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NEW SPECIES OF SYRPHIDAE.<sup>1</sup>

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SYRPHINAE.*Syrphus johnsoni*, sp. nov.

BELONGS to the *americanus-nitens* group; the spots on the second segment reach broadly forward to the anterior angles of the segment, the two following bands broadly separated from the lateral margins and practically straight, not bi-concave in front as in *Syrphus nitens*. Differs from *Syrphus opinator* O. S. in having the lower lobe of the squamae without pile.

*Male*.—Length, 9 mm. Face reddish yellow, dulled by pale yellowish pollen, the jowls, cheeks, broad oral margin and broad facial stripe, which is well separated from the base of the antennae, shining black. Facial pile black. In profile the face is gently concave above, almost perpendicular to the apex of the tubercle, sharply retreating below the tubercle to the not prominent oral tip. Frontal triangle shining black, the orbits yellow pollinose, pile moderately long, black. The frontal triangle is gently convex. Vertical triangle black, black pilose, a little prominent, slightly longer than broad. Occiput opaque black, the orbits grayish pollinose; pile whitish, slightly yellowish above, the cilia black. Antennae reddish; second joint above, the third above and on apex, broadly brown. Arista brown, gradually tapering.

Thorax brassy black, with yellow or reddish-yellow pile. Scutellum pale yellow with bluish opalescence, its base narrowly black, the pile wholly black.

Posterior legs black, the apex of the femora and base of the tibiae reddish yellow; front four legs reddish yellow, the basal third of their femora and last four joints of the middle tarsi black. All the long hairs on the legs are black.

Wings hyaline, stigma pale yellow; the third vein ends in the tip of the wing. Squamae whitish, the upper lobe slightly tinged with brown, the border and fringe pale yellow. Halteres yellow.

Abdomen opaque or sub-opaque black, with three broad reddish-yellow fasciae, the first broadly interrupted, the others entire; first segment wholly, the entire side margins, narrow apex of the second, broad apices of the two following, and whole of the fifth segment shining black. The yellow spots on the second segment lie mostly behind the middle, are triangularly oval, their small end inward, their outer end produced broadly forward almost to the base of the segment. Band on the third segment separated from the front margin by one-third its width, its anterior margin almost straight but a small triangle projects forward in the middle; behind there is a broad triangular black, median angulation, the band slightly wider laterally, its outer ends obliquely truncate. Band on fourth segment similar, but slightly narrow, its outer ends more oblique. Apex of fourth segment rather broadly reddish; a

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small spot on the anterior angles of the fifth segment similar in color. Pile yellow basally and on the three yellow bands, elsewhere black.

*Holotype*.—♀, Jaffrey, New Hampshire, June 15, 1917, collected by C. W. Johnson; in the Museum of the Boston Society of Natural History.

This species approaches *Syrphus nitens*, but in that species the forms in which the spots on the second segment reach the lateral margin are much paler and none of them has the yellow side margin of the second segment so broad. The entire fasciae are much straighter than in any specimens of *nitens* I have seen. This group is an extremely difficult one and large series are necessary in order to determine the limitation of species.

### Epistrophe Walker

The genus *Epistrophe* was established by Walker for the reception of *Syrphus grossulariae* Mg. (as *E. conjugens*, n. sp.) in "Insecta Saundersiana," Dipt., pt. 3, p. 242, 1852. As I have limited this group of the old genus *Syrphus*, *Epistrophe* takes precedence over *Stenosyrphus* Mats. (1916), a name I have previously used.

### Epistrophe abruptus, sp. nov.

Similar in form to *Syrphus transversalis* Curran but the cheeks in front, oral margin and median facial stripe are black and the abdomen is entirely shining black. Eyes pilose.

*Female*.—Length, 7 mm. Face reddish yellow, with almost whitish, rather thin pollen; median stripe occupying nearly one-fifth the width of the face and reaching almost to the base of the antennae, the oral margin broadly and the cheeks in front, shining black; jowls reddish brown. Pile on sides of face black, elsewhere whitish, not long. In profile the face is rather perpendicular, shallowly concave on the upper half, shortly concave below the rather long, roundish tubercle, the oral tip scarcely projecting. Front shining greenish black, with an arch of yellow pollen a little below the middle, the pollen continuing below along the orbits to the face. The narrow, rounded W above the antennae is reddish. Front wholly black pilose. Occiput aeneous, densely grayish pollinose along the orbits except above; the pile yellow on upper half, white on lower half and cheeks; occipital ciliae not differentiated. Eyes thinly short whitish pilose. Antennae black; third joint reddish on basal half except above, broad, oval, its upper margin almost straight; arista black, thickened on sub-basal half.

Mesonotum aeneous, slightly darker on disc; its pile short, fine, yellow. Pleura aeneous, with thin white pollen and white pile. Scutellum translucent reddish, wholly bordered by blackish blue, its pile chiefly black on apical half, short and yellowish on basal half, intermixed toward the middle.

Legs black, hind femora at apex and broad base of their tibiae, obscurely reddish; apical half or less of front four femora and the whole of their tibiae, brownish red, the knees paler. Legs with pale pile, the posterior tibiae short black pilose.

Wings cinereous hyaline, stigma luteous. The third vein ends in the tip of the wing. Squamae whitish, with yellowish border and fringe. Halteres yellow.

Abdomen shining black, the base more greenish black, the pile pale, the posterior margins of the second to fourth segments broadly black pilose except laterally. In shape the abdomen is rather rectangular, the sides strongly curved under from the apex of the second to tip of the fourth segments, the fifth and sixth segments are widest laterally, very narrow in the middle; all



the terminal segments visible from above because of the upturning of the apical segments.

*Holotype*.—♀, Mount Washington, New Hampshire, 2,500 ft., June 13, 1916, collected by C. W. Johnson; in the Museum of the Boston Society of Natural History.

This species cannot be confused with any described species on account of the truncate abdomen and absence of pale fasciae. Its only ally is *Syrphus transversalis* Curran, which has bare eyes, yellow abdominal fasciae and never more than a slight brown dash on the upper portion of the facial tubercle. The ♂ will be difficult to associate, although the terminal segments should be more or less deformed in appearance, if it is similar to ♂ *transversalis*.

#### CHILOSINAE.

#### *Pipiza nigrotibiata*, sp. nov.

Figs. 1 and 2.

Allied to *Pipiza femoralis* Lw., especially var. *albipilosa* Williston, but the posterior tibiae are almost all long black pilose, the whole insect is darker and the pile longer. The ♀ has no pale abdominal fascia.

*Male*.—Length, 8.5 to 9.5 mm. Face moderately retreating, scarcely produced below, gray pollinose, black pilose with the sides and upper half of the front pale-haired or all pale-haired, the hair rather long and abundant. Front similarly pollinose to face except immediately above the antennae. Vertical triangle pale-haired, several black hairs in front and a few scattered elsewhere; occiput grayish pollinose and pale-haired, the occipital ciliae black. Eyes with black or brown hair which becomes yellowish and white on the lower edge. Antennae black, the apex of the second and broad base of third segments often brownish red; third joint elongate-subcordate, more cut off above; arista longer than the third joint, thick on basal half, distinctly micropubescent to tip, brownish red in color, the apical third brown (Fig. 1).

Thorax and abdomen blue black, densely punctured, white pilose, the former with scattered black hairs before the suture, which may sometimes be very numerous, especially along the sides and often on the posterior and upper margin of the mesopleura. The scutellum lacks an apical groove and bears only a few black hairs or none.

Legs black; apices of femora, basal sixth and apex of tibiae, first three joints of front four tarsi, although the third joint may be darker, reddish yellow, the broad apex of the first joint of the hind tarsi and the whole of the second joint brownish red. Pile of legs moderately long, whitish, the posterior tibiae with long black hair except on the antero-ventral surface and anterior surface at apex. Posterior femora rather robust, strongly angulate at apex. They are larger than in *Pipiza femoralis* Lw. but decidedly smaller than in *grandifemoralis* Curran (Fig. 2).

Wings cinereous hyaline, usually strongly tinged with brown on apical half, especially toward the front. Venation as in *femoralis*.

Abdomen with the usual sub-opaque areas, the pile longish and the black pile much more conspicuous than in allied species. Genitalia normally all black-haired.

*Female*.—Front moderately narrowed above; in the middle with broadly separated, large, roundedly triangular gray pollinose orbital spots, connected along the eyes with the facial pollen. Frontal pile almost white, with conspicuous black hairs just above the antennae and a very narrow fascia across the ocelli.



Pile shorter and denser throughout, the posterior tibiae with white pile, their tarsi almost pure reddish on the first two joints, but the first is darker above. The abdomen lacks the sub-opaque areas and the insect is more slender.

*Holotype*.—♂, Bathurst, New Brunswick, June 15, 1923 (J. N. Knull); No. 776, in the Canadian National Collection, Ottawa.

*Allotype*.—♀, Jaffrey, New Hampshire, June 17 (C. W. Johnson).

*Paratypes*.—4♂, Chester, Massachusetts, August 6 (C. W. Johnson); ♂, Alstead, New Hampshire, August 8, 1914 (A. P. Morse).

The allotype and four paratypes are in the Museum of the Boston Society of Natural History.

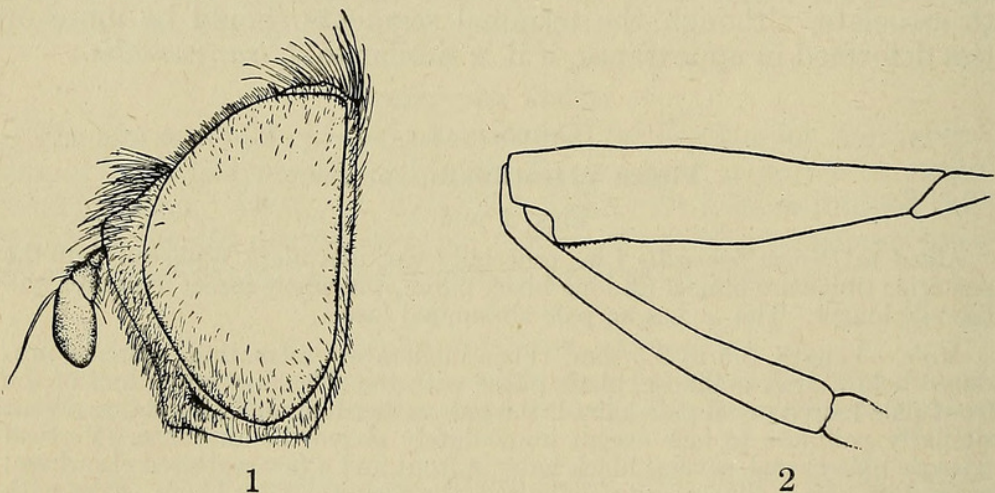


Fig. 1.—*Pipiza nigrotibiata*, *sp. nov.* Head in profile.

Fig. 2.—Posterior femur and tibia.

*Pipiza nigrotibiata* is a very distinct species and is readily distinguished from its allies. The only confusion which may arise concerning the identity of the ♀ may be expected in the case of *P. severnensis* Curran and *tricolor* Curran. This latter may be eliminated on account of its much smaller size and absence of femoral angles, while *severnensis*, (as I remember the ♂) has the femora no larger than in *femoralis* Lw. and both these females may have a reddish abdominal fascia, as neither is known. None of the other eastern species has the hind tibiae black pilose and there should not, therefore, be any confusion.



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