

Revision of the Thomson and Zetterstedt collections of the genus *Alloxysta* Förster (Hymenoptera: Figitidae) deposited in the Lund Museum of Zoology (Sweden)

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The Thomson and Zetterstedt collections of *Alloxysta* Förster and related genera were studied at the Lund Museum of Zoology (Sweden). 18 species and 83 specimens have been revised. Nine species are valid: *Alloxysta brevitarsis* (Thomson, 1862), *Alloxysta citripes* (Thomson, 1862), *Alloxysta crassicornis* (Thomson, 1862), *Alloxysta fraticornis* (Thomson, 1862), *Alloxysta fuscipes* (Thomson, 1862), *Alloxysta halterata* (Thomson, 1862), *Alloxysta nigrita* (Thomson, 1862), *Alloxysta xanthocera* (Thomson), and *Alloxysta xanthopa* (Thomson, 1862). These species are redescribed and illustrated. *Cynips consobrina* Zetterstedt, 1838 is here established as senior synonym of *Alloxysta fuscicornis* (Hartig, 1841). We consider that the following species were correctly synonymized by previous authors: *Allotria nigriventris* Thomson, 1862 with *Alloxysta erythrothorax* (Hartig, 1840); *Allotria basalis* Thomson, 1862 with *Alloxysta pallidicornis* (Curtis, 1838); *Allotria macrocera* Thomson, 1877 with *Alloxysta victrix* (Westwood, 1833); *Allotria piciceps* Thomson, 1862 with *Phaenoglyphis villosa* (Hartig, 1841); *Allotria ramulifera* Thomson, 1862 with *Alloxysta minuta* (Hartig, 1840); *Allotria rufa* Thomson, 1877 with *Phaenoglyphis xanthochroa* (Förster, 1869); *Cynips minuta* Zetterstedt, 1838 with *Alloxysta pallidicornis* (Curtis, 1838); and *Cynips ruficeps* Zetterstedt, 1838 with *Alloxysta victrix* (Westwood, 1833). Lectotypes and paralectotypes have been designated when necessary.

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Members of subfamily Charipinae are very small hyperparasitoid wasps of the aphid and psyllid primary parasitoids Aphidiinae (Hymenoptera: Ichneumonoidea: Braconidae), Aphelininae (Hymenoptera: Chalcidoidea: Aphelinidae) and Encyrtidae (Hymenoptera: Chalcidoidea).

The first species described in this subfamily was *Alloxysta victrix* (Westwood, 1833). Since then 280 species of Charipinae have been de-

scribed, of which 167 are now considered as valid (Ferrer-Suay et al. 2012). Many charipine species were described by a number of authors during the 19th century, one of the most prolific being Thomson (1862, 1877).

The taxonomical chaos of the subfamily Charipinae has always been a problem and an obstacle to the correct identification of specimens at the species level. This is especially critical when

dealing with the genus *Alloxysta* Förster, because it is the most species-rich genus of the Charipinae. The chaotic state of the taxonomy of this subfamily is mainly due to the fact that the first historical authors paid particular attention to size and coloration characters that are not now considered useful for species determination. Moreover, these early authors did not include in their descriptions characters that are now considered essential to distinguish different species of *Alloxysta*. These characters include: a) the relative proportions (length to width ratios) of flagellomeres; b) the size and shape of the radial cell; c) the presence or absence of pronotal carinae; and d) the presence or absence of propodeal carinae, and if present, their shape.

Alloxysta, with 111 valid species, is the most numerous, widespread and problematic genus in the Charipinae. The identification of *Alloxysta* species is very difficult because of their small size, their (usually) very smooth body, and the low level of interspecific variability. A complete revision of *Alloxysta* is needed, but in order to achieve this, it is first necessary to study all type material deposited in different museums - a task which has been carried out over recent years at the University of Barcelona (Spain).

In the present paper, 18 species and 83 specimens of *Alloxysta* deposited in the Lund Museum of Zoology (Sweden) belonging to the Thomson and Zetterstedt collections have been studied. *Alloxysta brevis* (Thomson, 1862) is not included in this work, because the status of this species is very complex and it has been studied in detail elsewhere (Ferrer-Suay et al. in press).

All valid Thomson and Zetterstedt species are here re-described. Lectotypes and paralectotypes have been designated when necessary, and the synonymies established by previous authors have been checked. Since species of *Alloxysta* are usually defined by a combination of different characters, these characters are studied in each valid species and compared with similar species.

Material and Methods

The type material was studied using stereomicroscopy at the Lund Museum of Zoology (Sweden). Lectotype and paralectotype designations follow the rules of the ICZN. Lectotypes were

loaned to the University of Barcelona in order that all necessary pictures could be taken. In order to preserve the type material, the specimens were photographed in a Zeiss Discovery. V8 compound microscope with an attached INFINITYX-21C digital camera. The program DeltaPix View-Pro AZ was used to merge an image series (typically representing 20 focal planes) into a single in-focus image.

The morphological terms used follow Pareas-Martinez et al. (2007). Measurements and abbreviations include the length and width of F1–F12, these being the first and subsequent flagellomeres, these dimensions usually quoted as the ratio of length to width, or in other relative terms. The width of the forewing radial cell is measured from the margin of the wing to the beginning of the Rs vein. The transfacial line is measured as the distance between the inner margins of compound eyes, measured across the face through the antennal sockets. The malar space is the distance from the mouthparts to the ventral margin of the compound eye. Females and males have the same characters except where indicated in the re-descriptions. MZLU: Lund Museum of Zoology (Lund, Sweden).

Due to the previous confusion during the historical determination of species of Charipinae, some host and distribution data mentioned by different authors also needs to be revised. Consequently, any such dubious information, when present, is indicated for each species. Most locations of specimens belong to Skåne (Scania county), the southernmost administrative county of Sweden. Location names are given in Swedish, following author's labels. The meaning of each location's abbreviation was elucidated thanks to Fitton (1982):

- Båtd = Båstad
- Bgs = Bökestad
- Boh = Bohuslän
- Esp = Äsperöd
- Fsg = Fågelsång
- Hg and Hbg = Helsingborg
- lp = Lappland
- Ld and L-d = Lund
- Lhd = Lindholmen
- Scan = Skåne
- Wit = Wittsjöe

Results

Nine species are currently considered valid. Only these valid species are re-described, with plates illustrating their morphological features: *Alloxysta brevitarsis* (Thomson, 1862), *Alloxysta citripes* (Thomson, 1862), *Alloxysta crassicornis* (Thomson, 1862), *Alloxysta fracticornis* (Thomson, 1862), *Alloxysta fuscipes* (Thomson, 1862), *Alloxysta halterata* (Thomson, 1862), *Alloxysta nigrita* (Thomson, 1862), *Alloxysta xanthocera* (Thomson, 1862) and *Alloxysta xanthopa* (Thomson, 1862). These species have been considered valid after comparison with all other known species of *Alloxysta*.

Alloxysta brevitarsis (Thomson, 1862)

(Fig. 1)

Combinations of *Allotria brevitarsis* Thomson, 1862: 409. *Dilyta brevitarsis* (Thomson) Kieffer, 1900: 114; *Alloxysta (Alloxysta) brevitarsis* (Thomson) Dalla Torre & Kieffer, 1902: 38; *Alloxysta brevitarsis* (Thomson) Hellén, 1963: 14, 15.

Diagnosis: *Alloxysta brevitarsis* is mainly characterized by having a closed radial cell, pronotal carinae present, propodeal carinae forming a plate, beginning of rhinaria in F2, and F1 longer than pedicel. This species is similar to *A. pilipennis* (Hartig, 1840) but they can be easily differentiated as follows: the size of the radial cell is 1.8 times longer than wide in *A. brevitarsis* (Fig. 1c) while the ratio is 2.4 in *A. pilipennis*; with regard to the relative lengths of flagellomeres, F1 is longer than F2 in *A. brevitarsis* (Fig. 1b) and F1 is subequal to F2 in *A. pilipennis*.

Re-description

Coloration: Head yellow, mesosoma reddish brown, metasoma dark brown on the back and reddish on the front. Scape, pedicel, F1–F3 yellow; F4–F12 dark yellow. Legs and veins yellowish.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below and between toruli, and a few setae above toruli. Without setae on vertex and with many setae on face. Transfacial line 1.2 times height of compound eye. Malar space 0.6 times height of compound eye (Fig. 1d).

Antenna: Female unknown. Male: 14-segmented, filiform. All antennomeres covered with sparse setation. F1 thinner than remaining flagellomeres, F2–F12 with club-shaped; F1–F2 smooth, F3–F12 with rhinaria. Pedicel 1.7 times longer than wide; F1 3.2 times longer than wide; F2 2.5 times longer than wide; F3 2.3 times longer than wide; F4 2.4 times longer than wide. F1 1.7 times longer than pedicel; F1 1.1 times longer than F2; F2 1.1 times longer than F3; F4 1.1 times longer than F3; F4–F12 subequal in length, width and shape (Fig. 1b).

Mesosoma: Pronotum with few setae, with two thick carinae present being dark brown and clearly visible (Fig. 1e). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae only in anterior area. Scutellum smooth and shiny, the few setae present being most abundant on the apex. Height of mesopleural triangle along anterior margin 1.5 times height of mesopleuron. Propodeum with heavy pubescence; two propodeal carinae forming a plate, with few setae in the upper part and sides slightly curved (Fig. 1f).

Forewing: Longer than body, 1.4 times longer than mesosoma and metasoma together (Fig. 1a). Covered with dense pubescence; marginal setae present. Closed radial cell, 1.8 times longer than wide. R1 short and straight; Rs long and curved (Fig. 1c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous medially, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguishable.

Confirmed distribution: Finland (Hellén 1963: 15); France (Kieffer 1902b: 34); Lapland, Sweden (Thomson 1862: 409).

Hosts to be confirmed: *Aphis* sp. on *Epilobium spicatum* (according to Dalla Torre & Kieffer 1910: 257).

Studied material

Type material of *Allotria brevitarsis* Thomson, Lectotype ♂ here designated (deposited in MZLU) with the following labels: “brevitarsis” (grey label, handwritten); “brevitarsis” (handwritten), “Lectotype *Allotria brevitarsis* Thomson, 1862 ♂ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta brevitarsis* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011”, “ZML.2011 061” (green label).

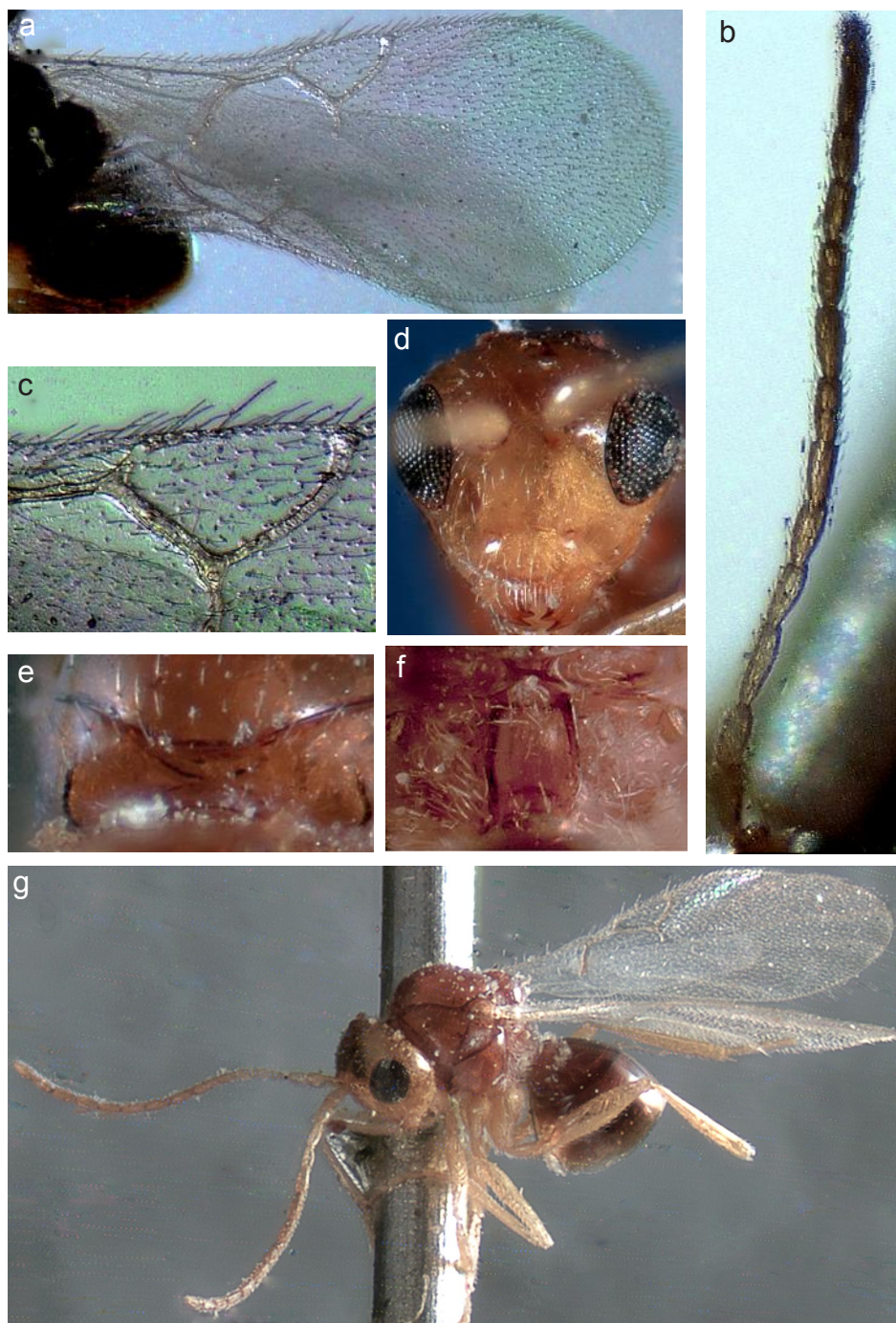


Figure 1. *Alloxysta brevitarsis* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) pronotum; f) propodeum; g) body.

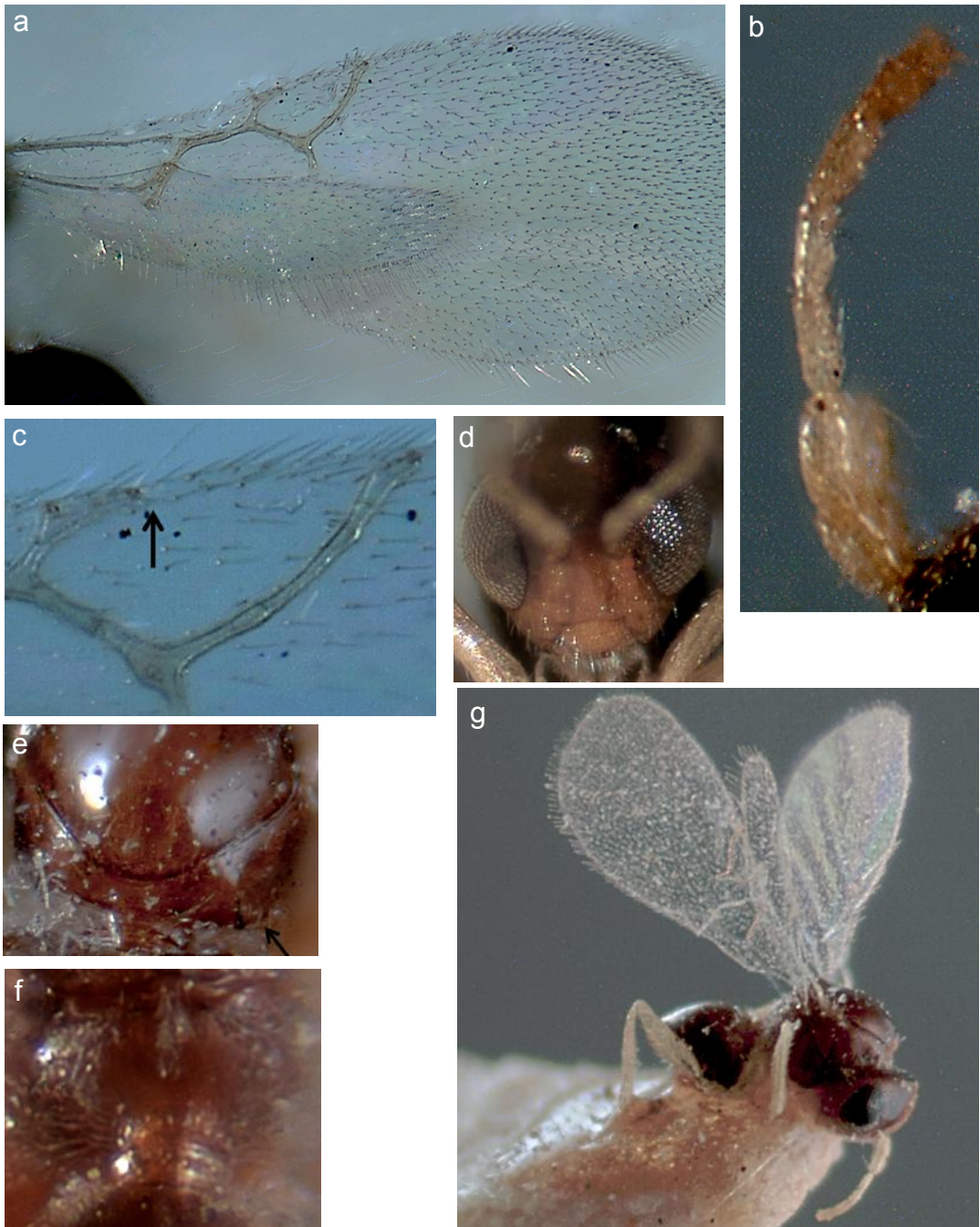


Figure 2. *Alloxysta citripes* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) pronotum; f) propodeum; g) body.

Comments

Alloxysta brevitarsis (Thomson) is represented by only one specimen (male) in Thomson's collection. According to the original description and labels, we designate this specimen as the lectotype.

Alloxysta erythrothorax (Hartig, 1840)

Allotria nigriventris Thomson, 1862. Synonymized by Fergusson (1986).

Combinations of *Allotria nigriventris* Thomson, 1862: 409. *Dilyta nigriventris* (Thomson) Kieffer, 1900: 114; *Alloxysta (Alloxysta) nigriventris* (Thomson) Dalla Torre & Kieffer, 1902: 39; *Alloxysta nigriventris nigriventris* (Thomson) Andrews, 1978: 87.

Studied material

Type material of *Allotria nigriventris* Thomson, Lectotype ♂ here designated (deposited in MZLU) with the following labels: "32.3.il., 34. lp", "nigriventris ♂" (handwritten), "nigriventris" (handwritten), "1984, 409" (green label), "Lectotype *Allotria nigriventris* Thomson, 1862 ♂ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta erythrothorax* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011", "ZML. 2011 069" (green label).

Additional material (3♀ & 4♂). "♀", "*Alloxysta erythrothorax* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011": 1♀. "Hg", "*Alloxysta erythrothorax* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011": 1♀. "pho", "*Alloxysta erythrothorax* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011": 1♀. "♂", "*Alloxysta erythrothorax* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011": 2♂. "Hg", "♂", "*Alloxysta erythrothorax* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011": 2♂.

Comments

Alloxysta nigriventris (Thomson) (Thomson) is represented by eight specimens (5 males and 3 females) in Thomson's collection. Only one of them (male) has enough information on the labels to be considered as the lectotype. The rest are the same species but due to the lack of information they cannot be considered as paralectotypes. According to our observations, Thomson usually added labels to all specimens. Fergusson (1986) synonymized *A. nigriventris* with *A. fulviceps* (Curtis). Nevertheless, *A. fulviceps* has been recently considered a synonym of *A. victrix* (Westwood, 1833) (Pujade-Villar et al. 2011). The valid name is, therefore, the next in the synonymic list, viz. *A. erythrothorax* (Har-

tig, 1840). All specimens have been revised to check the validity of this synonymy and it has been confirmed.

Alloxysta citripes (Thomson, 1862)

(Fig. 2)

Combinations of *Allotria citripes* Thomson, 1862: 410. *Dilyta citripes* (Thomson) Kieffer, 1900: 114; *Alloxysta citripes* var *britannica* Kieffer, 1902: 11, synonymized by Evenhuis (1976: 140); *Alloxysta (Alloxysta) citripes* (Thomson) Dalla Torre & Kieffer, 1902: 38; *Alloxysta (Alloxysta) citripes* var *britannica* Kieffer: Dalla Torre & Kieffer, 1902: 38; *Alloxysta (Alloxysta) citripes citripes* (Thomson) Dalla Torre & Kieffer, 1910: 261; *Alloxysta (Alloxysta) citripes britannica* Kieffer: Dalla Torre & Kieffer, 1910: 262; *Alloxysta citripes citripes* (Thomson) Andrews, 1978: 80.

Diagnosis: *Alloxysta citripes* is easily recognized by its having the radial cell partially open, pronotal carinae clearly visible, propodeal carinae not protruding and weakly defined, and F1 subequal to the pedicel in both male and female. No other known *Alloxysta* species is similar.

Re-description

Coloration: Head, mesosoma and metasoma light brown (head more yellowish). Antennae and legs yellowish. Veins nearly transparent.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below, between, and a few above toruli. With or without setae on vertex and with many setae on face. Transfacial line 0.9 times height of compound eye. Malar space 0.4 times height of compound eye (Fig. 2d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 1.7; F1, 2.7; F2, 2.3; F3, 1.9; F4, 1.9. F1 subequal to pedicel; F1, 1.1 times longer than F2; F2 subequal to F3; F4, 1.2 times longer than F3; F4-F11 subequal in length, width and shape (Fig. 2b). Male: 14-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. Relative proportions of flagellomeres as in the female, with no flagellomere curved.

Mesosoma: Pronotum covered with many setae, these less densely covering the posterodorsal margins and on central region; with two small carinae thick and clearly visible (Fig. 2e). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny with scattered setae, these most abundant on the apex. Height of mesopleural triangle along anterior margin 1.3 times height of mesopleuron. Propodeum with many setae and two carinae forming a plate not protruding (Fig. 2f).

Forewing: Longer than body, 1.5 times as long as mesosoma and metasoma together (Fig. 2a). Covered with dense pubescence; marginal setae present. Partially open radial cell, 2.1 times longer than wide. R1 short, slightly curved at the upper edge; Rs long and curved (Fig. 2c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: England (Kieffer 1902a: 11; Fergusson 1986: 18); France (Kieffer 1904a: 600); Netherlands (Evenhuis 1976: 140); and Sweden (Ringsjön and Skåne) (Thomson 1862: 410).

Distribution to be confirmed: Germany (Hübner *et al.* 2002: 508); Hungary (Fülöp *et al.* 2010: 55); Iran (Rakhshani *et al.* 2001: 42; Rakhshani *et al.* 2004: 3) and Scotland (Cameron 1886: 87)

Hosts confirmed: *Tuberculoides annulatus* on *Quercus* spp.; *Pterocallis alni* on *Alnus glutinosa*; *Myzocallis coryli* on *Corylus avellana* and *Trioxys pallidus* (according to Evenhuis 1976: 140). *Tuberculoides* sp., *Pterocallis* sp., *Myzocallis* sp. through *Trioxys* sp.; *Drepanosiphum* sp. through *Aphelinus* sp. (according to Fergusson 1986: 18).

Hosts to be confirmed: *Aphis tiliae* (according to Evenhuis & Barbotin 1987: 214). *Eucalpterus tiliae* on *Tilia cordata* through *Trioxys pallidus* (according to Hübner *et al.* 2002: 508).

Studied material

Type material of *Allotria citripes* Thomson, Lectotype ♀ designated by Evenhuis (1976: 140) (deposited in MZLU) with the following labels: "1972, 38" (green label), "lectotype H. H. Evenhuis" (orange la-

bel), "*Alloxysta citripes* (Thomson) det. H. H. Evenhuis 1976", "1984, 407" (green label), "ZML. 2011 071" (green label).

Additional material (1♀). "Bgs".

Comments

Alloxysta citripes (Thomson) is represented by three specimens (1 male and 2 females) in Thomson's collection. One of them (female) was designated as the lectotype by Evenhuis (1976: 140). The other female is in a very bad condition, only the head and mesosoma being preserved, and the locality does not match with the original description so it cannot be considered as a paralectotype. The male specimen, established as a paralectotype by Evenhuis, is totally different to *A. citripes* with its radial cell longer and completely open, and the propodeal carinae straight and not forming a plate. This male cannot be considered as a paralectotype of *A. citripes*. It may be for these reasons that Evenhuis added the comment "wrongly associated" in his label. We therefore consider this specimen as undetermined with the following labels: "Båtd", "♂", "citripes" (handwritten), "paralectotype H. H. Evenhuis (orange label), "*Allotria citripes* Thomson (wrongly associated) det. H. H. Evenhuis 1976".

Alloxysta consobrina (Zetterstedt, 1838)

Alloxysta fuscicornis (Hartig, 1841) **n. syn.**

Combinations of *Cynips consobrina* Zetterstedt, 1838: 410. *Allotria* (*Allotria*) *consobrina* (Zetterstedt) Dalla Torre & Kieffer, 1902: 41; *Charips* (*Charips*) *consobrinus* (Zetterstedt) Dalla Torre & Kieffer, 1910: 288; *Alloxysta consobrina* (Zetterstedt) Forshage (pers. comm).

Studied material

Type material of *Cynips consobrina* Zetterstedt, Lectotype ♀ here designated (deposited in MZLU) with the following labels: "C. Consobrina. ♀. Kengis" (handwritten), "Lectotype *Cynips consobrina* Zetterstedt, 1838 ♀ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta fuscicornis* (Hartig, 1841) ♀ M. Ferrer-Suay & J. Pujade-Villar det. 2011", "ZML. 2011 075" (green label).

Comments

After studying type material of *Cynips consobrina* it has been determined to be the same



Figure 3. *Alloxysta crassicornis* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) propodeum; f) pronotum; g) body.

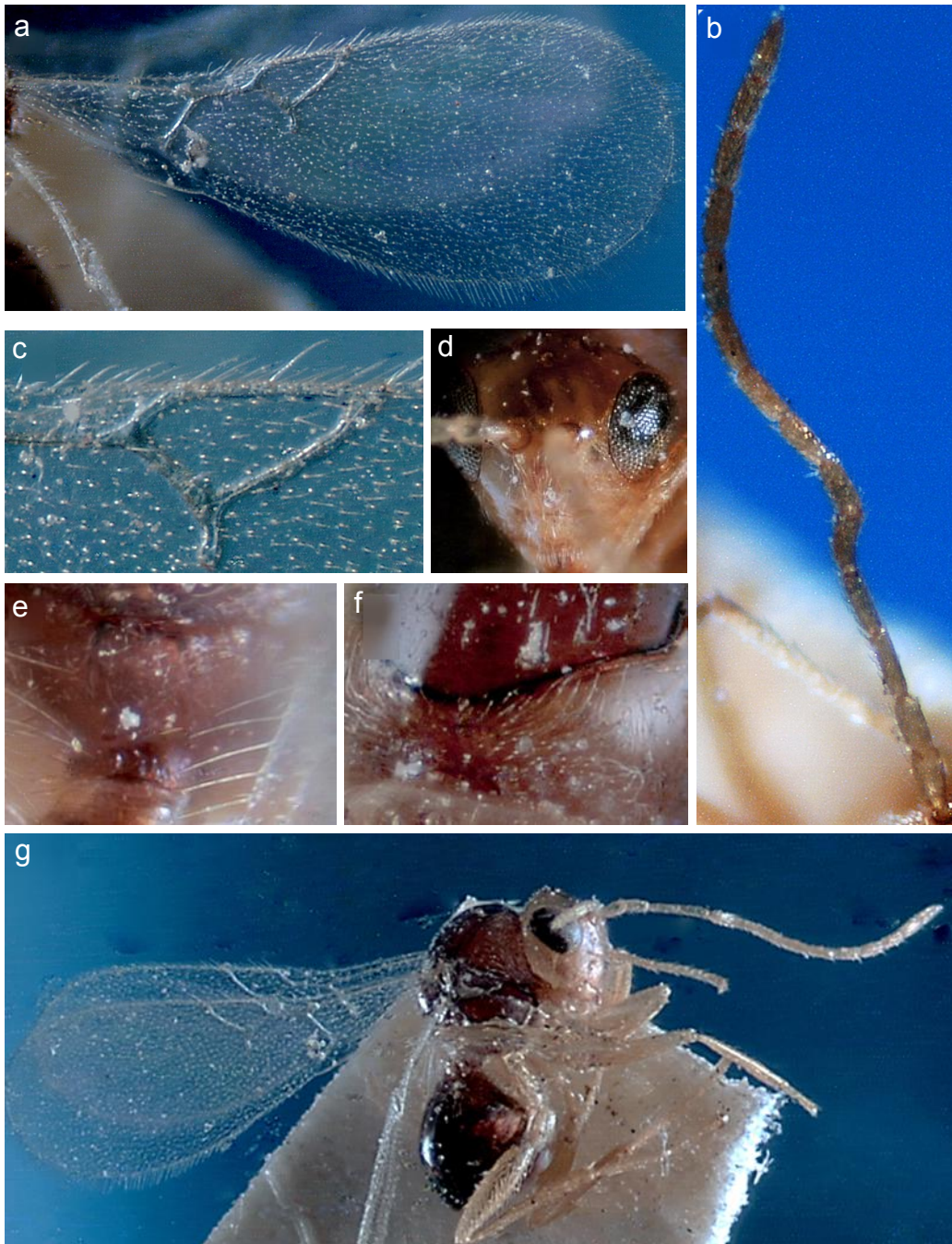


Figure 4. *Alloxysta fracticornis* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) propodeum; f) pronotum; g) body.

species as *Alloxysta fuscicornis* (Hartig, 1841). *Alloxysta fuscicornis* is a cosmopolitan species widely cited by different authors in many countries over many years. However, according to the principle of priority of the ICZN the valid name of *A. fuscicornis* must now be *A. consobrina*. According to Dalla Torre & Kieffer (1902:41), Dahlbom (1842) transferred *Cynips consobrina* (Zetterstedt) to *Allotria* genus, but this is apparently not in fact the case.

Alloxysta crassicornis (Thomson, 1862)

(Fig. 3)

Combinations of *Allotria crassicornis* Thomson, 1862: 407. *Allotria (Allotria) crassicornis* Thomson; Dalla Torre & Kieffer, 1902: 40; *Charips (Charips) crassicornis* (Thomson) Dalla Torre & Kieffer, 1910: 281; *Charips (Charips) versicolor* (Kieffer) Dalla Torre & Kieffer, 1910: 287; *Alloxysta crassicornis* (Thomson) Hellén, 1963: 19.

Diagnosis: *Alloxysta crassicornis* is characterized as having a closed radial cell, pronotal carinae present, propodeal carinae forming a plate, and F1 subequal to pedicel. According to these features *A. crassicornis* is very similar to *A. arcuata* (Kieffer, 1902) but they can be differentiated by the relative proportions of the flagellomeres: F2-F4 subequal in length in *A. crassicornis* (Fig. 3b), while F2 subequal to F3, and F3 shorter than F4 in *A. arcuata*; and by the size of the radial cell being 2.6 times longer than wide in *A. crassicornis* (Fig. 3c) the ratio being 2.3 in *A. arcuata*.

Redescription

Coloration: Head yellow, mesosoma and metasoma brown (posterior part of metasoma yellowish). Scape, pedicel, and F1-F3 yellow; F4-F12 dark yellow. Legs yellow and veins yellowish, nearly transparent.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below and between toruli, without setae above toruli. With very few or without setae on vertex and with many setae on face. Transfacial line 1.1 times height of compound eye. Malar space 0.4 times height of compound eye (Fig. 3d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F2

smooth and thinner than remaining flagellomeres, F3-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 2.2; F1, 2.7; F2, 1.9; F3, 1.8; F4, 1.8. Pedicel subequal to F1; F1, 1.2 times longer than F2; F2-F4 subequal in length; F4-F11 subequal in length, width and shape (Fig. 3b). Male unknown.

Mesosoma: Pronotum covered with many setae, these less densely covering the posterodorsal margins and central region; with two thick and long carinae present and clearly visible (Fig. 3f). Mesoscutum smooth and shiny, round in dorsal view with scattered setae most abundant on lateral/anterior margins. Scutellum smooth and shiny with scattered setae most abundant on apex. Height of mesopleural triangle along anterior margin 1.2 times height of mesopleuron. Propodeum covered with abundant pubescence; two propodeal carinae present forming a plate, with few setae on upper part and with clearly curved sides (Fig. 3e).

Forewing: Longer than body (Fig. 3a). Covered with dense pubescence; marginal setae present. Closed radial cell, 2.6 times longer than wide. R1 short and straight; Rs long and curved (Fig. 3c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: Finland (Hellén 1963: 20); France (Kieffer 1904a: 599) and Sweden (Skåne) (Thomson 1862: 407).

Distribution to be confirmed: Romania (Ionescu 1969: 260)

Hosts: unknown.

Studied material

Type material of *Allotria crassicornis* Thomson, **Lectotype** ♀ here designated (deposited in MZLU) with the following labels: "Esperöd 12 lund. 38.", "89.", "♂", "♀", "crassicornis T-2" (gray label, handwritten), "crassicornis" (handwritten), "Lectotype *Allotria crassicornis* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta crassicornis* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011", "ZML.2011 062" (green label).

Additional material (1♀). "Ld", "*Alloxysta crassicornis* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011".

Comments

Alloxysta crassicornis (Thomson) is represented by two specimens (females) in Thomson's collection. According to the original description and labels, we designate one of them as the lectotype. The other specimen cannot be considered as a paralectotype because the locality does not match with the original description.

***Alloxysta fracticornis* (Thomson, 1862)**

(Fig. 4)

Combinations of *Allotria fracticornis* Thomson, 1862: 408. *Allotria (Allotria) fracticornis* Thomson: Dalla Torre & Kieffer, 1902: 40; *Charips (Charips) fracticornis* (Thomson) Dalla Torre & Kieffer, 1910: 281; *Alloxysta fracticornis* (Thomson) Andrews, 1978: 83.

Diagnosis: *Alloxysta fracticornis* is characterized by having a closed radial cell, lacking pronotal carinae, having two propodeal carinae joining at the base, F1 slightly longer than pedicel, F1-F3 subequal in length in both male and female and F3 very curved in male. There is no other known *Alloxysta* species closely related.

Re-description

Coloration: Head yellow, mesosoma and metasoma brown. All antennomeres yellow, gradually darkening. Legs yellow and veins yellowish, almost transparent.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below, between, and few above toruli. With very few or without setae on vertex and with many setae on face. Transfacial line 1.1 times height of compound eye. Malar space 0.7 times height of compound eye (Fig. 4d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F2 smooth and thinner than remaining flagellomeres, F3-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 2.3; F1, 4.0; F2, 4.0; F3, 2.5; F4, 3.0. F1, 1.1 times longer than pedicel; F1-F3 subequal in length; F4, 1.2 times longer than F3; F4-F12 subequal in length, width and shape. Male: 14-segmented, filiform. All antennomeres with sparse setae. F1-F2 smooth and thinner than remaining flagellomeres, F3-F11 with rhinaria and club-

shaped. Length to width ratios are: Pedicel, 2.4; F1, 3.5; F2, 2.9; F3, 2.2; F4, 2.0. F1, 1.1 times longer than pedicel; F1-F3 subequal in length; F3, 1.2 times longer than F4; F4-F12 subequal in length, width and shape (Fig. 4b).

Mesosoma: Pronotum covered with many setae, these less densely covering the posterodorsal margins and central region; lacking carinae (Fig. 4f). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny with many setae, these most abundant on margins and apex. Height of mesopleural triangle along anterior margin 1.6 times height of mesopleuron. Propodeum with few scattered setae; two propodeal carinae parallel and straight, joining at the base (Fig. 4e).

Forewing: Longer than body, 1.5 times longer than mesosoma and metasoma together (Fig. 4a). Covered with dense pubescence; marginal setae present. Closed radial cell, 2.2 times longer than wide R1 short and straight; Rs long and straight, slightly curved at the upper edge (Fig. 4c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: Sweden (Gottland) (Thomson 1862: 408).

Distribution to be confirmed: Austria (Andrews 1978: 83); Poland (Kierych 1979: 14) and Romania (Ionescu 1969: 251).

Hosts: unknown.

Studied material

Type material of *Allotria fracticornis* Thomson, Lectotype ♂ here designated (deposited in MZLU) with the following labels: "fracticornis" (grey label, handwritten), "fracticornis" (handwritten), "Lectotype *Allotria fracticornis* Thomson, 1862 ♂ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta fracticornis* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011", "ZML.2011 063" (green label).

Comments: *Alloxysta fracticornis* (Thomson) is represented only by one specimen (male) in Thomson's collection. According to the original description and labels, we consider this specimen as the lectotype.

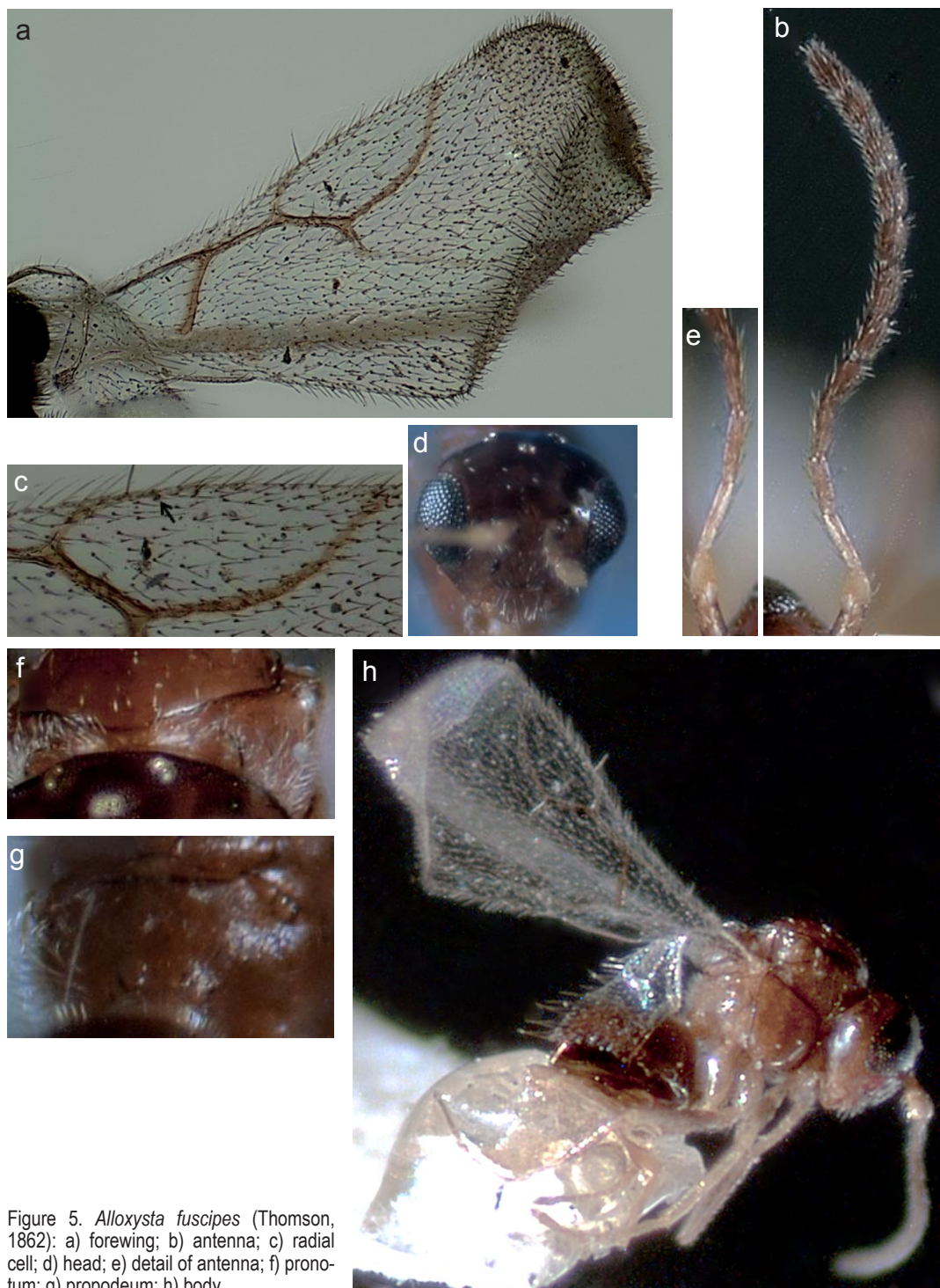


Figure 5. *Alloxysta fuscipes* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) detail of antenna; f) pronotum; g) propodeum; h) body.

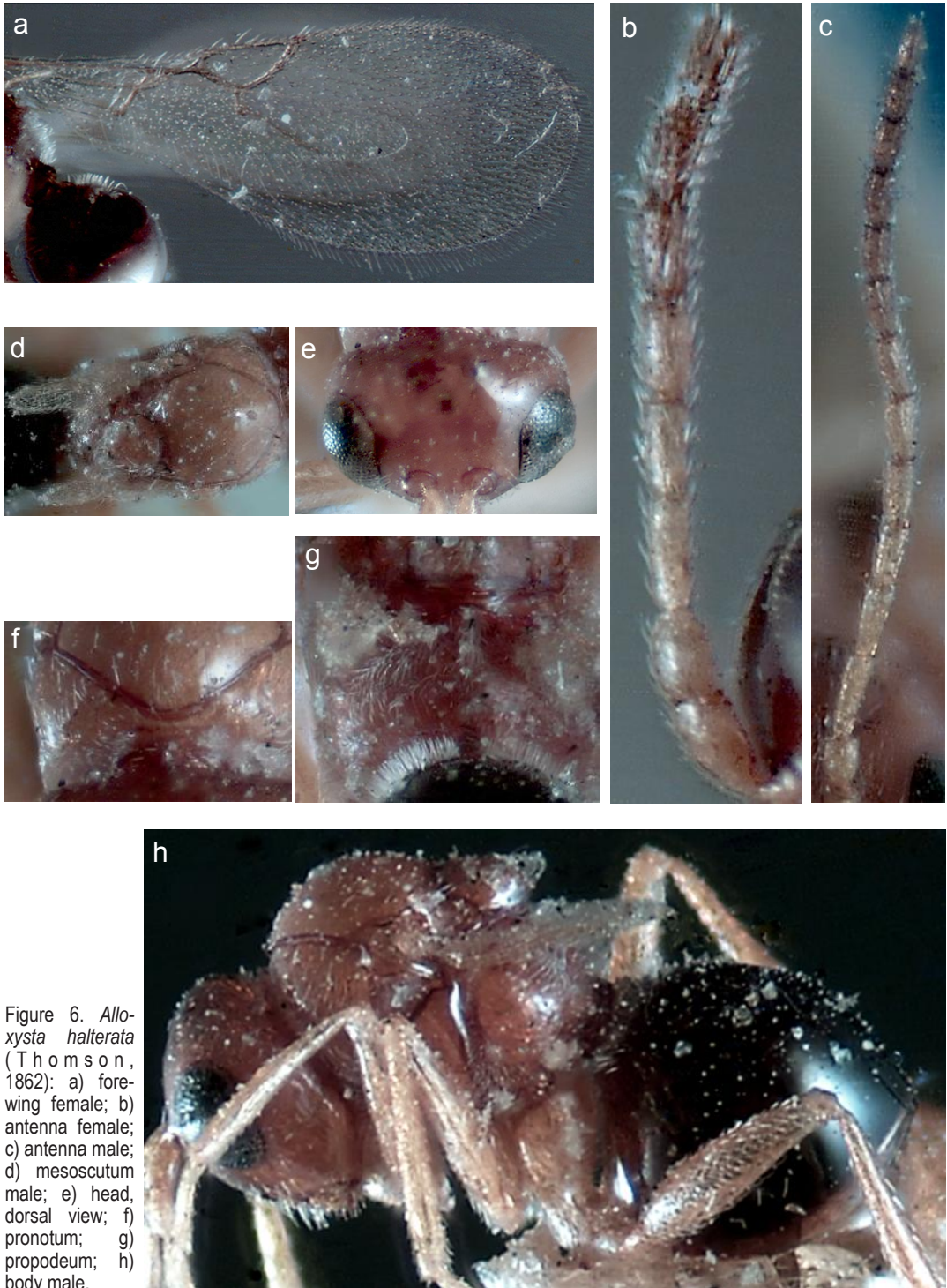


Figure 6. *Alloxysta halterata* (Thomson, 1862): a) forewing female; b) antenna female; c) antenna male; d) mesoscutum male; e) head, dorsal view; f) pronotum; g) propodeum; h) body male.

***Alloxysta fuscipes* (Thomson, 1862)**

(Fig. 5)

Combinations of *Allotria fuscipes* Thomson, 1862: 410. *Dilyta fuscipes* (Thomson) Kieffer, 1900: 114; *Alloxysta (Alloxysta) fuscipes* (Thomson) Dalla Torre & Kieffer, 1902: 38; *Alloxysta fuscipes* (Thomson) Hellén, 1931: 4.

Diagnosis: *Alloxysta fuscipes* is characterized by having the radial cell partially open, pronotal carinae present, rhinaria and club-shaped flagellomeres beginning at F4, and lacking propodeal carinae. No other known *Alloxysta* species is closely related.

Re-description

Coloration: Head, mesosoma and metasoma brown. Scape and F3-F11 yellowish brown; pedicel and F1-F2 yellow. Legs yellow and veins yellowish, almost transparent.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below and between toruli, but without setae above toruli. Without setae on vertex and with many setae on face. Transfacial line 1.3 times height of compound eye. Malar space 0.4 times height of compound eye (Fig. 5d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 1.8; F1, 4.0; F2, 3.3; F3, 3.1; F4, 2.0. F1, 1.6 times longer than pedicel; F1, 1.1 times shorter than F2; F2-F11 subequal in length, width and shape (Figs 5b, e). Male: 14-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. F2 and F3 curved. F1 longer than pedicel; F1 shorter than F2; F2 longer than F3; F3 longer than F4; F4-F12 subequal in length, width and shape.

Mesosoma: Pronotum with many setae, these less densely covering the posterodorsal margins and central region; with two thick carinae clearly visible under pubescence (Fig. 5f). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny with scattered setae, these most abundant on apex. Height of mesopleural triangle along anterior margin 1.3 times height of mesopleu-

ron. Propodeum covered by many setae; lacking carinae (Fig. 5g).

Forewing: Longer than body, (Fig. 5a). Covered with dense pubescence; marginal setae present. Partially open radial cell, 2.9 times as long as wide. R1 short, slightly curved at the upper edge; Rs long and curved (Fig. 5c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: Austria, Finland, Lapland and Russia (Hellén 1963: 13); Iceland (Hellén 1931: 4) and Sweden (Råby, Lund) (Thomson 1862: 410).

Distribution to be confirmed: England (Andrews 1978: 83) and Scotland (Cameron 1886: 88).

Hosts to be confirmed: *Aphis* sp. on *Salix aurita* (according to Andrews 1978: 83).

Studied material

Type material of *Allotria fuscipes* Thomson, Lectotype ♀ here designated (deposited in MZLU) with the following labels: “L-d”, “fuscipes” (handwritten), “1872, 40”, “Lectotype *Allotria fuscipes* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta fuscipes* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”, “ZML. 2011 064” (green label). **Paralectotypes** 2♀ (deposited in MZLU) with the following labels “Lund”, “1972, 39”, “Paralectotype *Allotria fuscipes* Thomson, 1862 ♀” (red label), “*Alloxysta fuscipes* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”: 1♀. “Råby, 8/9. L”, (handwritten), “1972, 41”, “Paralectotype *Allotria fuscipes* Thomson, 1862 ♀” (red label), “*Alloxysta fuscipes* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”: 1♀.

Additional material (6♀ & 2♂). “Ld 8/6”, (handwritten): 1♀. “L-d”: 2♀. “illegible” (Roy Danielsson pers. comm): 1♀. “L-d”: 1♀. “Hg”, (purple label), “*Alloxysta fuscipes* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”: 1♀. “Wit”, “*Alloxysta fuscipes* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011”: 1♂. “Hg”, (purple label), “*Alloxysta fuscipes* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011”: 1♂.

Comments

Alloxysta fuscipes (Thomson) is represented by eleven specimens (2 males and 9 females) in Thomson’s collection, but only six belong to this species. We designate one of these six specimens as the lectotype (female) because it

matches the original description and locality, and has a label handwritten by Thomson. Another two specimens (females) were established as paralectotypes because they match the original description and locality. Three were determined as *A. fuscipes* (Thomson) but they cannot be paralectotypes because the sex or locality does not match the original description. The other specimens were discarded because they do not correspond to this species, according to morphological characters, or because they were glued in a position that prevents inspection of important anatomical features.

Alloxysta halterata (Thomson, 1862)

(Fig. 6)

Combinations of *Allotria halterata* Thomson, 1862: 410. *Pezophycta halterata* (Thomson) Kieffer, 1900: 114; *Alloxysta halterata* (Thomson) Hellén, 1963: 20.

Diagnosis: *Alloxysta halterata* is a species characterized by the male being brachypterous with wings not reaching or reaching the beginning of metasoma, and the female with wings longer than body length. This species has pronotal carinae, lacks propodeal carinae, and the radial cell is not evident in the forewing. *Alloxysta halterata* is easily differentiated from the other known brachypterous species of *Alloxysta*, *A. apteroidea* (Hellén, 1963), *A. brachyptera* (Hartig, 1840) and *A. pedestris* (Curtis, 1838), because these species lack pronotal carinae, which are present in *A. halterata*.

Re-description

Coloration: Head dark yellow, mesosoma yellow and metasoma yellowish brown. Scape, pedicel, F1-F4 yellow; F5-F12 dark yellow. Legs yellowish.

Head: Transversely ovate, smooth and shiny, wider than high in front view. With setae present below and between toruli, and without setae above toruli. With few or without setae on vertex and with many setae on face. Transfacial line 1.1 times height of compound eye. Malar space 0.5 times height of compound eye (Fig. 6e).

Antenna: Female: 13-segmented, filiform. All antennomeres covered with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres; F4-F11 with rhinaria and club-

shaped. Length to width ratios are: Pedicel, 1.5; F1, 3.2; F2, 2.5; F3, 2.3; F4, 1.9. F1, 1.2 times longer than pedicel; F1-F3 subequal in length; F3, 1.1 times longer than F4; F4-F11 subequal in length, width and shape (Fig. 6b) Male: 14-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres; F4-F12 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 1.5; F1, 3.3; F2, 2.7; F3, 2.6; F4, 2.3. F1, 1.6 times longer than pedicel; F1, 1.2 times longer than F2; F2-F12 subequal in length, width and shape (Fig. 6c).

Mesosoma: Pronotum with setae, these less abundant on centre; with two thick carinae, dark brown, clearly visible (Fig. 6f). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny covered by setae, these most abundant on apex. Propodeum with abundant pubescence, lacking carinae (Fig. 6g).

Forewing: Longer than body in female, 1.7 times as long as mesosoma and metasoma together. Covered with dense pubescence; marginal setae present. Radial cell closed, 2.4 times longer than wide (Fig. 6a). Shorter than body in male, 3.1 times shorter than mesosoma and metasoma together (Fig. 6d) and without radial cell visible.

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: England (Hellén 1963: 20); Finland (Hellén 1963: 20) and Sweden (Ringsjön and Skåne) (Thomson 1862: 410).

Distribution to be confirmed: England (Müller *et al.* 1999: 346); Germany (Hübner *et al.* 2002: 507) and Scotland (Cameron 1886: 88).

Hosts to be confirmed: *Microlophium carnosum* and *Acyrtosiphon pisum* through *Aphidius* sp. and *Praon* sp. (according to Müller *et al.* 1999: 352); *Acyrtosiphon pisum* through *Aphidius ervi* on *Trifolium pratense* (according to Hübner *et al.* 2002: 508).

Studied material

Type material of *Allotria halterata* Thomson, Lectotype ♂ here designated (deposited in MZLU) with

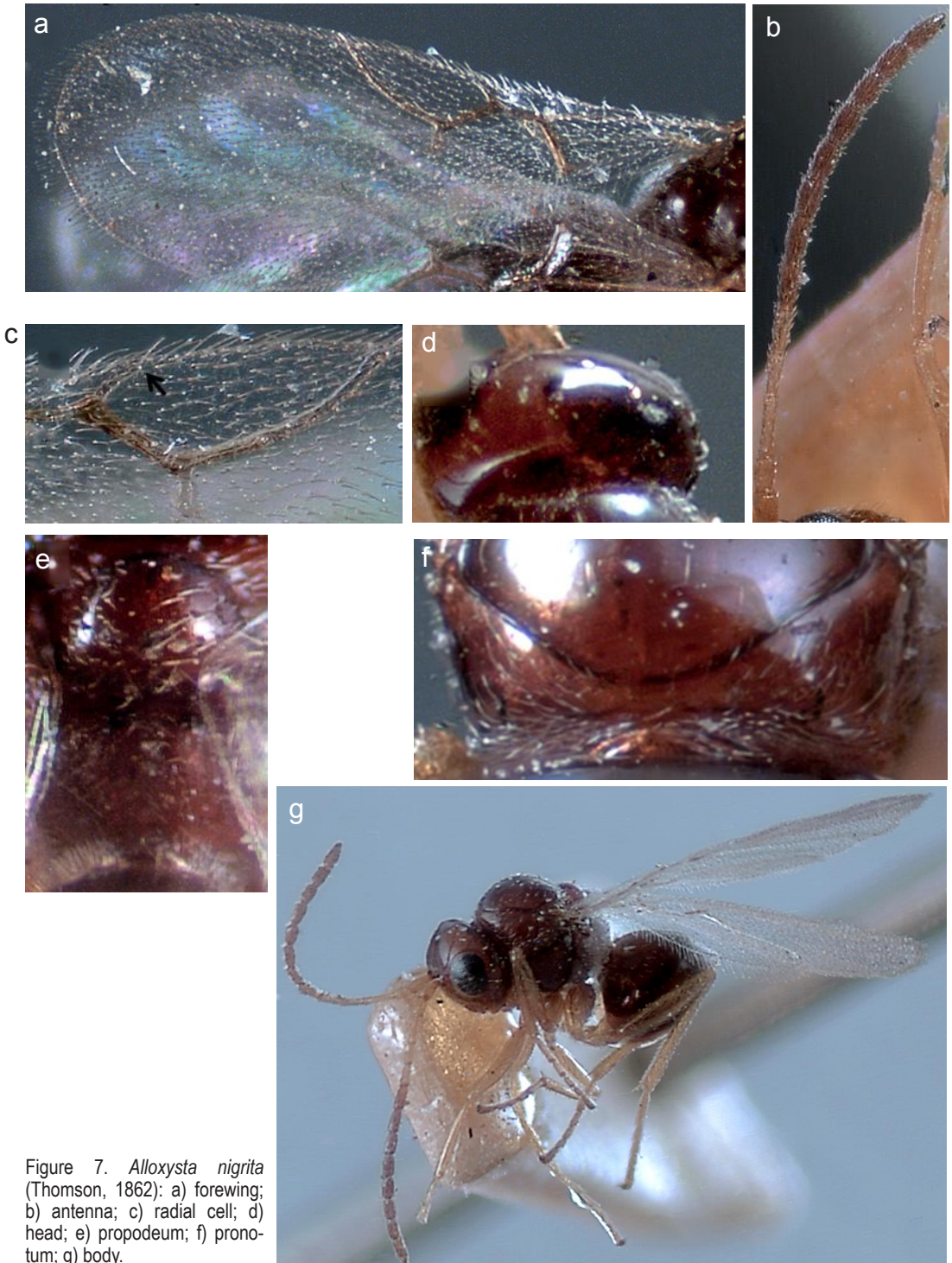


Figure 7. *Alloxysta nigrita* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) head; e) propodeum; f) pronotum; g) body.

the following labels: "1969, 97" (green label), "1984, 408" (green label), "sintype *A. halterata* Thomson, det. N.D.M. Fergusson, 1984", "ZML 2000, 002" (green label), "Lectotype *Allotria halterata* Thomson, 1862 ♂ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta halterata* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011".

Additional material (3♂ & 7♀). "Yddinge", "ZML 2000, 003" (green label), "*Alloxysta halterata* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011: 1♂. "Hbg.", (handwritten), "halterata" (handwritten), *Alloxysta halterata* (Thomson, 1862) ♂♀ M. Ferrer-Suay det. 2011: 3♂ & 7♀.

Comments

Alloxysta halterata (Thomson) is represented by 12 specimens (5 males and 7 females) in Thomson's collection. One male is here designated as the lectotype. According to Thomson's original description the lectotype is a female, but in his description he refers to *alis halterstis*, which is a diagnostic character found only in the males of this species; so Thomson was confused when he established the sex in his description. For this reason we designated the male established as a syntype by Fergusson as the lectotype of this species. There are four other males but they cannot be considered as paralectotypes because they do not match the locality in the original description. Only two females belong to this species. Five females are discarded because they belong to different species, one is *P. villosa* and another is *A. victrix*, the specific placement of the other three is not known.

Alloxysta nigrita (Thomson, 1862)

(Fig. 7)

Combinations of *Allotria nigrita* Thomson, 1862: 409. *Dilyta nigrita* (Thomson) Kieffer, 1900: 114; *Alloxysta* (*Alloxysta*) *nigrita* (Thomson) Dalla Torre & Kieffer, 1902: 39; *Alloxysta nigrita* (Thomson) Andrews, 1978: 87.

Diagnosis: *Alloxysta nigrita* is characterized by having the radial cell completely open, pronotal carinae present, lacking propodeal carinae, rhinaria beginning in F4, and F1 longer than pedicel. *Alloxysta nigrita* is similar to *A. brachycera* (Hellén, 1963) but these two species can be differentiated by comparing the relative lengths of flagellomeres: F2 shorter than F3 in

A. nigrita (Fig. 7b) but F2 longer than F3 in *A. brachycera*; and by the size of the radial cell: 2.9 times longer than wide in *A. nigrita* (Fig. 7c) while the ratio is 2.7 in *A. brachycera*.

Re-description

Coloration: Head, mesosoma and metasoma dark brown. Scape, pedicel, F1-F3 yellow; F4-F1 yellowish brown. Legs and veins yellow.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below and between toruli, without setae above toruli. With very few or without setae on vertex and with many setae on face (Fig. 7d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 1.7; F1, 4.4; F2, 3.2; F3, 3.2; F4, 2.1. F1, 1.7 times longer than pedicel; F1, 1.5 times longer than F2; F3, 1.2 times longer than F2; F3, 1.3 times longer than F4; F4-F12 subequal in length, width and shape (Fig. 7b). Male: 14-segmented, filiform. All antennomeres with sparse setae. F1-F3 smooth and thinner than remaining flagellomeres, F4-F11 with rhinaria and club-shaped. F1 longer than pedicel; F1 subequal to F2; F2 longer or subequal to F3; F3 shorter than F4; F4-F12 subequal in length, width and shape.

Mesosoma: Pronotum with many setae, these less densely covering the posterodorsal margins and central region; with two carinae clearly visible under pubescence (Fig. 7f). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny with scattered setae, these most abundant on margins and apex. Propodeum with many setae; two propodeal carinae parallel and straight (very thin, sometimes difficult to see) (Fig. 7e).

Forewing: Longer than body, 1.5 times as long as mesosoma and metasoma together (Fig. 7a). Covered with dense pubescence; marginal setae present. Open radial cell, 2.9 times as long as wide. R1 short, slightly curved at the upper edge; Rs long and curved (Fig. 7c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: France (Kieffer, 1902b: 44) and Sweden (Lund) (Thomson, 1862: 409).

Distribution to be confirmed: Bulgaria and Balkan peninsula (Vasileva-Sumnalieva 1976: 23); Hungary (Fülöp *et al.* 2010: 55); Israel (Argaman 1988: 114) and Romania (Barnea *et al.* 2005: 87).

Hosts to be confirmed: *Aphis* sp. on *Sonchus asper* (according to Dalla Torre & Kieffer 1910: 262); *Drepanosiphum platanoidis* through *Monoclonus (Falciconus) pseudoplatani* (according to Vasileva-Sumnalieva 1976: 24).

Studied material

Type material of *Allotria nigrita* Thomson, Lectotype ♀ here designated (deposited in MZLU) with the following labels: “L-d”, “Lectotype *Allotria nigrita* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta nigrita* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”, “ZML. 2011 065” (green label). **Paralectotype** ♀ (deposited in MZLU) with the following labels: “Lund”, “Paralectotype *Allotria nigrita* Thomson, 1862 ♀” (red label), “*Alloxysta nigrita* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”. **Additional material** (3♀ & 1♂). “L-d”: 1♀. “.gh” (handwritten), “*Alloxysta nigrita* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011: 1♀. “Hbg”, (handwritten): 1♀. “Fsg, 1816”, (handwritten), “nigrita” (handwritten), “*Alloxysta nigrita* (Thomson, 1862) ♂ M. Ferrer-Suay det. 2011: 1♂.

Comments

Alloxysta nigrita (Thomson) is represented by six specimens (1 male and 5 females) in Thomson’s collection, but only four correspond to *A. nigrita*. One female is here designated as the lectotype because it matches the original description and locality, and it is in better condition than the others. One female was established as a paralectotype. The male and one female belong to *A. nigrita*; the male is disregarded as a paralectotype because the description of *A. nigrita* was based only on females; the female is disregarded because it was collected in a different locality from the original description. The other two females do not belong to *A. nigrita*: in one the proportions of its flagellomeres do not match; the other is brachypterous.

Alloxysta pallidicornis (Curtis, 1838)

Allotria basalis Thomson, 1862. Synonymized by Evenhuis & Kiriak (1985: 18).

Cynips minuta Zetterstedt, 1838. Synonymized by Evenhuis & Kiriak (1985: 18).

Combinations of *Cynips minuta* Zetterstedt, 1838: 410. *Allotria (Allotria) minuta* (Zetterstedt) Dalla Torre & Kieffer, 1902: 40.

Studied material

Type material of *Allotria basalis* Thomson, Lectotype ♀ here designated (deposited in MZLU) with the following labels: “Esp”, “basalis” (handwritten), “Lectotype *Allotria basalis* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta pallidicornis* (Curtis, 1838) ♀ M. Ferrer-Suay det. 2011”, “ZML. 2011 070” (green label). **Paralectotype** ♀ (deposited in MZLU) with the following labels: “Scan”, “Paralectotype *Allotria basalis* Thomson, 1862 ♀” (red label), “*Alloxysta pallidicornis* (Curtis, 1838) ♀ M. Ferrer-Suay det. 2011”.

Type material of *Cynips minuta* Zetterstedt, Lectotype ♀ here designated (deposited in MZLU) with the following labels: “C. minuta ♀. Björkvik” (handwritten), “Lectotype *Cynips minuta* Zetterstedt, 1838 ♀ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta pallidicornis* (Curtis, 1838) ♀ M. Ferrer-Suay det. 2011”.

Additional material (1♀). “Ld”, “*Alloxysta pallidicornis* (Curtis, 1838) ♀ M. Ferrer-Suay det. 2011”.

Comments

Allotria basalis is represented in Thomson’s collection by three specimens (females). One of them is here designated as the lectotype because it matches the original description and has more label information. Another specimen was established as a paralectotype. The third specimen was discarded as a paralectotype because it does not match the locality of the original description. *Cynips minuta* Zetterstedt is represented by only one specimen (female) in Zetterstedt’s collection, and is here designated as the lectotype. All specimens of both species have been revised to check the validity of this synonymy.

***Alloxysta ramulifera* (Thomson, 1862)**

Allotria ramulifera Thomson, 1862: 407. Synonymized by Evenhuis (1982: 25) with *Xystus minutus* Hartig, 1840.

Combinations of *Allotria* (*Allotria*) *ramulifera* Thomson, 1862: 407. Dalla Torre & Kieffer, 1902: 40; *Charips* (*Charips*) *ramulifera* (Thomson) Dalla Torre & Kieffer, 1910: 281; *Alloxysta ramulifera* (Thomson) Hellén, 1963: 20.

Studied material

Type material of *Allotria ramulifera* Thomson, Lectotype ♀ designated by Evenhuis (1982: 25) (deposited in MZLU) with the following labels: "Åreskutan, 1840. 18.10" (handwritten), "All. ramulifera. n. ♀" (handwritten), "lectotype H.H. Evenhuis" (orange label), "Allotria ramulifera Thomson, det. H.H. Evenhuis, 1978", "ZML 2000, 007" (green label), "*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011".

Additional material (3♀) "Fsg.", (handwritten), "ZML 2000, 005" (green label), "*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011": 1♀. "Fsg.", (handwritten), "ZML 2000, 006" (green label), "*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011": 1♀. "Fsg.", (handwritten), "♀", "ramulifera" (handwritten), "ZML 2000, 006" (green label), "*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011": 1♀.

Comments

Alloxysta ramulifera (Thomson) is represented by four specimens (females) in Thomson's collection. One of them was designated as the lectotype by Evenhuis (1982). The other three specimens are conspecific but they cannot be paralectotypes because the locality does not match the original description. *Alloxysta ramulifera* was synonymized with *Alloxysta minuta* (Hartig) by Evenhuis (1982). Evenhuis & Barbotin (1987) proposed *A. ramulifera* as a valid name to replace the name *A. minuta* due to homonymy with *Alloxysta minuta* (Zetterstedt, 1838).

***Alloxysta victrix* (Westwood, 1833)**

Allotria macrocera Thomson, 1877. Synonymized by Dalla Torre & Kieffer (1910: 285).

Cynips ruficeps Zetterstedt, 1838. Synonymized by Giraud (1860: 127).

Combinations *Allotria macrocera* Thomson, 1877:

814. *Allotria* (*Allotria*) *macrocera* Thomson, 1877: 814; *Allotria macrocera* Thomson: Dalla Torre, 1893: 33.

Studied material

Type material of *Allotria* (*Allotria*) *macrocera* Thomson, Lectotype ♀ designated by Evenhuis (1982: 23) (deposited in MZLU) with the following labels: "Lhn", "macrocera" (handwritten), "lectotype H. H. Evenhuis" (orange label), "Allotria macrocera Thomson, det. H. H. Evenhuis, 1978", "1984, 411" (green label), "*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011", "ZML. 2011 072" (green label). **Paralectotype** ♀ (deposited in MZLU) with the following labels: "Lhn", "macrocera" (handwritten), "Paralectotype *Allotria* (*Allotria*) *macrocera* Thomson, 1877 ♀" (red label), "*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011".

Type material of *Cynips ruficeps* Zetterstedt, Lectotype ♀ here designated (deposited in MZLU) with the following labels: "C. ruficeps. ♀. Wittangi" (handwritten), "Lectotype *Cynips ruficeps* Zetterstedt, 1838 ♀ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011". **Paralectotype** ♂ (deposited in MZLU) with the following labels: "C. ruficeps. ♂. Björkvik" (handwritten), "Paralectotype *Cynips ruficeps* Zetterstedt, 1838 ♂" (red label), "*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011".

Additional material (1♀ & 2♂). "Dala. Tm ne", "*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011": 1♀. "pho", "*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011": 1♂. "♂", "*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011": 1♂.

Comments

Alloxysta macrocera (Thomson) is represented by five specimens (3 females and 2 males) in Thomson's collection. The pin having the label of the lectotype designation holds two specimens (2 females). Evenhuis (1982: 23) designated the top-most specimen on the pin as the lectotype; the second is a paralectotype. The third female, on another pin, is the same species but it cannot be considered a paralectotype because there is not enough information on the label. The two males belong to the same species but cannot be considered as paralectotypes because the description of this species was based on females. *Cynips ruficeps* Zetterstedt is represented by two specimens (a female and a male) in Zetterstedt's collection. In the original description



Figure 8. *Alloxysta xanthocera* (Thomson, 1862): a) forewing; b) antenna; c) radial cell; d) propodeum; e) pronotum; f) body.



Figure 9. *Alloxysta xanthopa* (Thomson, 1862): a) forewing; b) antennae; c) radial cell; d) head; e) propodeum; f) pronotum; g) body.

Zetterstedt described both the male and the female. However, because the male specimen is in a bad condition, we have designated the female as the lectotype and the male as a paralectotype. All specimens have been revised to check the validity of this synonymy.

Alloxysta xanthocera (Thomson, 1862)

(Fig. 8)

Combinations of *Allotria xanthocera* Thomson, 1862: 407. *Allotria (Allotria) xanthocera* Thomson: Dalla Torre & Kieffer, 1902: 41; *Charips (Charips) xanthocerus* (Thomson) Dalla Torre & Kieffer, 1910: 282; *Alloxysta xanthocera* (Thomson) Hellén, 1963: 18.

Diagnosis: *Alloxysta xanthocera* is characterized by having a closed radial cell, pronotal carinae present, propodeal carinae forming a wide plate with curved sides, and with rhinaria and club shape not beginning in the same flagellomere. No other known *Alloxysta* species is closely related.

Re-description

Coloration: Head yellow, mesosoma and metasoma dark brown. Antennae and legs yellow. Veins nearly transparent.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below and between toruli, without setae above toruli. Without setae on vertex and with many setae on face.

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1 thinner than remaining flagellomeres, F2 or F3-F11 club-shaped; F1-F11 with rhinaria. Length to width ratios are: Pedicel, 2.0; F1, 4.1; F2, 2.8; F3, 2.5; F4, 2.4. F1, 1.3 times longer than pedicel; F1, 1.2 times longer than F2; F2-F12 subequal in length, width and shape (Fig. 8b). Male unknown.

Mesosoma: Pronotum with many setae, less densely covering the posterodorsal margins and central region; with two carinae clearly visible under pubescence (Fig. 8e). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny with scattered setae, these most abundant on apex. Propodeum covered by many setae; two

propodeal carinae forming a wide plate with strongly curved sides (Fig. 8d).

Forewing: Longer than body, 1.6 times as long as mesosoma and metasoma together (Fig. 8a). Covered with dense pubescence; marginal setae present. Closed radial cell, 2.6 times longer than wide. R1 short, slightly curved at the upper edge; Rs long and curved (Fig. 8c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: Finland (Hellén 1963: 18) and Sweden (Lärketorp, Östergötland) (Thomson 1862: 407).

Distribution to be confirmed: Israel (Argaman 1988: 115) and Romania (Ionescu 1969: 262).

Hosts: unknown

Studied material

Type material of *Allotria xanthocera* Thomson, 1862: **Lectotype** ♀ here designated (deposited in MZLU) with the following labels: “xanthocera” (handwritten), “xanthocera” (handwritten), “Lectotype *Allotria xanthocera* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011” (red label), “*Alloxysta xanthocera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011”, “ZML. 2011 066” (green label).

Additional material (1♂). “hb” (handwritten), “♂”, “ZML. 2011 067” (green label), “*Alloxysta fuscicornis* (Hartig, 1841) ♂ M. Ferrer-Suay & J. Pujade-Villar det. 2011”.

Comments

Alloxysta xanthocera (Thomson) is represented in Thomson’s collection by two specimens (a male and a female). Only the female matches the original description, hence it is here designated as the lectotype. The male belongs to *Alloxysta fuscicornis* (Hartig).

Alloxysta xanthopa (Thomson, 1862)

(Fig. 9)

Combinations of *Allotria xanthopa* Thomson, 1862: 408. *Dilyta xanthopa* (Thomson) Kieffer, 1900: 114; *Alloxysta (Alloxysta) xanthopa* (Thomson) Dalla Torre & Kieffer, 1902: 39; *Alloxysta xanthopa* (Thomson) Andrews, 1978: 93.

Diagnosis: *Alloxysta xanthopa* is character-

ized by having the radial cell completely open, pronotal carinae present, propodeal carinae forming a plate, and rhinaria beginning in F3. No other known *Alloxysta* species is closely related.

Re-description

Coloration: Head yellowish brown, mesosoma and metasoma dark brown. Antennae yellow, legs and veins yellow.

Head: Transversely ovate, smooth and shiny, slightly wider than high in front view. With setae present below, between and above toruli. With very few setae on vertex and with many setae on face. Transfacial line 1.1 times height of compound eye. Malar space 0.3 times height of compound eye (Fig. 9d).

Antenna: Female: 13-segmented, filiform. All antennomeres with sparse setae. F1-F2 smooth and thinner than remaining flagellomeres, F3-F11 with rhinaria and club-shaped. Length to width ratios are: Pedicel, 2.0; F1, 2.9; F2, 3.0; F3, 2.8; F4, 2.6. F1, 1.2 times longer than pedicel; F1, 1.1 times longer than F2; F3, 1.1 times longer than F2; F3 subequal to F4; F4-F12 subequal in length, width and shape (Fig. 9b).

Mesosoma: Pronotum with many setae, these less densely covering the posterodorsal margins and central region; with two thick carinae clearly visible (Fig. 9f). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae on anterior margin. Scutellum smooth and shiny with scattered setae, these most abundant on lateral margins and apex. Height of mesopleural triangle along anterior margin 1.4 times height of mesopleuron. Propodeum covered by many setae; two propodeal carinae forming a wide plate with slightly curved sides (Fig. 9e).

Forewing: Longer than body, 1.4 times as long as mesosoma and metasoma together (Fig. 9a). Covered with dense pubescence; marginal setae present. Open radial cell, 2.4 times longer than wide. R1 short, slightly curved at the upper edge; Rs long and curved (Fig. 9c).

Metasoma: Anterior part with an incomplete ring of setae, glabrous at centre, wider laterally. Metasoma smooth and shiny, T3 and T4 clearly distinguished.

Distribution confirmed: Species known only from Sweden (Lärketorp, Östergötland) (Thomson 1862: 409).

Hosts: unknown.

Studied material

Type material of *Allotria xanthopa* Thomson, Lectotype ♀ here designated (deposited in MZLU) with the following labels: "C. frontalis ♂?", "xanthopa" (handwritten), "Lectotype *Allotria xanthopa* Thomson, 1862 ♀ desig. M. Ferrer-Suay 2011" (red label), "*Alloxysta xanthopa* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011", "ZML. 2011 068" (green label).

Additional material (1♀). "xanthopa Tom" (handwritten).

Comments

Alloxysta xanthopa (Thomson) is represented by two specimens (females) in Thomson's collection. Only one is in good condition and is here designated as the lectotype. The other female has a different locality according to the original description and because it is in a very bad condition, it was discarded as a paralectotype.

Phaenoglyphis villosa (Hartig, 1841)

Allotria picipes Thomson, 1862. Synonymized by Evenhuis & Barbotin (1977: 184).

Combinations *Allotria picipes* Thomson, 1862: 409. *Allotria (Auloxysta) picipes* Thomson: Thomson, 1877: 813; *Allotria (Bothrioxysta) picipes* Thomson: Dalla Torre & Kieffer, 1902: 40; *Charips (Bothrioxysta) picipes* (Thomson) Dalla Torre & Kieffer, 1910: 268; *Phaenoglyphis picipes* (Thomson) Hellén, 1958: 67; *Phaenoglyphis (Auloxysta) picipes* (Thomson) Hellén, 1963: 7; *Phaenoglyphis picipes* (Thomson) Andrews, 1978: 95.

Studied material

Type material of *Allotria picipes* Thomson, Lectotype ♀ designated by Evenhuis (1977: 186) (deposited in MZLU) with the following labels: "Fog", "picipes" (handwritten), "lectotype H. H. Evenhuis (orange label), *Allotria picipes* Thomson det H. H. Evenhuis 1977", "*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011", "ZML. 2011 073" (green label). **Paralectotypes** 2♀ (deposited in MZLU) with the following labels: "Lund", "Paralectotype *Allotria picipes* Thomson, 1862" (red label), "*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011": 1♀. "Lund", "1969, 95", "Paralecto-

type *Allotria piciceps* Thomson, 1862 ♀” (red label), “*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011”: 1 ♀.

Additional material (13 ♀ & 3 ♂). “Lhn”, “*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011”: 7 ♀. “Ld”, “♂”, “1969, 92”, “1972, 42”, “*Allotria piciceps* Thomson det. H. H. Evenhuis 1977”, “*Phaenoglyphis villosa* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011”: 1 ♂. “Ld 9/ 96”, “*Phaenoglyphis villosa* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011”: 1 ♂. “Ld”, “1969, 93”, “*Phaenoglyphis villosa* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011”: 1 ♂. “Hg”, “*Alloxysta victrix* (Wetwood, 1833) ♀ M. Ferrer-Suay det. 2011”: 1 ♀. “Ld”, “♂”, “1969, 94”: lost. “illegible”, “*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011”: 3 ♀ (three specimens in the same pin). “Hall”: 1 ♀. “Meg 8/80”: 1 ♀.

Comments

Allotria piciceps (Thomson) is represented by twenty specimens (17 females and 3 males) in Thomson’s collection, but only 14 belong to *Allotria piciceps*. One of them was designated as the lectotype by Evenhuis & Barbotin (1977: 186). Two females that match the original description and the locality were established as paralectotypes. Eight specimens are of the same species but they were discarded as paralectotypes because the locality does not match the original description. Three specimens were discarded as paralectotypes because they are of a different sex to that cited in the original description. Three specimens were discarded because they belong to *Alloxysta* (not *Phaenoglyphis*): one was determined as *Alloxysta victrix* (Westwood). The last specimen is lost. *Allotria piciceps* specimens have been revised and all belong to *P. villosa*, thus the synonymy proposed by Evenhuis & Barbotin is confirmed here.

Phaenoglyphis xanthochroa (Förster, 1869)

Allotria rufa Thomson, 1877. Synonymized by Cameron (1879: 23).

Combinations *Allotria rufa* Thomson, 1877: 812. *Allotria (Auloxysta) rufa* Thomson, 1877: 812.

Studied material

Type material of *Allotria (Auloxysta) rufa* Thomson, **Lectotype** ♀ designated by Evenhuis (1978:

170) (deposited in MZLU) with the following labels: “Hg”, “1972, 46”, “lectotype H. H. Evenhuis” (orange label), “*Allotria (Auloxysta) rufa* Thomson det. H. H. Evenhuis 1977”, “*Phaenoglyphis xanthochroa* Förster, 1869 ♀ M. Ferrer-Suay det. 2011”, “ZML. 2011 074” (green label). **Paralectotypes** 1 ♂ established by Evenhuis (1978: 170) (deposited in MZLU) with the following labels: “illegible”, “rufa” (handwritten), “1972, 47”, “paralectotype H. H. Evenhuis (orange label), “*Allotria (Auloxysta) rufa* Thomson det. H. H. Evenhuis 1977”, “*Phaenoglyphis xanthochroa* Förster, 1869 ♂ M. Ferrer-Suay det. 2011”. **Additional material** (2 ♀). “Lhn 8/46”, (handwritten), “*Phaenoglyphis xanthochroa* Förster, 1869 ♀ M. Ferrer-Suay det. 2011”: 1 ♀. “Boh. Skärg.”, “*Phaenoglyphis xanthochroa* Förster, 1869 ♀ M. Ferrer-Suay det. 2011”: 1 ♀.

Comments

Allotria rufa is represented in Thomson’s collection by four specimens (3 females and 1 male). One female was designated as the lectotype and one male as a paralectotype by Evenhuis (1978: 170). The other two females were discarded as paralectotypes because they do not match the locality of the original description. Specimens of *Allotria rufa* have been revised and all belong to *P. xanthochroa*, thus the synonymy proposed by Cameron is confirmed here.

Discussion

The chaotic status of the subfamily Charipinae is an important and obstructive problem requiring rectification in order that specimens might be correctly identified to species. The ecological importance of Charipinae has been demonstrated in a number of published papers, but it is regrettable that in these cases it has not been possible to determine the specific name of the organism reported in the study (Höller et al., 1993; Müller et al., 1999).

Ferrer-Suay et al. (2012) have recently published the worldwide Charipinae catalogue. This forms the baseline of our current knowledge of the Charipinae which has been determined from studies of the Charipinae type material at the University of Barcelona. The present paper is the first of a series of papers that focus on the study of the type material deposited in various international institutions. Other important collections are also being revised viz. those of

Hartig, Curtis, Cameron, Fergusson, Belizin and Ionescu. The value of this type of works is clear since it relies on the complete re-description of each valid species from type material.

The main aim of this type of study is to clarify the status of each Charipinae species and to give sufficient valid information that the boundaries between species might be established.

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