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Some Palearctic weevils in the subfamily Ceutorhynchinae (Coleoptera, Curculionidae) recently discovered in North America

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Abstract—The first fully documented North American records of the Palearctic Ceutorhynchinae weevil species *Amalorrhynchus melanarius* (Stephens, 1831), *Microplontus campestris* (Gyllenhal, 1837), *Pelenomus waltoni* (Boheman, 1843), and *Rhinoncus perpendicularis* (Reiche, 1797) are presented. Characters providing for their recognition, as well as keys and habitus photographs facilitating their identification, are provided. It is likely that all four species have recently been introduced unintentionally by human activities.

Anderson RS, Korotyaev BA. 2004. Sur quelques charançons Paléartiques de la sousfamille Ceutorhynchinal (Coleoptera, Curculionidae) récemment découverts en Amérique du Nord. *The Canadian Entomologist* **136** : 233–239.

Résumé—On documente ici la première mention nord-américaine des espèces de charançons paléartiques Ceutorhynchinae suivants : *Amalorrhynchus melanarius* (Stephens, 1831), *Microplontus campestris* (Gyllenhal, 1837), *Pelenomus waltoni* (Boheman, 1843) et *Rhinoncus perpendicularis* (Reiche, 1797). On donne aussi les caractères permettant de les reconnaître, des clés de détermination, et des photographies de leurs habitus pour faciliter leur identification. Il est à peu près certain que ces quatre espèces ont été introduites de façon non intentionnelle par des activités humaines.

Introduction

Four species of Ceutorhynchinae (Coleoptera, Curculionidae) weevils have been recently discovered in North America. These species are *Amalorrhynchus melanarius* (Stephens, 1831), *Microplontus campestris* (Gyllenhal, 1837), *Pelenomus waltoni* (Boheman, 1843), and *Rhinoncus perpendicularis* (Reiche, 1797). The presence of *A. melanarius* also represents the first occurrence of the Palearctic genus *Amalorrhynchus* in North America, as reported in Korotyaev and Anderson (2002). It is likely that all four species have recently been introduced unintentionally by human activities.

Host plants of these species are known in the Palearctic region and, although not confirmed for all species in North America, are likely the same as in Eurasia.

These discoveries have resulted from field collections made near Ottawa, Ontario, and from the examination of Ceutorhynchinae weevils in the following collections:

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CCCH	Claude Chantal, Varennes, Quebec, Canada
CMNC	Canadian Museum of Nature, Ottawa, Ontario, Canada
CNC	Canadian National Collection of Insects, Arachnids, and Nematodes, Ottawa, Ontario, Canada
CUIC	Cornell University Insect Collection, Ithaca, New York, United States of America
CWOB	Charles W O'Brien, Tallahassee, Florida, United States of America
DEBU	University of Guelph Insect Collection, Guelph, Ontario, Canada
USNM	Smithsonian Institution, National Museum of Natural History, Washington, District of Columbia, United States of America
WVDA	West Virginia Department of Agriculture, Charleston, West Virginia, United States of America
ZIN	Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia

Keys for the separation of tribes and genera of North American Ceutorhynchinae are not presented here. Such keys can be found in Korotyaev and Anderson (2002) and include all four genera in which these newly recorded species are placed.

Tribe Phytobiini

(Figs. 1, 5)

***Rhinoncus perpendicularis* (Reiche, 1797)**

Specimens examined

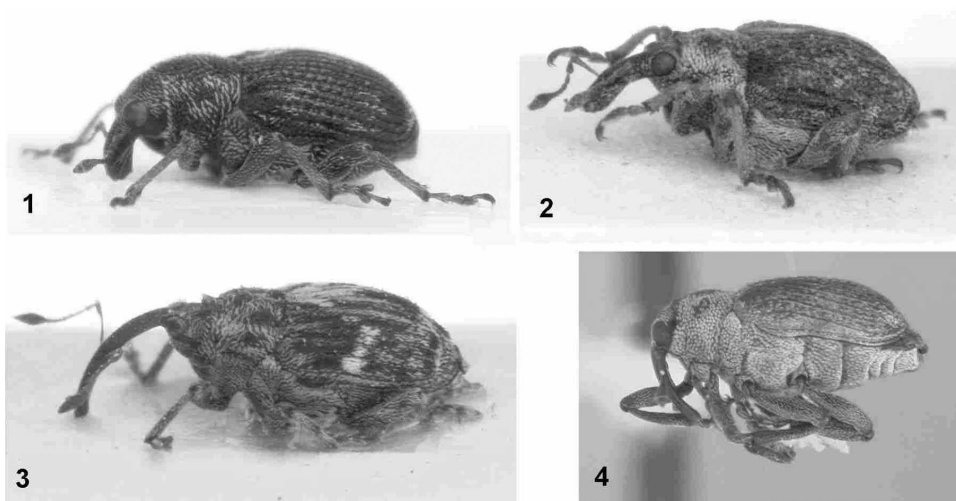
CANADA. Ontario: Ottawa, Woodlawn, 5–6.ix.99, B Korotyaev (1, CMNC; 1, CWOB; 1, USNM; 1, ZIN).

Rhinoncus perpendicularis is a widespread Eurasian species that, like all *Rhinoncus* species, is associated with species of *Polygonum* (Polygonaceae) (Hoffmann 1954). Hoebeke and Whitehead (1980) presented a key to the six then-known species of *Rhinoncus* in North America and summarized information about their natural history and distributions. *Rhinoncus perpendicularis* is the seventh species of the genus to be recorded in North America. It is known from only one locality near Ottawa, Ontario, where it was collected by sweeping *Polygonum hydropiper* L. The form found in Ontario is a nominotypical European subspecies not known from Asia, which means that it was most likely introduced into Canada from Europe. Hoffmann (1954) recorded the distribution of *R. perpendicularis* as including North America, but we know of no specimens to substantiate this earlier record.

Rhinoncus perpendicularis is easily distinguished from most other *Rhinoncus* species in North America by the absence of posterolateral tubercles on the pronotal disc and by dorsal orbital (eye) margins slightly raised above the level of the frontal area, eyes separated by about the width of one eye (or slightly less), and a more elongate body form. It is most similar to the native Nearctic species *Rhinoncus longulus* LeConte, 1876, which also lacks posterolateral tubercles on the pronotal disc but which has the dorsal orbital margins flush with the level of the frontal area and the eyes more narrowly separated.

The following amendment to the key of Hoebeke and Whitehead (1980) replaces their couplet 1 and should facilitate identification of *R. perpendicularis*.

1. Body elongate, elytra subparallel-sided, from 1.2–1.5 times as long as broad; elytral intervals smooth, glossy, convex, lacking acute granules; elytral pattern formed by white scales on a background of brown or golden, short, recurved, coarse setae. Rostrum straight or nearly straight. Frons



FIGURES 1–4. Lateral habitus. 1, *Rhinoncus perpendicularis* (Ottawa, Ontario, Canada); 2, *Pelenomus waltoni* (Krakow, Poland); 3, *Microplontus campestris* (Torino, Italy); 4, *Amalorrhynchus melanarius* (Jefferson Co., West Virginia, United States of America).

- much narrower than rostrum, flat or very shallowly depressed. Pronotum short, barrel-shaped, without lateral tubercles, glossy. Body size 2.1–3.2 mm 1A
- 1'. Body stout, elytra much broader than pronotum, often 1.10–1.15 times but no more than 1.2 times as long as broad, rounded, rather strongly narrowing apically; elytral intervals with rows of acute granules, or intervals dull, flat; elytral pattern formed by white or yellowish scales on a background formed by brown scales of the same form. Rostrum rather strongly curved. Frons slightly narrower than rostrum, moderately depressed. Pronotum with variously developed lateral tubercles, distinctly narrowed anteriorly, dull or slightly glossy. Body size 2.2–4.0 mm other species of *Rhinoncus*; see couplet 2 of Hoebeke and Whitehead (1980)
- 1A(1). Rostrum very short and thick, scarcely longer than broad, straight, flattened dorsally; frons flat, level with dorsum of rostrum or scarcely depressed, half as broad as rostrum. Elytra and legs of various colors, from almost entirely red to entirely black. Body size 2.1–3.2 mm. Widely distributed in Canada and United States of America. *Rhinoncus longulus* LeConte
- 1A'. Rostrum more slender, about twice as long as broad, noticeably curved, more or less convex in cross section dorsally; frons more or less depressed, not less than two thirds as broad as rostrum. Elytra and femora (except for the extremities) black. Body size 2.1–2.9 mm. Adventive in Canada (Ontario) *Rhinoncus perpendicularis* Reiche

***Pelenomus waltoni* (Boheman, 1843)**

(Figs. 2, 6)

Specimens examined

CANADA. Ontario: Chaffeys Locks Biological Station, 26.ix.1986, A Smetana (1 male, CNC; 1 female, ZIN).

Two specimens of *P. waltoni*, a transpalearctic species distributed from the boreal forest zone to South Korea and the Caucasus, have been collected in southeastern Ontario near Kingston. This species can be distinguished readily from the native North American congeners by the long rostrum and characteristic vestiture. In Europe, this

species occurs on *P. hydropiper* and *Polygonum mite* Schrank. Despite problems with separating the native species of this genus, the following couplet should facilitate recognition of *P. waltoni* in North America.

1. Rostrum in male distinctly longer than pronotum; in female, rostrum about 1.5 times as long as pronotum, slightly curved. Prosternum without keels before coxae. In male, middle and hind tibiae with well-developed mucro; venter without distinctive scaly arrangement on second ventrite and without fine, erect, light hairs on apical ventrites medially. Pronotum slightly convex, shining, finely punctate. Angular prominences on anterior margin of pronotum slightly projecting, tubercles on pronotal sides small. Elytra covered mostly with fine, short, recumbent, metallic-shiny setae, with spots of greyish oval scales; no velvety brown or black spot present behind scutellum. Third tarsal segment wide, about twice as wide as second segment. Body size 2.0–2.6 mm *Pelenomus waltoni* Boheman
- Rostrum in male thick, noticeably curved, shorter than pronotum; in female, rostrum at most slightly longer than pronotum. Prosternum often with low, wide keels before forecoxae (in these species, male abdomen often with small V-shaped ridge densely covered with light scales on second ventrite or with a scaly spot contrasting with the surrounding vestiture); if prosternum not keeled, then rostrum shorter than pronotum, and either entire body clothed with matte grey and brown scales, with metallic scales present only on head (then male hind tibia unarmed), or elytral vestiture as in *P. waltoni* but with dark brown or black velvety spot behind scutellum and apical male ventrites densely pubescent
 other North American species of *Pelenomus*

Tribe Ceutorhynchini

Microplontus campestris (Gyllenhal, 1837)

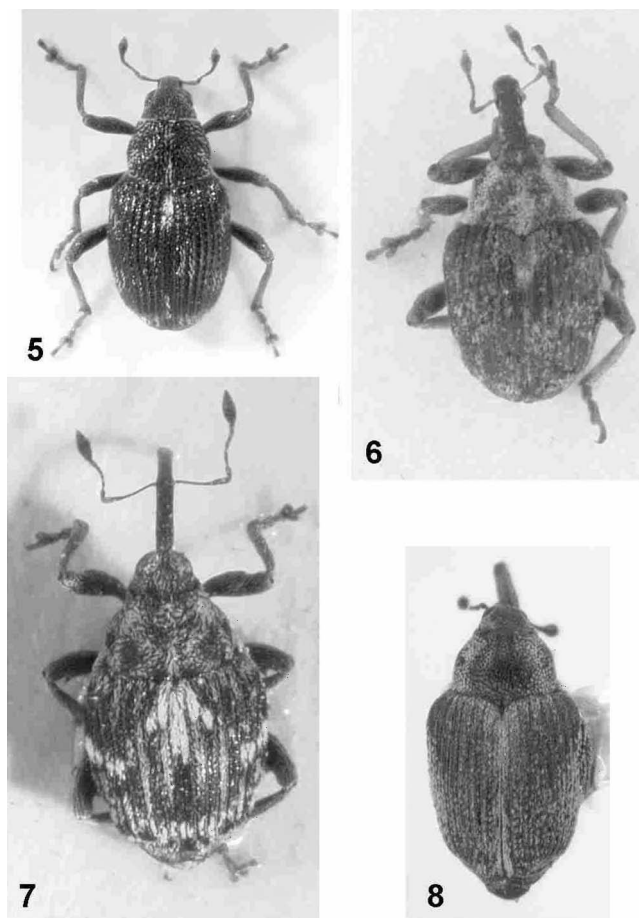
(Figs. 3, 7)

Specimens examined

CANADA. Ontario: Guelph, south Arboretum, malaise head, 22–24.v.1985, BV Brown (1, CMNC); 29.iv.–27.v.1985 (1, CMNC); 30.iv.–30.v.1985 (2, CMNC, DEBU). Guelph, 21.iv.1977, K Barber (1, CNC); 16.vi.1978 (1, CMNC); 28.vi.1978, B Warner (1, CMNC); 17.v.1979, DL Krailo (1, CMNC); 2.vii.1980, H Stockwell (1, CMNC). Vineland, 14.vi.1971, K Barber (1, CMNC).

A series of *M. campestris*, a European species, apparently monophagous on *Chrysanthemum leucanthemum* L. (Asteraceae), was found in student collections from the University of Guelph, Ontario, which were made as long ago as 1971. The genus *Microplontus* is restricted to the Palearctic region, with most of the approximately 20 described species found in the Mediterranean area, all developing on Asteraceae. *Microplontus campestris* is the second species of the genus known to be present in North America. The other known species is *Microplontus edentulus* (Schultze, 1896), which has recently been released at two sites in Alberta and Saskatchewan for biological control of scentless chamomile, *Matricaria perforata* Mérat (Asteraceae) (McClay *et al.* 2002).

Microplontus species are superficially similar to species now placed in the genus *Allosirocalus* Colonnelli (Coleoptera, Curculionidae), which have a cruciform scutellar spot and transverse lateral bands on the elytra, and to *Sirocalodes siculus* Dietz, 1896 (Coleoptera, Curculionidae), which also has transverse elytral bands. *Microplontus campestris* can be easily distinguished from the aforementioned species by the 7-segmented antennal funicle; from species of *Allosirocalus* by the mucronate middle and hind tibiae in males; and from *S. siculus* by its larger size (2.6–2.9 mm as opposed to 2.0–2.5 mm for *S. siculus*) and the presence of oblique bands directed from the suture to the scutellar spot, which is T-shaped in *S. siculus*. Neither *Allosirocalus* species nor *S. siculus* are known from Ontario at present.



FIGURES 5–8. Dorsal habitus. 5, *Rhinoncus perpendicularis* (Ottawa, Ontario, Canada); 6, *Pelenomus waltoni* (Krakow, Poland); 7, *Microplontus campestris* (Torino, Italy); 8, *Amalorrhynchus melanarius* (Jefferson Co., West Virginia, United States of America).

***Amalorrhynchus melanarius* (Stephens, 1831)**

(Figs. 4, 8)

Specimens examined

CANADA. Quebec: St-Augustin Portneuf, 25.vi.1984, Claude Chantal (8, CCCH; 4, CMNC; 2, CWOB). **UNITED STATES OF AMERICA. Connecticut:** Mt. Carmel, 11.vi.1956, CW O'Brien (1, CWOB). **Massachusetts:** Barnstable Co., Brewster, Indian Spring, 28.v.1989, ER Hoebeke and AG Wheeler (4, CMNC; 34, CUIC; 4, CWOB). Middlesex Co., Sherborn, 27.v.1950, on watercress (2, CMNC; numerous, USNM). **West Virginia:** Jefferson Co., Bullsken Run, near Wheatland, 14.v.1992, SM Clark (4, CMNC; 2, WVDA).

The genus *Amalorrhynchus* Reitter comprises two Palearctic species: the transpalearctic *A. melanarius* and *Amalorrhynchus lukjanovitshi* Korotyaev, 1980,

described from Yakutia and found also in Novosibirsk Province, Western Siberia. The two species are similar to small or medium-sized species of the genus *Ceutorhynchus* (Coleoptera, Curculionidae), to which the genus *Amalorrhynchus* apparently is closely related. The distinctions between the genera *Amalorrhynchus* and *Ceutorhynchus* are rather subtle; the former is characterized as a close derivative of the latter, slightly modified according to its semiaquatic habits. These habits are the dense recumbent pubescence of the tarsi and the vestiture of pronotum, elytra, and underside formed mostly by rather dense, tightly appressed, dull gray or olive-gray, apparently hydrophobic scales supplemented with short, recumbent or subrecumbent, golden brown setae. The structure of the pronotum is also distinctive because of the lack of lateral tubercles; the lateral margins are parallel or subparallel in the basal portion, and the disc is flattened and finely, shallowly punctate with the anterior margin not reflexed above the head. The tarsal claws are simple and the antennal funicle has 6 articles. These characters occur separately in several groups of *Ceutorhynchus* species but, taken together and combined with the characteristic vestiture and uniform black color of the entire body, they are diagnostic for *Amalorrhynchus* species.

In Europe, *A. melanarius* develops on watercress (*Rorippa nasturtium-aquaticum* (L.) Hayek) and greater yellow cress (*Rorippa amphibia* (L.) Bess.) (Brassicaceae). The host plant of *A. lukjanovitshi* is not known, but is thought to be a large semiaquatic crucifer.

In North America, *A. melanarius* has been collected at a number of localities along the eastern coast from Quebec to West Virginia. It has been collected from watercress in Quebec and Massachusetts, but other collections lack host plant information. It may have been established in North America for some time, the earliest record being from 1950, but it has been misidentified in collections as a species of the speciose and difficult genus *Ceutorhynchus*.

The following couplet may help to discriminate *A. melanarius* from the similar species *Ceutorhynchus typhae* (Herbst, 1795) (formerly called *Ceutorhynchus floralis* (Paykull, 1792), another apparently adventive Palearctic species now widely distributed in North America on *Capsella bursa-pastoris* (L.) Medic. and other ruderal and semiaquatic Brassicaceae) and the closely related and similar, apparently native western Nearctic species *Ceutorhynchus sparsus* Hatch, 1971 (restricted to California, Oregon, and Washington on *Barbarea* R. Br. species (Brassicaceae)).

- Pronotum with anterior margin not elevated; posterolateral area with no trace of tubercles; lateral margins weakly rounded in basal half; basal margin distinctly bisinuate; disc without median sulcus or with short and narrow sulcus only at base, strongly convex, densely and finely punctate, intervals between punctures matte because of the well-developed microreticulation. Elytra with striae narrow and deep, each bearing a dense row of pale gray scales; intervals with appressed, matte, broad lanceolate or short oval scales mixed with minute, golden, hair-like scales, the latter arranged in 3–4 rows along each elytral interval and also on pronotum. Body, including antennae and legs, black. Aedeagus without apical projection. Body size 1.6–2.3 mm. On aquatic and semiaquatic Brassicaceae *Amalorrhynchus melanarius* (Stephens)
- Anterior margin of pronotum noticeably raised and reflexed; lateral margins moderately rounded in basal half, posterolateral area usually with small but distinct, fold-shaped tubercles; disc with median sulcus, shining, more densely punctate. Elytra with striae rather broad and deep, bare; intervals mostly with 2 rows of semi-appressed, golden, narrow, parallel-sided or narrow lanceolate scales, with more or less distinct white stripes on first interval and along lateral margins, and a few scattered oval white scales throughout. Antennal funicle often brown or yellow, anterior margin of pronotum often reddish brown. Aedeagus with apical projection. Body size 1.4–2.6 mm *Ceutorhynchus typhae* (Herbst) or *Ceutorhynchus sparsus* Hatch

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