

## Two new European species of *Rhamphomyia* subgenus *Amydroneura* (Diptera: Empididae)

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*Rhamphomyia* (*Amydroneura*) *rampazzii* sp. n. (Switzerland) and *R. (A.) boreoitalica* sp. n. (Italy) are described and illustrated. *R. (A.) bipila* Strobl, 1909 is redescribed and illustrated. A lectotype is designated for *R. (A.) claripennis* Oldenberg, 1922. A key to the Palaearctic species of the subgenus *Amydroneura* is given.

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### 1. Introduction

The type species of the subgenus *Amydroneura* Collin, 1926, viz. *Rhamphomyia erythropteralma* Meigen, 1830 (original description), can be distinguished from the other subgenera by the elongate discal medial cell (dm) (cell D), in which the vein forming the upper margin is very faint and is only distinguishable around the middle as a slight depression in the wing surface (Collin 1961: 433).

The Palaearctic species currently assigned to the subgenus *Amydroneura* have been listed by Chvála & Wagner (1989) and by Chvála (2004), as follows (alphabetically): *R. bipila* Strobl, 1909: lectotype designated by Barták (1984: 338), and the species is redescribed here; *R. claripennis* Oldenberg, 1922: lectotype designated here, redescribed and illustrated by Barták (1982: 438); *R. crassicauda* Strobl, 1893: lectotype designated by Barták (1984: 338), redescribed by Barták (1982: 439); *R. erythropteralma* Meigen, 1830: lectotype designated by Barták (1989: 218), redescribed and illustrated by Collin (1961: 435) and Barták (1982: 440); *R.*

*gibba* (Fallén, 1816): syntypes studied by Collin (1961: 435), redescribed and illustrated by Collin (1961: 433) and Barták (1982: 440); *R. hirsutipes* Collin, 1926: recognizable from the original description; *R. pseudogibba* Strobl, 1910: holotype revised by Barták (1984: 341), redescribed and illustrated by Barták (1982: 441). Two additional species, *R. boreoitalica* sp. n. and *R. rampazzii* sp. n., are described here as new species.

### 2. Material and methods

The material studied originates from the following institutions: Museum Benediktiner Stift Admont, Austria; Museo Cantonale di Storia Naturale, Lugano, Switzerland; ETH Zentrum, Zurich, Switzerland; Deutsches Entomologisches Institut, Müncheberg, Germany; private collection of the author (now deposited in the Czech University of Agriculture, Prague). The morphological terms used here follow McAlpine (1981: 9–63), with few modifications. The genitalia were macerated in 10% KOH (24 hours, room temperature).

### 3. Systematic treatment

#### 3.1. *Rhamphomyia (Amydroneura) bipila* Strobl, 1909 (Fig. 1a)

*Rhamphomyia (Amydroneura) bipila* Strobl, 1909, Verh. Zool.-Bot. Ges. Wien 59: 171.

*Material examined.* Spain, Escorial, Strobl, 1♂ (lectotype) and 2♀♀, deposited in Admont [these specimens have no locality label; see Barták (1984)]. Lectotype designated by Barták (1984: 338).

*Redescription.* Male. Head brownish-black. Eyes narrowly separated on frons, upper facets slightly enlarged. Frons blackish-brown, about as broad as half diameter of front ocellus. Ocellar setae black, half as long as length of frons, ocellar triangle with 4 additional setulae. Face about as broad as thickness of 2nd antennal segment, four times as long as broad, entirely pruinose including genae, bare. Occiput dark grey pruinose, covered with fine long setae. Antennae black, both basal segments slightly lighter than third segment, with very short setulae. Style about 1/3 as long as third antennal segment. Labrum brown, polished, 0.6 times as long as head is high. Palpi brown, short, with a few short setae.

Thorax blackish-brown, pruinose, scutum subpolished when viewed from above, all setae black. Proepisternum bare as well as both prosternum and propleural depression; about 20 very fine biserial acrostichals, 1/2 as long as distance between rows of acrostichals and dorsocentrals; 16–18 irregularly 1–2 serial dorsocentrals, slightly longer than acrostichals; 2 long prescutellar dorsocentrals; postpronotum with 1 long seta and 6–8 setulae; 0 intrahumeral; posthumeral only slightly differentiated from numerous setae on sides of scutum; 3 notopleurals, front part of notopleura without setae; 1 scarcely differentiated supraalar, prealar area with a few setulae; 1 postalar; 6 scutellars. Coxae blackish-brown, pruinose, with black setae and setulae. Legs brown, pruinose, with black setae and setulae. No long seta in comb at tip of hind tibia. Fore femur without anteroventrals, posteroventral setulae 1/3 as long as femur is deep. Fore tibia with homogeneous posterodorsal setae about as long as diameter of tibia. Mid femur with anteroventral and posteroventral rows of fine setae half as long as

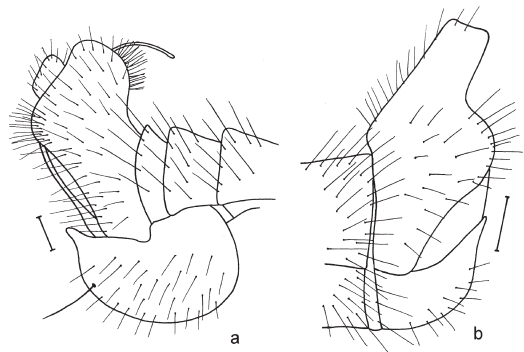


Fig. 1. – a. *Rhamphomyia bipila* Strobl, 1909, male terminalia, lateral view; scale bar 0.1 mm. – b.

*Rhamphomyia boreoitalica* sp. n., male terminalia, lateral view; scale bar 0.1 mm.

femur is deep. Mid tibia with 4–5 setae dorsally up to 3 times as long as diameter of tibia. Ventral surface of hind femur rather densely covered with setulae about as long as or slightly longer than femur is deep. Hind tibia with scarcely differentiated dorsal setae about as long as diameter of tibia. Basal tarsomere of all legs thin, covered with short setulae, with the exception of two very long dorsal preapical setae on fore basitarsus (which are about as long as length of tarsomere). Wings clear, stigma hyaline, costal seta present. Veins yellow to clear, vein  $A_1$  absent in apical half, axillary angle obtuse, about  $130^\circ$ . Vein  $M_2$  0.7 times as long as length of cell dm. Haltere brown, squama blackish-brown with long brown fringes.

Abdomen blackish-brown, sides polished, both hypandrium and sternites pruinose. All abdominal setae and setulae black. Hind marginal setae about as long as length of their segments, and discal setae similar. Hypopygium as in Fig. 1a.

Female. Similar to male with following exceptions. Eyes broadly separated on frons, all facets subequal. Frons 2.5 times as long as broad, with very fine setulae on each side. Face 1.5 times as long as broad. Labrum 0.8 times as long as head is high. Anteppronotum with 6 setulae. Fore femur with short anteroventrals in basal half only. Anteroventral setulae on mid femur shorter than in male, distinct posteroventral setae present in apical half only. Mid tibia without long setae. Hind femur with fine setae ventrally half as long

as femur is deep. Fore basitarsus with short setulae, setulae on both mid and hind basitarsi slightly flattened. Wings brownish along costal margin, veins yellowish-brown. Abdomen with tergites 2–6 polished, hind marginal setae 1/4 as long as the length of segments.

Length: body 2.3 mm (in male including hypopygium), wing 2.3–2.5 mm.

### 3.2. *Rhamphomyia (Amydroneura) boreoitalica* sp. n. (Fig. 1b)

*Material examined.* Holotype male: Passo Sella, 2,100 m a.s.l., alpine meadow, 8.VIII.1988, leg. et coll. Barták, deposited in the Czech University of Agriculture, Prague. No additional material.

*Description.* Male. Head blackish-brown. Eyes narrowly separated on frons, lower facets slightly smaller than upper ones. Frons pruinose, about as broad as diameter of three facets combined, covered with a few setulae. Ocellars black, half as long as length of frons, ocellar triangle with two pairs of additional setulae. Face about as long as broad, bare, polished in lower part. Occiput pruinose, sparsely covered with black setulae. Antennae black, 3rd antennal segment slightly flattened, 1st segment very short, ratio of antennal segments (in 0.01 mm scale) 2 : 3 : style = 4 : 30 : 4. Labrum blackish-brown, polished, 3/4 as long as head is high. Palpi brown, short, with 2–3 setulae.

Thorax blackish-brown, pruinose, covered with black setae, setulae both black and pale. Anteprepronotum with 3–5 setulae on each side; 2–3 setulae on proepisternum; both propleural depression and prosternum bare; about 26 very fine biserial acrostichals, 1/3 as long as distance between rows of acrostichals and dorsocentrals; about 22 irregularly 1–2 serial dorsocentrals as long as acrostichals; 1 very long prescutellar dorsocentral; postpronotum with 1–2 setae and several additional setulae; intrahumeral seta scarcely differentiated from setulae; 1 small posthumeral; 2–3 notopleurals, 1–2 setulae in front part of notopleura; a few supraalar and prealar setulae; 4 scutellars; laterotergite (metapleura) with both brown and pale setae. Both coxae and legs blackish-brown, pruinose, covered with brown setae and setulae. No long

seta in comb at tip of hind tibia. Fore femur with two ventral rows of setulae as long as femur is deep. Fore tibia with short setulae throughout. Mid femur with two rows of setae ventrally which, in basal half of femur, are about 1/3 as long as femur is deep and in apical part are slightly longer (up to as long as femur is deep). Both mid and hind tibia with scarcely differentiated setae dorsally, the longest up to 1.5 times as long as diameter of tibia. Hind femur with dorsal setulae which, in basal part, as long as femur is deep but short in apical part, ventral setae 2/3 as long as femur is deep. Basal tarsomere of all legs thin, covered with short setulae. Wing clear, stigma hyaline, costal seta present. Veins yellow along costal margin and almost colourless in lower half of wing, anal vein ( $A_1$ ) absent in apical half. Axillary angle obtuse, about 130°. Vein  $M_2$  0.75 times as long as length of cell dm. Haltere blackish-brown, squama blackish-brown with brown fringes.

Abdomen brown, entirely pruinose, both lateral and dorsal genital lamellae partly polished. Setae and setulae both brown and pale. Hind marginal setae about 2/3 as long as length of their segments, discal setae almost equally long.

Female. unknown.

Length: body 2.8 mm (including genitalia), wing 3.0 mm.

*Differential diagnosis.* *R. boreoitalica* sp. n. can be identified from the key given below. The male differs from allied species (*R. crassicauda* Strobl, 1893 and *R. rampazzii* sp. n.) by the shape of the lateral genital lamella [compare Figs. 1b and 2 with figure 14a in Barták (1982)].

*Derivatio nominis.* The specific name (Latinised adjective) is derived from the words borealis (northern) and the country of origin (Italy).

*Distribution.* Italy.

### 3.3. *Rhamphomyia (Amydroneura) claripennis* Oldenberg, 1922

*Rhamphomyia (Amydroneura) claripennis* Oldenberg, 1922, Dt. Ent. Z. 1922: 339.

This species was described from the Italian and Swiss Alps: Tiers (= Tires, prov. Alto Adige), Tschamintal (= Val di Ciamin, prov. Alto Adige), and Linthal. In 1985, I selected a well preserved

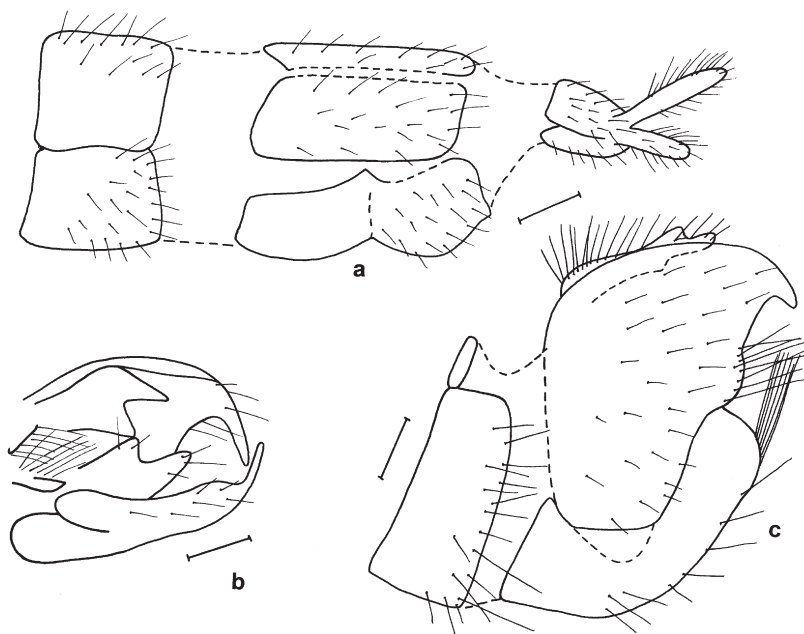


Fig. 2. *Rhamphomyia rampazzii* sp. n. – a. Female terminalia (macerated), dorsolateral view. – b. Male dorsal and partially lateral lamella (macerated), dorso-lateral view. – c. Male terminalia (macerated), lateral view. Scale bars 0.1 mm.

male from Tiers, deposited in the Deutsches Entomologisches Institut, Müncheberg (Tiers, 22.VI.1914), as a lectotype, and it is here formally designated as the lectotype of *R. claripennis*. This designation is provided in order to stabilise the nomenclature.

### 3.4. *Rhamphomyia (Amydroneura) rampazzii* sp. n. (Fig. 2)

*Material examined.* Holotype male: CH-TI, Nei Pini, 2,015 m a.s.l., Osco (A. da Chiera), 17.IX.1992, leg. F. Rampazzi, deposited (with the kind permission of F. Rampazzi) in the Deutsches Entomologisches Institut, Müncheberg. Paratypes: same data as holotype, 1♀; CH-GR, Bosch di San Remo, Mesocco (S. Bernard), 1,630 m a.s.l., 5.IX.1993, 5♂♂, 7♀♀, leg. Rampazzi; CH-TI, Angone (Anzonico), 21.–31.VIII.1981, 1♂, leg. Bächli; CH-TI, Cadagno di Fuori Wuinto (Val Piora), 6.IX.1991, 1♀, leg. Rampazzi; Gr Fleiss, Kärnten, Austria, 23.VIII.1927, leg. Oldenberg. Depositories: Museo Cantonale di Storia Naturale, Lugano, Czech University of Agriculture, Prague and ETH Zentrum, Zurich.

*Description.* Male. Head brown to black. Eyes narrowly separated on frons, all facets

subequal in size. Frons pruinose, about as broad as diameter of two facets combined, covered with 8–15 setulae. Ocellars strong, black, one-third as long as frons, ocellar triangle with 3 pairs of additional setulae. Face subpolished, bare, twice as long as broad. Occiput sparsely covered with both black (above) and pale (below) setulae. Antennae brownish-black, both basal segments with short black setulae, ratio of antennal segments (in 0.01 mm scale) 1 : 2 : 3 : style = 4 : 7 : 29 : 6. Labrum brown, polished, 1.1–1.2 times as long as head is high. Palpi brown, with several setulae.

Thorax brownish-black, scutum subpolished. Setae black, setulae both black and pale. Anteprepronotum with 4–6 setulae; proepisternum with 0–2 setulae; both propleural depression and prosternum bare; altogether 30 very fine 2–3 serial acrostichals, about 1/3 as long as distance between rows of acrostichals and dorsocentrals; almost uniserial dorsocentrals equally numerous and as long as acrostichals, scutum with many short setulae on sides; a single relatively long prescutellar; postpronotum with 1 long seta and 3–10 additional setulae; 1 intrahumeral; 1 posthumeral; 1–3 notopleurals, 3–5 setulae in front part of notopleura; 3 supraalars; 1 long and 1 smaller posthumeral; 4 black scutellars; laterotergite (metapleura) with pale setae. Coxae

brown, mostly pruinose, with dark setae and setulae. Legs brown, pruinose, covered with black to brown setae and setulae. Fore femora with anteroventral and posteroventral setulae two-thirds as long as femur is deep. Fore tibia with short setulae. Mid femur with anteroventral and posteroventral rows of setae much shorter than femur is deep in basal part but up to two-thirds as long as femur is deep in apical third. Mid tibia with only a single subbasal posterodorsal and another preapical anteroventral seta up to as long as diameter of tibia, otherwise with short setulae. Hind femur with anteroventral row of setae about as long as femur is deep, posteroventral row consisting of slightly shorter setae. Hind tibia with anteroventral row of strong setae up to as long as diameter of tibia, posterodorsal setae 1.5 times as long as diameter of tibia, anterodorsal setae absent. First tarsomere of all legs thin, with short setulae. Wing membrane clear to yellowish, stigma hyaline, costal seta present. Veins yellowish-brown, vein  $A_1$  absent in apical third, axillary angle obtuse. Vein  $M_2$  0.8–0.9 times as long as length of cell dm. Haltere brown, squama yellowish-brown with pale to brownish fringes.

Abdomen brown, pruinose, lateral genital lamella polished; the whole abdomen mostly with pale setae and setulae, terminal segments also with dark setae. Hind marginal setae on segments 2–4 about as long as their segments, on 5th segment about half as long. Discal setae subequally as long as marginals. Hypopygium as in Fig. 2. Hypandrium with setae on subapical swelling arranged in dense tuft. Lateral lamella with elongate, sharply tipped and medially bent upper hind corner. Dorsal lamella very short and flat with two teeth apically (best visible in dorsal view).

Female. Similar to male with following exceptions. Eyes broadly separated on frons; frons twice as long as broad. Frontal setulae one-third as long as frons is broad. Ratio of antennal segments (in 0.01 mm scale) = 5 : 7 : 29 : 6. Anteroventral setae on hind tibia not as strong as in male. Wing membrane brown in costal half of wing and slightly lighter in lower half, stigma brown. Abdomen with segment 8 modified: tergite divided medially into two parts, sternite consisting of very dark basal part and much lighter apical part, both parts separated by transverse constriction. All abdominal setae much darker

than in male (almost completely brown). Hind marginal setae on segments 2–4, 2/3 as long as length of their segments, on segment 5 about half as long as segment.

Length: body 2.9–3.3 mm, wing 3.0–3.5 mm.

*Differential diagnosis.* *R. (Amydroneura) rampazzii* sp. n. may be identified using the key given below. It can be differentiated from allied species by the sharply tipped and medially bent dorsal apical corner of the lateral genital lamella and by the small, flat dorsal lamella (Fig. 2). The most closely allied species is undoubtedly *R. crassicauda*, but the male of this species has an apically rounded lateral lamella and long dorsal lamella. The female of *R. crassicauda* has the 8th sternite ordinary in shape and the 8th tergite pruinose.

*Derivatio nominis.* The name of the species is dedicated to the collector of the type material, Mr. F. Rampazzi (Museo Cantonale di Storia Naturale, Lugano).

*Distribution.* Switzerland, Austria.

#### 4. Key to Palaearctic species of *Rhamphomyia* subgenus *Amydroneura*

The key includes also *R. curvicauda* from Taiwan.

- 1 Abdominal tergites polished (at least sides of tergites 5–6 devoid of microchaetae). Setae and setulae on both abdomen and laterotergite (metapleura) black 2
- Abdominal tergites uniformly covered with microchaetae, at most subpolished. Setae on laterotergite (metapleura) pale (yellow to brown), abdomen at least partly with pale setae and setulae 9
- 2 (1) Males 3
- Females 6
- 3 (2) Fore basitarsus with two very long preapical setae dorsally, about as long as the tarsomere *R. bipila* Strobl, 1909
- Fore basitarsus without such long setae 4
- 4 (3) Hind tibia strongly bent and a little dilated. Hypandrium larger than lateral lamella (Barták 1982, figure 14d)

*R. gibba* (Fallén, 1816)

- Hind tibia straight and simple, not dilated. Hypandrium smaller than lateral lamella 5
- 5 (4) Hind basitarsus cone-shaped, twice as thick in basal part as in apical part. Dorsal lamella small, hidden, about as long as high (Barták 1982, figure 14c). Frons narrower than front ocellus
  - R. pseudogibba* Strobl, 1910
- Hind basitarsus equally thick throughout. Dorsal lamella large, prominent, more than twice as long as high and strongly concave along dorsal margin (Barták 1982, figure 14e). Frons broader than front ocellus
  - R. claripennis* Oldenberg, 1922
- 6 (2) Hind tibia with dense and long ciliation anterodorsally. Hind basitarsus longer than half length of hind tibia. Frons with polished stripe in middle *R. gibba* (Fallén, 1816)
- Hind tibia with ordinary ciliation dorsally. Hind basitarsus shorter than half length of hind tibia. Frons uniformly pruinose to subpolished 7
- 7 (6) Wings clear. Frons broader than ocellar triangle. Hind basitarsus slender, not broader than the following tarsomere. Tergite 7 polished *R. claripennis* Oldenberg, 1922
- Wings brownish, at least along costal margin. Frons narrower than ocellar triangle. Hind basitarsus more or less thickened, distinctly broader than following tarsomere. Tergite 7 pruinose 8
- 8 (7) Hind basitarsus cone-shaped, twice as thick in basal part than in apical part. Abdominal sternites 2–5 polished. Mid tibia with 1–2 setae dorsally in middle, distinctly longer than other ciliation *R. pseudogibba* Strobl, 1910
- Hind basitarsus cylinder-shaped, with a much smaller difference in thickness of basal and apical parts. Abdominal sternites 2–5 subpolished. Mid tibia without setae dorsally in middle *R. bipila* Strobl, 1909
- 9 (1) Haltere yellow with brownish stalk. Scutum light grey pruinose, with four polished longitudinal stripes
  - R. curvicauda* Frey, 1949
- Haltere dark. Scutum subpolished, without stripes 10
- 10 (9) Prescutellar dorsocentral and scutellar setae brown to black. Vein  $A_1$  indistinct in apical third 11
- Prescutellar dorsocentral and scutellar setae yellow. Vein  $A_1$  complete, rarely abbreviated just before tip 15
- 11 (10) Males 12
- Females (*R. boreoitalica* sp. n. not known) 14
- 12 (11) Dorsal genital lamella large, apically with a distinct process protruding above lateral lamella. Hypandrium without a spine-like tuft of setae. Lateral genital lamella equally rounded, without any process (Barták 1982, figure 14a) *R. crassicauda* Strobl, 1893
- Dorsal lamella small, not protruding above lateral lamella. Lateral genital lamella with a dorsal or dorso-apical process 13
- 13 (11) Lateral genital lamella with a very long process protruding dorsally (Fig. 1b)
  - R. boreoitalica* sp. n.
- Lateral genital lamella without a long process dorsally but with a less distinct dorso-apical process protruding medially (Fig. 2)
  - R. rampazzii* sp. n.
- 14 (11) Tergite 8 pruinose. Wings brown anteriorly between costa and vein  $R_{4+5}$ , hind margin clear. 8th abdominal sternite without a median constriction *R. crassicauda* Strobl, 1893
- Tergite 8 polished. Wings more uniformly brown. 8th abdominal sternite divided into two parts by a submedian constriction, the basal part very dark, almost black
  - R. rampazzii* sp. n.
- 15 (10) Male fore tibia and basitarsus with short setae *R. erythrophthalma* Meigen, 1830
- Male fore tibia and basitarsus with dorsal setae more than 4 times as long as diameter of tibia. Female unknown
  - R. hirsutipes* Collin, 1926

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## References

- Barták, M. 1982: The Czechoslovak species of *Rhamphomyia* (Diptera, Empididae), with description of a new species from Central Europe. — Acta Univ. Carolinae – Biologica, 1980 (1982): 381–461.

- Barták, M. 1984: A revision of the species of the genus *Rhamphomyia* (Diptera, Empididae) described by Gabriel Strobl. — Beitr. Ent. Berlin 34: 337–342.
- Barták, M. 1989: Revision of the Meigen's types of *Rhamphomyia* (Diptera, Empididae) in the Paris Museum. — Věst. Čs. Společ. Zool. 53: 1–6.
- Chvála, M. 2004: Fauna Europaea: Empididae. — In: Pape T. (ed.), Fauna Europaea: Diptera, Flies. Fauna Europaea version 1.1. Available at <http://www.faunaeur.org>.
- Chvála, M. & Wagner, R. 1989: Empididae. — In: Soós, Á. & Papp, L. (eds), Catalogue of Palaearctic Diptera. Akadémiai Kiadó, Budapest, pp. 228–336.
- Collin, J. E. 1961: British Flies, VI, Empididae. Cambridge, 782 pp.
- McAlpine, J. F. 1981: Morphology and terminology – adults. — In: McAlpine, J. F., Peterson, B. V., Shewell, G. E., Teskey, H. J., Vockeroth, J. R. & Wood D. M. (eds.), Manual of Nearctic Diptera, Vol. 1: 9–63. Res. Branch Agric. Canada Monogr. 27. 674 pp.