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## SYNOPSIS OF MALES OF THE GENUS *PLATYCHEIRUS* ST. FARGEAU AND SERVILLE WITH DESCRIPTIONS OF NEW SYRPHINÆ. (DIPTERA)

BY C. H. CURRAN

No key to the North American species of *Platycheirus* has been published since the appearance of Williston's 'Synopsis of the Syrphidæ,' almost forty years ago. At that time only five species were definitely recognized from this region and as we now have nearly five times that number the difficulty of determining the various species is obvious. For several years it has been the desire of the author to deal fully with the genera related to *Melanostoma* Schiner but the opportunity has not presented itself, although material has been assembled. As the females of most of the species are placed in their genera only with difficulty it will be necessary to key them out together and no attempt is made here to distinguish them.

As almost half of the species of *Platycheirus* now recognized as North American were originally described from Europe, I have included in the key all the Palæarctic species of which I have examples, as some of these may be found in the Nearctic region. *P. ciliatus* Bigot is a synonym of *albimanus* Fabricius. The following species are omitted from the key owing to lack of representatives: *frontosus* Lovett, Oregon; *tenebrosus* Coquillett and *aeratus* Coquillett, Alaska. The latter may be the same as *hyperboreus* Stæger; *naso* Walker may be *pellatus* Meigen or one of the closely related species; while *pacilus* Walker is close to *quadratus* Say, if not identical.

### Key to the Males of *Platycheirus*

- 1.—Anterior tibiæ not or scarcely dilated, even at the apex. . . . . 2.  
Anterior tibiæ at least considerably broadened apically. . . . . 6.
- 2.—Third segment of the anterior tarsus forming part of the whitish disc. . . . . 3.  
Third tarsal segment not forming part of the white disc, usually not broadened. . . . . 4.
- 3.—Abdomen with reddish spots; anterior femora with yellowish hair behind on the basal third and short, black hairs below. . . . . *melanopsis* Loew.<sup>1</sup>  
Abdomen with hoary spots; anterior femora with fine black hair.

*grœnlandicus*, new species.

<sup>1</sup>Not known from North America.

- 4.—Abdominal spots orange; anterior oral margin more prominent than the facial tubercle.....5.  
Abdominal spots hoary; oral margin not more prominent than the tubercle.  
*discimanus* Loew.
- 5.—Third segment of the anterior tarsi yellowish; oral margin but little more prominent than the facial tubercle.....*tarsalis* Schummel.<sup>1</sup>  
Third segment of the anterior tarsi black; oral margin very strongly produced.  
*manicatus* Meigen.<sup>1</sup>
- 6.—Anterior tibiæ rather abruptly dilated beyond the middle following a tuft of long black hairs, or strongly dilated on the apical fourth or less; antennæ pale beneath.....7.  
Anterior tibiæ either gradually dilated from before the middle or if from slightly beyond the middle, the tuft of long hairs is absent; antennæ usually wholly black.....14.
- 7.—Anterior femora with a basal tuft of long white hairs which sometimes form a slender, white, curved appendage and is followed by one or two dense tufts of black hair.....8.  
Anterior femora without dense tufts of black hairs basally, wholly clothed with rather coarse, long, black hair posteriorly.....9.
- 8.—Second segment of the anterior tarsi four or five times as wide as long.  
*scutatus* Meigen.  
Second segment of the anterior tarsi about twice as wide as long.  
*albimanus* Fabricius.
- 9.—Abdomen black, without reddish markings, second and third segments each with a pair of hoary spots.....*varipes* Curran.  
Abdomen with broadly interrupted pale reddish fasciæ.....10.
- 10.—Posterior basitarsi very strongly swollen on the basal half where they are twice as wide as on the apical half.....*inversus* Ide.  
Posterior basitarsi only a little enlarged, evenly tapering.....11.
- 11.—Halteres wholly pale; mesopleura wholly yellowish pilose....*pellatus* Meigen.  
Halteres with the knob brown; mesopleura with considerable black pile....12.
- 12.—Middle tibiæ simple, black pilose except on the upper posterior surface; second segment of the anterior tarsi almost as wide as the first. .*bigelowi*, new species.  
Middle tibiæ with slight concavity near the middle, broadened and curved; second segment of the anterior tarsi much narrower than the first....13.
- 13.—Middle tibiæ black haired except on the anterior half of the dorsal surface, the ante-median brush very strong and black; on the lower posterior portion of the basal third with a low tubercle covered with very short, dense black setulæ.....*amplus*, new species.  
Middle tibiæ with black hair on most of the posterior surface and sometimes part of the ante-median brush, the tubercle and dense black setulæ absent.  
*pellatoides* Curran.
- 14.—Anterior femora with one or more long, angularly curved white or black hairs at the base below, these hairs composed of several fine, fused hairs, or with one or more basal tufts of hairs.....15.  
Anterior femora without unusual hairs near the base.....27.

<sup>1</sup>Not known from North America.

- 15.—The basal tuft of white hairs is followed by one or two strong black tufts.  
*albimanus* Fabricius.  
 The basal hair, if pale, not tufted and never followed by a black tuft; sometimes two peculiar black hairs present. . . . . 16.
- 16.—Anterior femora with two peculiar white hairs which are black beyond the bend (or almost all black), and end in a strong, nodose broadening.  
*nodosus* Curran.  
 Anterior femora almost always with a single white hair, or if with two they are not blackened nor nodose. . . . . 17.
- 17.—Abdomen not at all reddish; third and fourth segments each with a pair of hoary spots; basal white hair rather obscure. . . . . 18.  
 Abdomen with conspicuous reddish markings, sometimes all reddish. . . 19.
- 18.—Face receding, with low, roundish tubercle (Greenland, Labrador).  
*hyperboreus* Stæger.  
 Face not receding, oral margin prominent, tubercle strong, elongate.  
*varipes* Curran.
- 19.—Middle femora with a dense, basal patch of fairly stout, outwardly directed hair below. . . . . *quadratus* Say.  
 Middle femora without such tuft of short hair. . . . . 20.
- 20.—Lower anterior edge of middle femora with several long curved hairs towards the apex or with a row of short, stout bristles on apical half. . . . . 21.  
 Middle femora with only fine, normal hair on apical half in front, rarely with a single, inconspicuous curved hair apically. . . . . 22.
- 21.—Middle femora with curved hairs on apical fourth. . . . . *perpallidus* Verrall.  
 Middle femora with one or two curved, fine bristles and a row of very short, stout bristles on apical half of antero-ventral edge. *immarginatus* Zetterstedt.
- 22.—Second abdominal segment with reddish spots. . . . . 23.  
 Second abdominal segment wholly dark in ground color.  
*occidentalis*, new species.
- 23.—Anterior tibiæ very strongly broadened from base to basal fourth where they are a little broader than at the apex. . . . . *fulviventris* Macquart.<sup>1</sup>  
 Anterior tibiæ almost evenly broadened on basal half, or at least broadest near the apex. . . . . 24.
- 24.—Posterior femora black except the apex; anterior tibiæ very strongly widened beyond the middle. . . . . *podagratus* Zetterstedt.  
 Posterior femora with the base usually broadly reddish, the front tibiæ gradually widened. . . . . 25.
- 25.—Pale spots on fourth abdominal segment conspicuously longer than wide, two-thirds as long as the segment. . . . . *angustatus* Zetterstedt.  
 Pale spots on fourth segment conspicuously shorter towards their inner edge, than wide, at this point scarcely over half as long as the segment. . . . 26.
- 26.—Middle tibiæ with short, fine pale pile beneath, the edges black haired; front tibiæ wider. . . . . *erraticus*, new species.  
 Middle tibiæ with short, fine black pile beneath. . . . . *clypeatus* Meigen.

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<sup>1</sup>Not known from North America.

- 27.—Abdomen wholly pale orange except the base and sometimes linear segmental apices. . . . . *modestus* Ide.  
 Abdomen with at least a strong median vitta and crossbands. . . . . 28.
- 28.—Anterior femora with five or six strong black bristles behind and two beneath, middle femora with short, stout black bristles in front; antennæ wholly black. . . . . *scambus* Stæger.  
 Front femora with only two or three long, fine bristles behind on the apical third; middle femora without stout bristles below; antennæ reddish beneath. . . . . 29.
- 29.—Face wholly pollinose, the tubercle quite small; abdominal spots reddish. . . . . *scamboides*, new species.  
 Facial tubercle shining, prominent; abdominal spots æneous, with covering of hoary bloom. . . . . *varipes* Curran.

***Platycheirus amplus*, new species**

Related to *peltatus* Meigen but the halteres have blackish knobs and the legs and abdomen differ; nearest *peltatoides* Curran but differing in abdominal markings and the structure and ornamentation of the middle tibiæ. Length, 9.5 to 10 mm.

MALE.—Face only a little more prominent below than at antennal base, the tubercle more prominent than the slightly produced oral margin; face gently concave above the tubercle. Head grayish pollinose, middle of face and the frontal triangle with more brownish pollen; pile black; vertical triangle shining black. Antennæ black, the second and third segments reddish beneath.

Thorax and scutellum æneous, the mesonotum somewhat dulled with opaque black, its sides anteriorly and the pleura, gray pollinose. Pile black, the pleura with pale reddish yellow pile but the posterior portion of the mesopleura bears abundant, crinkly black hairs while on the pteropleura the pile is rather dusky; ventral scutellar fringe yellow.

Legs black; anterior four femora broadly reddish apically, the apices of the posterior pair, base and apex of their tibiæ, middle tibiæ except pre-apical ring, anterior tibiæ, apical three segments of the anterior and four segments of the middle tarsi, reddish or reddish yellow; anterior tibiæ apically and the first two tarsal segments, whitish, the tibiæ with one or two brownish spots posteriorly; anterior tibiæ and tarsi shaped almost as in *peltatus* Meigen but the tibiæ are narrow on the basal fourth, then conspicuously widened, slightly increasing in width to near the apex where they are produced posteriorly; (in *peltatus* the tibiæ are not conspicuously narrow on the basal fourth, but are gradually widened and more strongly produced apically). Middle femora black haired except behind, the pale pile not conspicuous; middle tibiæ black haired except on the postero-dorsal slope, the cluster of pile behind very strong, the anterior edge with dense, short pile on most of its length; the tubercle at the posterior apical third is very low but is accentuated by the dense, short black setulæ. (In *peltatus* the pile of the femora and tibiæ is mostly yellow, the "brush" is weak, the tubercle absent, etc.). Posterior tarsi with the first segment swollen basally and tapering.

Wing lightly infuscated, more so anteriorly. Halteres blackish with the stem reddish on the basal half or more.

Abdominal spots but little longer than the black posterior fascia on the third segment and separated from each other by almost the length of one spot.

Holotype, male, Low Bush, Lake Abitibi, Ont., July 15, 1925, (N. K. Bigelow); No. 2022, in the Canadian National Collection, Ottawa. Paratype, male, Spruce Brook, Newfoundland, Aug. 8, 1912; in The American Museum of Natural History, New York.

***Platycheirus bigelowi*, new species**

Superficially like *peltatus* Meigen but the middle femora and tibiae are simple, face more produced, and the abdominal spots not lengthened inwardly. Length, 10 mm.

MALE.—Face strongly produced, the oral margin slightly more prominent than the strong, narrow tubercle. Head with brownish gray pollen, the vertical triangle, lunula, facial tubercle and a triangle on the cheeks, shining black. Pile of the head black, on the lower two-thirds of the occiput and back of the cheeks, yellowish. Antennae black, the third segment reddish on the basal two-thirds of the under side.

Thorax black, the mesonotum more or less bronzed; pleura thinly gray pollinose, with yellowish pile, but there are many black hairs on the mesopleura and pteropleura. Mesonotum and scutellum with long black hair except on the sides of the former anteriorly and the ventral scutellar fringe.

Femora black, with reddish apices; anterior tibiae broadly red basally and on the whole anterior and most of the ventral surfaces; middle tibiae with the basal third or more and the apex, reddish, the narrow base of the posterior tibiae of the same color. Anterior femora wholly black haired, the pile long and fine behind, without peculiar bristles; anterior tibiae very gradually, slightly widened from near the base, the apex rather strongly widened and yellowish white in color, the pile short and yellowish in front and beneath and before the apex behind, long and black posteriorly and postero-dorsally, the broadened apex with several stronger black hairs. First two segments of the anterior tarsi very large, wider than the tibiae, the first segment twice as long as wide on the anterior side, only slightly longer than wide posteriorly; second segment narrower than the first, its anterior edge only half as long as its posterior, both the segments whitish, the apical three segments yellow except the basal half of the third, which is longer than wide. Middle femora with pale pile above and long black pile posteriorly; middle tibiae with fairly abundant long black pile except on the antero-dorsal slopes; middle tarsi wholly yellow, with pale hair. Posterior legs black haired except on the posterior surface of the femora.

Wings tinged with grayish. Squamæ brownish tinged, the margin and fringe brown. Knob of halteres deep brown.

Abdomen opaque black, the first segment, lateral margins, apex of the fourth and the fifth segment, shining aeneous black; adorned with four pairs of orange spots. Spots on the second segment sub-triangular, oblique on their outer edge, convexly oblique inwardly, their posterior margin transverse and separated from the posterior margin of the segment by a distance equal to two-thirds the length of either spot, the distance separating the spots equal to the length of one spot. The two following pairs of spots are rather narrowly separated from the base of the segments, their width equal to half the length of a segment, transverse, with the inner corners rounded, the black space between them equal to half the length of either spot. Spots on the fifth segment small, oblique, separated from each other by the length of a spot and separated from the base of the segment by a black triangle and extending broadly over

the lateral margins, the other spots well separated from the lateral margin. Abdominal pile black except on the first segment basally and the basal half of the venter.

**FEMALE.**—Facial and frontal pollen brownish ochreous, the frontal spots not contiguous; frontal pile black. Thorax cinereous pilose, the disc of the mesonotum black haired except a large, pre-scutellar area; a few black hairs on the scutellum apically. Legs simple except that the first segment of the anterior tarsi is angularly produced in front; femora all broadly reddish basally; anterior four tibiae brownish on the apical third except the apex, their tarsi yellowish brown except the yellowish apical segment. Spots on the second abdominal segment similar to the others but slightly concave posteriorly; all the abdominal spots narrower and all separated from the lateral margin.

Holotype, male, Low Bush, Lake Abitibi, Ont., June 9, 1925, (N. K. Bigelow); No. 2023, in the Canadian National Collection, Ottawa. Allotype, female, same locality, June 30. Paratype, female, Low Bush, June 7, (Bigelow), in the Royal Ontario Museum, Toronto.

This species is readily distinguished from its allies by the fairly wide black fasciae separating the pale spots from the base of the segments.

#### ***Platycheirus scamboides*, new species**

Very similar to *scambus* Meigen but there is no curved white hair at the base of the anterior femora; the legs are differently ornamented; and the black abdominal fasciae wider. Length, 8.5 mm.

**MALE.**—Head aeneous, covered with yellowish gray pollen, including the small, low tubercle, the vertical triangle and occiput above, blackish; frontal triangle with the pollen more brownish tinged. Pile black, on the occiput, white.

Thorax aeneous, the pleura thinly grayish pollinose, the pile wholly pale yellowish.

Legs reddish, the posterior femora and tibiae with broad black or brown band lying mostly beyond the middle; upper surface of the first and apical segments of the posterior tarsi, blackish. Pile of the anterior four legs yellowish except for a few dark hairs on the posterior surfaces of the femora apically, the anterior femora with two or three black bristly hairs behind on the apical half, and two or three on the basal half below, but these may sometimes be yellowish. Anterior tibiae gradually broadened to the middle, thence less strongly widened to the apex, the posterior corner of which is triangularly produced, the apical fifth of the tibiae and the first tarsal segment whitish; tarsi as in *scambus*, the first segment with almost parallel sides beyond the oblique basal edge, the following three segments gradually narrowed, successively shorter, wider than long, the first segment as wide as the tibia. Middle tibiae gently arcuate on the apical two-thirds so as to fit against the femora in repose. Black bands of the hind tibiae and their tarsi, black haired.

Abdomen with four pairs of reddish yellow spots, the first pair triangular, a little concave behind, broadly separated from the posterior and narrowly from the lateral margin of the second segment; spots on the third segment almost rectangular, a little longer inwardly, resting on the base of the segment, separated from each other by about two-thirds the distance separating the first pair of spots; on the fourth segment the spots are transverse, a little wider than long, gently concave posteriorly; spots on the fifth segment sub-triangular, rounded inwardly, occupying half or more

of the segment. The black of the abdomen is opaque on the second to fourth segments, the first segment, narrow lateral margins, apex of the fourth and whole of the fifth segments, shining black or æneous.

Holotype, male, Agricultural College, Michigan, (C. F. Baker), in the Illinois State Natural History Survey Collection.

**Platycheirus scambus, Stæger**

*Scæva scambus* Stæger, 1845, Kröjers Tidskr., (2) I, p. 325.

*Platychirus chætopodus* Williston, 1886, 'Syn. N. Amer. Syrphidæ,' p. 59.

I am unable to separate Williston's species from European specimens of *scambus*, although the type seems to differ somewhat from most Palæarctic specimens. However, some European examples are quite like Williston's and the species shows slight variation in some respects.

**Platycheirus erraticus, new species**

According to Lundbeck, ('Diptera Danica,' V, p. 219), *hyperboreus* Stæger, from Greenland, is a species distinct from *P. clypeatus* Meigen, having "hoary æneous or bluish abdominal spots"; such occur in the species which I have identified as *hyperboreus*. As the species which has been called *hyperboreus* in this country does not agree with the statement made by Lundbeck, who had the type before him, and moreover does not occur north of the Canadian zone, it is quite obvious that it has been misidentified and it is therefore without name.

*P. erraticus* is more closely related to *clypeatus* Meigen than to *hyperboreus* but it has broader front tibiæ than the former and these bear only pale hair beneath. Length, 8 to 9 mm.

MALE.—Head greenish black, grayish pollinose, the vertical triangle, lunula, oval tubercle and a triangle on the cheeks, bare; pile whitish or pale yellowish, black on the anterior half of the vertical and whole of the frontal triangle. Face receding, the tubercle small, oval, the oral margin scarcely produced. Antennæ black, the basal two-thirds or less of the third segment reddish below; arista brown.

Thorax æneous, sometimes more or less bronzed, wholly cinereous pilose.

Legs reddish, the posterior femora and tibiæ each with a very broad brown band, the posterior tarsi with the first and last segments chiefly blackish; middle femora sometimes brownish basally on the under surface. Anterior femora with a long, curved sub-basal white hair behind, the hair elsewhere on the posterior surface long and fine, with a few coarser hairs above. Anterior tibiæ gradually broadened from the base, the anterior edge very slightly convex beyond the middle, the posterior edge slightly produced triangularly, the apical third white except on the anterior margin; behind, on the basal half with some longish, fine back hairs. The tibia at the apex is practically one-fourth as wide as long. Front tarsi narrower than their tibiæ, tapering, broad, the first four segments successively shorter, the first one-fourth longer than wide, pale basally, the remaining segments, except the last, much wider than long.

Middle femora with sparse, longish black hairs behind and four or five bristly black hairs below; on the median half of the anterior surface with many short, stout bristles near the lower edge; middle tibiae with a fringe of black hair on either side of the basal two-thirds, elsewhere yellow haired. Posterior legs with yellowish hair except on the upper surface of the tarsi.

Wings cinereous hyaline or slightly infuscated.

Abdomen opaque black with the lateral margins, apex of the fourth and whole of the fifth segment, shining æneous or bronze black, adorned with three pairs of orange spots overlaid with white pollen which is only visible in certain views. Spots on the second segment oval, roundish or sub-triangular, lying mostly behind the middle of the segment and towards the sides. Spots on the third segment sub-rectangular, longer laterally, their inner posterior ends rounded, separated from each other by half the width of either spot and from the posterior margin by more than half the length of a spot. Spots on the fourth segment similar to those on the third but only slightly longer than wide and not or scarcely longer than the least width of the black fascia. Pile black on the dark portions behind the middle of the second segment, pale basally and on the entire lateral margins and genitalia. Genital claspers pale yellow.

FEMALE.—Head usually blue-black; front slightly narrowed above, across the middle with a pair of more or less joined hoary triangles which are narrowly connected along the orbits with the facial pollen. Pile black on the upper half of the front, elsewhere whitish.

Legs reddish, simple, the black bands on the femora and tibiae narrower, the pile wholly pale except on part of the upper surface of the posterior tibiae.

Abdomen with four pairs of reddish yellow spots, the first pair transverse, more or less oval or hemi-circular, lying mostly or wholly behind the middle of the second segment, quite small and separated from the posterior margin of the segment by more than their width. Spots on the two following segments much as in the male, but smaller, slightly transverse, extending over the lateral margins; spots on the fifth segment sub-triangular, basal, pointed inwardly, broadly separated from each other. Abdomen more shining, the broad segmental apices shining.

Holotype, male, Orillia, Ont., April 28, 1921, (Curran); No. 2024 in the Canadian National Collection, Ottawa; Allotype, female, Orillia, Sept. 12, 1920. Paratypes: male, Orillia, July 15, 1914; male, Orillia, May 30, 1920; 5 males, 10 females, Jordan, Ont., June, July; 2 males, Orillia, July 20, 23, 1923, (Curran); male, St. Hilaire, Que., May 24, 1906; female, Montreal, Que., June 17, 1906; male, female, Cottage Beaulieu, Que., Aug. 20, 1912, July 16, 1906; female, Rouville Co., Que., May 24, 1906; female, Montreal, July 22, 1906, (Beaulieu); male, St. Cloud, Man., Aug. 2, 1923, female, Aweme, Man., Aug. 31, 1923, female, June 12, 1916, female, Goodlands, Man., Aug. 23, 1923, (N. Criddle); 2 females, Glen Souris, Man., Sept. 3, 1923, male, female, Aweme, Man., Sept. 1, 1923, female, Baldur, Man., July 29, 1922, (H. A. Robertson); 5 males, 5 females, Oliver, B. C., April 20 to Aug. 19, 1923, (C. B. Garrett); male, Teulon, Man., (Hunter and Cumming); male, Aweme, Man., Oct. 18, 1915, (Criddle); male, female, Sturgeon Bay, Wis., Aug. 2, 1920, (C. L. Fluke); male, Ottawa, Ont., Aug. 25, 1908, (J. Fletcher); 3 females, Ottawa July 30 1912, Aug. 28, 1912, July 4, 1916, (G. Beaulieu); 4 males, 3 females, Ithaca, New York, July 13, 25, 27, 30 and Aug. 1, 1917; 2 males, Aweme, Man., May 9, 1925, and Treesbank, Man., May 19, 1925, (N. Criddle).



**Platycheirus occidentalis**, new species

Allied to *erraticus* Curran, but readily distinguished by the more slender fore tibiæ, wholly black hind tarsi, partly black front tibiæ with black pile in their middle anteriorly. Length 6 to 8 mm.

MALE.—Face slightly retreating, the tubercle small, round, metallic greenish black, only the tubercle and middle of cheeks black, the face thinly yellowish gray pollinose, black pilose. Frontal triangle yellow pollinose, only bare immediately above the antennæ, the pile black. Vertical triangle similar to the frontal, black pilose; eyes touching for a distance equal to that between the middle point of the anterior and posterior ocellus, the posterior ocelli slightly remote from each other. Occiput yellowish gray pollinose, with yellowish pile, the orbital cilia black. Antennæ wholly black; third joint one and one-half times as long as wide, obtuse apically, convex below, scarcely convex above; arista thickened on basal two-thirds, tapering, thinly pubescent; as long as last two joints combined.

Thorax and scutellum æneous; moderately long, fine yellow pilose.

Femora black, their apices reddish yellow; hind tibiæ except the broad base and apex, and their tarsi wholly, black; middle tibiæ brownish on sub-apical half, front tibiæ with a black stripe in front on sub-apical half; legs elsewhere reddish yellow, the apex of the fore tibiæ broadly white. Femora with very short, appressed yellowish pile; the hind ones black pilose in front; the front ones with long black pile behind, a few of the hairs towards the base yellow, the curved basal hair white. Middle femora black pilose behind and below, the hairs below ciliate and stronger basally, on either side of the middle. Fore tibiæ almost evenly widened from the base, but much less widened than in allied species, its posterior apex very slightly produced lappet-like; pile mostly yellowish, but longer on the middle posteriorly, beyond which it is white. Front tarsi slightly widened, decidedly narrower than the tibiæ, slightly narrowing to apex, the first joint one and one-half times as long as wide, the second short, one and one-half times as wide as long, the following joints twice as wide as long. Middle tibiæ slightly arcuate and curved a little backward apically, their pile probably all pale. Hind tibiæ black pilose. Hind basitarsus simple, but slightly tapering, the middle slender, normal.

Wings slightly tinged with fuscous or cinereous, the stigma brownish yellow.

Abdomen opaque black, the first segment metallic blackish green, the lateral margins and large, basal transverse triangles on the fifth segment, bronzed; with two (perhaps sometimes four), pairs of reddish yellow spots. Second segment without spots in type, perhaps sometimes with small roundish spots, but there is no shining area to indicate them; third segment with a pair of broadly separated, sub-rectangular basal spots, their outer ends longer, their hind margin oblique, fourth segment with similar, slightly smaller, more rectangular spots; all the spots well separated from the side margins by the cupreous margin. Pile on base, metallic and reddish spots, yellowish, not very abundant; on the black areas, black; white on genitalia.

Venter chiefly reddish, black towards apex.

FEMALE.—Much like the female of *erraticus*, but the second abdominal segment without spots and the hind tarsi wholly black. Tubercle slightly longer than in male; facial pile very short, white. Front slightly narrowed above, bluish black, the sides on the lower half, expanding as large, broadly separated, rounded triangles at

the middle, grayish white pollinose. Pile white, just above the antennæ and on subdorsal third, brown; on vertex and occiput wholly white; occiput grayish white pollinose. Third antennal joint larger, one and three-fourths as long as wide, its apex obtuse, sub-truncate, slightly longer above, its sides almost parallel; arista yellowish apically.

Thorax greenish black, short white pilose, the pleura and sides of mesonotum white pollinose.

Legs simple, reddish, hind femora with a broad band on apical half, hind tibiæ except the broad ends, and hind tarsi wholly, black, the second joint of hind tarsi more brownish or obscurely reddish. Pile wholly white.

Wings with brownish yellow cloud on apical half, fading out apically and posteriorly, the base and apex hyaline. Stigma luteous.

Abdomen shining black; the first segment wholly, second except a narrow median and broad, incomplete posterior margin, metallic grayish greenish black. Third segment with a pair of subquadrate orange spots, their anterior margin cut off obliquely towards the side, their inner ends slightly rounded, posterior margin transverse; narrowly separated from the anterior and moderately so from the lateral margin, behind. Second pair of spots more transversely elongate, almost or quite reaching the lateral and basal margins, their inner ends straight, the posterior scarcely concave laterally, the spots slightly wider laterally; fifth segment with a basal reddish fascia, broadly interrupted in the middle, wider laterally. Third segment subopaque. Pile short, whitish basally and on yellow spots; elsewhere black. Yellow spots with whitish sheen.

Holotype male, Yellowstone Park, Aug. 5, 1918, (A. L. Melander); type in Dr. Melander's Collection; allotype, female, British Columbia, No. 1502, in the Canadian National Collection, Ottawa. Paratypes: female, British Columbia; 2 females, Oliver, B. C., May 26, Aug. 17, 1923 (C. B. Garrett).

This species is most closely allied to *P. sticticus* of Europe because of the rather slender front tibiæ, but the tibiæ are broader than in that species.

The following three new species were collected in Greenland by the "Crocker-Land Expedition, 1913-1917" and were forwarded, along with some other Syrphidæ for identification, by the Illinois State Biological Survey, through Doctor T. H. Frison. The types are in The American Museum of Natural History, paratypes, where available, in the Illinois State Biological Survey Collection and in the Canadian National Collection.

#### ***Platycheirus grønlandicus*, new species**

Related to *melanopsis* Loew but much smaller, without clear reddish markings on the abdomen and lacking the short bristly hairs beneath the anterior femora. From *discimanus* Loew, which it closely resembles, it is at once distinguished by the dark first segment of the middle tarsi, which never show a white reflection in front, the shape of the hoary abdominal spots which are much longer, and the small, very strongly produced facial tubercle. Length, 6 mm.

MALE.—Face slightly produced below the very prominent but small tubercle which is more produced than the oral margin. Head with strong greenish reflections, thickly grayish yellow pollinose, the vertical triangle bare; pile black. Frontal triangle large, almost twice as wide in front as its length, rather flattened. Lower edge of face very slightly oblique. Antennæ black, the third segment about as wide as long, more or less rounded apically; arista thick, tapering on the apical half, not as long as either antenna. Pile of the occiput and back of the cheeks, pale yellowish.

Thorax and sides of the abdomen bluish æneous. Pile of the thorax long and crinkly, pale yellow, with black hairs intermixed on the mesonotum and scutellum.

Legs black; tips of the femora and narrow bases of the tibiæ reddish; first segment of the middle tarsi reddish brown, not laterally compressed, with a row of small spines on its postero-ventral edge. The anterior tibiæ have the basal fifth yellow and the apical fifth behind and the apex, similarly colored, the apex slightly widened. First two segments of the anterior tarsi pale yellowish, the first segment a little more than twice as wide as the apex of the tibia, with parallel sides on the apical two-thirds, equally tapering to the base on both sides; second segment one-sixth narrower than the first, two and one-half times as wide as long; third segment yellowish, narrower than the second and one and one-half times as wide as long, the apical two segments brown and a little narrower than the third. First segment of the posterior tarsi as long as the remaining segments combined, considerably swollen. Hair of the legs crinkly brown, no bristles; middle femora with rather abundant hair below, the pile of the anterior tibiæ abundant posteriorly.

Wings cinereous hyaline; stigma grayish luteous; last section of the fifth vein almost straight. Squamæ whitish, with brownish border and fringe. Halteres brown, with paler stem.

Abdomen opaque black, the lateral margins and fifth segment bluish æneous: with three pairs of hoary spots, the first pair on the sides of the second segment, occupying a little more than its median third, broadly separated from each other and from the lateral margins and in some lights appearing to reach the base of the segment. Spots on the third segment sub-quadrangle, separated from each other by their own width, occupying about the basal half of the segment, their inner margins divergent posteriorly. On the fourth segment the spots are narrower inwardly, their width at the outer end equal to a little more than one-third the length of the segment. Pile black along the middle of the dorsum from the middle of the third segment and on the genitalia, elsewhere, pale yellow.

Type, male, Umanak, Greenland, July 20, 1914, (W. E. Ekblaw).

#### ***Melanostoma carinata*, new species**

Superficially resembles *Platycheirus varipes* Curran, but the front tibiæ and tarsi are simple; also very similar in appearance to *Platycheirus grænländicus* Curran. Differs from *M. ambiguus* Fallen in the absence of a long, apically curved hair on the anterior femora behind and by possessing six or seven bristles on the posterior surface of the first segment of the anterior tarsi, the three towards the apical end broadly curved apically and forming a loose tuft. Length, 7 to 7.5 mm.

MALE.—Face with strong carina on the upper fourth; perpendicular, with a rather small, very prominent tubercle and produced oral margin, the oral angles not lower than the back of the mouth, the lower edge of the cheeks gently concave: the length of the head is equal to almost three-fourths its height. Front large, broad

slightly swollen, rather horizontal; the eyes touch for a shorter distance than the length of the shining vertical triangle, the head elsewhere blue-black, with a thin covering of gray pollen. Pile on the cheeks and occiput pale yellowish, elsewhere black, the occipital cilia black. Antennæ black, the third segment a little longer than wide, obtusely rounded apically, not longer than the basal two segments together; arista black, thick; tapering on the apical half, shorter than either antenna.

Thorax blue-black, white pilose, the disc black and clothed with coarse black pile. Scutellum with black pile, the margin with finer white hairs.

Legs black; tips of the anterior four femora and the broad bases of their tibiæ, reddish. Front femora with coarse black hair behind, two or three bristles on the basal half below, a row of short bristles in front below the middle and short, fine yellowish pile above. Anterior tibiæ with about ten long black bristles behind on the apical three-fourths and four or five shorter ones on the basal fourth, the first segment of their tarsi with six or seven bristles behind on the whole length, weakly divided into two groups. Middle femora with similar pile to the front ones, but the bristles below are scarcely distinguishable and the anterior row of bristles is weak while there is some pale hair towards the base posteriorly. Middle tibiæ with seven or eight long, sub-erect bristles on the apical half behind and on the basal half with a row of long, finer bristles which curve towards the apex of the tibia just after their base. Posterior femora with less black hair and scarcely any trace of bristles, their tibiæ simple, the first segment of their tarsi strongly thickened.

Wings cinereous hyaline; stigma grayish luteous. Third vein carried strongly forward on the apical two-thirds of the apical cell, ending in the tip of the wing. Squamæ and fringe white. Halteres pale yellow.

Abdomen opaque black, with three pairs of rectangular gray spots, the lateral margins and whole of the fifth segment and genitalia, æneous. The first pair of spots occupy a little more than the median half of the second segment, are somewhat oblique behind and broadly separated from each other; the second and third pairs of spots are basal and a little more approximate in the middle. Pile cinereous, long but not dense, the dark apices of the segments with scattered black hairs and there are also scattered long ones on the sides apically, while the genitalia are wholly black haired.

FEMALE.—Front not quite as wide as greatest width of either eye, rather strongly widened anteriorly; facial carina narrow and not very high. Thorax cinereous pilose, the black hair predominating on the disc of the mesonotum behind the suture; scutellum with black hair on the basal half. Legs simple, the anterior tarsi wholly dark. Abdomen shining black, with three pairs of transverse, sub-rectangular hoary spots, the first pair lying mostly before the middle of the second segment, the others sub-basal; hoary spots and sides of the abdomen with white pile, the hair elsewhere black. The broad apices of the second to fourth abdominal segments are inclined to be bronzed.

Type, male, Umanak, Greenland, July 29, 1914, (M. C. Tanquary and W. E. Ekblaw); allotype, female, same data.

### ***Epistrophe nigropilosa*, new species**

Belongs to the *sodalis* group. Differs from *mallochi* Curran by the narrower front of the female, which is, however, wider than in the other species, and the pleura are almost entirely black pilose while the abdomen is normally all black except the apex

of the fourth segment in the female. The male has narrow, obscure, broadly interrupted reddish fasciæ on segments three and four and these are broadly separated from the lateral margins. Length, 7 to 8.5 mm.

FEMALE.—Eyes thickly brownish pilose; occiput with pale yellow pile, the head elsewhere black pilose. Face dark reddish, the oral margin and cheeks black; head thinly grayish pollinose except the front above and the region about the tubercle, which is large and prominent and narrowly separated from the slightly produced oral margin; face perpendicular and produced moderately downwards as a short, obtuse cone. Front three times as wide as the wide ocellar triangle, strongly widening anteriorly. Antennæ black; arista robust, tapering on the apical two-thirds, microscopically pubescent.

Thorax rather dull blue-black; scutellum with the disc translucent brownish yellow. Pile wholly black, sometimes a few pale hairs towards the sides of the mesonotum and on the pleura below.

Legs black; broad apices of the femora and anterior four tibiæ and broader bases of all the tibiæ, reddish. Pile black, only a few pale hairs on the under surface of the femora towards the base.

Wings hyaline, sometimes a little luteous anteriorly; stigma luteous; third vein ending in tip of wing. Squamæ and fringe yellowish. Halteres reddish yellow, the base of the knob somewhat brownish.

Abdomen shining black, black pilose; apex of the fourth segment reddish. Venter thinly grayish pollinose; pale pilose.

MALE.—Head missing. Upper lobe of the squamæ brown. Reddish fasciæ on the third and fourth segments very broadly interrupted in the middle, widely separated from the lateral margins and moderately so from the base of the segments. Venter black pilose.

Holotype, female, Umanak, Greenland, June 28, 1914, (M. C. Tanquary and W. E. Ekblaw); allotype, male, (without head), June 22, 1914. Paratypes: female, same data as type; female, same locality, June 30, 1914, (M. C. Tanquary). Paratypes in the collection of the Illinois Biological Survey and the Canadian National Collection.

