übrigen Glieder zusammen, bei dem Weibchen von gewöhnlicher Bildung, etwas verdickt" (Fauna Austr. i, 131). This peculiar structure of the male tarsi was the character upon which *Leptarthrus* of Stephens was based, the typical species of which was the same. In five species of *Nicoles* known to me, the structural characters are all uniform, the hind tibiae are thickened at the extremity (similar to *Holopogon*), the hind tarsi are much thickened, but are alike in both sexes, the metatarsi scarcely more than a fourth of the length of the hind tibiae. Moreover, in the structure of the male abdomen and in the peculiar silvery markings so constant in all the species, *Nicoles* seems to show a sufficiently important difference.

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Neither am I fully persuaded of the synonymy of *Aphamartania* Schiner, which generic name Prof. Brauer would adopt in preference to *Isopogon* or *Leptarthrus* to include the American species of *Nicocles*. This genus was described in 1866 (*Die Wiedemannsche Asiliden*, Verh. Zool. Bot. Ges. 1866, 671) and the typical species from Venezuela, (*A. Frauenfeldii* Sch.) the following year (*ibid* 1867, 372). In regard to *Dasyg. politus* Say, Schiner says (*ibid* 1867, 372): "Gehört in die Gattung *Aphamartania*, obwohl die Habitus, eine etwas abweichende ist." In his generic and specific descriptions of *A. Frauenfeldii* ♂ he says: "Von gedrungenem Körperbau, kurz und plump." "Hinterleib kurz und breit, etwas eingebogen." "Genitalien des Männchens dick kolbig, die klappen gegen die Bauch gerichtet." "Stark verdickten Hinterschenkel." Moreover he does not mention the peculiar silvery appearance on the last abdominal segments, which is, I think, justly entitled to generic value. In these points, the difference of which may be seen by comparison of the following description, the two genera are sufficiently separated, it seems to me, to warrant the retention of *Nicocles*, for the present at least. Wherein *Blucodes* differs from *Aphamartania*, however, I am not prepared to say. I by no means affirm that these genera are firmly established, but before settling their value a careful comparison is needed of more species. Material for this I endeavor to add by the description of two aberrant forms, both of which show differences that might be considered of generic value, but there have been altogether too many genera made in this family already.

27. *Nicocles abdominalis* n. sp. Plate I, figs. 14, 14a, 14b.

♂.—Black, moderately shining, third, fourth, fifth and sixth abdominal segments, except the narrow lateral margins, yellowish red; fifth segment about four times broader than long. Wings variegated with dark brown. Length 11–12 mm.

Head much broader than high, much flattened, the face scarcely more than one-fourth the entire width, the inner margins of the eyes nearly parallel throughout. Face flattened, but very slightly projecting in profile below, black, somewhat shining, whitish dusted below, a row of brown bristles along the oral margin, intermixed with sparse, long whitish pile, which extends upon the face nearly to the antennae. Front more opaque black; the bristles on the ocellar tubercle brown or blackish. Antennae black, the first two joints with blackish hairs; first joint a little longer than the second, the latter short; third joint nearly twice as long as the first two combined, slender, of nearly equal width throughout; style divergent, rather slender, acuminate, less than half as long as the third joint, terminating in a microscopic bristle. Occipito-orbital bristles brown, pile below soft, white, rather long and abundant. Dorsum of thorax black, with two broad, velvety opaque black stripes, narrowly separated by a slightly grayish stripe in front, confluent behind; the rather short and weak bristles above the wing, in front of, and on the scutellum, dark brown. Pleurae thickly gray pubes-

cent. Abdomen: first two segments shining black; third and fourth bright yellowish red, very narrowly black along the lateral margins; fifth and sixth of the same color, but more broadly black on the sides, brilliant silvery when viewed from in front, less intense and finally not apparent when seen from behind. The first three segments are parallel on the sides, of nearly the same width as the thorax; from the beginning of the fourth to the tip of the fifth the sides are nearly straight, but divergent, so that at the tip the abdomen is fully a fourth wider; sixth segment convex behind. The abdomen is bare, except the sparse, very short, recumbent hairs, very much flattened, especially at the tip, the sixth segment projects eave-like much beyond the hypopygium, which is small and retracted. Legs rather slender, the tibiae and tarsi spinose, but not strongly so; hind femora slender, elongate, a little thickened just before the tip; hind tibiae elongate, slender on the basal two-thirds, much thickened, club-like at the end; hind tarsi much thickened, especially the first joint, which in length is little less than the three following together. In color the legs are deep pitchy black, on the under side of the femora, and sometimes the tibiae also deep red; bristles and pile mostly white. Wings elongate; all the posterior cells open; blackish, the third, fourth and fifth posterior cells chiefly, the anal cell wholly, the basal cells in part, the costal cell except the tip, and slender spots along the veins opposite the distal part of first vein, hyaline.

Two specimens, California (O. T. Baron).

28. *Niocles rufus* n. sp. Plate I, fig. 15.

♀.—Yellowish red; the second segment of abdomen with a small semioval black spot at base. Wings hyaline on basal third, on distal part variegated with brown. Length 10-11 mm.

Face dark red, slightly shining, on the sides and upper angles and on the lower part with yellow pubescence; bristles like the face, yellowish on outer part; pile short, very sparse. Antennae yellowish red, the basal joints a little darker; first joint scarcely at all longer than the second, style comparatively longer than in the preceding, nearly half as long as the third joint. Front opaque. Dorsum of thorax opaque brownish red, on each side of the middle in front a small spot, and back of the suture above the wings a larger spot of a darker, more reddish brown color: in front of the scutellum in the middle, a small, oval, shining space, on either side of which the color is golden yellow; along the suture on each side a slender, yellowish gray stripe. Pleurae thickly reddish yellow and grayish pubescent. Abdomen shining red; the second segment at the base with a narrow, transverse, semioval, shining black spot; on the anterior and posterior angles of the second segment with a small, on the posterior angles of the third and fourth with smaller silvery spots; the fifth segment on the side with a large triangle, narrowly separated from the one of the opposite side, and the sixth and seventh segments wholly opaque yellowish. In shape the abdomen has parallel sides to the tip of the second segment, thence widens to the tip of the fourth, thence on the sides more rapidly convergent. Legs wholly red, the coxae yellowish opaque, the bristles light colored. Wings a little broader than in *abdominalis*, the anterior cross-vein near middle of discal cell; on basal third (except extreme base) hyaline, beyond variegated with brown, darker across the middle, the cross-veins and along the veins at tip.

One specimen, Washington Territory.

29. ? *Nicoles scitulus* n. sp. Plate II, figs. 1, 1a.

♀.—Wings hyaline with small brown spots; abdomen shining black with a pollinose spot on the posterior angles of segments 1-5; posterior tibiae scarcely thickened at the tip. Length 5½ mm.

Black. Head and antennae black; face rather thickly pubescent with sparse, obscure, yellowish pile, black on the oral margin. Third joint of antennae a little broader at its base. Front more shining, a little yellowish pollinose. Lateral orbits white pollinose; beard white. Dorsum of thorax and scutellum but little shining, rather thickly brownish pollinose, with two linear median indistinct stripes; on each in front a whitish pollinose spot, and more exteriorly in front of the wings a larger, more yellowish spot. Pleurae, coxae and sides of metanotum thickly whitish pollinose; disk of metanotum shining. Abdomen bare, smooth, shining, bluish black, in structure and markings like *Nicoles*; broadest at tip of fourth segment; on the posterior angles of the first segment with a small whitish pollinose spot, which becomes successively a little larger on the second, third and fourth segments, but smaller on the fifth. Legs black; thinly whitish pilose and with light colored bristles; hind legs only a little elongate, of equal thickness throughout; the tibiae not thickened at the tip, but gradually, and only moderately so, from the base; the tarsi only slightly thickened. Wings not elongate, fourth posterior cell wide open; hyaline, at distal ends of the first and second basal and discal cells, and base of the submarginal cells with small brownish clouds.

One specimen, Washington Territory (H. K. Morrison).

This species will require the male to determine its correct place. I doubt that it is a *Nicoles*. The wings are like *Taracticus*, the hind legs are shorter, stouter and not clubbed, the tarsi but slightly thickened; the abdomen is quite smooth, as in *Nicoles*. With *T. brevicornis* it forms a connection between *Taracticus*, *Blucodes* and *Nicoles*, and they both might perhaps be better placed under *Blucodes*, which then would be distinguished from *Taracticus* by the presence of a terminal style, and from *Nicoles* by the structure of the male abdomen, should this species be found not to possess the silvery markings as I suspect.

LESTOMYIA.

In his Western Diptera, page 291, Baron Osten Sacken referred a new species to the genus *Charactor* Phillipi, described from Chili, but with a doubt inasmuch as Phillipi does not mention in his description the presence of tibial spurs. The type species (*C. punctipennis* Ph.), however, has been since shown *not* to possess this spur by the able dipterologist of South America, Dr. E. Lynch Arribáizaga, who confirms the view previously taken of it by Gerstaecker (Entom. Ber. 1865, 99 and 113) and Schiner, that it is synonymous with *Hypenetes* Lw.* The present genus, hence, appears to be new, and I would propose for it the name *Lestomyia*.

*Catálogo de los Dípteros hasta ahora descritos que se encuentran en las Repúblicas del Río de la Plata. Separata, 29—1882.

And yet, so nearly allied does the figure of Phillipi show his species to be to *sabulonum* that it seems very much of a question whether the tibial spur is a sufficient generic character, as is considered. This character, together with the closure or non-closure of the marginal cell, are excellent as aids to the artificial determination of the genera in this family, but I believe that future researches will greatly lessen their rigid application, and may throw together species with or without the tibial spurs, such as *Dioctria* and *Taracticus*, *Callinicus* and *Dasygogon*, and *Hypenetes* and *Lestomyia*.

I emend the generic characters, given at full length by Baron Osten Sacken (l. c. 292), so as to include a closely allied new species described below.

Front tibiae with a terminal curved spur. Head similar to that of *Cyrtopogon*, but smaller and narrower (narrower, also, than that of *C. punctipennis* as figured by Phillipi, l. c. pl. xxvii, fig. 29); mouth larger and more oblique; sides of face only a little diverging below, gibbose, the pile or hairs in the middle of the gibbosity, not reaching the antennae or eyes. First joint of antennae subcylindrical, short, the second yet shorter, the third longer than the first two taken together, narrow at the base and then expanded to twice or three times as wide, gently narrowed and then rounded at the tip; at the end a minute cylindrical style, ending in a microscopic bristle. Ocellar tubercle, dorsum of thorax and edge of scutellum with stout bristles. Abdomen subcylindrical, narrow, somewhat broader at the base, male hypopygium not stouter than the abdomen; female ovipositor with a star of short spines. Legs rather strong; tibiae and tarsi spinous; front and middle femora with a single spine on the hind side a short distance before the tip. Ungues and pulvilli long. Wings like those of *Cyrtopogon*; anal cell very little open, sometimes closed; anterior cross-vein about the middle of the discal cell; second submarginal cell considerably longer than the second posterior. All the posterior cells open, the fourth sometimes coarctate or nearly closed. Type *L. sabulonum* O. S.

30. ***Lestomyia sabulonum*.** Plate II, fig. 4.

Clavator sabulonum Osten Sacken, West. Dipt. 391.

♂ ♀.—Mouth oblique: the antennae situated midway between the ocelli and oral margin, first joint but little longer than the second, third joint narrow for a full fourth of its length, and then widened rapidly to about three times as wide as at base. Abdomen yellowish gray with whitish reflections; a black spot not reaching the posterior margin in the middle of each segment, a similar dark spot on each side of segments two, three, four and five. Legs black, femora at the tip, and base of tibiae narrowly red. Length 7-11 mm.

Six females and four males from Kern Co., California (H. K. Morrison), I refer unhesitatingly to this species. None of them have, however, any red at base of the femora, but one from Northern California has, the base of femora and tip of tibiae red. The color of the bristles vary much, as they often do in this family. In none of my females are there any black bristles above the border of the mouth. In every female I find on the under side of the second joint of the antennae two black bristles which are less strong, and white in the male. There are eight strong bristles on the females' ocellar tubercle, in five specimens wholly black, in two partly whitish; in all the males they are less strong and whitish. In all my specimens, both male and female, the fan-shape fringe of hairs in front of the halteres is white. In four of the specimens there are six bristles on the edge of the scutellum; in three there are eight, in two ten, so that the number is not of specific value. The spines on the tibiae of the male are white, in the female mostly whitish, but in part black. My specimens are all larger (9-11 mm.) than the ones described by Baron Osten Sacken, (7-7½ mm.) nevertheless I believe the species is the same.

31. *Lestomyia fraudiger* n. sp. Plate II, fig. 5.

♂.—Head below only gently oblique; face distinctly longer than the front from ocellar tubercle to antennae, less gibbose on the lower part; third joint of antennae elongate, less distinctly clavate, gradually widened from near the base, not three times as wide on its widest portion. Abdomen uniformly covered with whitish gray pubescence, leaving a row of small lateral black spots on segments 3-6. Legs red with broad black rings on femora and tibiae. Length 10 mm.

Gray. Face and front whitish, the mystax, pile on the inner sides of the front near the eyes and the bristles of the ocellar tubercle all nearly white, a single black bristle on the second joint of the antennae. Antennae black, the first joint somewhat yellowish at the base, the third joint begins to widen from very near its base, the under surface is nearly straight, the upper side gently convex, except near the base, the tip obtuse. Beard long and abundant, occipito-orbital bristles chiefly yellowish. Dorsum of thorax yellowish gray with four brownish stripes, the middle ones narrowly separated, the lateral ones consisting of two oval spots, the one before, the other behind the suture; there are four rows of rather stout black bristles nearly equidistant from each other, the lateral ones more irregular. Scutellum in the single specimen with four black bristles. Pleurae wholly purely grayish, the fan-like row of hairs in front of the halteres yellowish white. Abdomen wholly, and nearly uniformly whitish gray; on each side of the third, fourth, fifth and sixth segments near the front a small circular shining black spot; pile of the hypopygium yellowish white. Coxae and legs red; front femora with a small ring, middle with a broader, and hind pair except the base and tip, tibiae except the broad base tip of hind pair broadly, and middle pair narrowly black; spines of the legs white, of the tarsi chiefly black. Wings as in *sabulonum*, hyaline.

(One specimen, Mendocino Co., California (O. T. Baron).)

TARACTICUS.

Loew, Centur. vol. ii, 240, 1872.

The spurs in this genus are very small, and were evidently overlooked by Schiner when he placed the typical species under *Dioctria*. It does not seem to me probable that *Ceraturgus niger* Macquart can belong here.

32. *Taracticus octopunctatus*. Plate II, figs. 2, 2a.

Dioctria 8-punctata Say, J. Acad. Phil. iii, 40; Compl. Wr. ii, 63; Wiedemann Auss. Zw. Ins. i, 363; Schiner, Verh. Zool. Bot. Ges. 1866, 675; ibid 1867, 369.

Taracticus octopunctatus Loew, Centur. vol. ii, 240; O. Sacken Cat. Dipt. 2 Ed. 72.

♀.—Face considerably longer than wide; antennae distinctly longer than the height of the head, first joint about once and a half the length of the second, third joint more than twice the length of the first two together, slender, obtuse, the style hardly distinguishably differentiated, on the upper surface a small bristle a little beyond the middle. Dorsum of thorax with three yellowish lines, the middle one straight. Abdomen shining black, with a small silvery spot on the posterior angles of the second, third, fourth and fifth segments. Legs red, tip of hind tibiae broadly and of middle tibiae narrowly, and tips of all the tarsal joints blackish. Length 8 mm.

33. *Taracticus brevicornis* n. sp. Plate II, fig. 3.

♂ ♀.—Antennae short, about as long as the distance from antennae to oral margin; style distinct, acute, terminating in a microscopic bristle; legs brownish red, blackish toward the tips of tarsi; abdomen shining black, with a white spot on the posterior angles of the second, third, fourth and fifth segments. Length 7-9 mm.

Front and face silvery white, the bristles on the oral margin, ocelli, and the finer ones along the lateral margins of the front, black. Face broader than in *octopunctatus*, being very nearly square, the distance from antennae to oral margin scarcely greater than that between the eyes. Antennae black, the first two joints with black bristles below; short, not as long as the height of the head, first joint a little longer than the second, third joint slender, not more than twice the length of the first two taken together; style rather slender, not as long as the second antennal joint, terminating in a microscopic bristle. Dorsum of thorax thickly covered with brownish ochraceous pollen, with two very indistinct darker, brownish median stripes in front. Pleurae gray pollinose. Abdomen of equal width, gently convex above, black, shining, lightly punctulate, the posterior angles of the second, third, fourth and fifth segments with a small quadrate silvery spot, the narrow anterior margins of the same segments less distinctly whitish silvery. Legs brownish red, all the tarsi reddish brown, blackish at the tips. Wings like those of *T. octopunctatus*, nearly pure hyaline.

Two specimens, Washington Territory.

This species is, I believe, a *Taracticus*, although it has some of the characters of *Blucodes*. In size and appearance it is strikingly like *T. octopunctatus*, and with the exception of the head, the structure is almost precisely the same, and the coloration nearly so. The head and antennae, however, appear to be those of *Blucodes* or *Nicoteles*. The small cross-

veins of the wing in one specimen is nearer the end of the discal cell, as it is in *Blucodes*; unfortunately in the other specimen it is near the middle, as in *T. octopunctatus*. The only characters that I can understand for *Blucodes* now, are: Abdomen smooth, not clavate, thorax a little more gibbose, third joint of antennae perhaps more fusiform, fourth posterior cell of the wings nearly closed, and the wings with dark markings.

SAROPOGON.

34. *Saropogon combustus*.

S. combustus Loew, Berl. Ent. Zeit. 1874, 373.

"♂.—Black, the feet and wings of the same color; head and dorsum of thorax thickly dilutely luteous pollinose, pleurae fuscous pollinose; mystax whitish, front and dorsum of the thorax with pallid yellowish pile, remainder of the body black pilose, except on the tibiae chiefly, and on the tarsi wholly pallidly pilose. Length 13½ mm. Texas."

Three specimens from Western Kansas agree throughout with Dr. Loew's description; the tip of the second joint of the antennae is distinctly yellowish; in two specimens the fourth posterior cell is closed a little distance before the border of the wing.

35. *Saropogon adustus*.

S. adustus Loew l. c. 375. "♀.—Black, head and thorax very thickly luteo-pollinose, the posterior part of each abdominal segment broadly red, the first five on the posterior angles with thick dilutely lutescent pollen; antennae and feet red, the femora near the tip black; wings hyaline, the tip broadly blackish. Texas."

Two female and one male specimens from Western Kansas (E. W. Guild) are undoubtedly this, but the species is evidently variable in coloration. In all my specimens the legs are wholly reddish yellow, and the antennae of one specimen lacks the black at the tip of the third joint. In two specimens the ground color of the thorax is chiefly black, yellowish only on the front, sides and posterior part, in the third, a female, the ground color is wholly light yellowish red, with the rather narrow and abbreviated stripes of the thorax and a small spot above the middle coxae black. In all the abdomen is red, with a large triangular spot on the lateral anterior parts of the third, fourth and fifth segments, scarcely touching each other on the anterior border, a smaller one more broken up into spots on the second segment, and a very small one on the anterior angle of the sixth, black.

DEROMYIA.

Phillipi. Aufzählung der Chilenischen Diptera, Verh. Zool. Bot. Ges. xv, 705. 1865; v. d. Wulp, Tijds. voor Entom. xxv. Amerikaansche Diptera. 3. 92.

Diognites Loew, Centur.

This genus, as Baron Osten Sacken first pointed out, is very closely allied to our species hitherto placed under *Diognites*. A study of Phil-

lipi's figures and descriptions convinces me that v. d. Wulp is right in rejecting *Diognites*. In Loew's very brief diagnosis of the genus he defined it as differing from *Saropogon* in the fourth posterior cell being closed, the head broader and more disciform, the abdomen and feet longer and more slender. He afterwards (Ber. Ent. Zeit. 1874, 376) emended it as follows: "Mit *Diognites* kann die Gattung *Saropogon* nicht verwechselt werden, da der Körperbau der *Diognites* ein weniger gedrungener, namentlich der Hinterleib länger und schlanker ist, auch die vierte Hinterrandzelle vor, und zwar bei den nordamerikanischen Arten verhältnissmässig weit vor dem Flügelrande geschlossen, nicht wie bei den *Saropogon*-Arten geöffnet oder höchstens am Flügelrande selbst geschlossen ist, so dass in Folge davon die dritte Hinterrandzelle ein viel grössere Breite als bei den *Saropogon*-Arten hat; es ist dies für die *Diognites*-Arten sehr charakteristisches Merkmal, durch welches sich auch die südamerikanischen *Diognites*-Arten aus dem Verwandtschaftskreise des *Diognites* Wied. auszeichnen, bei denen die vierte Hinterrandzelle in geringerer Entfernung vom Flügelgerande geschlossen ist, als bei den mir bekannten nordamerikanischen "

This difference, however, is sometimes very slight indeed; in some specimens of species of *Saropogon* and *Diognites*, described by Loew himself, it is absolutely null. The characters then, at present, are the more elongate form, the more slender abdomen and legs, and the fourth posterior cell being always closed and usually long petiolate. *Deromyia gracilis* Ph. (Tab. xxvi, fig. 29), is in structure and markings much like *D. misellus* Lw.; in his description Phillipi speaks of the fourth posterior cell as being closed; in some specimens of *misellus* the cell is closed only just before the border of the wing.

36. ***Deromyia rufescens*** (Macq.) v. d. Wulp, Tijdschr. v. Ent. xxv, 91.

Dasyopogon rufescens Macq. Hist. Nat. Dipt. i, 295, 8.

Diognites rufescens v. d. Wulp, Notes from the Leyden Mus. iv, 76, 5.

I do not know this species; Prof. v. d. Wulp thinks it different from *D. discolor*. Macquart recorded it from Philadelphia, but his specimens may have come from the South-west. v. d. Wulp received it from Arizona.

37. ***Deromyia Winthemi***. (Plate II, fig. 6.)

Dasyopogon Winthemi Wiedmann, Dipt. Exot. 1, 223, 17; Auss. Zwei. Ins. i, 387, 32.—(South America.)

? — *angustiventris* Macquart, Dipt. Exot. 1 Suppl. 65; Tab. vi, fig. 9. (Without locality.)

Diognites misellus Loew, Centur. vii, 39.

Deromyia Winthemi v. d. Wulp, Tijds. v. Ent. xxv, 93.

This species agrees with Wiedemann's description very well, but the synonymy rests upon more direct evidence. Specimens in Prof. v. d. Wulp's collection without locality were compared by Prof. Mik with the typical specimens in the Vienna Museum, and specimens that I communicated to v. d. Wulp, he writes me are *D. Winthemi* Wied. I have specimens from Indiana and Kansas that show no difference from a number of individuals that I captured in an open field in June near New Haven.

38. **Deromyia discolor.**

Diogmites discolor Loew, Centur. vii, 37.—Penna.

A single, somewhat rubbed specimen from Pennsylvania (S. Auxer) agrees with Loew's description.

39. **Deromyia umbrina.**

Diogmites umbrinus Loew, Centur. vii, 43.

Dasyopogon basalis Walker, Dipt. Saund. 95.

———— *Herennius* Walker, List. etc., ii, 339.

This species is recorded from N. Y., Mass., and Ill. by Osten Sacken. I have taken numerous specimens in Connecticut and have it from Vermont. The abdomen is nearly like that of *Saropogon*.

40. **Deromyia angustipennis.**

Diogmites angustipennis Loew, Centur. vii, 41. Kansas, Mexico.

A single specimen from Kansas has the legs lighter and the dorsal thoracic stripes darker than Loew describes, yet it is evidently this species.

41. **Deromyia ternata.**

Diogmites ternatus Loew, Centur. vii, 38.—Cuba, Florida.

A single specimen from Georgia is probably this, but from the variability of the species, I am in doubt.

Species incertae sedis.

42. **Laparus ? pictitarsis** Bigot, Annales des Soc. Ent. de France 1878, p. 417.

If my determination is correct this is not a *Laparus* nor does it even belong in this division of the *Dasyopogoninae*. My specimen agrees throughout with Bigot's description, except that the femora are black; the "eperon *a peu pres droit et noir*," in my specimen is only a stout black spine! I cannot at present place this species. The head and wings are like *Callinieus*, but the abdomen is shorter, of equal width and cylindrical, and very different in general appearance.

DASYLLIS.

43. **Dasyllis flavicollis** Say, Longs Exped. App. 374, 2; Compl. Wr. 1, 255. (*Laphria*.)

Three specimens from Connecticut agree perfectly with Say's description. Its small size, yellow pile of head, thorax and scutellum; the rather broad third joint of the antennae, and very short second joint will enable it to be distinguished without difficulty. Length 11-15 mm.

44. **Dasyllis tergissa** Say, J. Acad. Phil. iii, 74, 5; Compl. Wr. ii, 67. (*Laphria*).—Head, thorax, a broad band on 2-4 abdominal segments, anterior coxae and tibiae yellow pilose. Length 18-25 mm.

Four specimens from Connecticut are typical. Another has but very little yellow pile on the legs and abdomen; two more very large specimens have the abdomen wholly black, and but a few yellow hairs on the legs.

45. **Dasyllis thoracica** Fab.; Wied., Auss. Zw. i, 511, 21 (*Laphria*).—Head, scutellum, abdomen and legs black pilose; thorax yellow pilose. Length 18-20 mm.

Eight specimens, Connecticut, Penna.

46. **Dasyllis unicolor** n. sp.—♂.—Black shining, everywhere yellow pilose, rather more fulvous on the thorax. Wings tinged with brown, hyaline on basal portion. Length 19 mm.

One specimen, Washington Territory.

There is but little to add to this diagnosis. I do not perceive a black hair or bristle anywhere. In size and shape it does not differ from specimens of *astur*.

47. **Dasyllis sacrator** Walker, List, etc., ii, 382.

Thorax, basal portion of the abdomen, and legs in large part, yellow pilose. It will be confounded with *tergissa* only. It is smaller; the beard wholly, the hair on the face wholly or in large part black. The wings are not usually as dark colored. The species varies considerably. I have ten specimens taken near the base of Mt. Washington (July 25-30). The color of the hair in some is fulvous, in others light yellow, that on the face in some specimens is largely intermixed with yellow. In most of the specimens there is considerable yellow hair on the hind legs, but in others it is wanting. The light colored hair of the abdomen is usually confined to the second and third segments, in some it extends into the fourth and fifth, and in others it is confined to a small spot on the side of the second segment, or may be wholly wanting. Such specimens may not be easily distinguished from *thoracica*; in all my specimens of the latter the body is more robust, the black abdominal pile is longer and more abundant, and the hair of the legs has rarely any intermixture of yellow.

48. **Dasyllis posticata** Say, Long's Exped. App. 374, 1; Compl. Wr. i, 255 (*Laphria*).—Head, thorax, and before the tip of abdomen yellow pilose.

I have but a single eastern specimen of this species, in which the tibiae have no yellow pile.

49. *Dasyllis astur* O. Sacken, West. Dipt. 285.

I have twenty specimens from California, Washington Territory and Oregon. They vary much and the species is doubtfully distinct from the foregoing: four specimens have the legs wholly black pilose, and with exception of the pile of the front being in part or wholly yellow, are typical *posticatae*, in appearance. All the rest have, however, more or less yellow pile on the front legs and coxae, and sometimes a lesser quantity on the middle tibiae. The yellow pile near the tip of the abdomen varies in extent; it usually extends over three segments; in some, however, only on one. As Baron Osten Sacken remarks, I find the pile of the head and pleurae variable. Two male and female specimens from Western Kansas have the four front legs thickly yellow pilose, and the yellow on the abdomen extending on the sides quite to the base.

50. *Dasyllis columbica* Walker, Osten Sacken, West. Dipt. 285.

Eight specimens from Oregon and Washington Territory I recognize as this. The species is more slender, and less thickly pilose than the preceding, especially on the thorax where the pile is shorter. Across the dorsum it is more or less black; on the posterior part longer, thicker and sometimes orange colored, or reddish. The hind tibiae as well as the front and middle pairs have yellow pile.

HYPERECHIA.

Schiner, Verh. Zool. Bot. Ges. 16, 673 (1866).

A single specimen from Pennsylvania, that has been in my collection for several years, I have not been able to identify with any described species. In size and appearance it resembles *Dasyllis tergissa*, but offers very distinct generic differences. From a study of Schiner's definition of *Hyperechia*, and also of the type species, *Laphria xylocopiformis* Walk., it seems probable that it belongs to that genus, and yet it may have differences that Schiner does not mention; I therefore give its structural characters:

Very large, robust, black; densely pilose. Head broader than in *Dasyllis*, considerably broader than high. The inner borders of the eyes nearly parallel. Face gibbose below, but even, convex from the antennae to the mouth, the convexity being greater below, densely covered with long hair. Antennae short, slender, not as long as the face, second joint only a little shorter than the first, cylindrical and more slender; third joint slender, a little broader at the base, scarcely longer than the first two together, terminating in a small but very distinct

cylindrical style at the tip of which there is a minute bristle. Proboscis short, thick, obtuse; palpi strongly clubbed, densely hairy. Thorax large, broad, only gently convex above, thickly pilose, as in *Dasyllis*. Abdomen short, not twice the length of the thorax, very broad, depressed, gently convex above, broadest at the base, the sides thence gently convergent to the tip of seventh segment, which is very broad, the abdomen thus appearing nearly truncate. Legs short, stout, the front and especially the middle femora thickened, the hind pair only a little elongated, less thickened, cylindrical, of nearly equal thickness throughout (a very little thicker on the proximal half), not clubbed as in *Dasyllis*; hind tibiae thickened and arcuate. Pulvilli small, narrow. Anterior cross-vein of wings a little before the base of the fourth posterior cell and very near the base of the discal cell; the first posterior cell hence very long, very narrow and closed a little before the tip. Anterior branch of the third vein strongly curved forward, so as to meet the costa only a little beyond the tip of the first vein. Fourth posterior cell closed a little before the border; anal cell acute, closed a considerable distance before the border.

The type of *Hyperechia* is *Laphria xylocopiformis* Walker, (List, etc., ii, 385) from British India, and so far as I am aware but two other species are known, viz: *H. (Laphria) robusta* (Wied.) v. d. Wulp, whose habitat is unknown, and *H. fera* v. d. Wulp, from Borneo.

51. ***Hyperechia atrox*** n. sp. (Plate II, figs. 7, 7a, 7b.)

♀.—Very large, robust, black, densely clothed with black and yellow hair. Hair of the face long, dense, brownish black; on the first two joints of the antennae in large part yellow. Hair of the front chiefly yellow, intermixed with black; the hair of the occiput dense, but not very long, together with that of the palpi deep black. Dorsum of thorax with thick, light yellow pile, longer and more abundant on the posterior part and on the scutellum. Pile of pleurae black; in front of the halteres a very conspicuous and dense tuft of long yellow pile. Abdomen thickly clothed with erect, rather short black pile; longer, bushy, and yellow on the sides of the second segment just behind the halteres. Legs with black pile; on the front, hind, and more especially the middle coxae, the middle femora behind and the hind femora in front, longer and yellow. Tibiae and tarsi reddish black. Wings nearly hyaline, with a strong yellowish tinge in front. Length 22 mm.; of wing 18 mm. Width of abdomen at second segment 8 mm.; at tip 5½ mm.

One specimen, Ponna., (S. Auxer).

LAPHRIA.

52. ***Laphria gilva*.**

Ailus gilvus Linné, Fauna Succ. 1912.

— *rufus* de Geer, Ins. vi, 241, 4; pl. 13, f. 15.

Laphria gilva Loew, Linn. Ent. ii, 548, 8; Schiner Fauna Austr. 1, 139; Perris, Annales Soc. Ent. France (4), 212, pl. 3, fig. 89, 96 (Parasitic on *Spondylis* and *Criocephalus* larvae); v. d. Wulp, Amerikanische Diptera, Tijds. voor Entom. xxv, 104.

"Een ♀ uit de omstreken van Quebec, in het Brusselsche museum aanwezig, gelijkt zoo volkomen op deze Europeesche soort, dat ik het gerust als zoodanig durf determineren" (v. d. Wulp, l. c.). I have before me a specimen from Canada (J. B. Caulfield) that agrees very well with the description of Schiner's.

53. *Laphria vultur* Osten Sacken, West. Dipt. 286.

Ten specimens from Washington Territory, Oregon and California I identify with this, but, in all my specimens, the dorsum of the thorax across the middle is clothed with short black pile.

54. *Laphria anthrax* n. sp.

♀.—Black; head, thorax, legs, and first two segments of the abdomen wholly black pilose; remainder of the abdomen, except the extreme tip, densely clothed with close-lying bright yellowish-red pile. Wings blackish. Length 21 mm.

The pile of the face is abundant, on the lower part composed mostly of bristles. Dorsum of thorax shining, wholly covered with short black pile, except the short black bristles above the wing. The third--seventh segments of the abdomen are wholly concealed beneath bright orange-red pile; the pile lies very closely and thickly. Tip of abdomen and venter black pilose. Legs wholly black pilose. Wings dark brownish or blackish; the anal and second basal cells in large part hyaline; the middle of the fourth and fifth posterior cells lighter.

One specimen, Northern California (O. T. Baron).

This species must resemble *L. rapax* O. S., and it is possible it may be the other sex, but the entire lack of white pile renders such a view improbable.

55. *Laphria ferox* n. sp.

♀.—Black; facial gibbosity, thorax except the posterior part of the dorsum, tip of abdomen and legs, black pilose; face on the side above, beard, and posterior part of dorsum with reddish yellow pile. Length 18-20 mm.

First joint of antennae rather short, thick, the second distinctly more than half as long, both clothed with black hairs. Facial gibbosity thickly covered with long black bristles and finer black hairs, separated by a distinct interval from another tuft of black hairs just below the antennae; on each side of the face above with short, close-lying, bright yellow pile. Pile of the occiput below yellow, above partly black. Dorsum of thorax nearly opaque brownish black; on the inner side of the humeri a large yellowish grayish pollinose spot; pile of dorsum erect, not very abundant nor long, black, a little lighter colored in front; on the posterior part and on the scutellum longer, yellow. Pleurae thickly grayish pollinose, pile sparse; the long, fan-like row in front of the halteres, black; abdomen shining black, rather thickly clothed with reddish pile, thicker on the posterior and middle parts of the segments, a large spot on the sides in front, more shining, sometimes with short obscure pile. The outline of the pile on each segment is more apparent when viewed directly from above; when seen from behind more changeable, and the ground color everywhere visible. Front and middle coxae with yellow pile; legs wholly black pilose; the front tibiae and tarsi on the inner side thickly yellow pubescent; hind tarsi somewhat reddish. Wings brownish on the outer part, hyaline toward the base.

Two specimens, Washington Territory (H. K. Morrison).

One of the specimens has on the inner side of the front femora some whitish pile.

56. *Laphria vivax* n. sp.

♂.—Black, shining; pile of the face, front, beard, humeri, scutellum, pleurae, posterior angles of the abdominal segments, coxae, front and middle tibiae light yellow. Length 22 mm.

Face thickly clothed with light yellow pile, on the lower angles black; protruding through the yellow pile a number of black bristles. The first two joints of the antennae with black pile; the second joint scarcely half as long as the first. Beard and pile of the proboscis light yellow; on the upper part of the occiput, and the bristles of the ocelli, black. Dorsum of thorax with a distinct blue reflection, clothed with short black pile, longer behind; in the front, the post alar callosities and a thin row in front of the scutellum light yellow. Scutellum with yellow pile and yellow and black bristles along its border. Pleurae with a tuft of yellow pile in front of the root of the wings; the fan-like row of hairs in front of the halteres light yellow. Abdomen shining black, with very short black pile, and longer dense light yellow pile as follows: the posterior angles of the third segment and on the following segments, successively extending more inward along the hind margin; on the seventh it forms a complete cross-band in front of the hypopygium; on the sides of the second segment in front, reaching nearly across, and successively less on the following segments, with less dense, more erect yellow pile; pile of the hypopygium black. Legs black pilose; the front and middle tibiae on their outer side with yellow pile, a trace of which is found on the hind tibiae. Wings nearly hyaline toward the base, lightly clouded with brownish on outer part.

One specimen, Washington Territory, (H. K. Morrison).

57. *Laphria bilineata* Walker, List. etc., ii.

♂ ♀.—Black; black pilose; posterior occiput below, pleurae, legs and sides of abdomen with long silky white pile; dorsum of thorax but little shining, in front with three darker opaque stripes, the middle one more or less obsolete; 3-7 segments of abdomen, except the sides, yellowish-red, with similar colored pile; facial gibbosity large. Length 15-20 mm.

Facial gibbosity large, globose; pile and bristles of the head wholly black, except on the occiput below, where it is long, abundant and silky white. Dorsum of thorax nearly opaque, with two rather distinct, narrow, median, more opaque brown stripes; obsolete posteriorly, between them there is a third, more obsolete, but of which the anterior end is usually quite apparent. Pile of dorsum rather short, erect, not abundant, black. Pleurae grayish pollinose, with sparse, silky white pile; the fan-like row of hairs in front of the halteres, black. Abdomen black, moderately shining; a very large oval spot reaching from near the beginning of the third segment to the tip or hypopygium, and broadly separated from the lateral margins, yellowish-red, with appressed, similar colored pile. On the black portion the pile is black, short; on the sides in front long, silky white. Legs black; the femora in large part, and more or less of the tibiae with silky white pile. Wings brownish along the veins; the inner parts of the cells and the base of the wings more hyaline.

Ten specimens, N. California (O. T. Baron).

58. *Laphria franciscana* Big. Ann. Soc. Ent. Fr. 1878, 225.

♂ ♀.—Deep black, shining; face with black bristly hairs and yellowish white or white pile; dorsum of thorax pubescent, blue; in the male with short light yellow, in the female wholly black, pile. Length 12-13 mm.

♂.—Bristly hairs on the face black, in the middle of which there is some long light colored pile, and on the sides above concealed beneath more appressed yellowish white or white pile; in the middle above, bare; front pollinose. The tuft of hairs below the base of the antennae and on the first two joints black. Third joint of antennae not much longer than the first two together. Front with black hair, and black bristles on the ocellar tubercle; occipito-orbital hair black; pile of beard soft, white. Dorsum of thorax of a distinct opalescent bluish color, the short, not abundant pile, light yellow, on the posterior part longer, black, the bristles also black; a spot lightly pollinose on the inner margins of the humeri. Pleurae black, lightly whitish pollinose; the ante-halteres bristles black. Abdomen deep shining bluish black, with very short black pile; on the sides of the segments, in front and behind, longer, light yellow, but still not conspicuous; the bristles and hairs on the sides of second segment black, the hair sometimes whitish. Legs deep black; front and middle coxae, and the underside of the four front femora near the base, with longer whitish pile; on the four front tibiae with shorter, light yellow pile. Wings hyaline at the base, tinged with blackish beyond.

♀.—The pile among the bristles on the facial gibbosity is wholly black, as is also that on the dorsum of the thorax; the posterior angles of the third, fourth and fifth abdominal segments have but little whitish pile; otherwise as in male.

Three males and one female from Washington Territory (H. K. Morrison), and two females from N. California (O. T. Baron).

59. *Laphria canis* n. sp.

♂ ♀.—Deep shining black; face with black bristly hairs and white pile; dorsum of thorax in both sexes with very short, sparse whitish pile, and in the male with longer, more sparse black pile, also. Length 10-11 mm.

Is closely allied to the preceding; the white pile on the facial gibbosity is less in the male in quantity, and the dorsum of the thorax lacks the characteristic yellow pile of the male, and the black pile in the female. In both sexes the dorsum is clothed with very short white pile or, more properly, pubescence, a little longer and more erect in the male; in the latter also there is moderately long, sparse, black pile, wanting in the female. In the male the dorsum of the thorax is bluish opalescent, but in the female the blue is scarcely apparent. The pile of the abdomen is longer, and on the sides near the base thicker and white. On the tibiae also the white pile is longer and more conspicuous.

Two specimens, Conn., June 25.

60. *Laphria xanthippe* n. sp.

♂ ♀.—Black, shining, black pilose; third segment in part, remainder of the abdomen, and under sides of hind femora red. Length 12-15 mm.

Face black, in large part shining, on the sides near the eyes narrowly white pollinose with a little silvery pile near the mystax below, elsewhere the pile and bristles are wholly black. Third joint of antennae rather more than twice as long

as the first two together. Dorsum of thorax nearly bare, with *very* short black pile. Pleurae wholly bare, shining; the coxae lightly pollinose. Abdomen with very short black pile, the bristly hairs on the side of second segment not abundant; first two segments black, with a bluish reflection; the large part of the third and the remainder of the abdomen red, except on the sides the black extends on the fourth, sometimes narrowly on the fifth. Legs black, with black pile; the hind femora for the whole length, except the upper side, red; on the inner side of the front tibiae and all the tarsi with golden pubescence. Wings brownish, hyaline toward the base.

One male and two females, Mt. Hood, Oregon (H. K. Morrison).

61. **Laphria pubescens** n. sp.

♂ ♀.—Black, shining; legs, except the tarsi, red. Length 10–13 mm.

Face and front clad with black pile and hair, except a tuft of silver pile on each side of the face above the mystax. In the male the beard wholly white, in the females wholly or chiefly black. Dorsum of thorax and abdomen shining, faintly bluish black, clothed with golden pubescence, very noticeable when seen from in front. Pleurae bare, shining black; the coxae whitish pollinose. Front and middle coxae, and under sides of the femora with white pile; femora and tibiae wholly red, bristles black; tarsi black with golden pubescence on the the under side. Wings tinged with brown, less so toward the base.

Eight males and five females, Washington Territory and Mt. Hood, Oregon, (H. K. Morrison).

LAMPRIA.

62. **Lampria fells** Osten Sacken, West. Dipt. 236.

A single female from Washington Territory agrees perfectly with Osten Sacken's description; it lacks the tubercles of *Lampria*, but has the setae of the hind femora very distinct.

63. **Lampria bicolor** Wiedemann, Auss. Zwei. Ins. i, 522, 40 (*Laphria*).

? *Laphria saniosa* Say, J. Acad. vi, 158; Compl. Wr. ii, 355.

Laphria megacera Macquart, Hist. Nat. Dipt. i, 284; 18 (type compared by Osten Sacken).

Laphria antaea Walker, List, etc., ii, 379 and vii, 527.

I have three specimens from Connecticut in which the first segment of the abdomen above is black; the dorsum of the thorax has fine golden pubescence,—they are evidently *saniosa* Say. Another specimen (♀) from Pennsylvania has the abdomen red from the very base, and the thorax without the golden pubescence. It may be a distinct species; if so it must be the true *bicolor* of Wiedemann, as he certainly would have noticed the black on the abdomen had it existed.

64. **Lampria rubriventris** Macquart, Hist. Nat. Dipt. i, 284, 19 (*Laphria*).

Four specimens from Georgia show a considerable variation in the abdomen. In one (♂) it is wholly red above, except the base; in the females it is chiefly black, with the red on the sides near the front, not

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extending quite across on the third segment. The shorter antennae, white mystax, and golden pubescence of the thorax will enable it to be readily recognized.

63. **Pogonosoma dorsata** Say, Amer. Ent. i, tab. vi; Compl. Wr. i; Wied. Auss. Zw. i, 505, 12 (*Laphria*).

Three specimens from Washington Territory agree throughout with the descriptions. I have no specimen for comparison.

64. **Andrenosoma fulvicauda** Say, J. Acad. Phil. iii, 53; tab. vi; Compl. Wr. i, 12 (*Laphria*), Wied. Auss. Zwei. Ins. i, 517, 31, (*L. pyrrhacra*).

A single specimen from Northern California agrees perfectly with Say's description, and I believe it to be the same.

In addition to the species enumerated in the foregoing pages the following new species have been described, since the publication of Osten Sacken's Catalogue, by J. Bigot in the Annales Soc. Entom. France, 1878.

From the United States:

Dasypogon bilineatum (*Callinicus calcaneum* Lw.) l. c. 411.

D. quadrinotatum l. c. 412.—California.

Neilopogon (*Cheilopogon*) **rubiginosum**, l. c. 419, N. America.—"Detritum et mutilatum, * * partie anterieur de la tête, extrémité de l'abdomen et pieds antérieurs, manquent."

The fragment left might belong to several genera.

Stenopogon albibasis, l. c. 422.—California.

Anisopogon vespoides, l. c. 433.—California.

Holopogon nitidiventris, l. c. 437.—California.

Leptogaster scapularis, l. c. 444.—California.

Laphria coralogaster, l. c. 227.—N. Am., (*Lampria*?)

From Mexico:

Microstylum fulvigaster, l. c. 410.

Stenopogon fuscolimbatus, l. c. 421.

Ceraturgus geniculatus, l. c. 443. (Antennae wanting.)

Cornaensis eupoda, l. c. 234.

Aphestia nigra, l. c. 235.

Atomosia soror, l. c. 236.

Cerotania nigra and **dubia**, l. c. 238.

Pogonosoma arachnoides, l. c. 239.

NAUSIGASTER n. gen.

Moderately large species, black in ground color but thickly pollinose, with shining, numerous, small, black, punctulate spots. Head spheroidal, broader than the thorax. Eyes bare. Front narrowed above, evenly arched to the antennae, which are situated a little above the middle of the head in profile. Face narrowed below, concave on upper part below the antennae, the tubercle near the middle large, obtuse, below it much

receding to the oral margin, resembling in structure the species of *Paragus*, but more concave above the tubercle and more receding below it; the tubercle being higher up. Cheeks narrow. First and second joints of the antennae extremely short, so that the third joint appears sessile, the latter large, subquadrate, as broad as long, the angles rounded, and narrower on the basal portion; arista small, bare, very short, not as long as the third antennal joint, remote from the base, situated upon the anterior rounded angle near the end of joint. Scutellum small, convex, but thinned along its margin. Abdomen very convex above, beyond the middle being in cross-section two-thirds of a circle; first segment short; second segment moderately long; third segment much shorter than the second, in the middle on the sides nearly as long, the incisure in front forming a deep stricture, less evident behind; fourth segment very large, as long as the three preceding together, forming half of an ellipsoid, flattened on one side, the strongly convex end extending beyond the anal opening, and wholly concealing the following segments. The sides of the abdomen are directed downward and inward inclosing toward the outer part of the venter a deep cavity, shallower on the second and third segments; at the posterior part of this cavity, and concealed by the posterior rim, is the anal opening looking obliquely forward; back of the anus on the rim on each side is a small obtuse membranous flap or process. Legs as in *Paragus*—rather short and moderately strong, the posterior metatarsi thickened. Wings more like those of *Syritta* than of *Paragus*. The first longitudinal vein joins the costa a little before the tip of second vein, and then by a curve at the tip, so that the vein runs parallel to the costa for some distance. The anterior cross-vein is near the basal third of discal cell, and the third vein beyond is gently bisinuate. The last section of the fourth vein is sinuate like it is in *Syritta*, but more deeply so, the vein terminating very near the costa, but forming nearly a right angle at its juncture.

The present genus must be placed in the vicinity of *Paragus*; but yet it is very different in the antennae, the abdomen and the wings. The fourth segment of the abdomen is probably composed of two, as is the third segment in *Triglyphus*; it does not show any traces whatever of such union on the dorsum, but I think I can distinguish it in the venter.

Nausigaster punctulata n. sp.

♀.—Length 12 mm. Black, moderately shining, everywhere except on legs and venter covered with thick whitish pile, which, when not rubbed, leaves every numerous, nearly contiguous circular black spots, more abundant on the thorax; on the dorsum of thorax and abdomen the ground color of the moderately shining punctulate black surface may be in large part denuded. In the middle of the

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Fig. 15

thoracic dorsum is a pair of indistinct, less pollinose stripes. Antennae wholly yellowish red; the cheeks and the lower part of the face obscurely yellowish, in the middle of the face below the antennae there is an oval space which is evenly pollinose, free from the black dots. Wings hyaline, with two conspicuous blackish spots; the larger one beginning in the subcostal cell at tip of auxiliary vein, thence more broadly along the marginal cell, the base of the submarginal cell for a third of its length, and less distinctly opposite this on the cross-vein and base of first posterior cell; the smaller spot reaching from the tip of the first longitudinal vein nearly to the third; veins black, brown toward the base. Legs yellowish red; the front femora on basal half, and the other femora except the tips black; the front and hind tarsi brown.

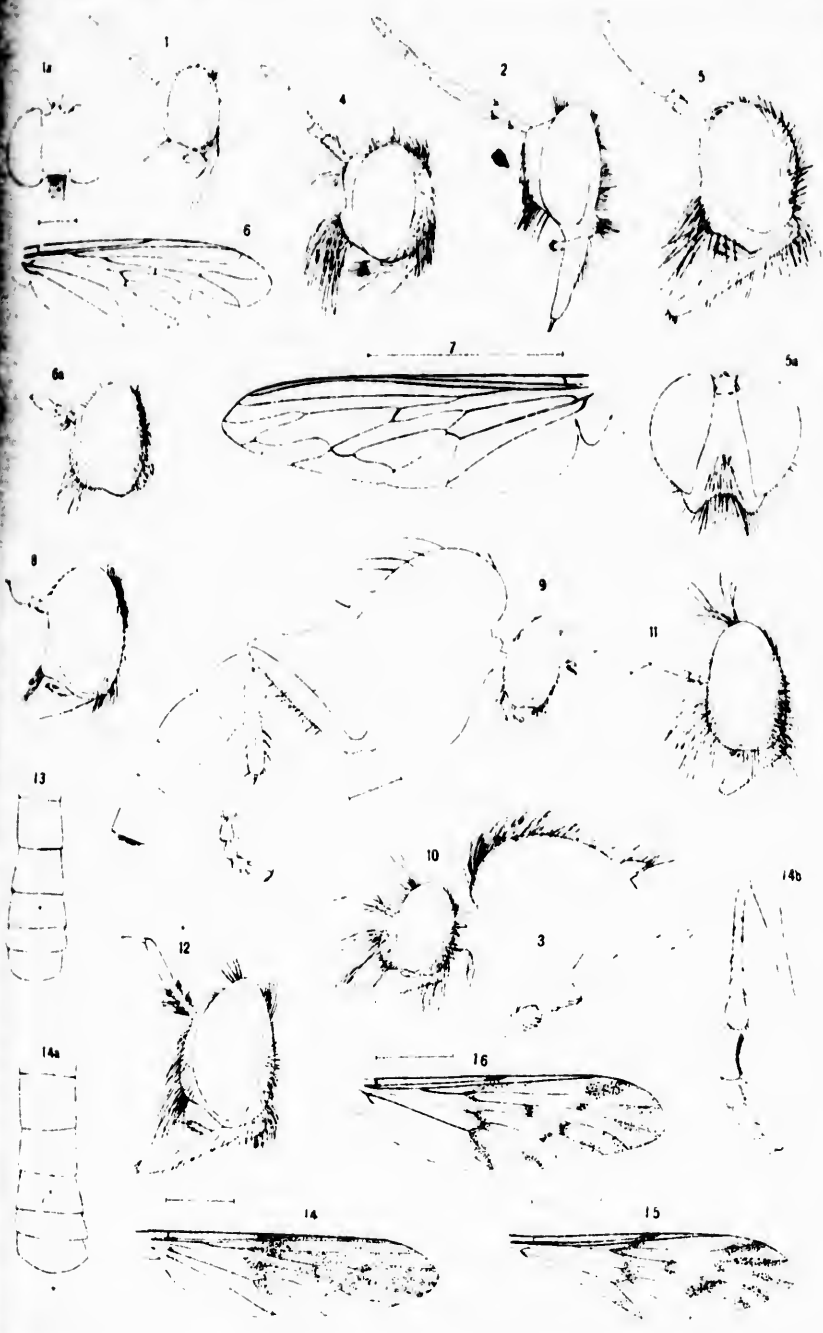
One specimen, New Mexico.

EXPLANATION OF PLATE I.

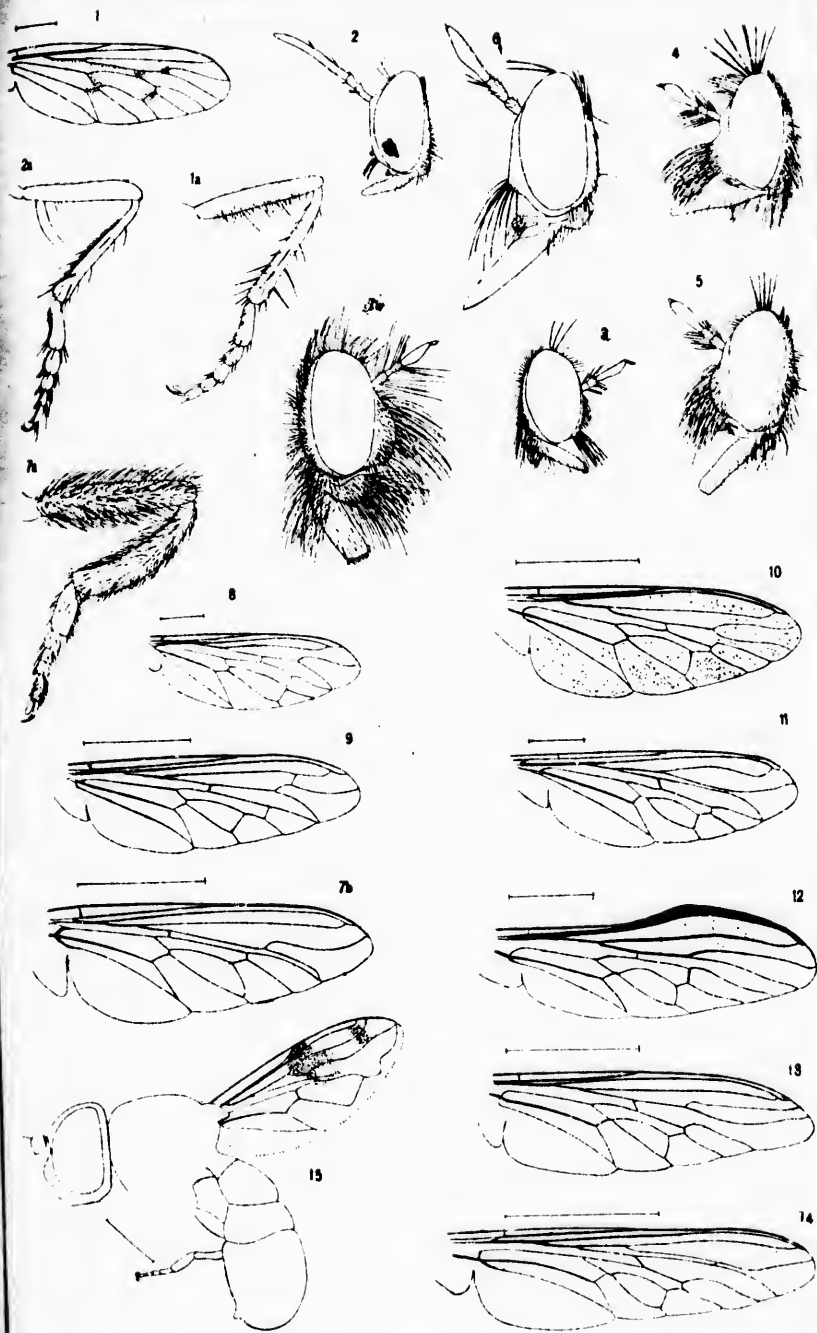
- Fig. 1, 1a.—*Myelaphus melas* Big.
 Fig. 2.—*Ceraturgus cruciatus* Say.
 Fig. 3.—*Dicetria nitida* n. sp. (antenna.)
 Fig. 4.—*Dicolonus simplex* Lw.
 Fig. 5, 5a.—*Oxypriocerus Aeacus* Wied.
 Fig. 6, 6a.—*Triclis tagax* n. sp.
 Fig. 7.—*Microstylum galacides* Lw.
 Fig. 8.—*Habropogon bilineatus* n. sp.
 Fig. 9.—? *Cyrtopogon* (? *Holopogon*) *gibber* n. sp.
 Fig. 10.—*Cyrtopogon* n. sp.
 Fig. 11.—*Cyrtopogon* n. sp.
 Fig. 12.—*Callinicus calcaneum* Lw.
 Fig. 13.—*Nicocles politus* Say. (Abdomen of male.)
 Fig. 14, 14a, 14b.—*Nicocles abdominalis* n. sp., (wing, abdomen of male, and hind leg).
 Fig. 15.—*Nicocles rufus* n. sp.
 Fig. 16.—*Nicocles dives* Lw.

EXPLANATION OF PLATE II.

- Fig. 1, 1a.—*Nicocles scitulus* n. sp., (wing and hind leg).
 Fig. 2, 2a.—*Taracticus octopunctatus* Lw., (head and hind leg).
 Fig. 3.—*Taracticus brevicornis* n. sp.
 Fig. 4.—*Lestomyia sabulonum* O. S.
 Fig. 5.—*Lestomyia* n. sp.
 Fig. 6.—*Deromyia Winthemi* Wied.
 Fig. 7, 7a, 7b.—*Hyperechia atrox* n. sp., (head, wing, and hind leg).
 Fig. 8.—*Atomosia puella* Wied.
 Fig. 9.—*Pogonosoma dorsata* Say.
 Fig. 10.—*Asilus sericeus* Say.
 Fig. 11.—*Mallophora laphroides* Wied.
 Fig. 12.—*Ommatius tibialis* Say. ♂.
 Fig. 13.—*Proctacanthus heros* Wied.
 Fig. 14.—*Promachus* n. sp.
 Fig. 15.—*Nausigaster punctulata* n. sp.



J.W. Williston from nature.



S.W. Williston, from nature

