NEW SPECIES OF THE SYRPHID GENUS CHILOSIA FROM CANADA (DIPTERA)

BY C. HOWARD CURRAN,

Orillia, Ontario.

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Chilosia orilliaensis, new species.

Eyes pilose; arista black, bare; thorax deep blackish green, its dorsum cupreous bronze; abdomen shining blackish green, first two segments chiefly opaque; wings clouded or infuscated with dark luteous; scutellum with bristles which are scarcely distinguishable in the male owing to long pile; third antennal joint small, reddish, black above; abdomen of female almost wholly shining.

Male. Length 8 to 10 mm. Face and front shining greenish black, thinly covered, except the tubercle, an area on its lateral slopes and the cheeks, with fine whitish pubescence which is condensed as a band below the antennae; side margins with whitish pile, face elsewhere without pile; in profile very slightly concave or almost straight to the tip of the large, rather prominent nose shaped tubercle, thence shortly concave to the oral margin, which is convex, not quite as prominent as the antennal base and much less prominent than the tubercle. Frontal triangle a little prominent, in the middle with a more or less distinct brassy tinge; in the middle with a rather broad longitudinal depression which is narrower above; margins very narrowly white pollinose; pile of frontal triangle rather stout, long, black. Antennae luteous or brownish luteous, first joint always darker, third joint about equal in length to the first two, small, little longer than broad, its lower end usually more sharply rounded. Arista long, slender, bare, black, the sub-basal quarter a little swollen. Vertical triangle dull black, black pilose in front, yellow behind, sometimes nearly all black or with chiefly yellow pile. Eyes brown or yellowish brown pilose on the upper half with yellowish or grayish yellow pile below. Posterior orbits narrowly white pollinose on lower two-thirds, with opaque black pollen on the upper half except against the eyes at the upper three-quarter area; the pile is white on the lower half, more brown or blackish above and the hairs overhanging the eyes are black.

Thorax and scutellum shining blackish green, the dorsum, except the sides, with a cupreous bronze reflection. Pile variable, but usually chiefly black on the dorsum, intermixed with some yellow or fulvous hairs on the disc, sometimes almost wholly black pilose, but often the pile is chiefly yellowish or fulvous with the borders black pilose; there is always black pile at the humeri, base of the wings and on the postalar calli; pile on the upper half of the pleura almost always wholly black, but sometimes a few pale hairs intermixed, the lower half always whitish pilose. Scutellum usually with almost all long black pile, with a few paler hairs at the base but these sometimes wanting, at other times chiefly yellow pilose with black pile apically. In these latter specimens the scutellar bristles are usually quite distinct. The other bristles on the thorax are not conspicuous in the males.

First abdominal segment more or less brownish, scarcely or moderately shining, the angles below the scutellum reddish brown, and often the anterior margin more or less yellow pollinose; if shining, with a greenish reflection. Sec-

ond segment opaque black, the anterior margin very narrowly shining, the side margins, more broadly in front, shining greenish; third segment opaque, the apex very narrowly shining, and apparently inclined to be reddish in some specimens, lateral margins shining greenish, expanded in front to occupy about one-third the width of the segment on each side, but the shining area indistinctly defined. Fourth segment wholly shining, and usually with a metallic bluish reflection, but sometimes metallic blackish green. Hypopygium shining blackish green, finely, sparsely whitish pubescent and with mixed yellowish and black pile. Pile of the abdomen moderately long, on the basal angles long pale yellowish, yellow or fulvous, the sides of the abdomen with similar colored pile to that on the basal corners, except the apical quarter to half of each segment, the light colored pile extending as triangles on the basal corners of each segment; pile elsewhere black or brown.

Legs shining greenish black; tips of the femora, anterior four tibiae except a broad band mostly beyond the middle, yellow; apex of hind tibiae and first two joints of middle tarsi reddish, brownish yellow or brown; anterior tarsi brown basally in most specimens. Wings strongly tinged with brownish or brownish yellow, more so anteriorly; veins brown; stigma yellow. Squamae yellow, tinged with brown, with brown margin and brown fringe. Halteres luteous, the tip of the knob brown.

Female. Antennae reddish, basal joint usually brownish, third joint larger than in male, brownish above and apically its end truncately rounded but frequently more pointed below. Face moderately concave between the antennal base and the small but prominent tubercle, only slightly concave below the tubercle. Front shining black, with a brassy reflection in the middle; a shallow longitudinal median groove usually indistinct just after its inception a little above the antennae, running to the ocellar triangle; lower quarter of front silvery white pollinose contiguous to the eyes, above which the sides of the front are black. Pile of the front usually nearly all yellowish with black pile across the ocelli, some black hairs intermixed above the antennae, the vertex with yellowish pile. Posterior orbits thinly grayish pollinose above, white below.

Thorax and scutellum shining blackish green, the dorsum with a more or less distinct brassy or bronze reflection. The pile of the dorsum is short reddish yellow, on the pleura long, white; postalar callosities with two black bristles, two to four short ones above the base of the wings, and rarely a long slender one on the posterior part of the mesopleura; scutellum with short white or pale yellow pile and from four (usually six) to eight long slender black bristles on the apical margin.

Abdomen shining blackish green or blackish; first segment with the corners below the scutellum reddish luteous; second segment with an obscure opaque area on the anterior three-fourths occupying about one quarter the width of the segment, or less, on each side of the middle and often interrupted longitudinally by a shining median line; third segment with a similar but smaller subopaque marking, but sometimes there is scarcely a trace. Pile on the abdomen yellow, on the base and the lateral segmental triangles usually whitish; the antero-lateral more smooth triangles are limited by a condensation of subappressed yellowish pile; on the apical half of the disc of the third and fourth segments the pile chiefly appressed black, but the yellow hairs which are intermixed are most prominent.

Legs as in the male but the bands on the anterior four tibiae are narrower and brownish, the basal three joints of the anterior four tarsi are reddish. Squamae white, with white fringe. Halteres yellow. Wings as in the male, but frequently more clouded beyond the middle anteriorly.

Holotype, ♂, Orillia, May 8, 1921. *Allotype*, ♀, Orillia, May 22, 1921, collected by the author, in the Canadian National Collection, Ottawa.

The descriptions are drawn from 57 ♂ and 81 ♀ specimens, taken at Orillia between May 5th and June 18th, 1920 and 1921 and one male, Ottawa, Ont., May 22, 1921 (J. McDunnough).

The species shows considerable variation in the color of pile, antennae and legs, and also the facial tubercle is more or less variable. Occasional females have the oral margin more prominent than described, but this varies and intermediate specimens occur. The shape of the third joint of the antennae varies especially in the females. In many specimens the end of the third joint is more produced below, while in others it is rounded rectangular and narrower, being not twice the width of the second joint at its broadest.

This species is very close to *hoodiensis* Bigot, but is at once distinguished by the lighter pile of the face and the paler pile generally. In *hoodiensis* the thorax is black pilose. From *borealis* Coq. it is distinguished by the lighter antennae, bare arista and opaque abdomen. From *occidentalis* and *petulca* by the paler antennae, darker pile on thorax and abdomen as a rule and absence of hairs on facial slopes. In Hunter's key (Can. Ent., vol xxviii, p. 229) the female traces out to *laevis* Bigot but is readily distinguished by its larger size, etc.

A very abundant fly on Cowslips, fairly abundant on Wild Cherry in the vicinity of deep woods and on flowers of *Osmorrhiza claytoni* in sub-swampy woods. The most common species of the genus in Ontario. Other species are frequently taken in company with it. Males are most abundant towards evening.

***Chilosia columbiae*, new species.**

Antennae small, arista bare, black; eyes yellow pilose; thorax wholly light yellow pilose; second and third abdominal segments more or less opaque; legs black, only the knees obscurely reddish.

Male. Length 11 mm. Face shining black, thinly covered, except the tubercle, with yellow pollen which forms a broad band across below the antennae and extends narrowly down along the eye margins to the cheeks; side margins short yellowish pilose. Front not prominent; a deep sulca rising just above the polished antennal arch and reaching quite to the juncture of the eyes; in color metallic blue, with wholly yellow pile; front densely punctulate in vicinity of sulca, the sides obscurely golden yellow pollinose. Antennae brown, shining; third joint about twice as broad as second, a little longer than broad, its end rounded, in color opaque yellowish red, its upper and apical border brown, dusted with whitish. Arista black, bare, longer than antennae, slender, the basal quarter a little thickened. Vertical triangle shining greenish black its pile yellow, but most of the hairs blackish on the anterior half. Posterior orbits yellow pollinose and with yellow pile, including the occipital ciliae. Eyes moderately densely yellowish cinereous pilose, whitish below.

Thorax and scutellum shining blackish green, the dorsum with a strong brassy reflection, pile luteous yellow, not long but rather dense; pleura and scutellum with similar pile, no trace of bristles.

Abdomen metallic blackish green, slightly brassy; first segment moderately shining, the corners under the scutellum brown; second segment opaque black, except the very narrow posterior margin and the sides broadly, the opaque area cut off nearly squarely at the sides; third segment with a rather broad abbreviated opaque band near the hind margin in the middle, but with a very slender shining median stripe interrupting the opaque longitudinally; the opaque outline is vague; anteriorly and contiguous to the opaque markings and extending across the anterior margin there is a metallic deep blue reflection. Pile on opaque areas short, black, elsewhere longer, yellowish.

Legs black, the knees obscurely reddish. Pile of the legs similar to that of thorax; decidedly short reddish beneath the femora and tibiae apically and beneath the tarsi; a patch of golden pubescence at the bases of the anterior four femora. Wings distinctly fuscous, more marked basally and anteriorly, almost hyaline posteriorly; veins brown; the tip of the fourth vein joins the third longitudinal at almost a right angle. Stigma yellow. Squamae pallidly yellow with yellow border and pale yellow fringe. Halteres brownish luteous, the knob brown.

Holotype, ♂, Cranbrook, B.C., May 8, 1920, (C. B. D. Garrett), in the writer's collection.

This species is very like *C. lasiophthalma* but the pile is lighter, the face is less produced downwards, and the abdomen is more elongate. It must closely resemble the male of *punctulata*, but the thorax is not densely punctulate, the arista is wholly black and the thorax is very shining. It must also be very similar to *sororia* from Mexico, but the brassy thorax will distinguish it from that species. It differs from *petulca* in the absence of bristles on the scutellum.

***Chilosia rita*, new species.**

Arista bare; eyes bare; thorax and scutellum yellow pilose, the latter with black bristles; wings with yellowish brown cloud.

Male. Length 10 mm. Face and front shining blue black, a grayish pollinose band below the antennal prominence; side margins with short whitish pile; tubercle large, Roman nose shaped; face sub-triangularly concave from tip of antennal prominence to tip of the tubercle but the lower half of the concavity formed is convex; below the tubercle perpendicular to the oral margin, the anterior tip of which is on a plane with the posterior oral cavity. Frontal triangle with strong metallic blue reflection, with a broad sulca rising at the antennal arch and reaching the eyes at their juncture, the pile moderately long, black, not longest above. Antennae brownish red, first joint black, third joint as long as the first two together, oval, a little flattened above; arista long, slender, a little thickened near the base. Posterior orbits grayish yellow pollinose below, opaque black above, below with sparse whitish pile, above with black, but at the vertex with short yellow pile, the orbital ciliae black. Vertical triangle black pilose, the hairs at the back yellowish basally. Eyes contiguous for long distance, the vertical triangle small and narrow.

Thorax and scutellum shining blackish green, the dorsum with a brassy

lustre, the pile luteous, on the sides of the dorsum and on the mesopleura black, moderate in length, longer on the scutellum which bears apical slender black bristles.

Abdomen shining greenish with a brassy reflection; first segment with about six transverse impressions; second segment opaque, the side margins, expanding in the middle and extending obscurely (subopaque) entirely across, shining; third segment similar, but the middle of the segment less opaque and the shining band less broadly subopaquely interrupted. Pile of the abdomen reddish yellow, paler on the sides. Hypopygium with some black hairs intermixed.

Legs black; tips of the femora and all the tibiae reddish yellow, the latter with a rather broad blackish band, tarsi yellow, the last joint and hind basitarsi except the tip, brownish. Legs with long pale yellow pile, the anterior four femora with black pile apically and fulvous pile antero-ventrally, hind femora with short bristle-like black pile beneath.

Wings clouded with luteous, veins mostly piceous, but brown postero-apically; stigma yellow. Base of 2-3 longitudinal vein with about 12 short, fine bristles. Squamae whitish yellow, fringed with luteous and with luteous fringe of pile. Halteres yellow, the knob darker.

Holotype, ♂, Orillia, Ontario, May 5, 1921, (C. H. Curran) in the author's collection.

Differs from the species of the *tristis* group in having bare arista, and in addition may be distinguished from the species in that group as follows: from *pallipes* in having no pale markings on thorax; from *tristis*, *similis* and *leucoparea* in its more extensively yellow legs, etc; from *skinneri* in its larger size and largely black legs.

***Chilosia rita*, new species.**

Antennae luteous, arista brown, bare; face with fine pile on slopes; front as long as face, not sulcate.

Length, 7.5 to 8 mm. al. 7.5 mm. ♀ Face and front shining black, the sides of the face and across below the antennae silvery pollinose, extending very narrowly up the sides of the front on the lower fifth; face considerably concave between antennae and prominent tubercle, and thence perpendicular to the oral margin which is only slightly below the eyes at its anterior point; face with very fine whitish pile on lower central slopes and short silvery pile on side margins; front with short whitish pile below, with longer black or brown pile on upper two-thirds and immediately above the antennae and a few scattered black hairs among the pale ones; posterior orbits white pilose below and with whitish gray pollen, black opaque above with black pile. Eyes bare antennae reddish yellow or luteous, the basal joints infuscated, third joint a little darker dorsoapically.

Thorax, scutellum and abdomen blackish blue, wholly shining; thorax chiefly short black pilose, but when viewed from in front appearing whitish; there is a triangular area of yellowish pile on the front of the dorsum, the pleura entirely whitish pilose. Scutellum with brownish yellow or brownish pile, appearing pale in most lights, its margin with three or four pairs of black bristles, and some stout black hairs laterally; postalar calli and the sides of the dorsum before and behind the suture with two to four black bristles, and

one to three bristles on the mesopleura. Abdomen wholly sparsely whitish pilose, pile a little longer basally, sub-appressed except on the anterior angles of the second, third and fourth segments. Femora black, their tips luteous; front coxae obscurely luteous, as well as a spot on the thorax above them extending to the partly obscurely luteous humeri. Anterior four tibiae luteous or yellowish with broad, ill-defined median blackish bands, hind tibiae paler at ends only; tarsi obscurely luteous, the apical joints darker; hind tarsi more brownish.

Wings almost hyaline, stigma pallidly yellowish; veins brown, yellow at base of wing; first posterior cell acute, last section of fourth vein a little bent at its basal fifth. There are five minute bristles on R_{4+5} before the furcation. Squamae white, with whitish fringe; halteres yellow.

Holotype, ♀, Macdiarmid, Ont., June 7, 1921, (N. K. Bigelow), in the Ontario Museum, Toronto.

Paratypes, ♀, same data, in the Ontario Museum; ♀, same data, in the writer's collection.

This species is distinct from any so far described from North America in having the eyes bare and the facial slopes pilose. It belongs to a distinct group, although its general structure places it close to the *tristis* group.

AN APPEAL FOR AID.

The following letter which has been received by the Secretary of the Entomological Society of Ontario speaks for itself.

DEAR SIRS:—The "Mikrographische Gesellschaft" has been in existence in Vienna for ten years and has at present about 50 members.

Its object is to popularize microscopy or rather those branches of the natural sciences which rely upon the study of the universe in the smallest space. At the same time it extends and affords opportunities to non-members to whom the use of our laboratory, consisting of five rooms, is offered gratuitously.

Through the extreme decline in the value of Austrian currency its finances have come into a most critical state. Before the war the society was able to cover its expenses and the upkeep of the laboratory out of its modest income. But our means are now exhausted and we are unable to procure even the most urgent expedients, such as instruments, reagents, colours, glass articles, photographic supplies, etc., the prices of which have arisen enormously, not to mention the increased cost for gas and electric current.

Without prompt assistance the society will soon be obliged to dissolve and to deprive the intellectual people of our unhappy city of a place of scientific study and research.

The unfortunate, poorly nourished intellectual classes of Vienna are facing a winter of hardship and privation which acts as a spur to seek education and enlightenment with a view of paving the way for a better future for themselves, and, let us hope, for the benefit of all mankind. We therefore beg leave to appeal to you, Gentlemen, who are pursuing similar noble objects, to make it possible for us, through an accommodation in your own sound money, that our society may be saved and continue with its work.

Please accept our heartiest thanks in advance.

We are, Gentlemen, gratefully and sincerely yours,

MIKROGRAPHISCHE GESELLSCHAFT WIEN,

Treasurer; Paul Frenzel, Vienna vi, Theobaldgasse ii.