

## A NEW GENUS AND SPECIES OF DELPHACID PLANTHOPPER (HEMIPTERA: FULGOROIDEA) FROM CANADA<sup>1</sup>

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**ABSTRACT:** *Scolopygos*, new genus, is described and illustrated with one species, *S. pallida* new species, from Canada. *Scolopygos* is assigned to the tribe Delphacini within the subfamily Delphacinae (as defined by Asche). The new genus superficially resembles *Pissonotus*, *Megamelus*, and *Parkana* by the presence of processes on the ventral opening of the male pygofer. Genera with similar features in the Delphacini are discussed.

A new genus, here described as *Scolopygos*, was discovered during recent work on the genus *Pissonotus* Van Duzee (Bartlett and Deitz, 2000). It is a member of the tribe Delphacini of the subfamily Delphacinae (according to Asche 1985, 1990). This new genus is similar to *Pissonotus*, *Megamelus*, and *Parkana* in that there are dorsally directed processes on the ventral margin of the opening of the male pygofer. The presence of ventral pygofer processes are an unusual feature among delphacids. Such processes, however, occur sporadically in the Delphacini in genera that do not otherwise appear to be related. The relationships of the genera in the Delphacini, however, have not been resolved and therefore the true relations of genera with pygofer processes remain unknown.

Among the New World Delphacini, the genera *Pissonotus* Van Duzee, *Megamelus* Fieber, *Parkana* Beamer, *Phrictopyga* Caldwell, *Pygospina* Caldwell, *Bostaera* Ball, the introduced sugarcane planthopper *Perkinsiella saccharacida* Kirkaldy, *Tarophagus* Zimmerman, and perhaps *Ribautodelphax* Wagner, share the presence of ventral pygofer processes (it is unclear whether these processes are homologous among these genera). This feature also occurs among the Tropidocephalini, suggesting that it is not a derived feature. Kershaw and Muir (1922) suggest that the median processes are the vestigial remains of the first gonapophyses.

The new genus is most similar to *Parkana*, *Pissonotus*, and *Megamelus*. It is probably most similar to *Parkana* in having the processes on the ventral margin of the pygofer closely approximated and having segment 10 unarmed. *Scolopygos* differs, however, in that *Parkana* has the caudoventral margin of the pygofer invaginated ("sinuately excavated" Beamer, 1950: 129), the processes of the pygofer are strongly asymmetrical, and the aedeagus is strongly modified.

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It differs from *Pissonotus* and *Megamelus* in that the median processes are closely oppressed in *Scolopygos*, and separated in *Pissonotus* and *Megamelus*. *Scolopygos* also lacks processes from the ventral margin of the anal segment, which are usually present in *Megamelus* and always present in *Pissonotus*. *Scolopygos* also differs from both of these genera in the form of the aedeagus (laterally flattened in *Pissonotus*, fine terete and elongate in *Megamelus*).

A few other New World genera have ventral pygofer processes in varying forms. Some species of the mostly European *Ribautodelphax* Wagner have small teeth on the ventral margin of the pygofer, but this genus also has conspicuous, asymmetrical ventral processes on abdominal segment 10 (*Scolopygos* lacks processes on segment 10). The Neotropical genera *Phrictopyga* Caldwell 1951 and *Pygospina* Caldwell 1951, are slender, fragile species with a single median ventral process (apically bilobed in *Phrictopyga*). The Neotropical genus *Tarophagus* Zimmerman, 1948, bears 3 ventral processes on the pygofer as well as processes on segment 10. *Bakerella pediforma* Beamer 1950, is unusual among *Bakerella* in having a prominent single median ventral process on the pygofer. Finally, the genera *Perkinsiella* and *Bostaera* have pygofer processes. They are large species with flattened antennae and the fork of the median facial carinae ("median metope keel" Emeljanov 1993: 93) is near the middle of the face. Emeljanov (1993) defined the subtribe Numatina for 23 genera (including *Perkinsiella* and *Bostaera*) with this feature of the median facial carina and having an articulated suspensoria of the phallobase. *Scolopygos* is not in Numatina, but this is the only formally defined subtribe in the Delphacini.

Because some delphacids are circumarctic (e.g., *Criomorphus wilhelmi* Anufriev & Averkin) or circumtemperate (e.g., *Javesella pellucida* (Fabricius)) (Wilson 1988, 1992), it is appropriate to examine Palearctic genera for similar features. There are, however, no temperate or boreal Palearctic genera, other than *Megamelus*, with well developed pygofer processes that are appropriate for this new species. An inventory of the Palearctic genera with pygofer processes or teeth would include (in addition to *Megamelus*) *Amblycotis* Stal, *Eurybregma* Scott, *Garaga* Anufriev, *Litochodelphax* Asche 1982, *Neoterthrona* Yang, the Hawaiian *Nesodryas* Kirkaldy, some *Nilaparvata* (e.g., *N. muiri* China 1925), the mostly African *Nycheuma* Fennah, *Pseudaraeopus* Kirkaldy (small teeth only), *Purohita* Distant, *Palego* Fennah, *Sinolacme* Fennah, and perhaps others (Le Quense 1960, Vilbaste 1971, Ossiannilsson 1978, Asche 1985). None of these Old World genera, however, appear to be appropriate for this new species.

Specimens for this study were borrowed from, and are deposited in, the Canadian National Collection: Ottawa, Ontario (CNCI). Measurements were taken on an optical micrometer. For details, see Bartlett & Deitz (2000). Measurements are given in millimeters using the specimens designated as the holotype and paratypes from the type locality (see *Material Examined*), except

one instance as noted below. Photographs were taken using an Olympus SZX-12 Scope Image Capture/Analysis System.

### *Scolopygos* Bartlett, NEW GENUS

**Type species.** *S. pallida* Bartlett, n. sp.

**Diagnosis.** Male with ventral margin of pygofer bearing a pair of elongate, closely approximated, subsymmetrical, median processes and toothlike lateral processes. Midlateral margins of pygofer opening produced posteriorly, ventral margin not excavated. Diaphragm weak, membranous. Anal segment unarmed.

**Description.** HEAD: Head narrower than pronotum. Frons subquadrate, slightly constricted between eyes, lateral carinae distinct, median carina rounded, obscurely forked just below fastigium. Fastigium rounded, very slightly projected, most produced near midline of compound eye, carinae nearly obsolete. Vertex equally long as wide, lateral margins subparallel, except where expanded laterally behind eye; carinae rounded. Antennal segment II longer than I, length of I nearly 2 X width. Beak extended to metacoxae. THORAX: Lateral carinae of pronotum posterolaterally directed, slightly curved, nearly reaching hind margin (may curve laterally before reaching). Mesonotal carinae obscure, lateral carinae diverging, extending to posterior margin. Wings truncate, reaching 5<sup>th</sup> tergite, setae and setal bases inconspicuous. Legs with tibia normal (not expanded), calcar of hind leg tectiform with many black-tipped teeth on posterior margin, more than half length of proximal metatarsal segment, metatibia with 5 apical teeth becoming uniformly larger posteriorly. Metatarsomere 1 with apical transverse row of 7 teeth (5 + 2) on plantar surface. ABDOMEN. Male pygofer rounded with elongate, appressed median processes on the midventral margin, and toothlike lateral processes on the lateroventral margin of the opening. Lateral margins of pygofer produced posteriorly to a toothlike apex (in lateral view) at the midlateral margins. Diaphragm weak, membranous. Segment 10 small, without ventral processes. This new genus includes a single species, *S. pallida* Bartlett, n. sp., the type species by monotypy.

**Etymology.** *Scolo-* (*skolos* or *skolops*) is from Greek referring to anything pointed; plus *pygos* (*pyge* or *pyx*), also from Greek, refers to the rump. This name was chosen in reference to the processes on the ventral margin of the pygofer opening.

### *Scolopygos pallida*, Bartlett NEW SPECIES

(Figures 1-8)

**Type Locality.** CANADA, Alberta, Drumheller.

**Diagnosis.** Body uniformly brownish-orange. Pygofer of male with pair of subequal, closely appressed, median processes, abdominal segment 10 without processes. Pygofer in lateral view with midlateral margins produced into a large tooth. Aedeagus much larger near bases, tapering apically, with large crenulate lateral flange.

**Brachypter.** Body (Figs. 1 & 3) lustrous, entirely brownish orange, paler at caudal apex of mesonotum, darker dorsolaterally on abdomen. Male (♂) body length 2.25 mm (paratype from Lockeport, NS), female (♀) 2.67-2.73. Width at tegula ♂ 0.73-0.75; ♀ 0.87-0.92. HEAD: Frons

nearly quadrate (Fig. 2), widest at base of eyes, narrowed somewhat between eyes, frons and clypeus unicolorous, width ♂ 0.70-0.71, ♀ 0.80-0.85. Median carinae of frons rounded, obscure at fork just ventrad to fastigium. Frons height ♂ 0.52-0.55, ♀ 0.63; width ♂ 0.31-0.32, ♀ 0.32-0.33 (Ratio width: height ♂ 0.58-0.60; ♀ 0.50-0.53). Vertex quadrate, with all carinae rounded and somewhat obscure, not projecting cephalad. Vertex length ♂ 0.28-0.30, ♀ 0.32; width ♂ 0.25-0.27, ♀ 0.29 (Ratio length: width 0.83-0.94). Antennae short, segment I (♂) I 0.11-0.12mm, II 0.23-0.25 (Ratio I:II 0.46-0.47); (♀) I 0.13-0.15, II 0.28-0.30 (Ratio I:II 0.48-0.50). THORAX. Carinae rather obscure. Lateral carinae of pronotum obscurely reaching hind margin, or curving laterally just before hind margin. Pro- and mesonotum unicolorous, brownish-orange. Pronotum width ♂ 0.73-0.75, ♀ 0.87-0.92; length ♂ 0.20-0.21, ♀ 0.22-0.23. Mesonotum length ♂ 0.35-0.37, ♀ 0.42-0.43. Tegmina light amber (nearly clear), veins irregularly darker, setal bases on veins inconspicuous, length ♂ 0.90, ♀ 1.13. Metothoracic leg with



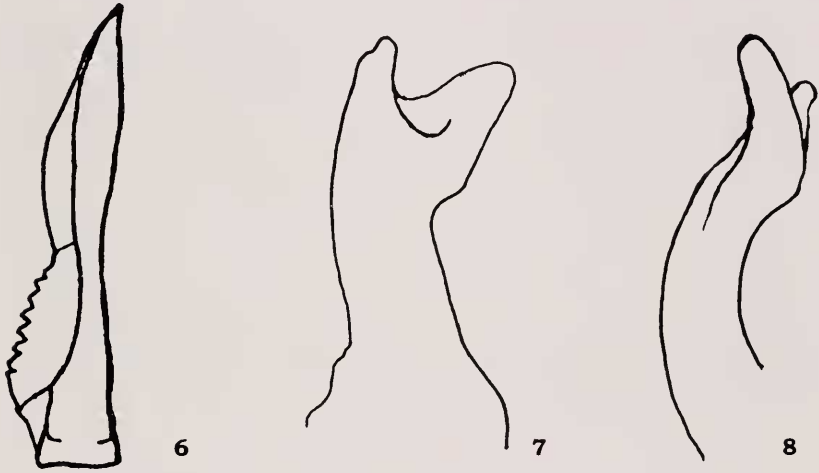
Figures 1-5. *Scolopygos pallida* sp. n. Fig. 1. Lateral view. Fig. 2. Frons. Fig. 3. Dorsal view. Fig. 4. Pygofer with aedeagal complex and anal segments removed. Fig. 5. Aedeagal complex (aedeagus, parameres, and connectives) and anal segment, lateral view of right side. (Figs. 1-3 paratype from type locality, 4-5 holotype.)

calcar tectiform, concave ventrally, with 12-14 black tipped, similar teeth, length ♀ 0.23-0.27, ♀ 0.27-0.28. ABDOMEN. Orange-brown, darker laterally, immaculate. Pygofer (Fig. 4) rounded in cross-section. Ventral margin of opening with a pair of long, closely approximated, subequal median processes, laterally flanked by a pair of short, dark-tipped teeth ("lateral processes"). Lateral margins of pygofer produced posteriorly (in lateral view) with a toothlike apex at midlateral margins. Parameres (Figs. 7 & 8) rather flattened, broadest near bifurcate apex, posterior process with bend, apex directed laterally. Diaphragm weak, membranous. Segment 10 small, unornamented. Aedeagus terete (Figs. 5 & 6), large basally, strongly tapering toward apex, slightly curved ventrally; with large crenulate lateral flange, gonopore dorsal, subapical. Anal segment small, unornamented.

**Macropters.** Unknown.

**Recorded Hosts.** None.

**Distribution.** Canada: Alberta, Saskatchewan.



Figures 6-8. *Scolopygos pallida* n. sp. Fig. 6. Aedeagus dorsal view. Fig. 7. Left paramere, widest view. Fig. 8. Right paramere, lateral view. (Figs. 6-8 holotype.)

**Material Examined.** Holotype. Brachypterous ♂, "Drumheller, Alta., /11 VIII.1957/ A. R. & J. E. Brooks// Bartlett / Research/ 96-44a♂". Paratypes: CANADA: ALBERTA: Same locality as holotype (2 ♂, 5 ♀), Wainwright, 27-VII-1957 (A. R. Brooks). SASKATCHEWAN: Candle lake, 19-VIII-1959 (A. R. & J. E. Brooks) (1 ♂); NOVA SCOTIA: Lockeport 31-VII-1958 (J. R. Vockeroth) (2 ♂), same, 1-VIII-1958 (1 ♀, tentatively included). All specimens brachypterous. All specimens CNCI.

**Etymology.** The specific name comes from the Latin word "*pallida*" meaning pale, a reference to the color of this species.

**Remarks.** No other New World genus has median processes of the pygofer that are closely appressed basally and subequal. *Parkana* has similar processes, but they are asymmetrical. The lateral flange on the aedeagus of this species is similar to that found in *Nothodelphax* (e.g., *N. consimilis*).

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