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A review of the Palaearctic species of *Rhamphomyia* subgenus *Holoclera* (Diptera: Empididae) with description of 5 new species

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A review of the Palaearctic species of *Rhamphomyia* subgenus *Holoclera* (Diptera: Empididae) with description of 5 new species - Palaearctic species of the *Rhamphomyia* subgenus *Holoclera* are revised. *Rhamphomyia* (*Holoclera*) *bistriatella* sp. n. (Spain), *Rhamphomyia* (*Holoclera*) *bohemica* sp. n. (Czech Republic, Slovak Republic, Switzerland, Austria, Romania, Finland, Sweden), *Rhamphomyia* (*Holoclera*) *helvetica* sp. n. (Spain, Switzerland), *Rhamphomyia* (*Holoclera*) *portugalica* sp. n. (Portugal), and *Rhamphomyia* (*Holoclera*) *subvariabilis* sp. n. (Russia - Caucasus) are described and illustrated. A key to the Palaearctic species of *Rhamphomyia* (*Holoclera*) is provided.

Keywords: *Rhamphomyia* (*Holoclera*) - new species - West Palaearctic - taxonomy - key.

INTRODUCTION

Holoclera Schiner, 1860 (Wiener entomologische Monatschrift, 4: 53), was described as a genus (type species: *Holoclera pulchra* Egger, 1860 = *Rhamphomyia nigripennis* (Fabricius, 1794), by subsequent monotypy of Egger 1860), however, all authors treat it as a subgenus of a large heterogeneous assembly: *Rhamphomyia*. Schiner (l.c.) included a single species in his genus *Holoclera* which was apparently undescribed at that time (see also Coquillett, 1902: 251). However, when applying ICZN article 69.3., this genus was validated by the subsequent inclusion of the species *Holoclera pulchra* by Egger (1860).

Species of *Rhamphomyia* (*Holoclera*) are usually small- to middle- sized (wing length from 2.4 to 6.6 mm), and yellow to black in colour. Labrum usually longer than head is high, axillary angle slightly acute to slightly obtuse, prosternum with no setae. Acrostichals are either absent or present (in the latter case legs and palpus are yellow). Legs are slender, and never pennate in females. Postpedicel at least twice as long as broad, stylus shorter than postpedicel. Male eyes holoptic or narrowly dichoptic, female frons relatively narrow. Male 8th tergite often modified: either partially fused with 8th sternite or desclerotized medially. Biology is poorly known, adults are flower visitors, and they have never been observed hunting prey.

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The *Rhamphomyia* subgenus *Holoclera* may be easily divided into two groups (see also Barták, 1982). The *R. nigripenis* group: fore femur with specialised anterior somewhat spine-like setae, intrahumeral seta absent, hind tibia without a long seta in the posteroapical comb (sometimes with very short and poorly distinct seta present), cell dm small and narrow, palpus black except *R. caliginosa* Collin, 1926, and female thorax brown to black. The *R. flava* group: fore femur without specialised anterior setae, intrahumeral seta present, hind tibia with a long seta in the posteroapical comb, cell dm more truncate, palpus yellow, and female thorax mostly yellow (except *R. culicina* (Fallén, 1816)).

Altogether 19 species are recognized in this paper, two additional species are arranged in the key but not described, because the available specimens do not enable them to be described formally (and funding of field collecting trips is currently all but impossible). All formerly known species were properly described and illustrated by Collin (1961) or Barták (1982), with the exceptions of *R. trigemina* Oldenberg, 1927 and *R. variabilis* (Fallén, 1816) illustrated herewith. More recently, *R. tenuipes* Becker, 1907 was recognized as a distinct species and redescribed alongside *R. lamellata* Collin, 1926 and *R. biserialis* (Collin, 1960) by Barták & Kubík (2009). *R. umbripennis* var. *morenae* Strobl, 1899 was described on a basis of two females (Cardenas, Spain), with only a single characteristic mentioned in the original description differentiating it from *R. umbripennis* Meigen, 1822 ("Schwinger gelbbraun"). There are two females in Strobl´s collection in Admont, apparently syntypes, which are very similar to *R. umbripennis* or *R. trigemina*, only halter is somewhat paler, yellowish brown. *R. umbripennis* var. *morenae* is not considered here as distinct species until more specimens (including males) are available. This is due to fact that differences among females of these three nominal forms are very slight.

Empis subgenus *Rhadinempis*, with only a single known species, *Empis bazini* Collin, 1926, is strikingly similar to species of the *R.* (*Holoclera*) *nigripennis* group. Both share a similar shape, colour and body chaetotaxy, including an irregular row of spine like anterior setae on the fore femur, slender and short setose legs, absence of seta in posteroapical comb on hind tibia, absence of acrostichal setae and uniserial dorsocentrals. However, *Rhadinempis* has forked vein R4+5 and somewhat different antenna with a short 1st flagellomere scarcely twice as long as broad as well as a very long apical stylus (three times as long as postpedicel).

All known palaearctic *R.* (*Holoclera*) species are distributed in the West Palaearctic region (ranging from the British Isles to the Caucasus and from Scandinavia to the Canary Islands, North Africa and Israel), with at least two other species inhabiting the Nearctic region.

MATERIAL AND METHODS

The material studied is deposited in the following collections (all specimens without registration number):

CULSP Czech University of Life Sciences, Prague
MHNG Muséum d'Histoire Naturelle, Geneva
NHMH Natural History Museum, Helsinki

UZMC University Zoological Museum, Copenhagen
ZMLU Zoological Museum, Lund University
ZMMU Zoological Museum, Moscow University

The genitalia were macerated in 10 % KOH (24 hours, room temperature) and later stored together with specimens in plastic glycerine filled microvials. The morphological terms used here follow Merz & Haenni (2000) and Sinclair (2000). Abbreviations: f1,2,3 = fore, mid, hind femur, t1,2,3 = fore, mid, hind tibia, bt1,2,3 = fore, mid, hind basitarsus (metatarsus); M2/D = length of vein M2: greatest length of discal medial cell (discal cell); CuA1 ratio = length of apical: preapical sections of vein CuA1; lw: ww = greatest length of wing (from basicosta to apex): greatest width of wing. Length of antennal segments = length of first segment (scape): 2nd (pedicel): 3rd (1st flagellomere): stylus (in 0.01 mm scale). All measurements (including body length) were taken from dry specimens (therefore the actual length may differ). Male body length were measured from antennal base to the hind margin of 8th tergite (without genitalia) and female body length from base of antenna to the tip of cerci.

SYSTEMATIC TREATMENT

Rhamphomyia (Holoclera) bistriatella sp. n. Fig. 1

HOLOTYPE: CULSP; 1 ♂; Spain, Pr. Cadiz, Hozgarganta, Tal bei Jimena, 200 m; 18.iv.1979; leg. W. Schacht.

PARATYPES: CULSP; 1 ♂; same data as the Holotype.

DISTRIBUTION: Spain.

DATE OF OCCURRENCE: April.

DESCRIPTION

Male: Eyes dichoptic, facets in dorsal half of eye smaller than in ventral half. Frons black, light grey microtrichose, 0.07 mm broad in the middle and 0.10 mm just above antenna, 0.24 mm long, with 4 pairs of fine setae about 0.10 mm long. Ocellar setae black, half as long as frons, ocellar triangle not much prominent and without additional setae. Face black, light grey microtrichose, 0.20 mm long and 0.10 mm broad ventrally, without setae. Occiput black, light grey microtrichose, sparsely and short setose, black setae arranged in two rows, postocular row complete, subparallel to hind eye margin, second row confined to dorsal half. Antenna black, both basal antennomeres brown, length of antennal segments (in 0.01 mm scale) = 10: 8: 25: 17, both basal antennomeres short setose (the longest setae about 0.08 mm long). Labrum brownish yellow, lustrous, 1.4 times as long as head is high. Palpus yellow with several short black setae. Gena very narrow, clypeus microtrichose. Thorax black to brownish black, mesoscutum with two somewhat darker stripes between rows of acrostichals and dorsocentrals. All thoracic setae dark. Chaetotaxy: proepisternum with 2-3 fine setae; prosternum and proepisternal depression without setae; 11 short (0.10 mm) and narrowly biserial (almost uniserial in front) acrostichals (in the paratype damaged by a pin); 5-8 uniserial dorsocentrals up to 0.20 mm long, 1-2 prescutellar pairs longer; intrahumeral present and strong; 1 long and strong posthumeral (no additional setae outside dorsocentrals in posthumeral area); 1 postpronotal and 2 shorter setae; 2-3 no-

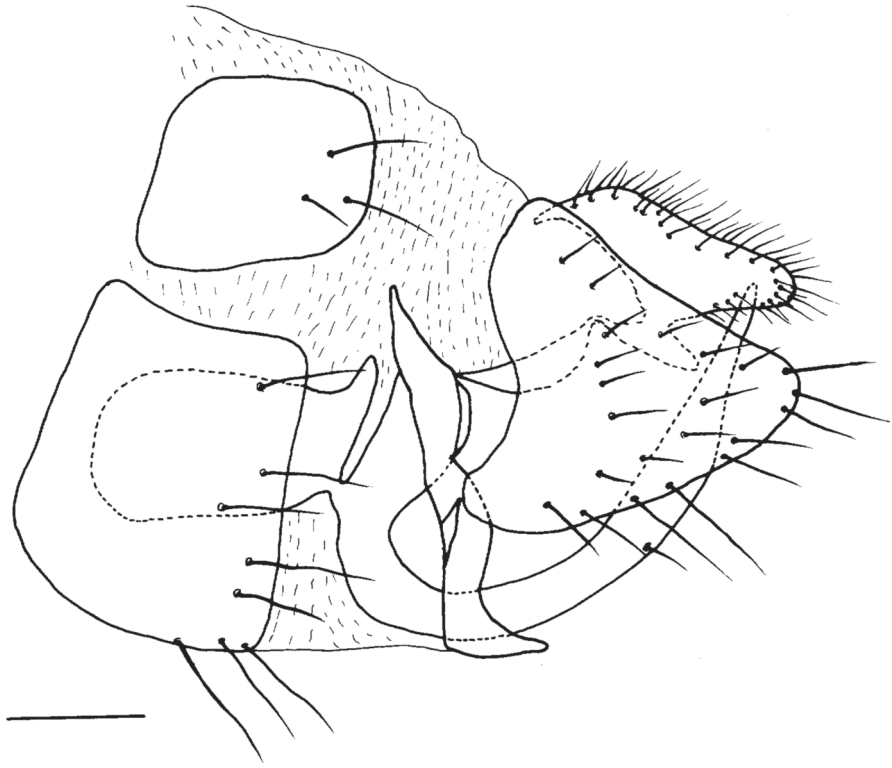

FIG. 1
Rhamphomyia (*Holoclera*) *bistriatella* sp. n., male terminalia (macerated), lateral view. Scale 0.1 mm.

topleurals (anterior part of notopleuron with 0-1 seta); 1 strong supraalar and 0-1 seta in prealar area; 1 long and 1 short and fine postalars; 4 scutellars (apical pair inserted wide apart); laterotergite with dark setae. Legs including coxae yellow (proximal parts clear yellow and more distal parts brownish yellow). Legs microtrichose (femora sublustrous), covered with dark setae. One long seta present in posteroapical comb on hind tibia. Both fore and mid femora and tibiae short setose, preapicals on tibiae unusually short. Hind femur with three short but distinct setae in apical third (in anterior, antero- and posterodorsal position). Hind tibia with 4-5 pairs of setae dorsally, not longer than tibia is deep. Basal tarsomeres of all legs thin and short setose, with short spines ventrally. Measurements (in 0.01 mm scale): length: f1 (148-155), f2 (176-182), f3 (228-236), t1 (158-163), t2 (168), t3 (222-230), bt1 (98-104), bt2 (82-88), bt3 (116-120), width: bt1 and bt2 (5), bt3 (9). Wing clear, stigma light brown, veins brown, anal vein (A1) incomplete, absent in apical third. Costal seta present, axillary angle right. M2/D = 1.6-1.8, CuA1 ratio = 2.1-2.3, lw: ww = 3.2-3.4. Halter grey with yellow stem, calypter yellow with dark fringes. Abdomen brown, yellowish on basal segments and

ventrally, microtrichose or slightly sublustrous, dark setose. Hind marginal setae on sides of tergites 2-3 subequally long as their segments, on remaining segments half as long, discal setae very short. The 8th tergite desclerotized dorsally. Terminalia (Fig. 1): phallus rather thick but narrowed apically; cercus bilobate, straigth dorsally; epandrium simple, triangle shaped. Length of body 3.9-4.4 mm, wing 4.1-4.6 mm.

Female: Unknown.

DIFFERENTIAL DIAGNOSIS: *Rhamphomyia* (*Holoclera*) *bistriatella* sp. n. belongs to the *R. flava* group of *Holoclera* and it is most similar to and allied with *R. bistriata* Strobl. The main characteristics distinguishing these two species are as follows: halter yellow, fore and mid tibiae with dorsal setae at least as long as the tibia is deep and cercus with dorsobasal swelling (trilobate in lateral view) in *R. bistriata*, but halter grey, fore and mid tibiae without dorsal setae and cercus without dorsobasal swelling (bilobate in lateral view) in *R. bistriatella* sp. nov. Moreover, hypandrium is shorter and ejaculatory apodeme is larger in *R. bistriatella* than in *R. bistriata*. Differences in male genitalia are obvious when comparing Fig. 1 with Fig. 17f of *R. bistriata* (as *R. pallidiventris* (Fallén)) by Barták (1982). The female remains unknown; however, if it has a yellow thorax, it may go in the key to *R. sciarina* (Fallén, 1816).

DERIVATIO NOMINIS: the specific name refers to its similarity to *R. bistriata*.

Rhamphomyia (Holoclera) bohemica sp. n. Fig. 2

HOLOTYPE: CULSP; 1 ♂; the Czech Republic, Kozlov, 2km E, meadow near picetum, 49°24´N, 15°41´E, 340 m; 22.vi.1986; M. Barták.

PARATYPES: CULSP. CZECH REPUBLIC. 17 ♂, 8 ♀; same data as the holotype.- 3 ♂, 4 ♀; Božejovice near Jistebnice, Jezviny; 17.vii.1987; sweeping.- 1 ♂; same locality; 22.vii.1987.- 2 ♂, 2 ♀; same locality; 26.vi.1977.- 1 ♂; same locality; 4.viii.1990.- 2 ♂; same locality; 6.vii.1991.- 1 ♀; same locality; 15.vii.2008.- 1 ♀; same locality; 4.vii.1988; all leg. M. Chvála. - 1 ♂, 1 ♀; Lhenice, 48°59´N, 14°11´E; 2.vii.1981; M. Barták.- 1 ♀; Albeř, nr. Pond; 24.vi.1977.- 1 ♂; same locality; 18.vi.1981; both M. Chvála.- 1 ♂; Hůrka u Nové Bystřice; 16.vi.1977.- 1 ♂; O. Syrovátka; Šumava, Prášily near Křemelná river; 27.viii.2000; M. Barták.- 6 ♂, 4 ♀; Šumava, Antýgl; 2.viii.1975; M. Barták.- 1 ♂; Kašperské hory, 2 km SW, near Losenice river, 49°08´N, 13°33´E, 600 m; 1.vii.1995 ; M. Barták.- 1 ♀; Šumava, Nová Hůrka, peat bog, 49°09´N, 13°20´E, 870 m; 20.viii.-24.ix.1999; Malaise trap; M. Barták & Š. Kubík.- 1 ♀; Šumava, Popelná, along brook, 880 m, 49°06´N, 13°38´E; 7.vii.1988; M. Barták.- 1 ♂; Šumava, Malá Niva, peat bog, 48°55´N, 13°49´E, 780 m; 5.vii.1988; M. Barták.- 1 ♂; Šumava, Volary-Nová Pec; car net; 22.vii.1992; M. Barták.- 1 ♂, 1 ♀; Šumava, Horská Kvilda- Horní Vltavice; car net; 21.vii.1992; M. Barták.- 1 ♂; Šumava, Spálenec, damp meadow, 48°56´N, 13°57´E, 800 m; 28.vi.1992; M. Barták.- 1 ♂; same locality; 15.viii.1994; M. Barták.- 2 ♂; Šumava, Chalupská slať, peat bog, 49°01´N, 13°39´E; 28.vi.1992; M. Barták.- 1 ♀; same locality; 17.viii.1994; M. Barták.- 3 ♂; Šumava, Pěkná, peat bog, 49°21´05´´N, 13°54´44´´E, 730 m; sweeping; 17.vii.1997; leg. M. Barták & J. Roháček.- 1 ♂, 2 ♀; same locality; 20.viii.1997; leg. M. Barták & J. Roháček.- 1 ♂; Šumava, Kyselovský les, peat bog, emerged from dead wood, 48°41´28´´N, 14°03´18´´E, 730 m; M. Barták & J. Roháček.- 1 ♂; Nová Huť -Prachatice; car net; 22.vii.1992; M. Barták.- 3 ♀; Vyšší Brod, near river, 48°37´N, 14°20´E; 1.vii.1981; M. Barták.- 1 ♀; Purkarec, near brook, 49°08´N, 14°26´E, 400 m; 26.vii.1995; M. Barták.- 1 ♂; Vráž near Písek, 49°24´N, 14°7´E, 410 m; 18.vi.-18.vii.2009; Malaise trap; M. Barták.- 1 ♂; same locality; 18.-22.vi. 2007; M. Barták.- 1 ♂; Jizerské hory, Bukovec NR, damp meadow, 900 m; pan trap; 2.-21.vii.2010; P. Vonička.- 1 ♂; Krkonoše, Labský důl near Labe river, 1040 m, 50°45´48´´N, 15°33´05´´E; Malaise trap; 7.-13.vi.2006; J. Vaněk.- 1 ♂ Krkonoše, Slunečná stráň, 645 m, near pond, 50°38´12.5´´N, 14°49´23.6´´E; Malaise trap; 2.-30.vi.2009; J. Vaněk.- 2 ♂; Rokytno; vii.1964; J. Macek.- 1 ♂; Horní Lomná, 3 km N, meadow near brook, 49°33´N,

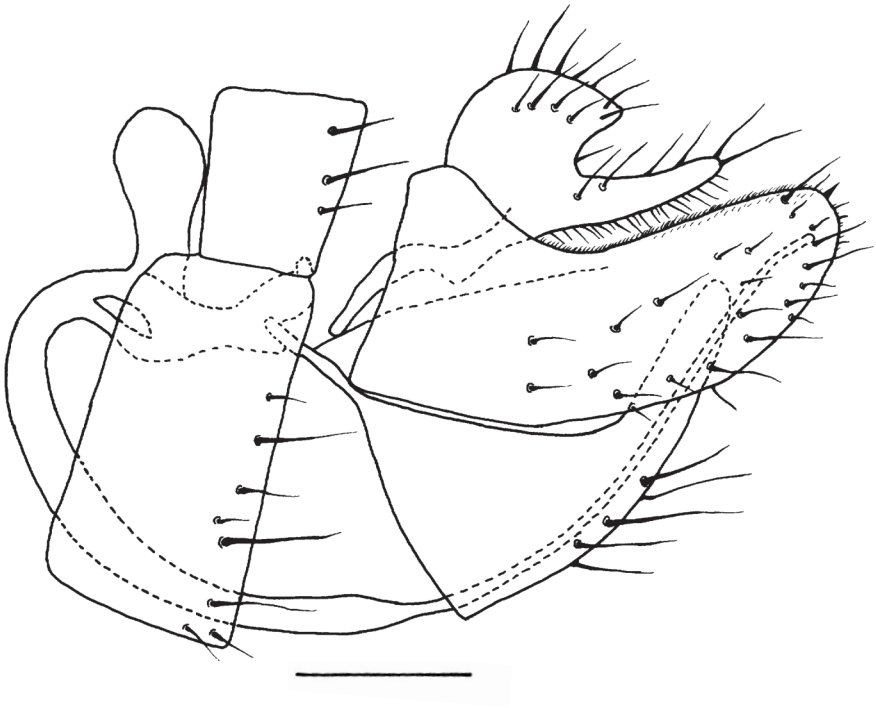

FIG. 2

Rhamphomyia (*Holoclera*) *bohemica* sp. n., male terminalia (macerated), lateral view. Scale 0.1 mm.

18°40´E, 520 m; 10.viii.1986; M. Barták.- SLOVAK REPUBLIC. 1 ♂, 3 ♀; Vyšné Ružbachy, 1 km NW, pasture, 49°28´N, 20°33´E, 650 m; 25.vii.1986; M. Barták.- 1 ♂; Košecké Podhradie, mixed wood, 48°59´N, 18°17´E, 270 m; 29.vii.1989; M. Barták.- 2 ♂; Orava, Námestovo; 11.vii.1973; M. Chvála.- 6 ♂; Nízké Tatry, Demänovská dolina; 3.vii.1975; M. Barták.- 9 ♂, 2 ♀; Pribylina, along brook, 49°07´N, 19°48´E, 770 m; 28.vii.1989; M. Barták.- 1 ♂; same locality; 4.vii.1975; M. Barták.- 1 ♂; Ružomberok; 6.vii.1975; M. Barták.- SWITZERLAND. 1 ♂; Bellelay; 23.vii.1963; leg. F. & L. Keiser.- 1 ♀; same locality; 15.vii.1962; leg. F. & L. Keiser.- ÖSTERREICH. 1 ♀; Styria, Ennstal, Frauenberg Bhf., Erlgraben, 700 m; 9.vi.2010; M. Chvála.- 1 ♀ ; Styria, Gesäuse, Keiserau, forest road, 1250 m ; 2.vii.2006 ; M. Chvála.- 1 ♂; Styria, Gesäuse, Johnsbach, meadows, 860 m; 6.vii.2006; M. Chvála.- ROMANIA. 2 ♂; Bystritei mt., 900 m; 7.vii.1977; O. Syrovátka.-: FINLAND. NHMH; 1 ♀; LK, Parikkala; flowers; 8.vii.2003; J. Sinkkonen.- RUSSIA. ZMMU; 1 ♀; Abramcevo, 57 km N Moskva; 4.vii.1966; V. Kovalev.- SWEDEN. ZMLU; 4 ♂, 9 ♀; Sm, Växjö, S. Åreda; 27.vii.1991; R. Danielsson.- 7 ♂, 4 ♀; same locality; 5.vii.1989; R. Danielsson.- 3 ♂, 3 ♀; Sm Bergkvara; 17.vii.1983; R. Danielsson.- 11 ♀; same locality ; 19.vii.1983 ; R. Danielsson.- 1 ♀; Sm, Torsas ; 1.vii.1989; R. Danielsson.-, 1 ♂; same locality; 20.vii.1991; R. Danielsson.-, 1 ♀; same locality; 26.vii.1991; R. Danielsson.- 1 ♀; Sm, Söderakra; 25.vi.1989; R. Danielsson.- 1 ♀; Vstm, Strömsholm; 11.vii.1989; R. Danielsson.- 1 ♂, 1 ♀; Vstm, Angsö; 9.vii.1989; R. Danielsson.- 1 ♂; Vstm, Badelunda; 9.vii.1989; R. Danielsson.- 1 ♀; Vr, Alga; 3.vii.1988; R. Danielsson.- 1 ♂; Vr, Grasmark; 4.vii.1988; R. Danielsson.- 1 ♂; Vr, Vagge; 3.vii.1988; R. Danielsson.- 1 ♂; Go, 2 km V Sundre; 2.viii.1992; R. Danielsson.- 1 ♀; Öl, N. Möckleby; 24.vii.1991; R. Danielsson.- 1 ♂, 2 ♀; Me, Indal; 17.vii.1981; R. Danielssson.

DISTRIBUTION: the Czech Republic, Slovak Republic, Switzerland, Österreich, Romania, Finland, Sweden.

DATE OF OCCURRENCE: June-August.

DESCRIPTION

Male: Eyes holoptic, facets in ventral half of eye much smaller than in dorsal half. Frons (small area just above antenna and below ocellar triangle) black, microtrichose, setae absent. Ocellar setae black, about 1/3 as long as the distance between front ocellus and base of antenna, ocellar triangle mostly with 1 pair of additional similarly long setae on hind margin. Face brown, microtrichose, about 0.11 mm broad ventrally and 0.10 mm long, without setae. Occiput brownish black, microtrichose, sparsely black setose (setae on dorsal half of occiput arranged in two rows), postocular row remote from eye margin in middle part. Antenna brown to black, length of antennal segments (in 0.01 mm scale) = 7: 5-6: 16-19: 11-13, both basal antennomeres short setose (the longest setae about 0.05 mm long). Labrum brown, as long as or slightly shorter than head is high. Palpus brown, short, with 1-3 short setae. Gena very narrow, clypeus microtrichose. Thorax brownish black, microtrichose, mesoscutum uniformly dark brownish black, almost velvety black in dorsal view; without any stripes. All thoracic setae black. Chaetotaxy: 2-4 setae on proepisternum; both prosternum and proepisternal depression bare; 7-10 uniserial dorsocentrals (about 0.10-0.15 mm long in middle of their rows), 1-2 only slightly longer inclinate prescutellars; acrostichals absent; intrahumeral absent; one strong posthumeral (no additional setae laterad of dorsocentrals in presutural part of mesoscutum); 1 long postpronotal and 1-3 short additional setae; 2-3 notopleurals (0-1 shorter setae on anterior part of notopleuron); both supraalars and prealars absent; 1 strong and 1 small postalars; 4, rarely 5-6 scutellars; laterotergite with black setae. Fore coxa yellowish brown, distinctly paler than pleura, mid and hind coxae usually brown. Legs brown, microtrichose, hind femur (in some specimens also tibiae) lustrous, all setae on coxae and legs black. No seta in posteroapical comb on hind tibia. Fore femur with short setation (no prominent setae), anterior row of (sensory?) setae 0.03 mm long. Fore and mid tibiae with only short setation, without prominent setae (except preapicals on ventral part). Mid femur with short setation, no prominent setae except preapicals. Hind femur with short setation (ventrally almost bare in proximal 2/3), without prominent setae, except 1-2 preapicals ventrally. Hind tibia slightly broadened apically, with several setae dorsally slightly shorter than tibia is deep (only preapical dorsal seta may be longer), otherwise with short setation only. Basal tarsomeres of all legs thin and short setose, with short ventral setae. Measurements (in 0.01 mm scale): length: f1 (67-81), f2 (78-98), f3 (104-128), t1 (70-83), t2 (75-90), t3 (102-126), bt1 (40-46), bt2 (24-34), bt3 (48-56), width: bt1 and bt2 (4), bt3 (6). Wing light brown, stigma indistinct or only slightly darkened, veins brown, anal vein (A1) indistinct in distal half. Costal seta distinct axillary angle slightly obtuse. M2/D = 1.8-2.3, CuA1 ratio = 4.5-6.8, lw: ww = 3.1-3.3. Halter dark brown, calypter brown with dark fringes. Abdomen brown (lighter ventrally and almost velvety black in dorsal view), brown microtrichose, black setose. Hind marginal setae on sides of tergites 2-4 subequally long as their corresponding segments, on remaining segments shorter, discal setae shorter than marginals, dorsum of tergites with short

setae, 1st sternite bare. Terminalia (Fig. 2): hypandrium triangle-shaped in lateral view, with several strong and long setae, basal part connected with phallobase with narrow arms; cercus short and deeply concave dorsally; epandrium rounded apically, with a single spine at apex; phallus relatively short and broader in basal half than in apical half. Length of body 2.2-3.2 mm, wing 2.7-3.2 mm.

Female: Similar to male but with the following differences. Eyes dichoptic, facets subequal in size. Frons brown, microtrichose, 0.20-0.24 mm long and 0.08-0.10 mm broad, almost parallel sided, with 3-5 rather long (up to 0.10 mm) setae on each side. Face subequally broad as frons and 0.10-0.13 mm long. Labrum slightly longer than head is high. Mesoscutum dark reddish brown to blackish brown, sublustrous in dorsal view and light grey in frontal view. Legs mostly paler than in male: fore coxa yellow to brownish yellow, also proximal parts of all femora mostly yellowish brown. Setation of legs as in male, only mid tibia sometimes with 1-2 setae dorsally not longer than tibia is deep. Measurements (in 0.01 mm scale): length: f1 (78-86), f2 (90-96), f3 (120-136), t1 (80-87), t2 (80-91), t3 (111-120), bt1 (37-43), bt2 (34-36), bt3 (47-50), width: bt1 and bt2 (3-4), bt3 (5). Wing almost clear, stigma slightly darkened, M2/D = 1.6-1.9, CuA1 ratio = 2.3-3.8, lw: ww = 2.6-2.9. Abdomen mostly yellowish brown proximally and dark blackish brown distally, microtrichose, lateral part of tergites 3-4 sublustrous. Hind marginal setae on sides of tergites 2-3 up to 2/3 as long as their corresponding segments, on remaining segments shorter, discal setae shorter than marginals. Length of body 2.8-3.5 mm, wing 2.9-3.3 mm.

DIFFERENTIAL DIAGNOSIS: *R.* (*Holoclera*) *bohemica* sp. n. belongs to the *R.* (*Holoclera*) *nigripennis* group and it is most similar to *R. nigripennis* and *R. helvetica* sp. n. (all three having supraalar seta absent and front coxa usually paler than pleura). However, male cercus (Fig. 2) is more similar to *R. trigemina* Oldenberg (Fig. 9, i.e. deeply concave dorsally) than to *R. nigripennis* (Fabricius). Moreover, the species described above has a relatively short 3rd antennal segment in comparison to all other species of *R. nigripennis* group and this is probably the only characteristic enabling differentiation between females of *R. bohemica* and *R. helvetica*.

DERIVATIO NOMINIS: the specific name is derived from the country of origin (Bohemia = historical part of the Czech Republic).

Rhamphomyia (Holoclera) helvetica sp. n. Fig. 3

HOLOTYPE: MHNG; SWITZERLAND, GE, Cartigny/Moulin de Vert; 1 ♂; 350 m, 5.vi.2006, B. Merz.

PARATYPES: MHNG, CULSP; SWITZERLAND. 5 ♂, 2 ♀; same data as the holotype.- 1 ♀; same locality; 2.vi.2002.- 1 ♂; same locality, 470 m; 4.vi.2001; M. Eggenberger & B. Merz.- 1 ♂; Chancy/LaLaire, 350 m; 1.vii.2001; B. Merz.- 1 ♂, 2 ♀; Cartigny, Nant-des-Crues, Rhone embouchure, 360 m; 4.vi.2001; M. Eggenberger & B. Merz.- 1 ♂ ; Dardagny/LeMoulin, 360 m; 30.vi.2001; B. Merz.- 1 ♀; Dardagny/Roulave, 420 m; 30.vi.2001; B. Merz.- 1 ♀; Avusy Moulin de la Grave, MT; 7.vi.2006; H. Boillat.- 1 ♀; Russin, Les Baillets, 405 m ; 30.vi.2001; B. Merz.- 3 ♂; NE, Marin/Les Tertres, 435 m; 19.v.2001; B. Merz.- 1 ♀; St. Blaise/Les Riedes, 470 m; 19.v.2001; B. Merz.- 1 ♂; ZH, Dietikon-Hardwald, 400 m ; 15.v.1995 ; B. Merz.- 1 ♂; Zürich-Allmend, 450 m; 8.vi.1994; B. Merz.- UZMC; SPAIN. 1 ♂; Granada, Rio Mulhacén, 5 km N Capileira, 1500 m; 9. iv 1966.- 1 ♀; Rio Guadalfeo, Orgiva, 300 m; 4. iv 1966; Lyneb.-Martin-Langem.

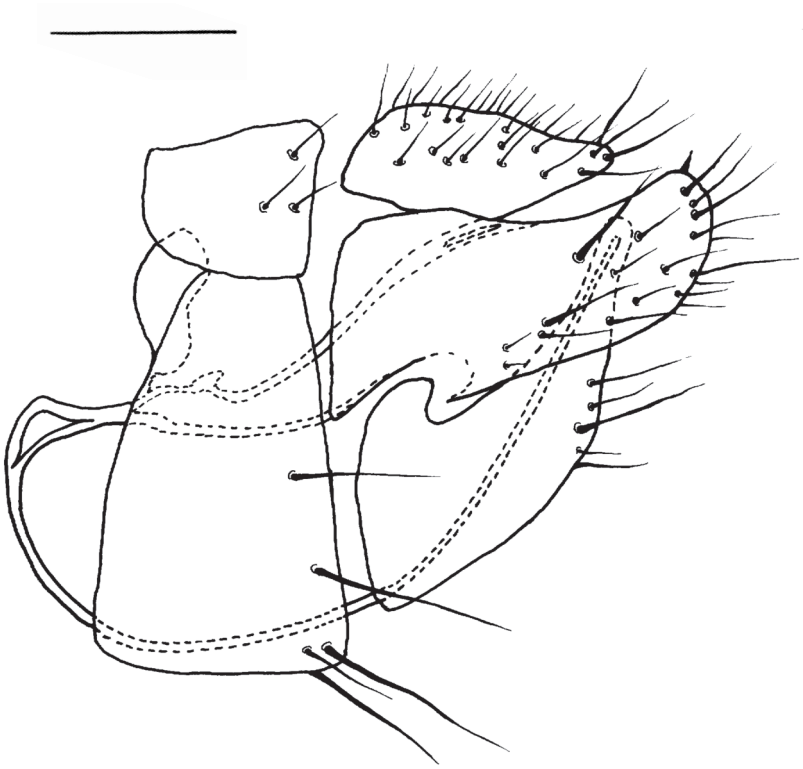

FIG. 3
Rhamphomyia (*Holoclera*) *helvetica* sp. n., male terminalia (macerated), lateral view. Scale 0.1 mm.

DISTRIBUTION: Spain, Switzerland.

DATE OF OCCURRENCE: April-July.

DESCRIPTION

Male: Eyes holoptic, facets in ventral half of eye much smaller than in dorsal half. Frons (small area just above antenna and below ocellar triangle) brown, brown microtrichose, setae absent. Ocellar setae black, about half as long as the distance between front ocellus and base of antenna, ocellar triangle with 1 pair of additional setae on hind margin. Face brown, microtrichose, about 0.09-0.10 mm broad ventrally and 0.11-0.14 mm long, without setae. Occiput dark brown, microtrichose, sparsely black setose (setae on dorsal half of occiput arranged in two rows), postocular row irregular on ventral half. Antenna brown, length of antennal segments (in 0.01 mm scale) = 5-6: 7: 21-26: 10-12, both basal antennomeres short setose (the longest setae

about 0.07 mm long). Labrum brown, slightly shorter than head is high. Palpus brown, short, with 2-3 short setae. Gena very narrow, clypeus microtrichose. Thorax brownish black, microtrichose, mesoscutum uniformly dark brownish black, almost velvety black in dorsal view; without any stripes. All thoracic setae black. Chaetotaxy: 0-3 setae on proepisternum; both prosternum and proepisternal depression bare; 7-10 uniserial dorsocentrals (about 0.15 mm long in middle of their rows), 1-2 only slightly longer inclinate prescutellars; acrostichals absent; intrahumeral absent; one strong posthumeral (no additional setae laterad of dorsocentrals in presutural part of mesoscutum); 1 long postpronotal and 1-2 short additional setae; 2-3 notopleurals (0-2 shorter setae on anterior part of notopleuron); both supraalars and prealars absent; 1 strong and 1 very small postalars; 4 scutellars; laterotergite with black setae. Legs including coxae brown (fore coxa yellowish brown apically, yellow in the male from Spain), microtrichose, hind femur (in some specimens also tibiae) lustrous, all setae black. No seta in posteroapical comb on hind tibia. Fore femur with short setation (no prominent setae), anterior row of (sensory?) setae 0.02-0.04 mm long. Fore tibia with short setation only, without prominent setae (except preapicals). Mid femur with short setation, no prominent setae except preapicals. Mid tibia often with one anteroventral seta on apical third, otherwise with short setation only. Hind femur with short setation, without prominent setae, except several preapical anteroventrals not much stronger than other setation but somewhat longer. Hind tibia slightly broadened apically, with 1-3 posterodorsal setae slightly longer than tibia is deep (situated mostly on distal half of tibia), otherwise with short setation only. Basal tarsomeres of all legs thin and short setose, ventral setae short, more distinct on hind one. Measurements (in 0.01 mm scale): length: f1 (72-85), f2 (83-95), f3 (115-140), t1 (75-88), t2 (79-88), t3 (105-120), bt1 (41-50), bt2 (35-38), bt3 (48-58), width: bt1 and bt2 (5), bt3 (6-7). Wing light brown, stigma indistinct or only slightly darkened, veins brown, anal vein (A1) indistinct in distal third. Costal seta long, axillary angle right. M2/D = 1.8-2.3, CuA1 ratio = 3.4-5.8, lw: ww = 2.9-3.3. Halter dark brown, calypter brown with dark fringes. Abdomen brown (lighter ventrally and almost velvety blackish brown in dorsal view), brown microtrichose, black setose. Hind marginal setae on sides of tergites 2-4 subequally long as their corresponding segments, on remaining segments slightly shorter, discal setae shorter than marginals, dorsum of tergites with short setae, 1st sternite bare. Terminalia (Fig. 3): hypandrium triangle-shaped in lateral view, with several setae, basal part connected with phallobase with very long and narrow arms; cercus short and simple, straigth dorsally; epandrium rounded apically, with a single spine at apex; phallus medium long and evenly thin to the tip. Length of body 2.5-3.1 mm, wing 2.3-3.2 mm.

Female: Similar to male but with the following differences. Eyes dichoptic, facets subequal in size. Frons brown, microtrichose, 0.18-0.25 mm long and 0.08-0.09 mm broad, almost parallel sided, with 3-6 rather long (up to 0.10 mm) setae on each side. Face subequally broad as frons. Ocellar setae ¾ as long as the distance between front ocellus and base of antenna. Mesoscutum dark reddish brown to blackish brown, sublustrous. Legs paler than in male: fore coxa yellow, mid and hind coxae yellow to brownish yellow, proximal parts of all femora yellow to brownish yellow. Basal tar-

someres of legs with slightly longer ventral spines than in male. Measurements (in 0.01 mm scale): length: f1 (72-95), f2 (80-100), f3 (110-125), t1 (70-88), t2 (78-94), t3 (105-117), bt1 (38-45), bt2 (32-36), bt3 (44-52), width: bt1 and bt2 (4), bt3 (5-6). Wing light brownish, M2/D = 1.6-1.9, CuA1 ratio = 2.6-4.8, lw: ww = 2.7-2.8. Halter brown, calypter brown with dark fringes. Abdomen yellow to brownish yellow proximally and dark blackish brown distally, microtrichose, lateral part of tergites 2-4 sublustrous. Hind marginal setae on sides of tergites 2-4 less than half as long as their corresponding segments, on remaining segments slightly shorter, discal setae slightly shorter than marginals. Length of body 2.0-3.1 mm, wing 2.6-3.4 mm.

DIFFERENTIAL DIAGNOSIS: *R.* (*Holoclera*) *helvetica* sp. n. belongs to the *R.* (*Holoclera*) *nigripennis* group and it is most similar to *R. nigripennis* (Fabricius) (both species sharing two characteristics: supraalar seta absent and cercus almost straight dorsally). The *R. nigripennis* male has a very long phallus (see Barták 1982: fig. 12d), much longer than in *R. helvetica*. However, this characteristic is visible only after dissection. The shape of cercus may be used for distinguishing both species without dissection: in *R. nigripennis* it has distinct basal swelling, which is best visible in dorsal view (inner margins are angled) but it has no swelling in *R. helvetica* (inner margins of cerci are straight, V-shaped in dorsal view). Moreover, epandrium is narrowed apically in *R. helvetica* with only a single apical spine, but broadened apically with several long spine-like setae in *R. nigripennis*. Female frons is microtrichose in *R. helvetica* but lustrous in *R. nigripennis*.

DERIVATIO NOMINIS: the specific name is derived from the country of origin (Helvetia = Switzerland).

Rhamphomyia* (*Holoclera*) *portugalica sp. n. Fig. 4

HOLOTYPE: CULSP; 1 ♂; Portugal, 5 km N of Formalicao, 40°28´31´´N, 7°21´32´´W, 930 m; Castanea wood, sweeping vegetation; 23.v.2008; M. Barták.

PARATYPES: CULSP; 21 ♀; same data as the Holotype.- 1 ♀; Serra da Estrella, forest, 40°24´13´´N, 7°35´10´´W, 1450 m; 16.-17.vii.2009; M. Barták.

DISTRIBUTION: Portugal.

DATE OF OCCURRENCE: May-July.

DESCRIPTION

Male: Eyes holoptic, facets in ventral half of eye smaller than in dorsal half. Frons (small area just above antenna and below ocellar triangle) brown, brown microtrichose, setae absent. Ocellar triangle with 2 pairs of short setae, ocellars broken in the single male at hand. Face brown, microtrichose, 0.10 mm broad ventrally and about 0.09 mm long, without setae. Occiput brown, microtrichose, sparsely black setose (setae arranged in two almost complete and regular rows). Antenna brownish black, length of antennal segments (in 0.01 mm scale) = 9: 7: 22: 11, both basal antennomeres short setose (the longest setae about 0.06 mm long). Labrum brown, 1.5 times as long as head is high. Palpus brown, only 1 short seta on base of broadened terminal part and further three setae on base. Gena extremely narrow, clypeus microtrichose. Thorax brown, microtrichose, mesoscutum light brownish grey viewed from the front or from

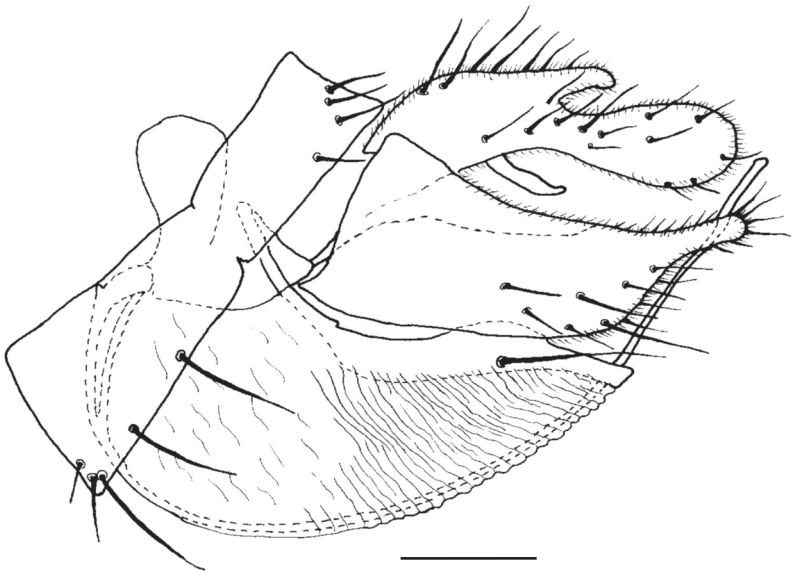

FIG. 4
Rhamphomyia (*Holoclera*) *portugalica* sp. n., male terminalia (macerated), lateral view. Scale 0.1 mm.

sides and uniformly dark almost velvety brownish black in dorsal view and with two narrow somewhat lighter stripes between rows of dorsocentrals in caudal view. All thoracic setae black. Chaetotaxy: 2 setae on proepisternum; both prosternum and proepisternal depression without setae; 6-8 uniserial dorsocentrals (about 0.15 mm long in middle of their rows), last 1-2 (prescutellar) pairs slightly longer (but one shorter seta present on both sides close to scutellum); acrostichals absent; intrahumeral absent; one strong posthumeral (no additional setae laterad of dorsocentrals in presutural part of mesoscutum); 1 long postpronotal and 2 very short additional setae; 2 notopleurals (1-2 shorter setae on anterior part of notopleuron); 1 rather long supraalar (inserted in cranial position, almost in prealar region); 1 strong and 2 very small postalars; 4 scutellars; laterotergite with black setae. Legs including coxae brown, microtrichose (hind femur lustrous except for the tip), black setose. One very short and poorly distinct seta in posteroapical comb on hind tibia. Fore femur with short setation (no prominent setae), anterior row of spine like (sensory) setae about 0.02 mm long. Fore tibia with short setation only, without prominent setae (except preapical ventral). Mid femur with short setation, no prominent setae. Mid tibia with one anteroventral seta in apical third subequally long as remaining short setation. Hind femur with short setation, without prominent setae. Hind tibia slightly broadened apically, with 1-3 posterodorsal setae slightly stronger but no longer than remaining short setation. Basal tarsomeres of both fore and mid legs thin and short setose, basal tarsomere of hind leg

thin, short setose, ventrally with several slightly prominent setae. Measurements (in 0.01 mm scale): length: f1 (75), f2 (95), f3 (128), t1 (75), t2 (80), t3 (125), bt1 (50), bt2 (40), bt3 (60), width: bt1 and bt2 (3), bt3 (6). Wing light brownish, stigma brown, veins brown, anal vein (A1) depigmented in middle part, but apical part distinct. Costal seta long, axillary angle slightly obtuse. M2/D = 2.2, CuA1 ratio = 5.0, lw: ww = 2.6. Halter yellowish brown with darker stem, calypter light brown with dark fringes. Abdomen brown, brown microtrichose, black setose. Hind marginal setae on sides of tergites 2-3 subequally long as their segments, on remaining segments much shorter, discal setae slightly shorter than marginals, dorsum of tergites with short setae, 1st sternite with 2 setae. The 8th tergite and sternite scarcely separated. Terminalia (Fig. 4): hypandrium narrow, with a single long submedian seta, and scarcely differentiated from sclerotized membrane; epandrium approximately rectangular with elongate dorsoapical corner; cercus unusually shaped: trilobate, two dorsal lobes visible in lateral view, lower of them broader and much longer than upper one and cercus with the third short internal lobe visible after dissection; phallus extremely thin to the tip. Length of body 2.9 mm, wing 3.0 mm.

Female: Similar to male but with the following differences. Eyes dichoptic, facets subequal in size. Frons brown, microtrichose, 0.18-0.23 mm long and 0.09 mm broad ventrally and 0.08 mm broad dorsally (slightly narrowing above), with 4-5 short setae on each side (about 0.05 mm). Ocellar setae half as long as the distance between front ocellus and base of antenna. Labrum 1.5-1.8 times as long as head is high. Fore coxa paler than in male, yellowish brown anteriorly about base. Legs as in male, setae on mid and hind tibia more distinct, mid tibia often with 1-2 anterodorsal setae, hind femur often with 1-3 ventral setae on apical third. Basal tarsomeres with more distinct ventral setae. Measurements (in 0.01 mm scale): length: f1 (67-85), f2 (85-105), f3 (123-150), t1 (70-90), t2 (80-100), t3 (94-140), bt1 (37-50), bt2 (32-40), bt3 (42-63), width: bt1 and bt2 (6), bt3 (9). M2/D = 1.6-2.1, CuA1 ratio = 3.7-5.3, lw: ww = 2.6-3.1. Abdomen brown, microtrichose. Hind marginal setae on sides of tergites 2-4 half as long as their corresponding segments, on remaining segments much shorter. Length of body 2.7-4.2 mm, wing 2.6-3.7 mm.

DIFFERENTIAL DIAGNOSIS: *R.* (*Holoclera*) *portugalica* sp. n. belongs to the *R.* (*Holoclera*) *nigripennis* group. However, it differs from other species of this group by its long labrum and unusually (trilobate) shaped male cercus. Females should be compared with *R.* (*Holoclera*) *tenuipes* Becker and *R.* (*Holoclera*) *lamellata* Collin (both having fore coxae paler than pleurae and supraalar seta present), but may be differentiated according to the key.

DERIVATIO NOMINIS: the specific name is derived from the country of origin (Portugal).

Rhamphomyia (Holoclera) subvariabilis sp. n. Figs 5, 6

HOLOTYPE: CULSP; 1 ♂; Russia, Caucasus, Azau, 43°15´47´´N, 42°29´21´´E, 2 300m; 25.vi.-7.vii.1976; M. Barták.

PARATYPES: CULSP; 1 ♀; same data as the Holotype.

DISTRIBUTION: Russia (Caucasus).

DATE OF OCCURRENCE: June-July.

DESCRIPTION

Male: Eyes holoptic, facets in ventral half of eye much smaller than in dorsal half. Frons (small area just above antenna and below ocellar triangle) brown, light grey microtrichose, bare. Ocellar setae black, more than half as long as frons, ocellar triangle with a pair of rather long additional setae on hind part. Face brown, light grey microtrichose, about 0.18? mm broad ventrally and 0,12? mm long, bare. Occiput blackish-brown, light grey microtrichose, with rather strong black setae arranged in two nearly regular rows, postocular row complete, subparallel to hind eye margin, irregular ventrally. Antenna black, both basal antennomeres yellowish-brown, length of antennal segments (in 0.01 mm scale) = 8?: 7: 28: 16, both basal antennomeres rather short setose (the longest setae about 0.11 mm long). Labrum yellow, lustrous, nearly twice as long as head is high. Palpus yellow with several brown setae. Gena very narrow and microtrichose, clypeus microtrichose. Thorax brown, humeri, anterior part of notopleuron and stripes under presutural dorsocentrals yellowish translucent, mesoscutum grey or brownish-grey microtrichose, with more greyish median stripe between dorsocentrals with darker margins. All thoracic setae dark. Chaetotaxy: proepisternum entirely setose; prosternum bare; proepisternal depression with a single small seta; acrostichals absent; 7-8 uniserial dorsocentrals about 0.30 mm long in middle of their rows, ending in 2-3 prescutellars; intrahumeral present; 1 strong posthumeral (1-2 additional setae laterad of dorsocentrals on posthumeral area); 1 postpronotal and about 8 shorter but relatively strong setae on postpronotum; 3-4 notopleurals (anterior part of notopleuron with 3-4 setae); 1 very long supraalar and 3-4 setae on prealar area; 1 long and 1 short and fine postalars; 4 scutellars; laterotergite with dark setae. Legs including coxae yellow, base of coxae and tarsi slightly darkened. Legs microtrichose (femora sublustrous), covered with dark setae. One long seta present in posteroapical comb on hind tibia. Fore femur short setose. Fore tibia with 3 anterodorsal and 4-5 posterodorsal setae slightly longer than tibia is deep. Mid femur with 2 anterior setae in apical third, otherwise short setose except preapical setae. Mid tibia with 3-4 anterodorsal (or anterior) and 4 posterodorsal setae slightly longer than tibia is deep, otherwise short setose. Hind femur similarly setose as mid femur. Hind tibia with 4-5 anterodorsal and 5-6 posterodorsal setae slightly longer than tibia is deep, ventral setae short. Basal tarsomeres of all legs thin and short setose, with short spines ventrally. Measurements (in 0.01 mm scale): length: f1 (140), f2 (183), f3 (235), t1 (145), t2 (169), t3 (203), bt1 (104), bt2 (89), bt3 (125), width: bt1 (5), bt2 (6), bt3 (7). Wing clear, slightly iridescent, stigma hyaline, veins yellowish-brown, anal vein (A1) complete. Costal seta present, axillary angle acute. M2/D = 1.4-1.5, CuA1 ratio = 2.5, lw: ww = 2.8-2.9. Halter yellow, calypter yellow with dark fringes. Abdomen brown, hind margin of segments and last two sternites translucent yelow, abdomen microtrichose and dark setose. Hind marginal setae on sides of tergites subequally long as segments, discal setae much shorter than marginals. Dorsum of tergites shorter setose. 8th segment forming syntergosternite, cranial part depigmented ventrally and in dorsal third. Terminalia (Figs 5, 6): cercus trilobate; phallus short and thick, axe-like broadened at apex and slightly narrowed before middle; hypandrium with two short

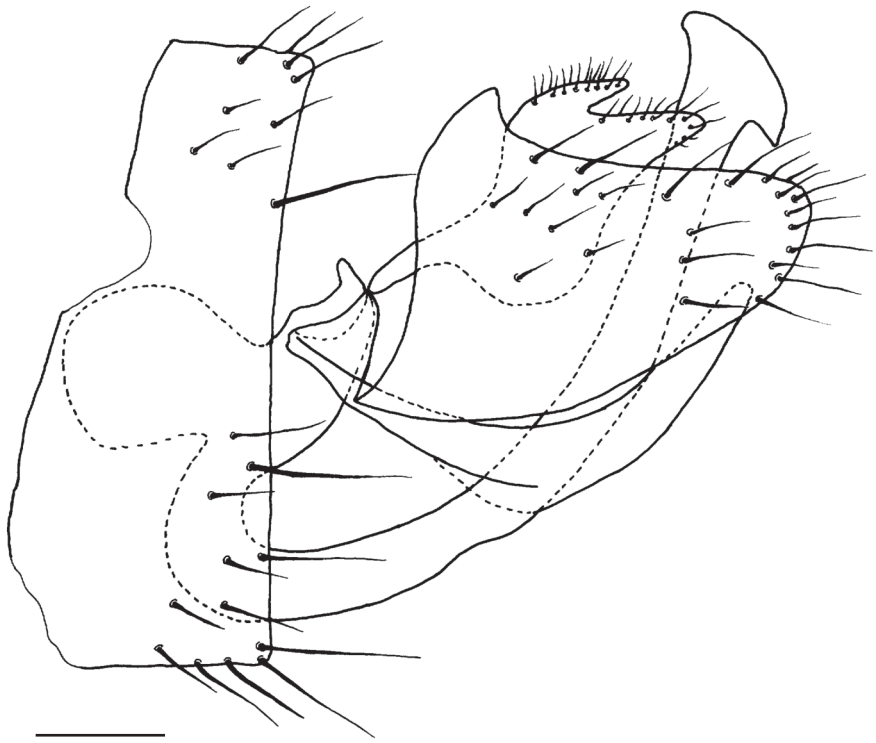

FIG. 5
Rhamphomyia (*Holoclera*) *subvariabilis* sp. n., male terminalia (macerated), lateral view. Scale 0.1 mm.

apical spine like setae; epandrium attached to hypandrium some distance from hypandrial articulation with phallobase (short hypandrial arms present). Length of body 4.6 mm, wing 5.0 mm.

Female: Similar to male but with the following differences. Eyes narrowly dichoptic (0.05 mm broad in the narrowest place), ventral facets only slightly smaller than dorsal ones. Frons 0.32 mm long, with a pair of setae in the dorsal part. Face as in male, yellowish only ventrally. Length of antennal segments = 9: 7: 26: 15. Ocellar setae 2/3 as long as frons. Occiput translucent yellow near neck. Thorax similarly coloured and setose as in male, only yellow parts more extensive (practically whole of prothorax and broad stripes below dorsocentrals yellow), median grey stripe without dark margins, all setae slightly shorter and finer than in male (dorsocentrals about 0.25 mm long), short setae on postpronotum not strong. Legs including coxae similarly colored as in male, also arrangement of setae similar, only anterior setae on hind femur less distinct and anterodorsal and posterodorsal setae on tibiae slightly shorter than in male. Leg measurements (in 0.01 mm scale): length: f1 (125), f2 (160), f3 (210), t1

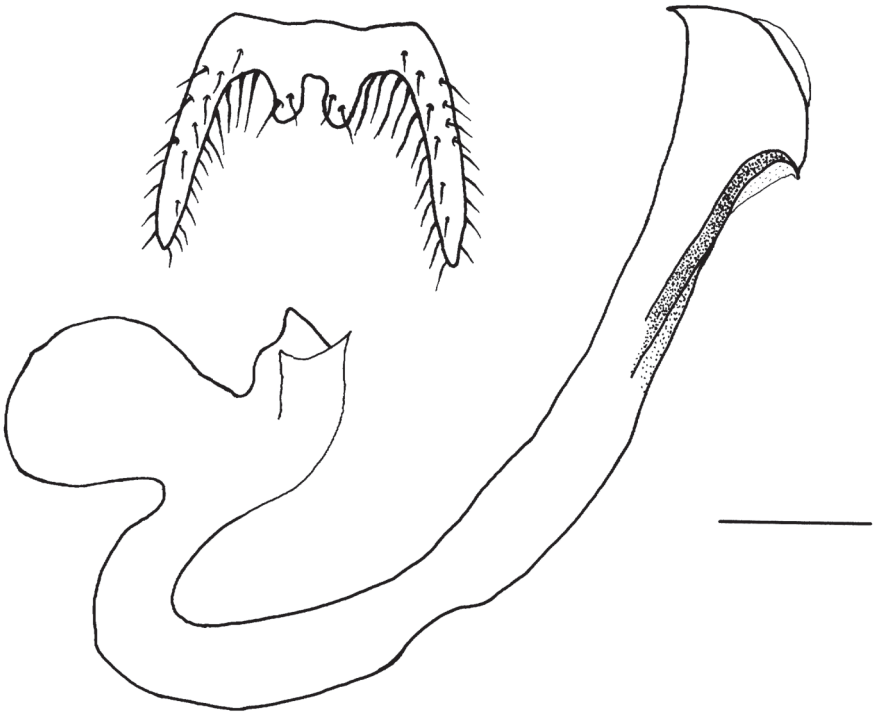

FIG. 6
Rhamphomyia (*Holoclera*) *subvariabilis* sp. n., male phallus (lateral view) and cerci (dorsal view). Scale 0.1 mm.

(125), t2 (143), t3 (184), bt1 (85), bt2 (72), bt3 (104), width: bt1 and bt2 (5), bt3 (7?). M2/D = 1.3-1.4, CuA1 ratio = 2.6-2.7, lw: ww = 2.9. Abdomen brownish-yellow (front part darker than more yellowish hind third), microtrichose. Hind marginal setae on sides of tergites 2-3 almost as long as their corresponding segments, on segment 4 half as long and on the following segments much shorter. Length of body: 4.0 mm, wing: 5.0 mm.

DIFFERENTIAL DIAGNOSIS: *Rhamphomyia* (*Holoclera*) *subvariabilis* sp. n. belongs to the *R. flava* group of *Holoclera* and due to the absence of acrostichals it is most similar to *R. variabilis* (Fallén). The main characteristics distinguishing these two species are as follows: antennal stylus in *R. variabilis* is much shorter than the 1st flagellomere (being less than 1/3 as long), mid and hind tibiae with strong anteroventral setae. In *R. subvariabilis*, antennal stylus is more than half as long as the 3rd segment and the mid and hind tibiae are without anteroventral setae. Moreover, there are differences in male genitalia (compare Figs 5 & 6 with Fig. 7 and with Barták, 1982: fig. 17c). Hypandrium bears several strong submedian setae in R. variabilis but

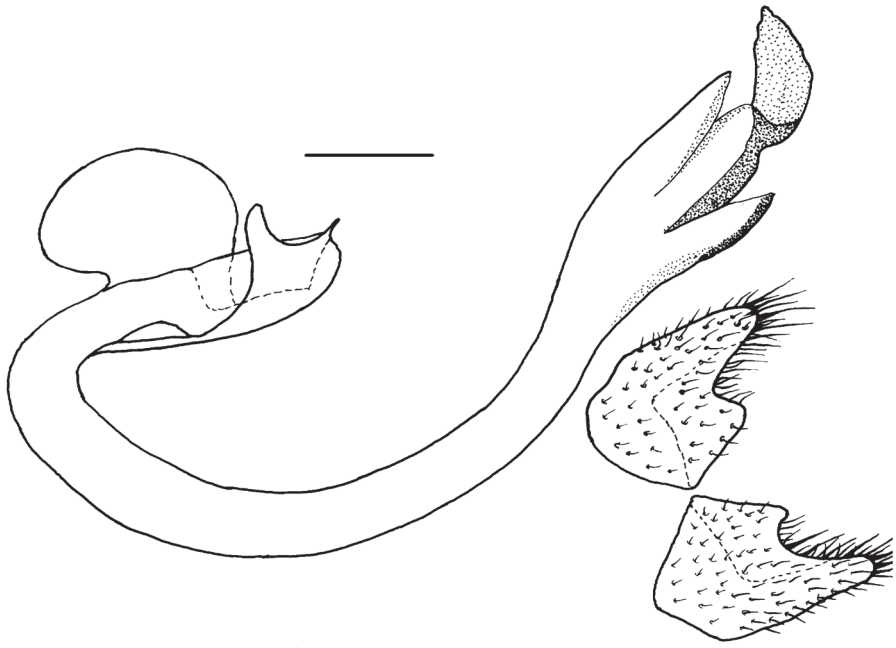

FIG. 7
Rhamphomyia (*Holoclera*) *variabilis* (Fallén, 1816), male phallus (lateral view) and cerci (dorsal view). Scale 0.1 mm.

only two very short apical spines in *R. subvariabilis*; dorsobasal projection of cercus is triangle-shaped, lustrous, bare and inflated (not visible in lateral view) in *R. variabilis* but finger-like microtrichose, with fine setae and laterally visible in *R. subvariabilis*; and tip of phallus also differs markedly in both species (compare Figs 6 and 7).

DERIVATIO NOMINIS: the specific name refers to the similarity with *R. variabilis*.

Rhamphomyia (*Holoclera*) sp. 1

MATERIAL EXAMINED: CULSP; TURKEY. 1 ♀; Antalya province, Kursunlu Selalesi, 15 km NNE Antalya, 150 m; 29.iv.2000; leg. B. Merz & Senay.- 1 ♀; Antalya province, Cavusköy (Adrasan), 50 m; 26.iv.2000; B. Merz & Senay. We left the species unnamed because we have not male at our disposal.

DESCRIPTION: A species of the *R.* (*Holoclera*) *nigripennis* group with dark palpus, uniserial dorsocentrals, yellow fore coxae, female frons sublustrous, mesoscutum largely devoid of microtrichiae, and supraalar seta absent.

Rhamphomyia (*Holoclera*) sp. 2 Fig. 8

MATERIAL EXAMINED: CULSP; TURKEY. 1 ♂; Nur Daglari Mts., 20 km N Antakya, Akbez, 500 m; 5.v.1996; leg. B. Mocek.- 1 ♀; 20 km W Antakya, Cevlik, undeciduous forest; 3.v.1996; leg. B. Mocek. We decided not to name this species because of limited and damaged material at hand.

DESCRIPTION: A species of the *R.* (*Holoclera*) *nigripennis* group with dark palpus, uniserial dorsocentrals, yellow fore coxae, female frons microtrichose, mesoscutum in male specimen damaged (supraalar seta probably present). Male genitalia of the species (Fig. 8) similar to those of *R. trigemina* Oldenberg (Fig. 9). However, both phallus and phallic plate are shorter and both epandrium and hypandrium shorter setose in *R.* sp. 2 than in *R. trigemina*. There are also differences in the shape of cercus. The female is very similar to *R. tenuipes* and *R. lamellata*.

KEY TO PALAEARCTIC SPECIES OF *RHAMPHOMYIA* (*HOLOCLERA*)

1 Seta in posteroapical comb on hind tibia very short or absent. Fore femur with a row (often irregular) of short spine like anterior setae. Acrostichals absent. Palpus brown to black; if yellow (*R. caliginosa*) than anal vein incomplete. (*R.* (*H.*) *nigripennis* group) 2

- A long seta in posteroapical comb on hind tibia present. Fore femur without spine like anterior setae. Palpus yellow. Acrostichals present; if absent (*R.* (*H.*) *variabilis* and *R.* (*H.*) *subvariabilis*) than anal vein complete. (*R.* (*H.*) *flava* group) 22

2 (1) Palpus yellow. (Characters opposite of other species: supraalar seta present, fore coxa yellow, female frons lustrous and female hind femur with one to several ventral setae in apical third) . . . . . *R.* (*H.*) *caliginosa* Collin

- Palpus brown to black 3

3 (2) Dorsocentral setae 2-3 serial. (Characters opposite of other species: fore coxa brown, propleura setose, supraalar seta present, female frons microtrichose, female hind femur without long ventral setae; male fore femur with posterodorsal setae as long as femur is deep) . . . . . *R.* (*H.*) *biserialis* Collin

- Dorsocentral setae uniserial 4

4 (3) Male. (Unknown male of *R.* (*H.*) sp. 1 probably has mesoscutum lustrous) 5

- Female 13

5 (4) Cercus long, exceeding epandrium, with very long setae dorsally (Collin, 1961: fig. 149b and Barták & Kubík, 2009: figs 6, 7) 6

- Cercus shorter than epandrium, with short setae 7

6 (5) 8th sternite with 2-4 long marginal setae and 2-5 additional shorter setae; cercus parallel-sided in apical half, with only short setae ventrally, epandrium gently rounded apically, without spine-like setae apically, hypandrium long and densely setose, setae longer than maximum height of hypandrium (Barták & Kubík, 2009: figs 6, 7) . . . . . *R.* (*H.*) *tenuipes* Becker

- 8th sternite with many short setae in two irregular rows (10-12 setae in each row); cercus distinctly broadened apically, with long setae also along ventral margin, epandrium narrowed apically, with 1-2 strong spine-like apical setae, hypandrium short and sparsely setose, setae shorter than maximum height of hypandrium (Collin, 1961: fig. 149b) . . . . . *R.* (*H.*) *lamellata* Collin

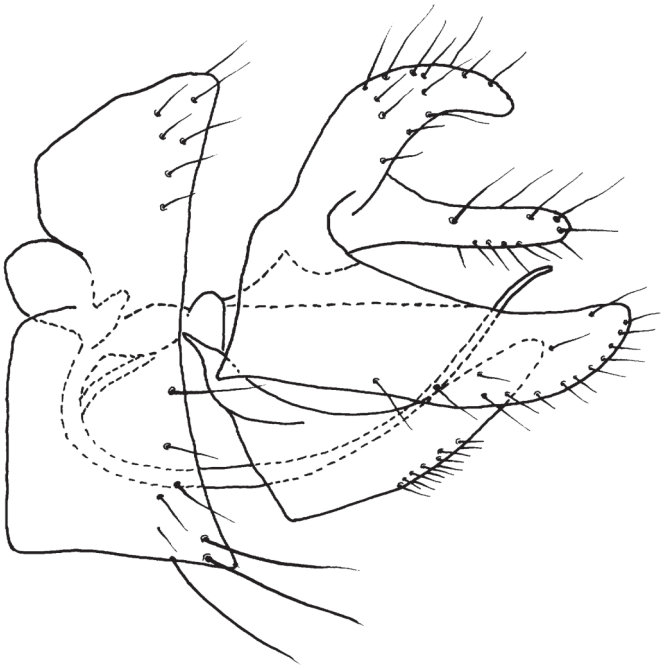

FIG. 8
Rhamphomyia (*Holoclera*) sp. 2, male terminalia (macerated), lateral view. Scale 0.1 mm.

7 (5) Cercus deeply concave, lower lobe broader than upper one, with a third short internal process (visible after dissection, Fig. 4). (Characters opposite of other species: fore coxa yellowish brown, supraalar seta present, labrum 1.5 times as long as head is high) . . . . . *R.* (*H.*) *portugalica* sp. n.
- Cercus of different shape 8
8 (7) Cercus deeply concave (bilobate) 9
- Cercus almost straight dorsally (unilobate) 12
9 (8) Both epandrium and hypandrium short setose (Fig. 8) (Turkey) . . *R.* (*H.*) sp. 2
- Epandrium long setose. Hypandrium either long setose or without setae . . . 10
10 (9) Supraalar seta absent. Fore coxa yellowish brown, paler than pleura. (Fig. 2) . . . . . *R.* (*H.*) *bohemica* sp. n.
- Supraalar seta present. Fore coxa dark, concolorous with pleura 11
11 (10) Hypandrium long setose (Fig. 9), microtrichose in ventral view . . . . . *R.* (*H.*) *trigemina* Oldenberg
- Hypandrium without setae, lustrous in ventral view . . . . . *R.* (*H.*) *umbripennis* Meigen
12 (11) Phallus extremely long, longer than abdomen (visible only after dissection). Cerci with inner margins angled. Epandrium with several strong setae on apex (Barták, 1982: fig. 12d) . . *R.* (*H.*) *nigripennis* (Fabricius)

- Phallus short. Cerci with inner margins straight (V-shaped in dorsal view). Epandrium with only a single short apical seta (Fig. 3) . . . . . *R.* (*H.*) *helvetica* sp. n.

13 (4) Mesoscutum lustrous, leaving two narrow microtrichose stripes below dorsocentrals and somewhat broader median microtrichose stripe. Abdominal segments 2-5 almost without microtrichosity. (Other characters: supraalar seta absent, front coxa yellow) . . . . . *R.* (*H.*) sp. 1

- Mesoscutum uniformly microtrichose. Abdominal segments 2-5 at least partly microtrichose 14

14 (13) Frons lustrous . . . . . *R.* (*H.*) *nigripennis* (Fabricius)

- Frons microtrichose 15

15 (14) Supraalar seta present (sometimes very short). Fore coxa yellow (paler than pleura) or brown (concolorous with pleura) 16

- Supraalar seta absent. Fore coxa yellow to yellowish brown, paler than pleura 21

16 (15) Fore coxa yellow to yellowish brown, paler than pleura 17

- Fore coxa brown, concolorous with pleura 20

17 (16) Labrum more than 1.5 times as long as head is high. Fore coxa in most specimens darkened. Knob of halter yellowish brown. *R.* (*H.*) *portugalica* sp. n.

- Labrum less than 1.4 times as long as head is high. Fore coxa yellow. Knob of halter brown 18

18 (17) Hind femur without long anteroventral seta, anterior spines on fore femur shorter than 0.02 mm long (Turkey) . . . . . *R.* (*H.*) sp. 2

- Hind femur with or without long anteroventral seta, anterior spines on fore femur up to 0.03 mm long 19

19 (18) South Mediterranean . . . . . *R.* (*H.*) *tenuipes* Becker

- Temperate European . . . . . *R.* (*H.*) *lamellata* Collin

20 (16) Dorsocentral setae long (about as long as the distance between their rows). Usually 1 long and 0-1 smaller supraalar seta. Frons slightly broadened above . . . . . *R.* (*H.*) *trigemina* Oldenberg

- Dorsocentral setae shorter than the distance between their rows. Usually 2 small, subequal supraalars. Frons slightly broadened below . . . . . *R.* (*H.*) *umbripennis* Meigen

21 (15) 1st flagellomere usually shorter than 0.20 mm, 1.4-1.7 times as long as stylus . . . . . *R.* (*H.*) *bohemica* sp. n.

- 1 st flagellomere usually longer than 0.21 mm, 1.8-2.0 times as long as stylus . . . . . *R.* (*H.*) *helvetica* sp. n.

22 (1) Acrostichal setae absent 23

- Acrostichal setae present 24

23 (22) Antennal stylus 1/3 the length of the 3rd segment. Mid and hind tibiae with anteroventral setae. Male hypandrium with several long submedian setae . . . . . *R.* (*H.*) *variabilis* (Fallén)

- Antennal stylus more than half of length of the 3rd segment. Both mid and hind tibiae without anteroventral setae. Male hypandrium with two very short apical setae . . . . . *R.* (*H.*) *subvariabilis* p. n.

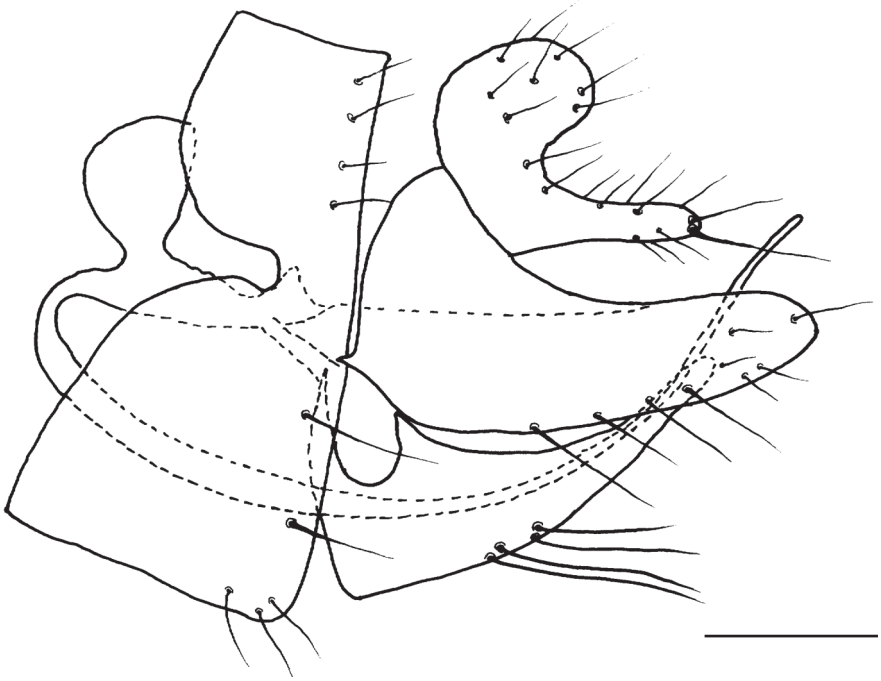

FIG. 9

Rhamphomyia (*Holoclera*) *trigemina* Oldenberg, 1927, male terminalia (macerated), lateral view. Scale 0.1 mm.

24 (22) Scape yellow. Thorax of both sexes yellow, without dark pattern . . . . . *R.* (*H.*) *flava* (Fallén)

- Scape reddish brown to black, distinctly darker than palpus. Male thorax never yellow 25

25 (24) Male 26

- Female (unknown in *R. bistriatella*) 31

26 (25) Eyes broadly separated on frons, facets in ventral part enlarged. Frons with setae at least as long as pedicel 27

- Eyes meet on frons, if narrowly separated then frons bare or with minute setae only, facets in dorsal part enlarged 29

27 (26) Epandrium with dorsoapical angle more obtuse, about 80° (Barták, 1982: fig. 16e). Anal vein complete. Normally 6 scutellar setae. Usually more than 35 acrostichal and dorsocentral setae altogether. Larger species (wings more than 5.5 mm) . . . . . *R.* (*H.*) *flaviventris* Macquart

- Epandrium with dorsoapical angle more acute, about 60° (as in Fig. 1). Anal vein incomplete. Normally 4 scutellar setae. Usually less than 35 acrostichal and dorsocentral setae altogether. Smaller species (wings less than 5.5 mm) 28

28 (27) Halter yellow. Fore and mid tibiae with dorsal setae at least as long as tibia is deep. Cercus with basal swelling in dorsal view (trilobate in lateral view, see Barták, 1982: fig. 17f) . . . . . *R.* (*H.*) *bistriata* Strobl
- Halter grey. Fore and mid tibiae without dorsal setae. Cercus without basal swelling, strip-like in dorsal view (bilobate in lateral view, Fig. 1) . . . . . *R.* (*H.*) *bistriatella* sp. n.
29 (26) Anal vein complete, without trace of weakening. Mesoscutum dark brown or reddish brown in dorsal view. Mid femur with anterior setae. Hind femur with at least 2 strong anteroventral (or ventral) setae, one of them situated on basal half of femur . . . . . *R.* (*H.*) *heterochroma* Bezzi
- Anal vein incomplete, at least distinctly weakened (visible in translucent light). Mesoscutum velvety black in dorsal view. Mid femur usually without anterior setae. Hind femur usually without anteroventral (or ventral) setae at least on basal half of femur 30
30 (29) Visible part of cercus longer than high (Barták, 1982: fig. 16a). Phallus slightly broadened at tip. Axillary angle acute . . . . . *R.* (*H.*) *culicina* (Fallén)
- Visible part of cercus higher than long (Barták, 1982: fig. 15b). Phallus pointed at tip. Axillary angle obtuse to right . . . . . *R.* (*H.*) *sciarina* (Fallén)
31 (25) Thorax black . . . . . *R.* (*H.*) *culicina* (Fallén)
- Ground colour of thorax yellow 32
32 (31) Anal vein complete. Axillary angle right to acute. Usually 6-8 scutellar setae. Clypeus lustrous 33
- Anal vein incomplete. Axillary angle right to obtuse. Usually 4 scutellar setae. Clypeus microtrichose 34
33 (32) Hind femur with 2 or more anteroventral setae, one of them situated on basal half of femur. Mid femur with several anterior setae. Larger, more robust and more setose species. 1st sternite setulose or bare . . . . . *R.* (*H.*) *heterochroma* Bezzi
- Hind femur without anteroventral (ventral) setae at least on basal half. Smaller, less robust and less setose species. 1st sternite bare . . . . . *R.* (*H.*) *flaviventris* Macquart
34 (32) Halter clear yellow. Usually more than 10 acrostichal setae. Mesoscutum without any stripes . . . . . *R.* (*H.*) *bistriata* Strobl
- Halter greyish. Usually less than 10 acrostichal setae. Mesoscutum with two darker and more lustrous stripes between rows of acrostichals and dorsocentrals . . . . . *R.* (*H.*) *sciarina* (Fallén)

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