



Review of the Hartig type collection of *Alloxysta* (Hymenoptera: Figitidae: Charipinae) and other *Alloxysta* material deposited in the Zoologische Staatssammlung Museum (Munich)

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Abstract: Hartig's collection of *Alloxysta* species, deposited in the Zoologische Staatssammlung Museum (ZSM, Munich, Germany), is here reviewed. In total, 19 species and 144 specimens have been studied. Fourteen species, of the previous twenty-two, are now valid: *Alloxysta aperta* (Hartig, 1841), *A. brachyptera* (Hartig, 1840), *A. castanea* (Hartig, 1841), *A. circumscripta* (Hartig, 1841), *A. fuscicornis* (Hartig, 1841), *A. leunisia* (Hartig, 1841), *A. longipennis* (Hartig, 1841), *A. macrophadna* (Hartig, 1841), *A. melanogaster* (Hartig, 1840), *A. obscurata* (Hartig, 1840), *A. pilipennis* (Hartig, 1840), *A. postica* (Hartig, 1841), *A. minuta* (Hartig, 1840) and *A. rufiventris* (Hartig, 1840). These species are redescribed and their morphological features are illustrated in corresponding plates. *Alloxysta cursor* (Hartig, 1840) and *A. erythrothorax* (Hartig, 1840) are considered as 'nomen dubium'. Two new synonyms are here established among Hartig's species: *Alloxysta defecta* (Hartig, 1841) with *A. castanea* (Hartig, 1841) and *A. flavicornis* (Hartig, 1841) with *A. pilipennis* (Hartig, 1840). Additional material of *Alloxysta* deposited in this museum has been examined and new host records are here reported.

Key words: redescriptions, hyperparasitoids, synonyms, type material, ZSM

INTRODUCTION

Charipinae (Hymenoptera: Cynipoidea: Figitidae) are small wasps (0.8–2.0 mm), which are typically characterized by having a smooth and shiny body, and by being widely distributed around the world. The subfamilies Eucoilinae, Emargininae and Thrasorinae also include small figitids with a smooth shiny body. Eucoilinae differs from Charipinae having a scutellar cup or plate, a unique feature in the Cynipoidea. Emargininae differs from Charipinae having a deeply bilobed forewing, and most species having two faint semi-parallel scutellar dorsal carinae, slightly ovoid. *Thrasorus* (Thrasorinae) differs from Charipinae having the posterior dorsal surface of scutellum irregularly carinate, and having circumtorular impression and notauli.

Numerous species of Charipinae have been described, especially in the 19th century. Two of the most prolific authors are Hartig (1840, 1841) and Thomson (1862, 1877). Cameron (1879, 1883, 1886, 1889) also published several important contributions to this group. More recently, Belizin (1962, 1966, 1968, 1973) and Andrews (1978) expanded the knowledge of Charipinae for Russia and the Nearctic region, respectively. Menke & Evenhuis (1991) subsequently conducted a review of the Charipinae species in North America with some descriptions of new species and new combinations.

The taxonomy of this subfamily has been chaotic in the past. The early authors gave special attention to size and colouration of specimens, disregarding other important characters that are now considered as essential for species differentiation, namely: a) the proportion of the flagellomeres; b) the size and shape of the radial cell; c) the presence or absence of pronotal carinae; d) the presence or absence, size and shape of propodeal carinae.

Moreover, there are many described species which need to be revised in order to discard possible synonyms and establish their correct status.

Alloxysta Förster, 1869 is the most species-rich genus of Charipinae, comprising 111 species currently considered valid. Species of this genus are cosmopolitan and they are hyperparasitoids of Aphididae through Aphelinidae and Braconidae (Menke & Evenhuis 1991). The identification of the species is difficult due to very few diagnostic features useful to distinguish between them. As result, thorough revision of *Alloxysta* species is necessary studying all the type material deposited in different institutions around the world.

In this study, the *Alloxysta* type material of Hartig's collection and some other specimens of *Alloxysta* deposited in the Zoologische Staatssammlung (Munich, Germany) were reviewed. Hartig described 9 *Alloxysta* species in 1840 and 10 species in 1841. Evenhuis (1982) revised Hartig's type material and designated lectotypes. In our study, some specimens of type series are considered paralectotypes and all lectotypes are redescribed and illustrated. Two new synonyms among Hartig's species are established. Additional material of *Alloxysta* has been identified for better understanding of the distribution and biological traits of the species.

MATERIAL AND METHODS

The type material was studied in situ using a stereomicroscope (NIKON SMZ-1) at the Museum. The lectotype specimens were photographed using a Zeiss Discovery V8 compound microscope attached to an INFINITYX-21C digital camera. The program DeltaPix View-Pro AZ was used to process stacks of images (typically 20) taken at different focal planes into a single picture with extended focus. Electron microscope images (SEM) were taken with a Stereoscan Leica-360, without coating, at 15 KV.

According to the International Code of Zoological Nomenclature, the specimens within a type series which do not correspond to the species description, cannot be excluded of this type series and should be considered as non-conspecific paralectotypes (ICZN, Art. 72.1.3; 73.2.2; 74.1.3). Only the species considered valid are redescribed and their morphological features are illustrated in corresponding plates (Figs 1–14). As the presence and shape of propodeal carinae are the important characters to distinguish between *Alloxysta* species, two SEM figures have been included there: with all the propodeums without carinae (Fig. 15) and with all the propodeums with carinae present (Fig. 16). Sometimes, it was necessary to include to our study also the different material from Charipinae subfamily from the collection of ZSM. A total of 100 *Alloxysta* specimens have been studied and revised.

The morphological terms used are drawn from Paretas-Martinez et al. (2007). Abbreviations include F1–F12, first and subsequent flagellomeres. The width of the forewing radial cell is measured from the margin of the wing to the beginning Rs vein. The transfacial line is measured as the distance between the inner margins of composed eyes, measured across the face through the antennal sockets divided by the height of the eye. The malar space is measured by the distance from the lower part of the gena from the mouthparts to the ventral margin of the composed eye, divided by the height of the eye.

RESULTS

After studying of 18 different type series and 144 specimens from Hartig's collection, only 14 of these nominal species are now considered valid: *Alloxysta aperta*, *A. brachyptera*, *A. castanea*, *A. circumscripta*, *A. fuscicornis*, *A. leunisii*, *A. longipennis*, *A. macrophadna*, *A. melanogaster*, *A. obscurata*, *A. pilipennis*, *A. postica*, *A. minuta* and *A. rufiventris*. The type material of *Alloxysta erythrothorax* was lost when Evenhuis (1982) studied the *Alloxysta* type

specimens of the ZSM. The antennae of *A. cursor* are missing. Therefore, *Alloxysta cursor* and *A. erythrothorax* are considered as 'nomen dubium'. *Alloxysta erythrocephalus* has been synonymized with *A. victrix* by Giraud (1860). Two new synonyms are here established: *A. defecta* with *A. castanea* and *A. flavicornis* with *A. pilipennis* (syn. nn.). Detail review of species is presented below.

Alloxysta aperta (Hartig, 1841)

(Fig. 1)

Xystus aperta: Hartig, 1841: 353.

Allotria aperta: Thomson, 1862: 410.

Allotria aperta: Taschenberg, 1866: 129.

Dilyta aperta: Kieffer, 1900: 114.

Alloxysta (Alloxysta) aperta: Dalla Torre & Kieffer, 1902: 38.

Alloxysta aperta: Hellén, 1931: 4.

Type material. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus aperta* Hartig det. H.H. Evenhuis 1980', '*X. aperta* Hart. ♂ det. E. Kierych 1985', '*Alloxysta aperta* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Additional material (1♂ & 1♀). 'In collection Hartig as *Xystus aperta*', '*Alloxysta aperta* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011', 1♂; 'D, BY, Allgäu, Besler, 16.8.83, 1500–1600m Hochstanden und Wiesen, Hbth', '♀', '*Alloxysta aperta* (Hartig) det. H.H. Evenhuis 1990', 1♀.

Diagnosis. *Alloxysta aperta* is mainly characterized by having closed radial cell, radial cell being 2.4 times as long as wide, pronotal and propodeal carinae absent, female antennae with the beginning of rhinaria in F4, F1 slightly longer than pedicel, F1-F3 subequal in length. It is similar to *A. quedenfeldti* (Kieffer, 1909) but they differ in the relation between pedicel/F1: F1 longer than pedicel in *A. aperta* but subequal to pedicel in *A. quedenfeldti*; beginning of rhinaria: in F4 in *A. aperta* while in F3 in *A. quedenfeldti*.

Redescription. Coloration. Head, mesosoma and metasoma brown. Scape, pedicel, flagellomeres 1–2 dark yellow, flagellomeres 3–12 yellowish brown. Legs dark yellow and veins yellowish, nearly transparent.

Head. Transversally ovate, slightly wider than high in front view. Transfacial line 1.3 times height of eye. Malar space 0.6 times height of eye.

Antenna. Female with 13 filiform antennomeres. Antennomeres covered with sparse setae. Flagellomeres 1–3 thinner and smoother than distal flagellomeres, flagellomeres 4–11 with rhinaria, club shaped. Pedicel 1.7 times longer than wide; flagellomeres 1–3 each 2.0 times longer than wide (Fig. 1d). Male with 14 antennomeres, its relative length not visible due to state of preparation (Fig. 1h).

Mesosoma. Pronotum covered with few setae, without carinae (Fig. 1e). Mesoscutum and scutellum smooth, shiny, round in dorsal view with few scattered setae. Mesopleural triangle along anterior margin 1.7 times as high as mesopleuron. Propodeum covered by pubescence, without carinae, with less setae on place where carinae usually placed in other species (Figs 1f & 15a).

Forewing. Longer than body (Fig. 1a), covered with dense pubescence, marginal setae present. Radial cell closed, 2.4 times as long as wide. R1 short and straight, Rs long and curved (Figs 1b & 1c).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta aperta* (Hartig) is represented by two specimens (1 ♂ & 1 ♀) in Hartig's collection. The female was designated as lectotype by Evenhuis (1982: 21). The male determined by Hartig as *Xystus apertus* (included here in additional material) does not represent a paralectotype because this species was originally described only from one or several females. Hartig (1841) erroneously stated that the radial cell is open. According to the labels, Kierych was mistaken in defining the sex of the lectotype specimen.

Alloxysta arcuata (Kieffer, 1902)

Studied material (3♂♂ & 8♀♀). 'ex *Aphis fabae*, *Lysiphleblus fabarum*', 'D-Stuttgart NU19, Hohenheim, 7.89, Phasedus 6i, leg. Schmid-Egger', '*Alloxysta* spec. 1,2, Höller, det. Schmid Egger 89', 2♀; '261/8+. 1, ex *Aphis fabae*', 'D Hessen, Wetolar, *Phaseolus vulgaris*, leg. 31.8.87 ag, 261.87.1', '♀', '*Alloxysta brevis* (Thomson) det. H.H. Evenhuis 1989', 1♀; '90/87 4.1.10, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg. 25.5.87 org', '♀', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♀; 'D. Hessen, Gießen, *Prunus avium*, leg 6.7.87 ag', '183/87 1.2 ex *Myzus cerasi*', '♀', '*Alloxysta arcuata* (Kieffer), det. H.H. Evenhuis 1989', 1♀; '90/87 10.6, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg. 25.5.87 ag', '♀', '*Alloxysta arcuata* (Kieffer) det H.H. Evenhuis 1989', 1♀; '183/87 1.3, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus avium*, leg. 6.7.87 ag', '♀', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♀; '90/87 10.1, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg. 25.5.87 ag', '♀', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♀; '90/87 4.1.3, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg. 25.5.87 ag', '♀', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♀; '90/87 4.1.7, ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg 25.5.87 org', '♂', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♂; '90/87 10.5, , ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, leg 25.5.87 org', '♂', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♂; '183/87 1.1, ex *Myzus cerasi*', 'D. Hessen Gießen, *Prunus avium*, leg. 6.7.87 ag', '♂', '*Alloxysta arcuata* (Kieffer) det. H.H. Evenhuis 1989', 1♂.

Comments. After examination of the type material (Ferrer-Suay et al. 2012b), we showed that this species was erroneously synonymized with *A. brevis* by Fergusson (1986).

Remarks on hosts. *Alloxysta arcuata* is here cited for the first time related with the aphid *Myzus cerasi*.

Alloxysta brachyptera (Hartig, 1840)

(Fig. 2)

Xystus brachypterus: Hartig, 1840: 200.

Allotria brachyptera: Giraud, 1860: 131.

Pezophycta brachyptera: Förster, 1869: 339.

Pezophycta brachyptera brachyptera: Dalla Torre & Kieffer, 1910: 292.

Alloxysta brachyptera: Hellén, 1931: 5.

Type material. Lectotype: ♂, designated by Evenhuis (1982) with the following labels: '210', '♂', 'lectotype H. H. Evenhuis' (orange label), '*Xystus brachypterus* Hartig det. H.H. Evenhuis 1980', '*Alloxysta brachyptera* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011'. Paralectotype: ♂, with the following labels: 'In collection Hartig as *Xystus brachypterus*', 'Paralectotype *Xystus brachypterus* Hartig, 1840 ♂' (red label), '*Alloxysta brachyptera* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011'. Also one non-conspecific paralectotype (see comments).

Additional material: (1♂). 'In collection Hartig as *Xystus brachypterus*', 1♂.

Diagnosis. *Alloxysta brachyptera*, being a brachypterous species, is mainly characterized by pronotal carinae absence, propodeal carinae present and F1 shorter than pedicel. It is similar to *A. pedestris* (Curtis, 1838) but they can be easily differentiated by the presence of propodeal carinae: present in *A. brachyptera* while absent in *A. pedestris*.

Redescription. Coloration. Head and mesosoma yellowish brown, metasoma dark brown with distal part almost dark. Scape, pedicel, flagellomeres 1–3 yellow, flagellomeres 4–12 yellowish brown. Legs dark yellow.

Head. Transversally ovate, slightly wider than high in front view; with setae below and between toruli; without setae above toruli; with few or without setae on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.5 times height of eye.

Antenna. Female unknown. Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1–F3 thinner and smoother than remaining flagellomeres, F4 to F12 with rhinaria and club shaped. Pedicel 2.5 times as long as wide; F1 to F3 2.7 times as long as their width; F4 2.0 times as long as wide. Pedicel 1.3 times as long as F1; F1 to F4 subequal in length; F4 to F12 subequal in length, width and shape (Fig. 2b).

Mesosoma. Pronotum covered with few setae, without carinae (Fig. 2c). Mesoscutum smooth and shiny, round in dorsal view, with few scattered setae. Scutellum smooth and shiny, covered by long setae. Propodeum covered with abundant setae, with setae on top; two carinae present forming a separated plate. Sides of first half of plate straight while in second half it slightly curved (Figs 2d & 16a).

Forewing. Strongly shorter than body, 0.3 times as long as mesosoma and metasoma together; covered with dense pubescence, marginal setae present. Radial cell absent (Fig. 2a).

Metasoma. Proximal part with incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta brachyptera* (Hartig) is represented by three specimens in Hartig's collection (3 males); females are still unknown. Hartig's description of this species is based on a female but there are no females in his collection. It's likely Hartig was mistaken in defining the sex in the original description. For this reason, one male was designated as lectotype by Evenhuis (1982: 21). Another male is considered here as paralectotype because it matches with the original description and it is similar to the lectotype designated by Evenhuis. The last specimen has longer wings than the others, reaching to the end of the metasoma and the radial cell is visible, it is considered here as non-conspecific paralectotype because in the original description Hartig mentions short wings.

Alloxysta brevis (Thomson, 1862)

Studied material. (1♂ & 8♀♀). 'D-Stuttgart NU19, Hohenheim, 1.89, Glasshouse, *Rhopalosiphum padi*, leg. Schmid-Egger', '*Alloxysta* spec. ♀, cf. spec. 1,2 Höller det. Schmig-Egger 89', '*A. brevis*' (handwritten): 3♀♀; 'ex *Aphis fabae*, *Lysiphlebus fabarum*', 'D-Stuttgart NU19, Hohenheim 7.89, Phasedus 6i, le. Schmid-Egger', '*Alloxysta* spec. ♀, Kopf + Viorpu Schurer, Rodialzelle klein, det. Schmid-Egger spec 1,2 Höller 88', '*A. brevis*' (handwritten), 1♀; 'D-Stuttgart NU19, Hohenheim 1.89, Glasshouse, *Rhopalosiphum padi* leg. Schmid-Egger', '*Alloxysta* spec. 1,2 Höller, det. Schmid-Egger', 1♂ & 4♀♀.

Remarks on hosts. *Alloxysta brevis* is here cited for the first time parasitizing *Aphis fabae* through *Lysiphlebus fabarum* and related with the aphid *Rhopalosiphum padi*.

***Alloxysta castanea* (Hartig, 1841)**
(Fig. 3)

Xystus castaneus: Hartig, 1841: 352.

Allotria castanea: Cameron, 1890: 233.

Dilyta castanea: Kieffer, 1900: 114.

Alloxysta (Alloxysta) castanea: Dalla Torre & Kieffer, 1902: 38.

Alloxysta castanea: Hellén, 1963: 14.

Xystus defectus: Hartig, 1841: 352 n. syn.

Allotria defecta: Giraud, 1860: 130.

Allotria defectus: Cameron, 1886: 87.

Dilyta defecta: Kieffer, 1900: 114.

Alloxysta (Alloxysta) defecta: Dalla Torre & Kieffer, 1902: 38.

Alloxysta defecta: Hellén, 1963: 15.

Type material of *Xystus castaneus* Hartig. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: 'lectotypus *Xystus castaneus* Htg, Zoologische Staatssammlg. München' (pink label), 'Lectotype design. Evenhuis, according to Evenhuis (1982)' (red label), '*Alloxysta castanea* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Type material of *Xystus defectus* Hartig. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus defectus* Hartig det. H.H. Evenhuis 1980', '*Alloxysta castanea* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Paralectotype: 2♂♂ & 7♀♀, with the following labels: 'In collection Hartig as *Xystus defectus*', 'Paralectotype *Xystus defectus* Hartig, 1841 ♂♂' (red label), '*Alloxysta castanea* (Hartig, 1841) ♂♀ M. Ferrer-Suay det. 2011'. Also nine non-conspecific paralectotypes (see comments).

Additional material (11♀♀). 'In collection Hartig as *Xystus defectus*', 9♀♀; 'A, K, Kötschach, Mähviese, 27.5.1985, 1050m., E. Haesel barth', '♀', '*Alloxysta defecta* (Hartig) det. H.H. Evenhuis 1990', 1♀; 'A, T, Brandenburg, Kink 1030m, Wiese am Waldrand, 20.6.84 Hbth', '♀', '*Alloxysta fulviceps* (Curtis) det H.H. Evenhuis 1990', 1♀.

Diagnosis. *Alloxysta castanea* is mainly characterized by having partially open radial cell, radial cell being 2.4 times as long as wide, pronotal and propodeal carinae present, male and female with the beginning of rhinaria in F3, F2-F4 subequal in length, F1 and F2 slightly curved outward in male. It is similar to *A. aurata* Belizin, 1968 but they can be differentiated by the relation between F2 and F3: F2 subequal to F3 in *A. castanea* but F2 shorter than F3 in *A. aurata* and size of radial cell: 2.3 times as long as wide in *A. castanea* while 3.0 times in *A. aurata*.

Redescription. Coloration. Head yellowish, mesosoma and metasoma yellowish brown (with distal part of metasoma dark brown). Antennae yellow, becoming darker towards tip. Legs and veins yellowish.

Head. Transversally ovate, slightly wider than high in front view; with setae below, between and a few above toruli; without setae on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.5 times height of eye (Fig. 3d).

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 to F3 thinner and smoother than remaining flagellomeres, F4 to F11 with rhinaria and club-shaped. Pedicel 1.8 times as long as wide; F1 4.6 times, F2 3.3 times, F3 3.1 times, and F4 3.8 times as long as their width. F1 1.3 times as long as pedicel and 1.2 times as long as F2; F2 subequal to F3; F4 1.2 times as long as F3; F4 to F11 subequal in length, width and shape (Fig. 3b). Male with 14 antennomeres; as in female but with F1 and F2 slightly curved outward.

Mesosoma. Pronotum covered with setae except its central area, with two thick carinae clearly visible (Fig. 3e). Mesoscutum smooth and shiny, round in dorsal view, with few scattered setae. Scutellum smooth and shiny, covered by scattered setae, being abundant on apex of scutellum. Height of mesopleural triangle along anterior margin 1.6 times height of mesopleuron. Propodeum covered by numerous setae, with two carinae forming a plate, with few setae on its top, with its sides slightly curved (Figs 3f & 16e).

Forewing. Longer than body, 1.6 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 3a). Radial cell closed, 2.4 times as long as wide. R1 short and straight, slightly curved distally; Rs long and slightly curved (Fig. 3c).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially and wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. In Hartig's collection, the material of *Alloxysta castanea* (Hartig) include two specimens (females), on the same pin. One of them was designated as lectotype by Evenhuis (1982: 21), the other is considered as paralectotype. According to Evenhuis (1982) this pin has two labels: a grey label with the number '638', and a Hartig's species label 'castaneus m.'. Unfortunately, both these labels are lost, but the specimens have a pink label with 'lectotypus *Xystus castaneus* Htg, Zoologische Staatssammlg. München'.

Material of *Alloxysta defecta* (Hartig) consists of 19 specimens in Hartig's collection (2 ♂♂ and 17 ♀♀). One female was designated as lectotype by Evenhuis (1982: 22). Two males and seven females are considered here as paralectotypes because they match with the original description and the lectotype. The other nine specimens have been rejected as *A. defecta* for different reasons, and considered here as non-conspecific paralectotypes.

Initially, *Alloxysta castanea* (Hartig, 1841) was synonymized with *A. fulviceps* (Curtis, 1838) by Fergusson (1986). In the recent study (Pujade-Villar et al. 2011) a new lectotype of *A. fulviceps* was designated and according to its features it was synonymized with *A. victrix* (see Table 1). Thus, the new valid name for this group was *A. castanea*.

Alloxysta circumscripta (Hartig, 1841)

(Fig. 4)

Xystus circumscriptus Hartig, 1841: 352.

Allotria circumscripta: Giraud, 1860: 127.

Allotria (Allotria) circumscripta: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) circumscripta: Dalla Torre & Kieffer, 1910: 277.

Alloxysta circumscripta: Hellén, 1963: 17.

Type material. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus circumscriptus* Hartig det. H.H. Evenhuis 1980', '*Alloxysta circumscripta* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Paralectotype: ♀, with the following labels: 'In collection Hartig as *Xystus circumscriptus*', 'Paralectotype *Xystus circumscriptus* Hartig, 1841 ♀' (red label), '*Alloxysta circumscripta* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Also three non-conspecific paralectotypes (see comments).

Additional material (3♀♀). 'In collection Hartig as *Xystus circumscriptus*', 3♀♀.

Diagnosis. *Alloxysta circumscripta* is mainly characterized by having closed radial cell, radial cell being 2.3 times as long as wide, pronotal carinae present, propodeal carinae absent, female antennae with the beginning of rhinaria in F5, F2 shorter than F3, F3 shorter than F4, male antennae with the beginning of rhinaria in F4, F2 longer than F3, F3 shorter than F4. It is similar to *A. fuscicornis* but they can be differentiated by the proportion between flagellomeres: F1 subequal to F2, F2 shorter or subequal to F3 in *A. circumscripta* while F1 longer than F2,

F2 subequal to F3 in *A. consobrina*; size of radial cell: 2.5 times as long as wide in *A. circumscripta* but 2.7 in *A. consobrina*.

Redescription. Coloration. Head, mesosoma and metasoma brown. Scape, pedicel, flagellomeres 1 and 2 dark yellow; flagellomeres 3–11 yellowish brown. Legs yellowish; veins yellowish brown.

Head. Transversally oval, slightly wider than high in front view, with setae below, between and laterally of toruli, with few setae above toruli; with few scattered setae on vertex and numerous setae on face. Transfacial line equal to height of eye. Malar space 0.5 times height of eye (Fig. 4c).

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club-shaped. Pedicel 1.5 times as long as wide; F1 4.0 times, F2 4.0 times, F3 2.6 times, and F4 2.6 times as long as their width respectively. F1 1.7 times as long as pedicel; F1 subequal to F2; F2 1.1 times as long as F3; F3 to F11 subequal in length, width and shape (Fig. 4d). Male with 14 filiform antennomeres, without any flagellomere curved outward; F1 to F3 thinner and smooth than remaining flagellomeres, F4 to F12 with rhinaria and club shaped. F1 longer than pedicel and F2; F2 longer than F3, and F3 shorter than F4.

Mesosoma. Pronotum covered with numerous setae except in the central area, with two thick carinae distinctly visible under the pubescence (Fig. 4e). Mesoscutum smooth and shiny, round in dorsal view with very few scattered setae. Scutellum also smooth and shiny covered by a few long setae, not being abundant on apex of scutellum. Propodeum entirely covered by long setae, without carinae (Figs 4f & 15b).

Forewing. Longer than body, 1.3 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 4a). Radial cell closed, 2.5 times as long as wide. R1 short and straight; Rs longer and slightly curved (Fig. 4b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta circumscripta* (Hartig) is represented by five specimens (females). One female was designated as lectotype by Evenhuis (1982: 22). The other female is considered here as paralectotype because it matches the original description and the lectotype. The other three females are discarded as *A. circumscripta*, one of them is a *Phaenoglyphis* species and the other two have a propodeal plate. They are considered here as non-conspecifics paralectotypes.

Alloxysta cursor (Hartig, 1840)

Type material. ‘♂’, ‘lectotype H.H. Evenhuis’, ‘*Xystus cursor* Hartig det. H.H. Evenhuis 1980’.

Comments. The type material of *Alloxysta cursor* contains only one specimen which is designated as lectotype by Evenhuis (1982); this author mentions ‘only one male is present, which has the funicolus of both antennae missing’ (Evenhuis, 1982: 22). The antennae are very important to define species of *Alloxysta*. In the original description the flagellomeres are not defined. Therefore we cannot recognize if *A. cursor* is a valid name or it is a synonym of another one. For this reason, we consider here this species name a nomen dubium.

Alloxysta erythrothorax (Hartig, 1840)

Type material. lost (Evenhuis, 1982).

Comments. This species was considered valid until the Charipinae revision by Ferrer-Suay et al. (2012a). *Alloxysta defecta* and *A. nigriventris* were considered by different authors as

synonyms of this species. The type material of *A. erythrothorax* is lost. Quinlan & Fergusson (1981) synonymized this species with *A. fulviceps* without study the type material. In the original description, nor in subsequent descriptions, important characters such as the radial cell, proportion between flagellomeres, and pronotal and propodeal carinae have been not mentioned. Then, we cannot recognize if this species is a valid species or it is really a synonymy of *A. fulviceps*. For this reason, we consider here this species name a nomen dubium.

Alloxysta fracticornis (Thomson, 1862)

Studied material: (1♀). 'I, VI, Recoaro, C. Campogrosso, 1500m, 30.6.85, E. Haeselbarth', '♀', '*Alloxysta fracticornis* (Thomson) det H.H. Evenhuis 1990', 1♀.

Alloxysta fuscicornis (Hartig, 1841)

(Fig. 5)

Xystus fuscicornis: Hartig, 1841: 352.

Allotria fuscicornis: Taschenberg, 1866: 130.

Allotria (Allotria) fuscicornis: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) fuscicornis: Dalla Torre & Kieffer, 1910: 279.

Alloxysta fuscicornis: Andrews, 1978: 83.

Type material. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus fuscicornis* Hartig det. H.H. Evenhuis 1980', '*Alloxysta fuscicornis* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Additional material (3♂♂ & 11♀♀). 'D-Stuttgart NU19, Hohenheim, 23.6., *Brassica oleracea*, leg. Schmid-Egger', '*A. brassicae* (As) ♀ det. Schmid-Egger 89', 4♀; 'D-Stuttgart NU19, Hohenheim, 23.6., *Brassica oleracea*, leg. Schmid-Egger', '*Alloxysta brassicae* (As) ♂ det. Schmid-Egger 89', 1♂; 'Paraguay Canendiyñ Katnete, v. Lossan', 'ex *Methopolophium dirhodum* (Walk.) an weizenblättern, 1.8.1986', '♂/♀', '*Alloxysta fuscicornis* (Hartig) det H.H. Evenhuis 1987', 1♂ & 1♀; 'Ismanshg, ex *D. rapae* 13/19.8, Haeselbart 1968', '♀', '*Alloxysta fuscicornis* (Hartig) det H.H. Evenhuis 1987', 'Z6848', 1♀; 'Ismanshg, ex *B. brassicae* 13/26.8. Haeselbarth 1968', '♀', '*Alloxysta fuscicornis* (Hartig), det H.H. Evenhuis 1990', 'Z6850', 3♀; 'Ismanshg, ex *D. rapae* 13./13.8 Haesebarth 1968', '♀', '*Alloxysta fuscicornis* (Hartig) det H.H. Evenhuis 1987', 'Z6845', 2♀; 'Ismanshg, ex *D. rapae* 13./19./8. Haeselbarth 1968', '♂', '*Alloxysta fuscicornis* (Hartig) det H.H. Evenhuis 1990', 1♂.

Diagnosis. *Alloxysta fuscicornis* is mainly characterized by having a closed radial cell, (radial cell being 2.7 times as long as wide), pronotal carinae present, propodeal carinae absent, male and female antennae with the beginning of rhinaria in F4, F2 longer than F3, F3 shorter than F4, F1-F3 bowed in male. It is similar to *A. circumscripta* but they can be differentiated by the proportion between flagellomeres: F1 longer than F2, F2 subequal to F3 in *A. fuscicornis* while F1 subequal to F2, F2 shorter or subequal to F3 in *A. circumscripta*; size of radial cell: 2.7 times as long as wide in *A. fuscicornis* but 2.5 in *A. circumscripta*.

Redescription. Coloration. Head yellowish brown, mesosoma and metasoma yellowish brown. Antennae yellowish brown. Legs yellow and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view; with setae below and between toruli; without setae above toruli; and on vertex; with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.4 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club-shaped. Pedicel 1.5 times as long as wide; F1 4.5 times, F2 3.5 times, F3 2.3 times,

and F4 2.3 times as long as their width respectively. F1 1.5 times as long as pedicel; F1 1.3 times as long as F2; F2 to F11 subequal in length, width and shape (Fig. 5d). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 to F12 with rhinaria and club-shaped. F1 to F3 curved outward (F1 slightly curved outward, F2 and F3 distinctly curved outward). Pedicel 1.5 times as long as wide; F1 2.7 times, F2 2.7 times, F3 2.7 times, and F4 2.7 times as long as their width respectively. F1 2.0 times as long as pedicel; F1 to F11 subequal in length, width and shape.

Mesosoma. Pronotum covered with numerous setae except in its central area, with two thick carinae distinctly visible (Fig. 5b). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae present. Scutellum smooth and shiny, covered by setae, being more abundant on apex of scutellum. Height of mesopleural triangle along anterior margin 1.6 times height of mesopleuron. Propodeum entirely covered by setae, without carinae (Figs 5c & 15c).

Forewing. Longer than body, 1.7 times as long as mesosoma and metasoma together; covered with dense pubescence, marginal setae present (Fig. 5a). Radial cell closed, 2.7 times as long as wide. R1 short and slightly curved; Rs longer and curved. (Fig. 5a).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially and wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta fuscicornis* (Hartig) is represented only by a single specimen (female) in Hartig's collection. This specimen was designated as lectotype by Evenhuis (1982: 23).

Remarks on hosts. *Alloxysta fuscicornis* is here cited for the first time parasitizing *Diaeretiella rapae* through the aphids *Aphis brassicae* and *Methopolophium dirhodum*.

Alloxysta leunisii (Hartig, 1841)

(Fig. 6)

Xystus leunisii: Hartig, 1841: 351.

Allotria leunisii: Taschenberg, 1866: 129.

Allotria (Allotria) leunisii: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) leunisii: Dalla Torre & Kieffer, 1910: 275.

Alloxysta leunisii: Andrews, 1978: 84.

Type material. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), 'Xystus leunisii Hartig det. H.H. Evenhuis 1980', '*Alloxysta leunisii* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Paralectotypes: 4♀♀, with the following labels: 'In collection Hartig as *Xystus leunisii*', 'Paralectotype *Xystus leunisii* Hartig, 1841 ♀' (red label), '*Alloxysta leunisii* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Also four non-conspecific paralectotypes (see comments).

Additional material (1♂ & 5♀♀). 'In collection Hartig as *Xystus leunisii*', '*Alloxysta leunisii* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011', 1♂. 'In collection Hartig as *Xystus leunisii*', 4♀♀; '5329', '*Alloxysta leunisii* ♀, det. leg Borgemeist', 1♀.

Diagnosis. *Alloxysta leunisii* is mainly characterized by having closed radial cell, radial cell being 2.0 times as long as wide, pronotal carinae present, propodeal carinae absent, rhinaria and club shaped begin in F2 in female and F2 in male, F1 longer than pedicel and subequal to F2 and F3 in female, male with the same proportions except having F3 longer than F2. It is similar to *A. fuscicornis* but they can be differentiated by the beginning of rhinaria in female: F2 in *A. leunisii* and F3/F4 in *A. fuscicornis*; shape of flagellomeres in male: F1 slightly curved outward in *A. leunisii* while F1-F3 strongly curved outward in *A. fuscicornis*; size of radial cell: 2.0 times as long as wide in *A. leunisii* 2.7 times as long as wide in *A. fuscicornis*.

Redescription. Coloration. Head yellowish brown, mesosoma and metasoma brown (distal part of metasoma dark brown to almost black). Antennae yellowish brown. Legs and veins yellowish brown.

Head. Transversally oval, slightly wider than high in front view, with setae below and between toruli, with few setae above toruli, with a few or without setae on vertex, with numerous setae on face. Transfacial line 1.3 times height of eye. Malar space 0.5 times height of eye (Fig. 6h).

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 thinner and smoother than remaining flagellomeres, F2 to F11 with rhinaria and club-shaped (more obvious in F3). Pedicel 1.5 times as long as wide. F1 3.7 times, F2 2.8 times, F3 3.1 times, and F4 3.1 times as long as their width. F1 1.8 times as long as pedicel and 1.1 times as long as F2; F3 1.1 times as long as F2; F3 to F11 subequal in length, width and shape (Fig. 6f). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smooth than remaining flagellomeres, F3 to F12 with rhinaria and club-shaped. F1 curved outward. Pedicel 1.7 times as long as wide; F1 3.0 times, F2 2.0 times, F3 2.7 times, and F4 2.7 times as long as their width respectively. F1 1.2 times as long as pedicel and subequal to F2; F3 1.3 times as long as F2; F3 to F12 subequal in length, width and shape (Fig. 6e).

Mesosoma. Pronotum covered with setae except its central area, with two thick and dark carinae (Fig. 6c). Mesoscutum smooth and shiny, round in dorsal view, with a few scattered setae. Scutellum also smooth and shiny, covered by setae, being more abundant on apex of scutellum. Propodeum entirely covered by setae, without carinae (Figs 6d & 15d).

Forewing. Longer than body, 1.5 times as long as mesosoma and metasoma together, covered with dense setae, marginal setae present. Radial cell closed, 2.0 times as long as wide in male and female. R1 short and slightly curved; Rs long and curved. (Figs 6a & 6b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta leunisia* (Hartig) is represented by ten specimens (1 ♂ and 9 ♀♀) in Hartig's collection. One female is designated as lectotype by Evenhuis (1982: 24). Four females are considered here as paralectotypes because they match with the original description and the lectotype. The male has been rejected as paralectotype because the description of this species is based only on female. The last four females are not conspecific with *A. leunisia*, one of them is not even a Charipinae specimen, other two are *Phaenoglyphis* species and the last is not *Alloxysta leunisia*. For these reasons they are considered here as non-conspecific paralectotypes.

Alloxysta longipennis (Hartig, 1841)

(Fig. 7)

Xystus longipennis: Hartig, 1841: 352.

Allotria longipennis: Taschenberg, 1866: 130.

Dilyta longipennis: Kieffer, 1900: 114.

Alloxysta (Alloxysta) longipennis: Dalla Torre & Kieffer, 1902: 38.

Alloxysta longipennis: Andrews, 1978: 85.

Type material. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '1149', '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus longipennis* Hartig det. H.H. Evenhuis 1980', '*Alloxysta longipennis* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Diagnosis. *Alloxysta longipennis* is mainly characterized by having partially open radial cell, radial cell being 2.6 times as long as wide, pronotal and propodeal carinae present forming a plate with straight sides, female with the beginning of rhinaria in F3, F1 longer than pedicel and F2, F2 subequal to F3, F3 shorter than F4. Male unknown. It is similar to *A. melanogaster*

but they can be differentiated by the proportion between flagellomeres in female: F1 longer than pedicel and F2, F2 subequal to F3 in *A. longipennis* while pedicel-F3 in *A. melanogaster*; size of radial cell 2.6 times as long as wide in *A. longipennis* but 2.3 times in *A. melanogaster*.

Redescription. Coloration. Head yellow, mesosoma and metasoma brown. Scape yellowish brown, pedicel and flagellomeres 1–3 yellow; flagellomeres 4–11 yellowish brown. Legs yellow and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view; with setae below, between and a few above toruli; with few or without setae on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.5 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club-shaped. Pedicel 1.5 times as long as wide; F1 4.0 times, F2 3.6 times, F3 3.0 times, and F4 3.3 times as long as their width. F1 1.7 times as long as pedicel and 1.1 times as long as F2; F2 subequal to F3; F4 1.1 times as long as F3; F4 to F11 subequal in length, width and shape (Fig. 7d). Male unknown.

Mesosoma. Pronotum covered with dense setae except in posterodorsal margins and central area, with two thick carinae clearly visible under pubescence (Fig. 7b). Mesoscutum smooth and shiny, round in dorsal view, with few scattered setae, abundant on anterior margin. Scutellum smooth, shiny, covered by long setae being more abundant on apex of scutellum. Propodeum covered by setae, with two carinae forming a plate, setae present in three first thirds of plate with curved sides (Figs 7c & 16f).

Forewing. Longer than body, 1.7 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 7a). Radial cell partially open, 2.6 times as long as wide. R1 short and straight; Rs long and curved (Fig. 7a).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta longipennis* (Hartig) is represented only by one specimen (female) in Hartig's collection. This specimen was designated as lectotype by Evenhuis (1982: 25).

Alloxysta macrophadna (Hartig, 1841)

(Fig. 8)

Xystus macrophadnus: Hartig, 1841: 352.

Allotria macrophadna: Giraud, 1860: 130.

Alloxysta macrophadna: Förster, 1869: 340.

Allotria macrophadnus: Cameron, 1889: 55.

Dilyta macrophadnus: Kieffer, 1900: 114.

Alloxysta (Alloxysta) macrophadna: Dalla Torre & Kieffer, 1902: 38.

Alloxysta macrophadnus: Rohwer & Fagan, 1919: 340.

Charips macrophadnus: Muesebeck & Krombein, 1951: 607.

Alloxysta macrophadna: Andrews, 1978: 85.

Type material. Lectotype: ♀, designated by Evenhuis (1982: 25) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus macrophadnus* Hartig det. H.H. Evenhuis 1974', '*Alloxysta macrophadna* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Paralectotypes: 3♀, with the following labels: 'In collection Hartig as *Xystus macrophadnus*', 'Paralectotype *Xystus macrophadnus* Hartig, 1841 ♀' (red label), '*Alloxysta macrophadna* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Additional material (1♂ & 6♀♀). 'In collection Hartig as *Xystus macrophadnus*', '*Alloxysta macrophadna* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011', 1♂; 'I, VI, Recoaro, Campogrosso, 1500m, 1.7.85, Haeselbarth', '♀', '*Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1990', 1♀; 'A, T, Imsterberg, Bergwiesen, 23.8.83, 1250m. Haeselbarth', '♀', '*Alloxysta macrophadna*

(Hartig) det H.H. Evenhuis 1990', 1♀; 'I, VI, Recoaro, Campogrosso, 1500m, 30.6.85, E. Haeselbarth', '♀', *Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1990', 1♀; 'D, BY, Allgäu Besler, 16.8.83, 1500-1600m Hochstanden und Wiesen, Hbth', '♀', *Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1990', 1♀; 'D-Stuttgart NU19, Hohenheim 29.6. ex *Cirsium* leg. Schmid-Egger', *Alloxysta* spec. ♀ cf. *macrophadna*, det. Schmid-Egger 89', *Alloxysta pleuralis* (Cameron)', 1♀; '228/87 5.2', 'D. Hessen, Grißen, *Lupinus luleas*, leg. 13.8.87 af', '228/87 5.2', '♀', *Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1989', 1♀; '228/87 .6', 'D. Hessen, Grißen, *Lupinus luleas*, leg. 13.8.87 af', '228/87 5.2', '♀', *Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1989', 1♀; '228/87 .7', 'D. Hessen, Grißen, *Lupinus luleas*, leg. 13.8.87 af', '228/87 5.2', '♀', *Alloxysta macrophadna* (Hartig) det H.H. Evenhuis 1989', 1♀.

Diagnosis: *Alloxysta macrophadna* is mainly characterized by having a big partially open radial cell, pronotal carinae present, propodeal carinae absent, rhinaria and club shaped begin in F4 in females and F3 in males. It is similar to *A. obscurata* but they can be differentiated by the shape and proportion between flagellomeres: F1 subequal to F2, F2 longer than F3 and F3 subequal to F4 in *A. macrophadna* while F1 longer than F2, F2 shorter than F3 and F3 shorter than F4 in *A. obscurata*; F2 and F3 strongly curved outward in *A. macrophadna* male but without any flagellomere curved outward in *A. obscurata* male; size of radial cell: 3.0 times as long as wide in *A. macrophadna* but 2.7 times in *A. obscurata*.

Redescription. Coloration. Head reddish brown, mesosoma and metasoma dark brown. Scape, pedicel and flagellomeres 1–3 dark yellow; flagellomeres 4–11 brown. Legs dark yellow and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view; with setae below and between toruli, without setae above toruli and on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.5 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club shaped. Pedicel 1.7 times as long as wide; F1 5.3 times, F2 4.0 times, F3 2.8 times, and F4 2.8 times as long as their width respectively. F1 1.3 times as long as pedicel and subequal to F2; F2 1.1 times as long as F3; F3 to F11 subequal in length, width and shape (Fig. 8c). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F12 with rhinaria and club shaped. F2 and F3 curved outward. Pedicel 1.3 times as long as wide; F1 3.5 times, F2 3.5 times, F3 3.0 times, and F4 2.0 times as long as their width respectively. F1 1.8 times as long as pedicel and subequal to F2; F2 1.2 times as long as F3; F3 1.5 times as long as F4; F4 to F11 subequal in length, width and shape.

Mesosoma. Pronotum covered with numerous setae, with two thick carinae distinctly visible under the pubescence (Fig. 8d). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae in anterior and lateral margins. Scutellum smooth and shiny, covered by long setae being more abundant on apex of scutellum. Propodeum covered by long setae, without carinae (Figs 8f & 15e).

Forewing. Longer than body, 1.8 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 8a). Radial cell partially open, 3.0 times as long as wide. R1 short and slightly curved; Rs longer and curved. (Fig. 8b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta macrophadna* (Hartig) is represented by five specimens (1 male and 4 females) in Hartig's collection. One female was designated as lectotype by Evenhuis (1974: 165). The other three females are conspecifics and then are considered here as paralectotypes. The male has been rejected as paralectotype because the original description is based only in females.

***Alloxysta melanogaster* (Hartig, 1840)**
(Fig. 9)

Xystus melanogaster: Hartig, 1840: 200.

Allotria melanogaster: Giraud, 1860: 129.

Allotria (Allotria) melanogaster: Dalla Torre & Kieffer, 1902: 40.

Alletria melanogaster: Lameere, 1907: 195.

Charips (Charips) melanogaster: Dalla Torre & Kieffer, 1910: 279.

Alloxysta melanogaster: Hellén, 1963: 21.

Type material. Lectotype: ♂, designated by Evenhuis (1982: 25) with the following labels: '♂', 'lectotype H. H. Evenhuis' (orange label), '*Xystus melanogaster* Hartig det. H.H. Evenhuis 1980', '*Alloxysta melanogaster* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011'. Paralectotype: 1♂, with the following labels: '314', 'In collection Hartig as *Xystus melanogaster*', 'Paralectotype *Xystus melanogaster* Hartig, 1840 ♂' (red label), '*Alloxysta melanogaster* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011'. Also one non-conspicuous paralectotype (see comments).

Additional material (1♂ & 6♀♀). 'In collection Hartig as *Xystus melanogaster*', '*Alloxysta melanogaster* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011', 4♀♀; 'In collection Hartig as *Xystus melanogaster*', 1♂ & 2♀♀.

Diagnosis. *Alloxysta melanogaster* is mainly characterized by having partially open radial cell, radial cell being 2.3 times as long as wide, pronotal and propodeal carinae present, female antennae with the beginning of rhinaria in F3, F1 subequal to pedicel, F1 longer than F2, F2 subequal to F3, F4 longer than F3, male antennae with the beginning of rhinaria in F2, F1 longer than pedicel and F2, F2-F4 subequal in length. It is similar to *A. longipennis* but they can be differentiated by the proportion between flagellomeres in female: pedicel-F3 subequal in *A. melanogaster* while F1 longer than pedicel and F2, F2 subequal to F3 in *A. longipennis*; size of radial cell 2.3 times as long as wide in *A. melanogaster* but 2.6 times in *A. longipennis*.

Redescription. Coloration. Head yellowish, mesosoma dark yellow and metasoma yellowish brown (darker in distal part). Antennae yellow, darkening towards the end. Legs yellow and veins yellowish nearly transparent.

Head. Transversally ovate, slightly wider than high in front view, with setae below and between toruli, without setae above toruli and on vertex, with numerous setae on face. Transfacial line 1.2 times height of eye. Malar space 0.5 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club shaped. Pedicel 1.7 times as long as wide; F1 2.5 times, F2 2.5 times, F3 2.5 times, and F4 2.4 times as long as their width respectively. F1 subequal to pedicel; F1 to F3 subequal in length; F4 1.2 times as long as F3; F4 to F11 subequal in length, width and shape (Fig. 9c). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 thinner and smooth than remaining flagellomeres, F2 to F12 with rhinaria and club shaped. Pedicel 1.5 times as long as wide; F1 4.0 times, F2 2.3 times, F3 2.3 times, and F4 2.3 times as long as their width respectively. F1 1.3 times as long as pedicel and 1.1 times as long as F2; F2 to F12 subequal in length, width and shape (Fig. 9g).

Mesosoma. Pronotum covered by setae, less abundant in central area; with two thick carinae distinctly visible (Fig. 9d). Mesoscutum smooth and shiny, round in dorsal view with scattered setae. Scutellum smooth and shiny, covered by a few setae, not being more abundant on apex of scutellum. Propodeum covered by numerous setae, two present carinae forming plate with setae on middle of first half, its sides straight or very slightly curved (Figs 9e & 16g).

Forewing. Longer than body, 1.3 times as long as mesosoma and metasoma together; covered with dense pubescence, marginal setae present. Radial cell partially open, 2.0 times as long as wide. R1 short and straight; Rs longer and curved (Figs 9a & 9b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. Material of *Alloxysta melanogaster* (Hartig) contains of nine specimens (3 males and 6 females). One male is designated as lectotype by Evenhuis (1982: 25). Other male is considered here as paralectotype because it matches with the original description and the lectotype designated by Evenhuis. The last male is brachypterous so it is considered here as non-conspecific paralectotype. There are four females conspecific, but they cannot be considered as paralectotypes because the description is based on males. The other two females are not *A. melanogaster* specimens (one for being *A. victrix*).

Alloxysta obscurata (Hartig, 1840)

(Fig. 10)

Xystus obscuratus: Hartig, 1840: 200.

Allotria obscuratus: Taschenberg, 1866: 130.

Allotria obscurata: Dalla Torre, 1893: 34.

Dilyta obscurata: Kieffer, 1900: 114.

Alloxysta (Alloxysta) obscurata: Dalla Torre & Kieffer, 1902: 39.

Alloxysta obscurata: Andrews, 1978: 87.

Type material. Lectotype: ♀, designated by Evenhuis (1982: 26) with the following labels: '♀', 'second from top, lectotype H. H. Evenhuis' (orange label), '*Xystus obscuratus* Hartig det. H.H. Evenhuis 1980', 'first from top, Paralectotype *Xystus obscuratus* Hartig, 1840 ♀, third and fourth paralectotypes no conspecifics' (red label), '*Alloxysta obscurata* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011 only the two first'. Paralectotype: ♀, with the following labels: '♀', 'second from top, lectotype H. H. Evenhuis' (orange label), '*Xystus obscuratus* Hartig det. H.H. Evenhuis 1980', 'first from top, Paralectotype *Xystus obscuratus* Hartig, 1840 ♀, third and fourth paralectotypes no conspecifics' (red label), '*Alloxysta obscurata* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011 only the two first'. Also seven non-conspecific paralectotypes (see comments).

Additional material (2♂♂ & 7♀♀). '1751' (blue label), 'In collection Hartig as *Xystus obscuratus*', '*Alloxysta obscurata* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011', 1♂. '♀', 'second from top, lectotype H. H. Evenhuis' (orange label), '*Xystus obscuratus* Hartig det. H.H. Evenhuis 1980', 2♀. 'In collection Hartig as *Xystus obscuratus*', '*Phaenoglyphis villosa* (Hartig, 1841) ♂ M. Ferrer-Suay det. 2011 ONLY THE FIRST', 1♂. 'In collection Hartig as *Xystus obscuratus*', '*Phaenoglyphis villosa* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011', 2♀♀. 'In collection Hartig as *Xystus obscuratus*', 2♀♀; 'D. By. Neuburg, D., Finkenstein, 6.7.82', '♀', '*Alloxysta obscurata* (Hartig) det H.H. Evenhuis 1990', 1♀.

Diagnosis. *Alloxysta obscurata* is mainly characterized by having partially open radial cell, radial cell being 2.7 times as long as wide, pronotal carinae present, propodeal carinae absent, female antennae with the beginning of rhinaria in F3, F1 longer than pedicel and F2, F2 subequal to F3, F3 shorter than F4, male antennae with the beginning of rhinaria in F4, F2 slightly curved outward, F1 longer than pedicel and F2, F2 longer than F3 and F3 longer than F4. It is similar to *A. macrophadna* but they can be differentiated by the shape and proportion between flagellomeres: F1 longer than F2, F2 shorter than F3 and F3 shorter than F4 in *A. obscurata* while F1 subequal to F2, F2 longer than F3 and F3 subequal to F4 in *A. macrophadna*; without any flagellomere curved in *A. obscurata* male but F2 and F3 strongly curved outward in *A. macrophadna* male; size of radial cell: 2.7 times as long as wide in *A. obscurata* but 3.0 times in *A. macrophadna*.

Redescription. Coloration. Head, mesosoma and metasoma dark brown. Scape, pedicel and flagellomeres 1–2 dark yellow; flagellomeres 3–12 yellowish brown. Legs yellow and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view, with setae below, between and above toruli, with a few or without setae on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.4 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club shaped. Pedicel 1.8 times as long as wide; F1 4.0 times, F2 3.2 times, F3 3.3 times, and F4 2.6 times as long as their width respectively. F1 1.4 times as long as pedicel and 1.3 times as long as F2; F3 1.3 times as long as F2; F3 1.1 times as long as F4; F4 to F11 subequal in length, width and shape (Fig. 10f). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 to F3 thinner and smooth than remaining flagellomeres, F4 to F12 with rhinaria and club shaped. F2 slightly curved outward. Pedicel 1.4 times as long as wide; F1 7.0 times, F2 5.0 times, F3 3.6 times, and F4 2.0 times as long as their width respectively. F1 2.8 times as long as pedicel and 1.4 times as long as F2; F2 1.1 times as long as F3; F3 1.5 times as long as F4; F4 to F12 subequal in length, width and shape (Fig. 10g).

Mesosoma. Pronotum covered by numerous setae being less abundant in the central area and distolateral corners; with two thick carinae distinctly visible under pubescence (Fig. 10c). Mesoscutum smooth and shiny, round in dorsal view, with scattered setae, more abundant on anterior margin. Scutellum smooth and shiny, covered by long setae, being more abundant on apex of scutellum and lateral sides. Propodeum covered by numerous setae, without carinae (Figs 10d & 15f).

Forewing. Longer than body, 1.4 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present. Radial cell partially open, 3.1 times as long as wide. R1 short and slightly curved; Rs longer and curved. (Figs 10a & 10b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta obscurata* (Hartig) is represented by 10 specimens in Hartig's collection (2 males and 8 females). One female was designated as lectotype by Evenhuis (1982: 26); other female is considered as paralectotype because it matches with the original description and the lectotype designated by Evenhuis. One male is conspecific but it cannot be considered as paralectotype because the original description is based on females. There are three specimens which correspond to *P. villosa* (one male and two females) and four females from different *Alloxysta* species not identified, all of them are considered here as non-conspecific paralectotypes.

Alloxysta pilipennis (Hartig, 1840)

(Fig. 11)

Xystus pilipennis: Hartig, 1840: 199.

Allotria pilipennis: Thomson, 1862: 406.

Allotria (Allotria) pilipennis: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) pilipennis: Dalla Torre & Kieffer, 1910: 283.

Alloxysta pilipennis: Hellén, 1963: 19.

Xystus flavicornis: Hartig, 1841: 352 **syn. n.**

Allotria flavicornis: Giraud, 1860: 129.

Allotria (Allotria) flavicornis: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) flavicornis: Dalla Torre & Kieffer, 1910: 282.

Alloxysta flavicornis: Hellén, 1963: 16.

Type material of *Xystus pilipennis* Hartig. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '1709' (blued label), '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus pilipennis* Hartig det. H.H. Evenhuis 1980', '*Alloxysta pilipennis* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011'. Paralectotypes: 5 ♀♀, with the following labels: '711' (red label) 'In collection Hartig as *Xystus pilipennis*', 'Paralectotype *Xystus pilipennis* Hartig, 1840 ♀' (red label), '*Alloxysta pilipennis* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011', 1 ♀; 'In collection Hartig as *Xystus pilipennis*', 'Paralectotype *Xystus pilipennis* Hartig, 1840 ♀' (red label), '*Alloxysta pilipennis* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011', 4 ♀♀. Also five non-conspicuous paralectotypes (see comments).

Type material of *Xystus flavicornis* Hartig. Lectotype: ♀, designated by Evenhuis (1982) with the following labels: '1500' (blued label), '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus flavicornis* Hartig det. H.H. Evenhuis 1980', '*Alloxysta pilipennis* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Paralectotype: 2 ♀♀, with the following labels: 'In collection Hartig as *Xystus flavicornis*', 'Paralectotype *Xystus flavicornis* Hartig, 1841 ♀' (red label), '*Alloxysta pilipennis* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'. Also one non-conspicuous paralectotype (see comments).

Additional material (1♂ & 4♀♀). 'In collection Hartig as *Xystus pilipennis*', 3♀♀. 'In collection Hartig as *Xystus pilipennis*', 2 specimens with sexes unidentified; 'In collection Hartig as *Xystus flavicornis*', 1♀; 'DHessen, Gießen, *Prunus cerasus*, leg. 25.5.87 ag', '90/874.1.2., ex *Myzus cerasi*', '♂', '*Alloxysta flavicornis* (Hartig) det H.H. Evenhuis 1989', 1♂.

Diagnosis. Male unknown. *Alloxysta pilipennis* is mainly characterized by having closed radial cell, radial cell being 2.5 times as long as wide, pronotal and propodeal carinae present, female antennae with the beginning of rhinaria in F3, F1 longer than pedicel and F2, F2-F4 subequal in length. It is similar to *A. pusilla* (Kieffer, 1902) but they can be differentiated by the proportion between flagellomeres: F2 subequal to F3 in *A. pilipennis* female but F2 shorter than F3 in *A. pusilla* female; F1-F3 not subequal and without any flagellomere curved in *A. pilipennis* male but F1-F3 subequal in length and slightly curved in *A. pusilla* male; size of radial cell: 2.4 times in *A. pilipennis* female but 2.7 times as long as wide in *A. pusilla* female.

Redescription. Coloration. Head dark yellow, mesosoma yellowish brown, metasoma brown with distal part dark brown. Antennae yellowish, darkening towards tip. Legs yellowish and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view, with setae below, between and above toruli, with few setae on vertex and numerous setae on face. Transfacial line 1.4 times height of eye. Malar space 0.7 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 and F2 thinner and smoother than remaining flagellomeres, F3 to F11 with rhinaria and club shaped. Pedicel 1.8 times as long as wide; F1 5.5 times, F2 4.5 times, F3 3.6 times, and F4 3.0 times as long as their width respectively. F1 1.6 times as long as pedicel and 1.2 times as long as F2; F2 to F11 subequal in length, width and shape (Fig. 11b). Male with 14 filiform antennomeres. All antennomeres covered with sparse setae. F1 thinner and smooth than remaining flagellomeres, F2 to F12 with rhinaria and club shaped. Without any flagellomere curved. Pedicel 2.0 times as long as wide; F1 2.8 times, F2 2.3 times, F3 2.3 times, and F4 2.3 times as long as their width respectively. F1 1.2 times as long as pedicel; F1 to F12 subequal in length.

Mesosoma. Pronotum entirely covered with numerous setae; with two carinae difficult to see under the pubescence (Fig. 11d). Mesoscutum smooth and shiny, round in dorsal view, with scattered setae. Scutellum smooth and shiny covered by long setae, being more abundant on apex of scutellum. Propodeum covered by numerous setae, two carinae well defined in the

first third and joined in fine plate in last three thirds, with abundant setae in first half, sides very slightly curved (Figs 11f & 16h).

Forewing. Longer than body, 1.7 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 11a). Radial cell open, 2.3 times as long as wide. R1 short and slightly curved; Rs longer and curved (Fig. 11c).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta pilipennis* (Hartig) is represented by 11 specimens (females). One female was designated as lectotype by Evenhuis (1982: 25). Five females are here considered as paralectotypes because they match with the original description and the lectotype designated by Evenhuis. The rest of specimens are different species and considered here as non-conspecific paralectotypes.

Alloxysta flavicornis (Hartig) is represented by four specimens (females) in Hartig's collection. One of them is designated as lectotype by Evenhuis (1982: 23). Other two females are considered as paralectotypes. The last female has been rejected as *A. flavicornis* because it has not pronotal carinae and has different proportions between flagellomeres. So it is considered as non-conspecific paralectotype. After studying the type series of these two species it has been evidenced that they are the same species because both have radial cell closed, pronotal and propodeal plate present, F1 longer than pedicel and F2 (syn. nov).

Alloxysta pleuralis (Cameron, 1879)

Studied material (2♀♀). 'ex *Aphis fabae*, *Trioxys angelicae*', 'ert. mit Sockel!!!, !D-Stuttgart NU19, Hohenheim, 23.5.89, 20-5, Euonymus, leg. Schmid-Egger', '*Alloxysta cf. macrophadna* ♀, det. Schmid-Egger', '*Alloxysta pleuralis* Cameron', 1♀; 'ex *Aphis fabae*, *Trioxys angelicae*', 'D-Stuttgart NU19, Hohenheim, 5.6.89, 20-2, Euonymus, leg. Schmid-Egger', '*Alloxysta cf. macrophadna* det. Schmid-Egger 89', '*Alloxysta* ? width macrophadn', '*Alloxysta cf. pleuralis*', 1♀.

Alloxysta postica (Hartig, 1840)

(Fig. 12)

Xystus posticus: Hartig, 1841: 352.

Allotria posticus: Taschenberg, 1866: 130.

Allotria postica: Cameron, 1890: 234.

Dilyta posticus: Kieffer, 1900: 114.

Alloxysta (Alloxysta) postica: Dalla Torre & Kieffer, 1902: 39.

Alloxysta postica: Andrews, 1978: 88.

Type material. Lectotype: ♀, designated by Evenhuis (1982: 26) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus posticus* Hartig det. H.H. Evenhuis 1980', '*Alloxysta postica* (Hartig, 1841) ♀ M. Ferrer-Suay det. 2011'.

Additional material (1♀). '125/87 8 ex *Myzus cerasi*', 'D. Hessen, Gießen, *Prunus cerasus*, 9.6.87 af', '25/87/8', '♀', '*Alloxysta postica* (Hartig) det H.H. Evenhuis 1979', 1♀.

Diagnosis. Male unknown. *Alloxysta postica* is mainly characterized by having partially open radial cell, radial cell being 2.5 times as long as wide, pronotal carinae and propodeal carinae present, female antennae with the beginning of rhinaria in F4, pedicel-F4 subequal in length. It is similar to *A. citripes* (Thomson, 1862) but they can be differentiated by the shape of propodeal carinae: clearly visible and forming a protruding plate in *A. postica* while the carinae are not protruding in *A. citripes*; size of radial cell: 2.5 times as long as wide in *A. postica* but 2.1 times in *A. citripes*.

Redescription. Coloration. Head yellow, mesosoma and metasoma brown. Scape, pedicel and flagellomeres 1–2 yellow; flagellomeres 3–11 brown. Legs yellow, veins yellowish almost transparent.

Head. Transversally ovate, slightly wider than high in front view, with setae below, between and a few above toruli, with few or without setae on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.4 times height of eye.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 to F3 thinner and smoother than remaining flagellomeres, F4 to F11 with rhinaria and club shaped. Pedicel 1.7 times as long as wide; F1 2.5 times, F2 2.5 times, F3 2.0 times, and F4 1.7 times as long as their width respectively. Pedicel to F11 subequal in length (Fig. 12b). Male unknown.

Mesosoma. Pronotum covered by setae, being less abundant on central area; with two thick carinae distinctly visible (Fig. 12d). Mesoscutum smooth and shiny, round in dorsal view, with few scattered setae. Scutellum smooth and shiny covered by long scattered setae, being more abundant on apex of scutellum. Propodeum entirely covered by setae, two carinae present forming plate with numerous setae on middle of first thirds, sides of plate straight (Figs 12e & 16d).

Forewing. Longer than body, covered with dense pubescence, marginal setae present (Fig. 12a). Radial cell partially open, 2.2 times as long as wide. R1 short and straight; Rs longer and curved (Fig. 12a).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta postica* (Hartig) is represented in Hartig's collection by only one specimen (female). This specimen is designated as lectotype by Evenhuis (1982: 26).

***Alloxysta ramulifera* (Thomson, 1862) (= *X. minutus* Hartig)**
(Fig. 13)

Xystus minutus: Hartig, 1840: 200 [non *Cynips minuta* Zetterstedt, 1838]:

Allotria minuta: Giraud, 1860: 127.

Allotria (Allotria) minuta: Dalla Torre & Kieffer, 1902: 40.

Charips (Charips) minuta: Dalla Torre & Kieffer, 1910: 276.

Alloxysta minuta: Hellén, 1963: 21.

Type material. Lectotype: ♀, designated by Evenhuis (1982: 25) with the following labels: '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus minutus* Hartig det. H.H. Evenhuis 1980', '*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011'. Paralectotype: 4♀♀, with the following labels: 'In collection Hartig as *Xystus minutus*', 'Paralectotype *Xystus minutus* Hartig, 1840 ♀' (red label), '*Alloxysta ramulifera* (Thomson, 1862) ♀ M. Ferrer-Suay det. 2011'. Also four non-conspecific paralectotypes are present (see comments).

Additional material (4♀♀). 'In collection Hartig as *Xystus minutus*', 4♀♀.

Diagnosis. *Alloxysta ramulifera* is mainly characterized by having small closed radial cell, radial cell being 2.0 times as long as wide, pronotal carinae present also very small sometimes difficult to see under the pubescence, propodeal carinae forming a plate, rhinaria and club shaped begin in F4, F1 subequal to pedicel, F1 longer than F2, F2 subequal to F3, F3 shorter than F4. *Alloxysta ramulifera* is very similar to *A. arcuata* (Kieffer, 1902) both species having pronotal carinae, propodeal plate, and radial cell small and closed. They can be distinguished by: shape of pronotal carinae, small and sometimes very difficult to see under the pubescence in *A. ramulifera* (thick and clearly visible in *A. arcuata*); shape of propodeal plate, in *A. ramulifera* the carinae are straight separated by setae in the first 1/3 and forming a plate in the

last 2/3 (forming a complete plate in *A. arcuata*); and in size of radial cell: 2.0 times as long as wide in *A. ramulifera* (2.3 times as long as wide in *A. arcuata*).

Redescription. Coloration. Head, mesosoma and metasoma yellowish brown. Scape, pedicel and F1 to F3 dark yellow, F4 and F5 yellowish brown. Legs dark yellow and veins yellowish brown.

Head. Transversally ovate, slightly wider than high in front view, with setae below and between toruli, without setae above toruli and on vertex, with numerous setae on face. Transfacial line 1.1 times height of eye. Malar space 0.5 times height of eye.

Antenna. Female: only present filiform F1-F5. All antennomeres covered with sparse setae. F1 to F3 thinner and smoother than remaining flagellomeres, F4 and F5 with rhinaria and club-shaped. Pedicel 1.4 times as long as wide; F1 2.5 times, F2 2.0 times, F3 1.6 times, and F4 2.0 times as long as their width respectively. F1 subequal to pedicel and 1.3 times as long as F2; F2 subequal to F3; F4 1.3 times as long as F3; F4 subequal to F5. (Fig. 13d). Male unknown.

Mesosoma. Pronotum entirely covered by setae, less abundant on posterodorsal margins and central area; with two small carinae sometimes indistinctly visible under pubescence (Fig. 13b). Mesoscutum smooth and shiny, round in dorsal view with scattered setae, more abundant on anterior margin. Scutellum smooth and shiny, covered by long setae, being more abundant on apex of scutellum. Propodeum covered by numerous setae, with two carinae forming plate, carinae only well defined on top, with abundant setae in first half, sides of plate straight (Figs 13c & 16c).

Forewing. Longer than body, 1.4 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 13a). Radial cell closed, 2.0 times as long as wide. R1 short and straight; Rs longer and curved. (Fig. 13a).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga distinctly visible.

Comments. *Alloxysta minuta* (Hartig) is represented by nine specimens (females). One female was designated as lectotype by Evenhuis (1982: 25). Four females are considered here as paralectotype because they match with the original description and the lectotype designated by Evenhuis. The rest of females are not *A. minuta* (one of them even is a *Phaenoglyphis* species), they are considered here as non-conspecific paralectotypes.

According to Evenhuis & Barbotin (1987), the name *A. minuta* (Hartig, 1840) had to be rejected due to homonymy with *A. minuta* (Zetterstedt, 1838). For this reason the authors replaced it by *A. ramulifera* (Thomson), the next name into its synonym list. The specimens of *Alloxysta minuta* (Hartig) studied here belong to *A. ramulifera*.

Alloxysta rufiventris (Hartig, 1840)

(Fig. 14)

Xystus rufiventris: Hartig, 1840: 200.

Allotria rufiventris: Taschenberg, 1866: 130.

Dilyta rufiventris: Kieffer, 1900: 114.

Alloxysta (Alloxysta) rufiventris: Dalla Torre & Kieffer, 1902: 39.

Alloxysta rufiventris: Andrews, 1978: 90.

Type material. Lectotype: ♂, designated by Evenhuis (1982: 26) with the following labels: '♂', 'lectotype H. H. Evenhuis' (orange label), 'Xystus rufiventris Hartig det. H.H. Evenhuis 1980', '*Alloxysta rufiventris* (Hartig, 1840) ♂ M. Ferrer-Suay det. 2011'.

Additional material (2♀♀). 'In collection Hartig as *Xystus rufiventris*', '*Alloxysta rufiventris* (Hartig, 1840) ♀ M. Ferrer-Suay det. 2011', 1♀; 'In collection Hartig as *Xystus rufiventris*', 1♀.

Diagnosis. *Alloxysta rufiventris* is mainly characterized by having partially open radial cell, radial cell being 2.2 times as long as wide, pronotal carinae absent, propodeal carinae present forming a plate, rhinaria and club shaped begin in F4, pedicel-F4 subequal in length. According with these features there is no other *Alloxysta* similar to *A. rufiventris*.

Redescription. Coloration. Head dark yellow in female and yellowish brown in male, mesosoma and metasoma yellowish brown in both sexes. Scape, pedicel and F1 to F3 yellow, F4 to F12 brown. Legs yellow; veins yellowish, almost transparent.

Head. Not available for study because specimen has been glued with head down.

Antenna. Female with 13 filiform antennomeres. All antennomeres covered with sparse setae. F1 to F3 thinner and smoother than remaining flagellomeres, F4 to F11 with rhinaria and club shaped. Pedicel 1.7 times as long as wide; F1 2.5 times, F2 2.5 times, F3 2.5 times, and F4 1.7 times as long as their width respectively. Pedicel to F11 subequal in length (Fig. 14e). Male without antennae.

Mesosoma. Pronotum covered by setae, being less abundant on posterodorsal margins and central area; without carinae (Fig. 14c). Mesoscutum smooth and shiny, round in dorsal view with few scattered setae. Scutellum smooth and shiny, with few scattered setae being more abundant on apex of scutellum. Propodeum entirely covered by setae, with two carinae forming thick plate, with few setae on top and sides very slightly curved (Figs 14f & 16b).

Forewing. Longer than body, 1.1 times as long as mesosoma and metasoma together, covered with dense pubescence, marginal setae present (Fig. 14a). Radial cell partially open, 2.2 times as long as wide. R1 very short and straight; Rs longer and curved. (Fig. 14b).

Metasoma. Proximal part with an incomplete ring of setae, this ring glabrous medially, wider laterally. Distal part of metasoma smooth and shiny. Terga clearly visible.

Comments. *Alloxysta rufiventris* (Hartig) is represented by three specimens (1 male and 2 females). The male was designated as lectotype by Evenhuis (1982: 26). One female is conspecific but it cannot be a paralectotype because the description is based on male. The other female is another not identified *Alloxysta* species.

***Alloxysta victrix* (Westwood, 1833) (= *X. erythrocephalus* Hartig)**

Xystus erythrocephalus: Hartig, 1840: 199.

Allotria erythrocephalus: (Hartig) Dahlbom, 1842: table 2: 3.

Synonymized by Giraud (1860: 127) with *A. victrix* (Westwood).

Type material of *Xystus erythrocephalus* Hartig. Lectotype: ♀, designated by Evenhuis (1972) with the following labels: '1036', 'Weld 1931' (red label), '♀', 'lectotype H. H. Evenhuis' (orange label), '*Xystus erythrocephalus* Hartig det. H.H. Evenhuis 1972', '*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011'. Paralectotype: 7♂♂ & 33♀♀, with the following labels: 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus* Hartig, 1840 ♀' (red label), '*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011', 17♀♀. '638', 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus* Hartig, 1840 ♀' (red label), '*Alloxysta victrix* (Westwood, 1833) ♀ M. Ferrer-Suay det. 2011', 6♀♀. '♂', 'Weld 1931' (red label), 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus* Hartig, 1840 ♂' (red label), '*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011', 1♂; '1717' (blue label), 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus* Hartig, 1840 ♂' (red label), '*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011', 1♂; '459', 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus* Hartig, 1840 ♂' (red label), '*Alloxysta victrix* (Westwood, 1833) ♂ M. Ferrer-Suay det. 2011', 1♂. 'In collection Hartig as *Xystus erythrocephalus*', 'Paralectotype *Xystus erythrocephalus*

Hartig, 1840 ♂♀ (red label), '*Alloxysta victrix* (Westwood, 1833) ♂♀ M. Ferrer-Suay det. 2011', 4♂♂ & 10♀♀. Also present seven non-conspecific paralectotypes (see comments).

Additional material (9♂♂ & 48♀♀). 'In collection Hartig as *Xystus erythrocephalus*', 7♀♀; 'Brüggenn 5', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1987', 2♀♀; 'I, VI, Piovene Bte Summano, 900–1300m, 3.7.1965 Hbth.', '♀', '*Alloxysta victrix* (Westwood), det. H.H. Evenhuis 1990', 1♀; 'D, BY, Kochel, 700–900m, 5.8.81, Hbth', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1990', 1♀; 'D, BY, Walchensee, 800m, 6.8.1981 Haeselb.', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1990', 1♀. 'I, VI, Piovene, Mte. Summano, 900-1300m, 3.7.1985 Hbth', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis, 19_', 4♀♀; 'I, TN, Riva, 80-250m, 21.5.1982, Haeselb.', '♀', '*Alloxysta victrix* (Westwood) det H. H. Evenhuis 1990', 1♀; 'I, VR, Garda, Rocca, 100-250m, 20.5.83 Haeselb', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1987', 4♀♀; 'I, VR, Garda, M. Luppia, 10.-18. 5. 83, 150-400m, E. Haeselbarth', '♂', '*Alloxysta victrix* (Westwood), det. H.H. Evenhuis 1987', 1♂; 'D, BY, Sonthofen, Grünten 15.8.83, 1450-1600m, Haeselbarth', '♂', '*Alloxysta victrix* var. *leunisii* (Hartig) det H.H. Evenhuis 1990', 2♂♂; 'D-Heilbroun, Glasshouse 4.89, Cucumber leg. Schrameyer ex. *Aphidius uzbekistanicus*', '*Alloxysta victrix* (W) ♂', det. Schmid-Egger 89', 1♂; 'I, VI, Piovene, Mte. Summano, 900-1300m, 3.7.1985, Hbth.', '♂', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1990', 1♂; '131/87 1.6, ex *Macrosiphum rosae*', 'D. Hessen, Wetzlar, *Rosa* sp., leg. M. G. 87 ag', '♂', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♂; '156/87 3. 10', 'D Hessen longgéns *Epilobium*, leg 21.6.87 org', '♂', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♂; '156/87 3.16', 'D Hessen longgéns *Epilobium*, leg 21.6.87 org', '♂', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♂; '156/87 3.13', 'D Hessen longgéns *Epilobium*, leg 21.6.87 org', '♂', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♂; 'D, BY, Garmisch-P., Eckbauer, 1200m., 10.7.82, E. Haeselbarth', '♀', '*Alloxysta victrix* var. *leunissi* (Hartig) det H.H. Evenhuis 1990', 1♀; 'I, VR, Garda, M. Lenzino, 300-450m, 13.-48.5.83, Haeselb.', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1990', 1♀; 'I, VI, Recoero C. Campogrosso, 1500m, 30.6.85, E. Haeselbarth', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1987', 3♀♀; 'I, VI, Recoaro Campogrosso, 1500m, 1.7.85, Haeselbarth', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1990', 3♀♀; '5895', '*Alloxysta victrix* lg det. Borgem', 1♀; 'D, BY, Oberammergau Leber, 1650m, 5.9.1980', '♀', '*Alloxysta victrix* var. *leunisii* (Hartig) det H.H. Evenhuis 1990', 1♀; 'I, VI, Piovene, Mte. Summano, 600-900m., 3.7.1985 Hbth.', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 19', 1♀; '131/87 1.7, ex *Macrosiphum rosae*', 'D. Hessen Wetzlar, *Rosa* sp., leg. 116.87 org', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '54/88. 1 ex *Macrosiphum rosae*', 'D. Hessen, Wetzlar, *Rosa* sp. leg. 21.5.88 ag', '♀', '*Alloxysta victrix* (Westwood) det H.H. Evenhuis 1989', 1♀; '131/87 1.8, ex *Macrosiphum rosae*', 'D. Hessen Wetzlar, *Rosa* sp., leg. 116.87 org', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '131/87 1.5, ex *Macrosiphum rosae*', 'D. Hessen Wetzlar, *Rosa* sp., leg. 116.87 org', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '131/87 1.11, ex *Macrosiphum rosae*', 'D. Hessen Wetzlar, *Rosa* sp., leg. 116.87 org', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '131/87 1.1, ex *Macrosiphum rosae*', 'D. Hessen Wetzlar, *Rosa* sp., leg. 116.87 org', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '156/87 3.12, ex', 'D. Hessen, Longgóns, *Epilobium*, leg 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; 'D-Stuttgart NU19, Hohenheim 1.89, Glasshouse *Rhopalosiphum padi*, leg. Schmid-Egger', '*Alloxysta* cf. *victrix* (W) ♀, det. Schmid-Egger', 1♀; *Rhopalosiphum padi*, *Aphidius uzbekistanicus*', 'D-Stuttgart NU19, Hohenheim 19.1.89, Glasshouse, leg. Schmid-Egger', '*A. victrix* ♀ det. Schmid-Egger 89', 1♀; '183/86 ex', 'D. Hessen, Gießen, *Lupinus mutabilis*, leg. 28.7.86 org', 'Hym. Cynip. Charipinae', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis

1989', 1♀; '156/87 3.11, ex', 'D. Hessen, Longgóns, *Epilobium*, leg. 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '156/87 3.14, ex', 'D. Hessen, Longgóns, *Epilobium*, leg. 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '156/87 3.15, ex', 'D. Hessen, Longgóns, *Epilobium*, leg. 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '156/87 3.18, ex', 'D. Hessen, Longgóns, *Epilobium*, leg. 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '156/87 3.17, ex', 'D. Hessen, Longgóns, *Epilobium*, leg. 21.6.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '202/87 . 2', 'D. Hessen, Gießen, *Lupinus consenlinii*, leg. 16.7.87 ag', '♀', '*Alloxysta victrix* (Westwood) det. H.H. Evenhuis 1989', 1♀; '228/87 5.1', 'D. Hessen.

Comments. Material of *Alloxysta erythrocephalus* (Hartig) is represented by 48 specimens in Hartig's collection (7♂♂ & 41♀♀). One female was designated as lectotype by Evenhuis (1972: 211). Seven males and 33 females are considered as paralectotypes because they match with the original description and the lectotype designated by Evenhuis. Seven females have been rejected as *A. victrix* for different reasons, one of them being *Phaenoglyphis* species; they are considered here as non-conspecific paralectotypes. *Alloxysta erythrocephalus* (Hartig, 1840) was synonymized with *A. victrix* (Westwood, 1833) by Giraud (1860). All specimens of *A. erythrocephalus* have been revised to check the validity of this synonym and it has been confirmed.

Remarks on hosts. *Alloxysta victrix* is here cited for the first time parasitizing *Aphidius uzbekistanicus*, *Rhopalosiphum padi* through *Aphidius uzbekistanicus* and related with the aphids *Macrosiphum rosae* and *Rhopalosiphum padi*.

SUMMARY

Hartig described ten species in 1840: *Xystus brachypterus*, *X. cursor*, *X. erythrocephalus*, *X. erythrothorax*, *X. melanogaster*, *X. obscuratus*, *X. pilipennis*, *X. minutus*, *X. rufiventris*, *X. longicornis*; and fourteen in 1841: *Xystus apertus*, *X. castaneus*, *X. circumscriptus*, *X. defectus*, *X. flavicornis*, *X. fuscicornis*, *X. leunisii*, *X. longipennis*, *X. macrophadnus*, *X. posticus*, *X. trapezoideus*, *X. cinctus*, *X. heterocerus*, *X. villosus*. Of these twenty-four species names, twenty-two were considered valid. The current review of the Hartig type collection show that only fourteen species names remained valid. According to the principles of the International Code of Zoological Nomenclature, the next two names may be treated as *nomen dubium*.

Alloxysta cursor should be considered as a *nomen dubium* because the two antennae of only lectotype specimen saved are missing. In this genus, the antennae are one of the most important features to distinguish species. Thus, we cannot be sure if the name of this species is valid or synonym of another one. The type material of *A. erythrothorax* is lost. Then, we cannot establish if the name of this species is valid or it is really a synonym of *A. fulviceps*. For this reason, we consider here *A. erythrothorax* a *nomen dubium*.

The study explains that *Alloxysta castanea* is not a synonym of *A. fulviceps* as it was considered by Fergusson (1986) and how it was adopted in the later publications (Ferrer-Suay et al. 2012a). The taxonomic changes that have suffered all the species involved in *fulviceps*-*castanea* group and their current status are summarized in the Table 1.

Additionally, some new records on host of the considered species have been revealed during identification of the Charipinae material, which does not belong to the Hartig collection but is deposited in ZSM. The results presented in the Table 2 expand the scarce data on some *Alloxysta* species.

Table 1. Changes in the species names related with *Alloxysta fulviceps* and *Alloxysta castanea*.

Oryginal species name with synonym according to the later authors	Species name sensu Ferrer-Suay et al. (2012a)	Species name established in the present study
<i>A. fulviceps</i> (Curtis, 1838)	<i>Alloxysta victrix</i> after Pujade-Villar et al. (2011)	<i>Alloxysta victrix</i> after Pujade-Villar et al. (2011)
<i>A. erythrothorax</i> (Hartig, 1840) Syn. by Quinlan & Fergusson (1981) with <i>A. fulviceps</i>	<i>A. erythrothorax</i> (Hartig)	nomen dubium by this study
<i>A. castanea</i> (Hartig, 1841) Syn. by Fergusson (1986) with <i>A. fulviceps</i>	<i>A. castanea</i> (Hartig) status rev.	<i>A. castanea</i> (Hartig)
<i>A. defecta</i> (Hartig, 1841) Syn. by Fergusson (1986) with <i>A. fulviceps</i>	<i>A. erythrothorax</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig) in this study
<i>A. nigriventris</i> (Thonson, 1862) Syn. by Fergusson (1986) with <i>A. fulviceps</i>	<i>A. erythrothorax</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig) in this study
<i>A. erythrothorax</i> var. <i>dubia</i> Kieffer, 1902 Syn. by Evenhuis, 1982 with <i>A. castanea</i>	<i>A. castanea</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig)
<i>A. rubriceps</i> (Kieffer, 1902) Syn. by Evenhuis, 1982 with <i>A. castanea</i>	<i>A. castanea</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig)
<i>A. semiclausa</i> Kieffer, 1904 Syn. by Evenhuis & Barbotin, 1987 with <i>A. castanea</i>	<i>A. castanea</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig)
<i>A. pruni</i> (Hedicke, 1928) Syn. by Evenhuis, 1982 with <i>A. castanea</i>	<i>A. castanea</i> (Hartig)	Synonym of <i>A. castanea</i> (Hartig)

Table 2. Summary of new host data discovered during the study of the Charipinae species deposited in the Zoologische Staatssammlung Museum.

<i>Alloxysta</i> species	Primary parasitoids	Aphids
<i>arcuata</i>		<i>Myzus cerasi</i>
<i>brevis</i>	<i>Lysiphlebus fabarum</i>	<i>Aphis fabae</i> <i>Rhopalosiphum padi</i>
<i>fuscicornis</i>	<i>Diaeretiella rapae</i>	<i>Aphis brassicae</i> <i>Methopolophium dirhodum</i>
<i>victrix</i>	<i>Aphidius uzbekistanicus</i> <i>Aphidius uzbekistanicus</i>	<i>Rhopalosiphum padi</i> <i>Macrosiphum rosae</i> <i>Rhopalosiphum padi</i>

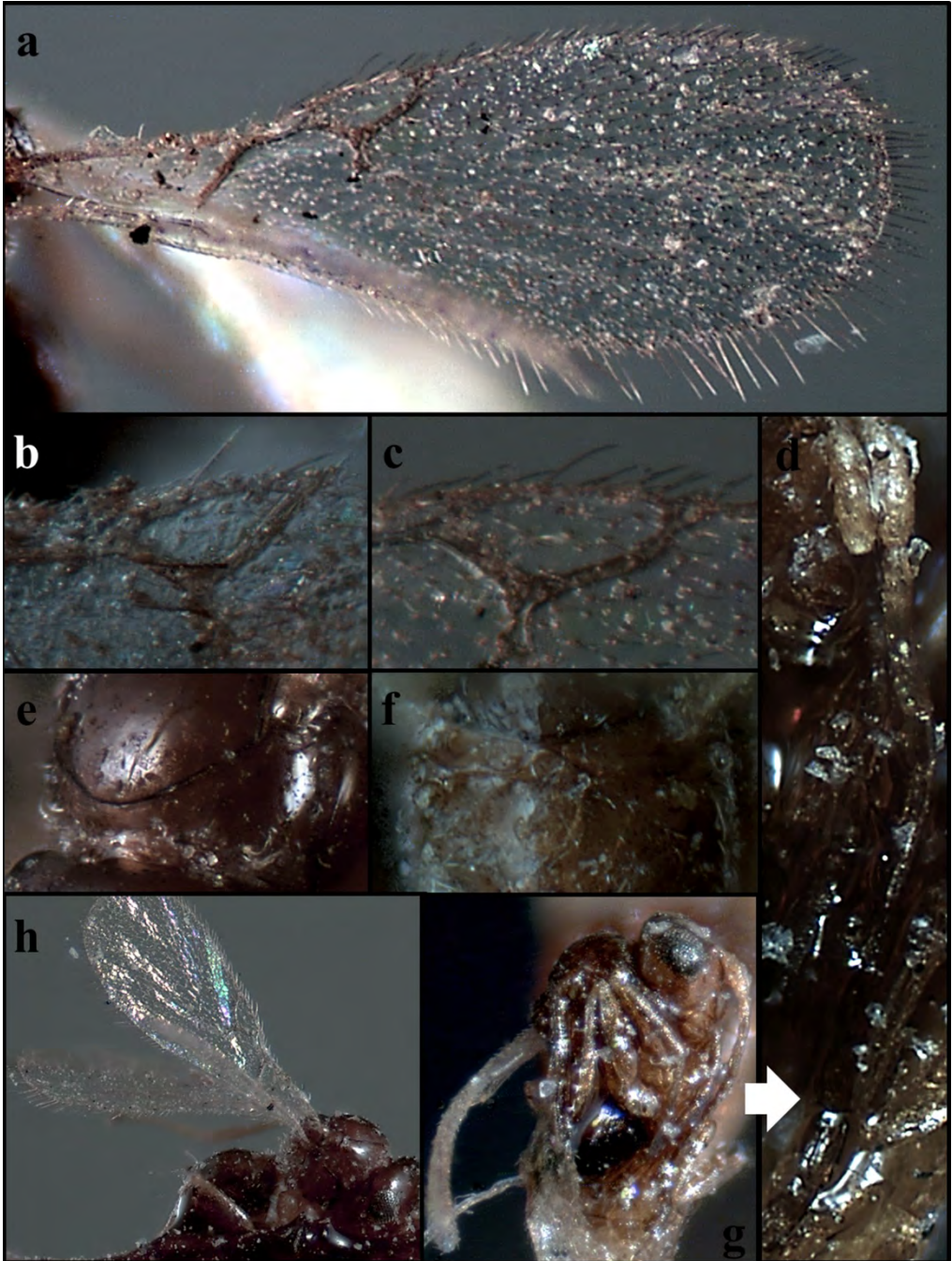


Fig. 1. *Alloxysta aperta*: a – forewing of male, b – radial cell of female, c – radial cell of male, d – antenna of female, e – pronotum of female, f – propodeum of female, g – body of female, h – body of male.

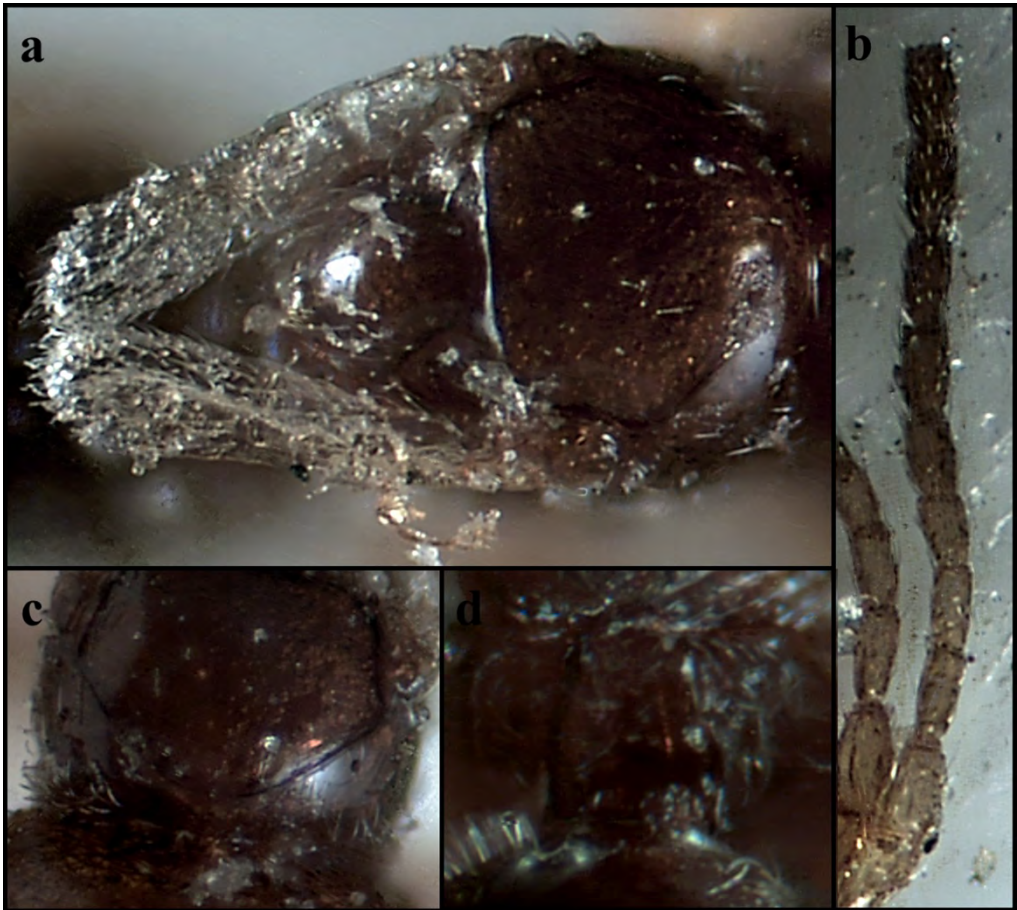


Fig. 2. *Alloxysta brachyptera* (male): a – mesoscutum, b – antenna, c – pronotum, d – propodeum.

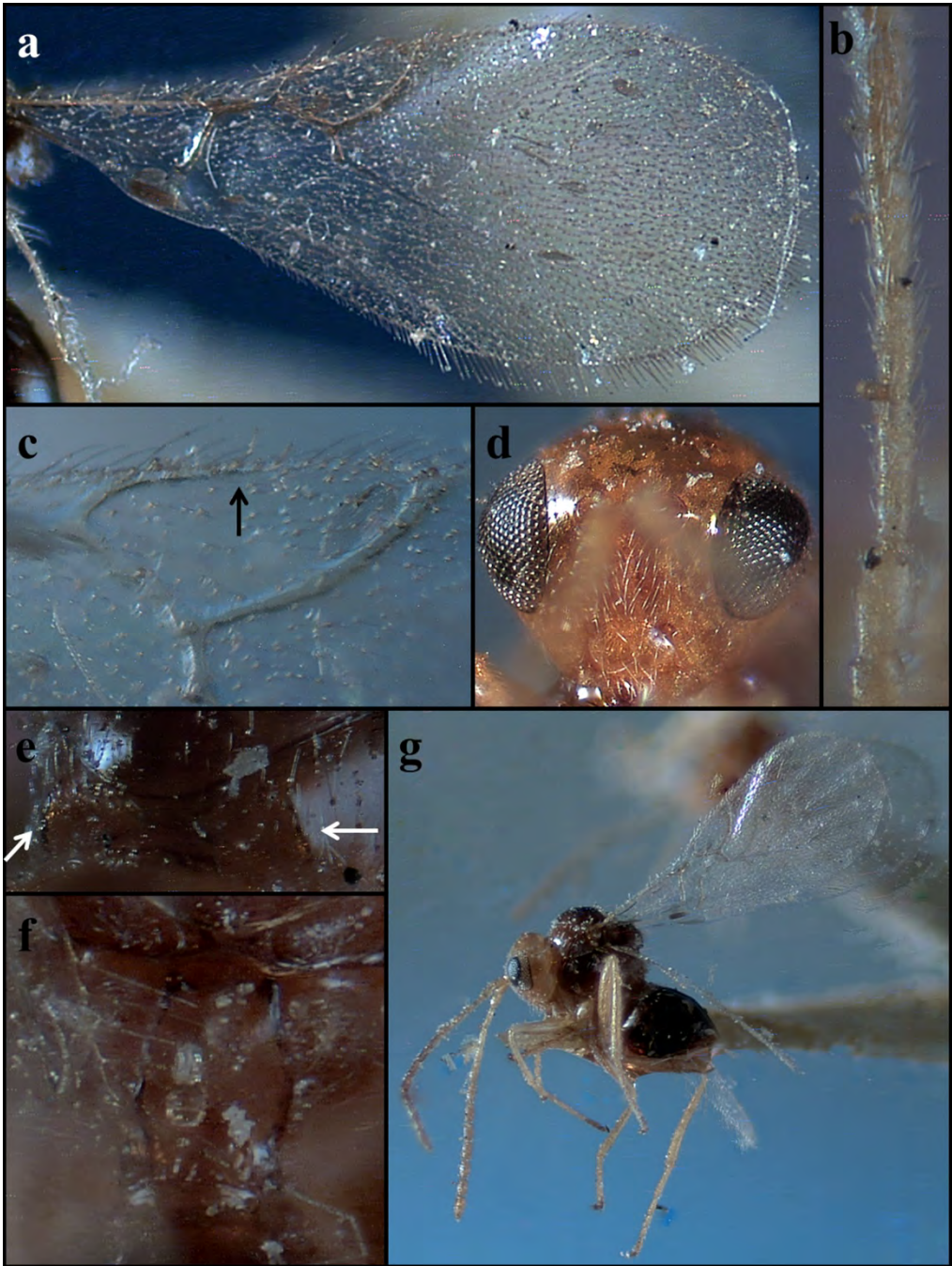


Fig. 3. *Alloxysta castanea* (male): a – forewing, b – antenna, c – radial cell, d – head, e – pronotum, f – propodeum, g – body.



Fig. 4. *Alloxysta circumscripta* (female): a – forewing, b – radial cell, c – head, d – antenna, e – pronotum, f – propodeum, g – body.

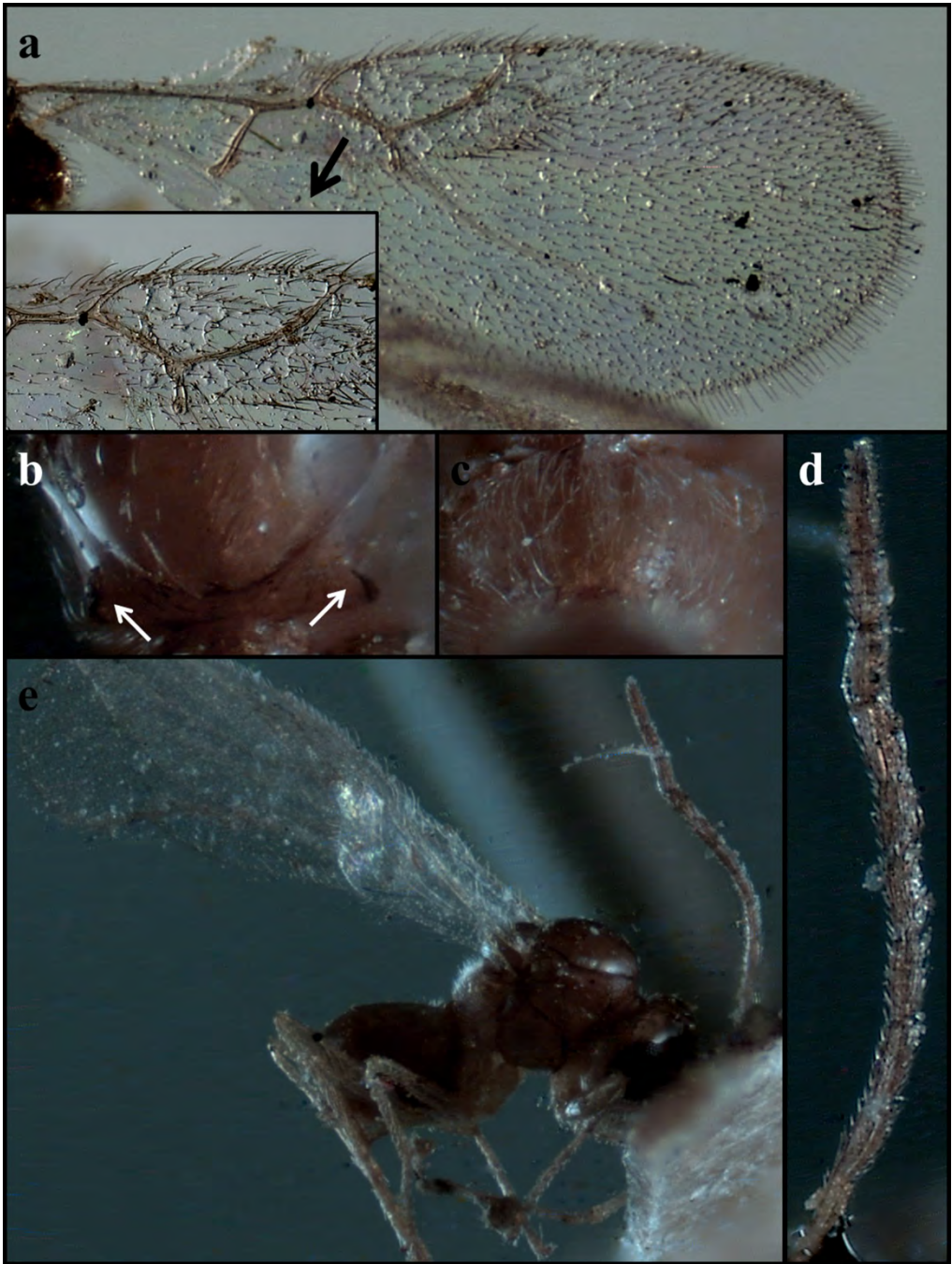


Fig. 5. *Alloxysta fuscicornis* (female): a – forewing, b – pronotum, c – propodeum, d – antenna, e – body.

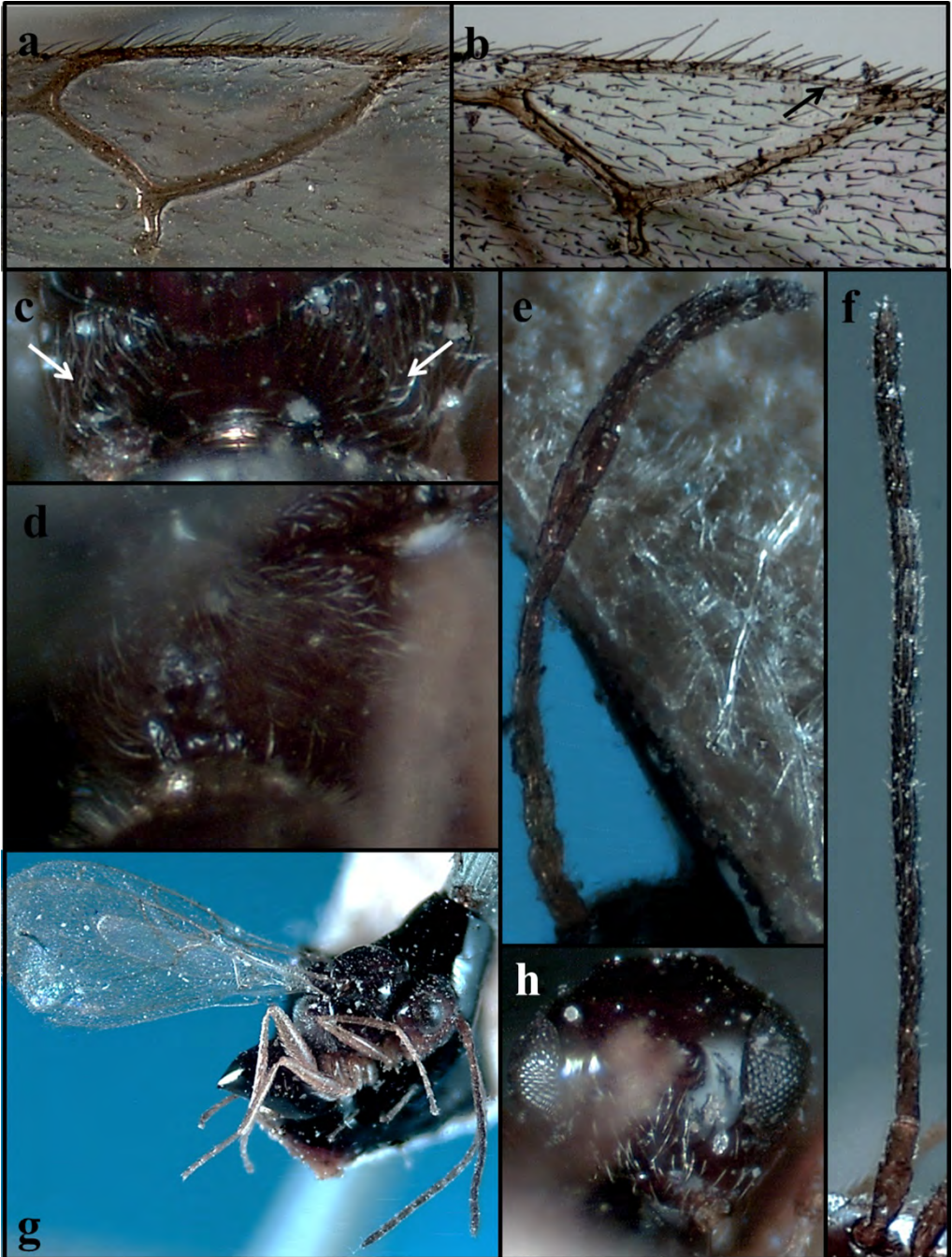


Fig. 6. *Alloxysta leunisii*: a – radial cell of female, b – radial cell of male, c – pronotum of female, d – propodeum of female, e – antenna of male, f – antenna of female, g – body of female, h – head of female.

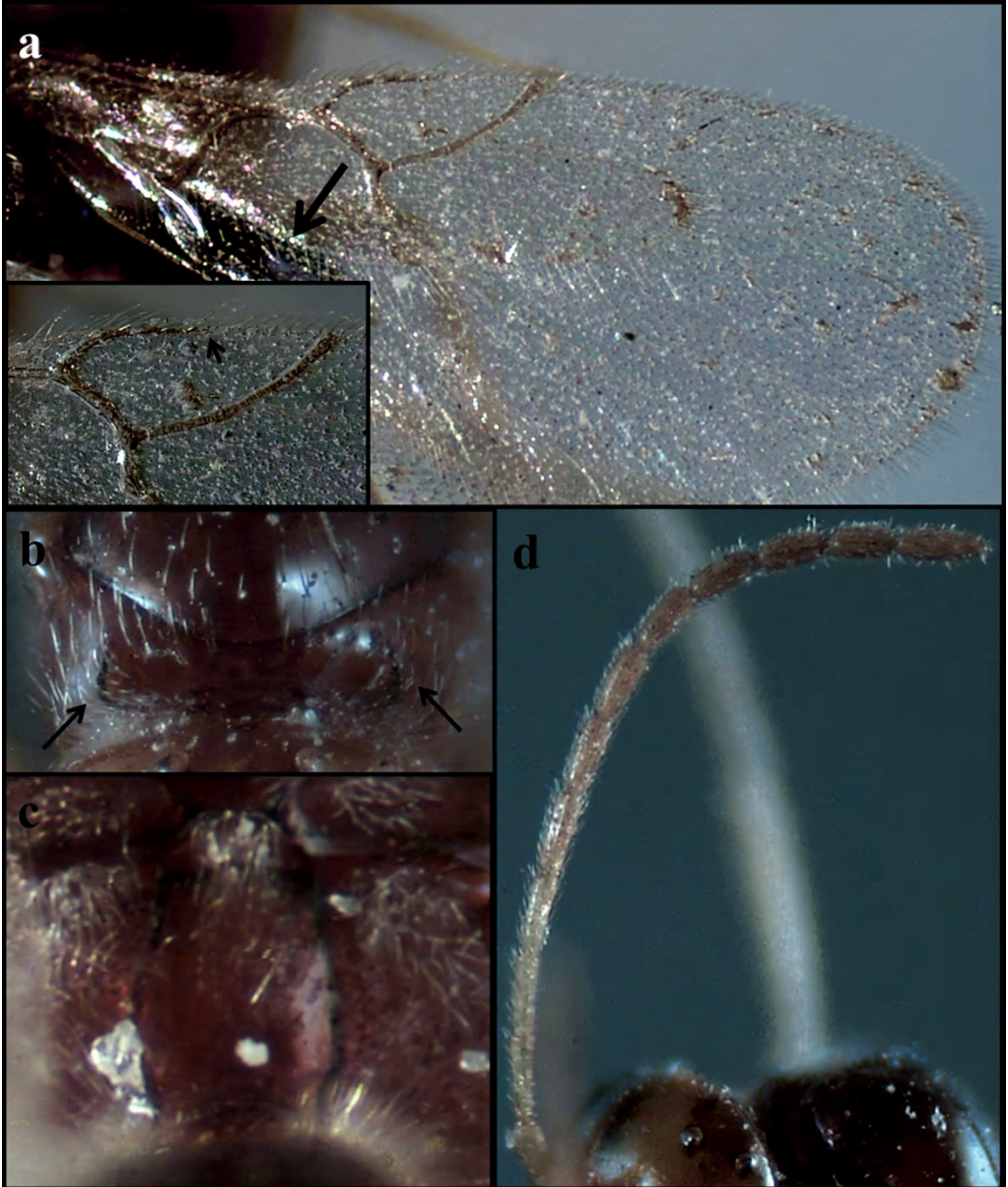


Fig. 7. *Alloxysta longipennis* (female): a – forewing, b – pronotum, c – propodeum, d – antenna.

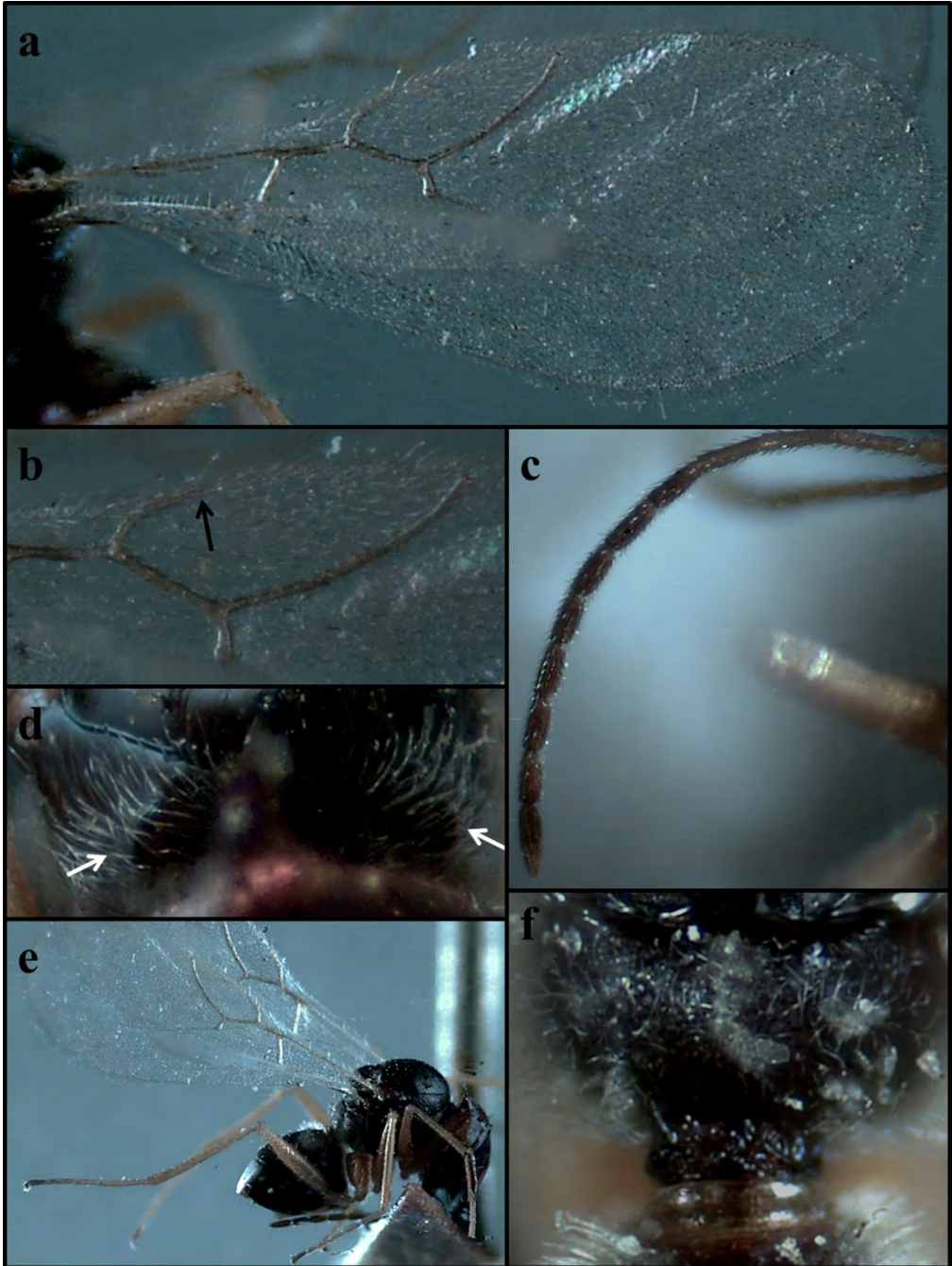


Fig. 8. *Alloxysta macrophadna* (female): a – forewing; b – radial cell, c – antenna, d – pronotum, e – body; f – propodeum.

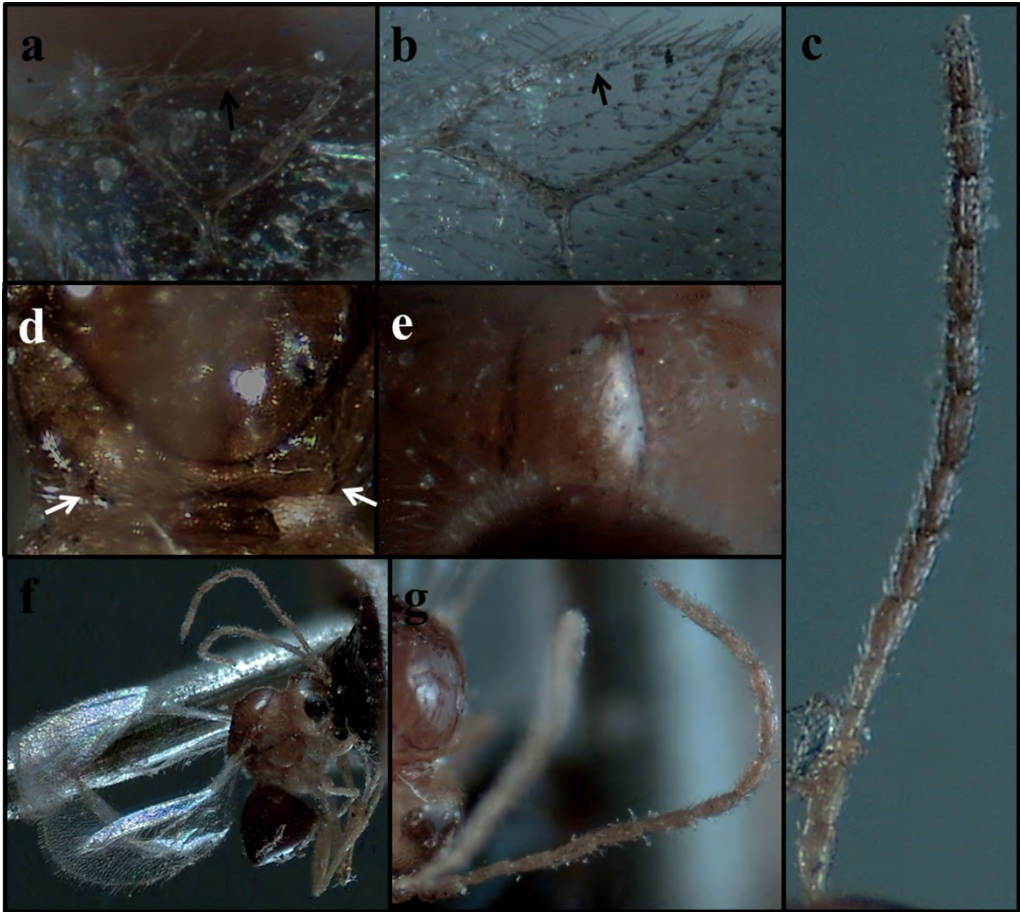


Fig. 9. *Alloxysta melanogaster*: a – radial cell of female, b – radial cell of male, c – antenna of female, d – pronotum of male, e – propodeum of male, f – body of male, g – antenna of male.



Fig. 10. *Alloxysta obscurata*: a – radial cell of male, b – radial cell of female, c – pronotum of female, d – propodeum of female, e – body of female, f – antenna of female, g – antenna of male.

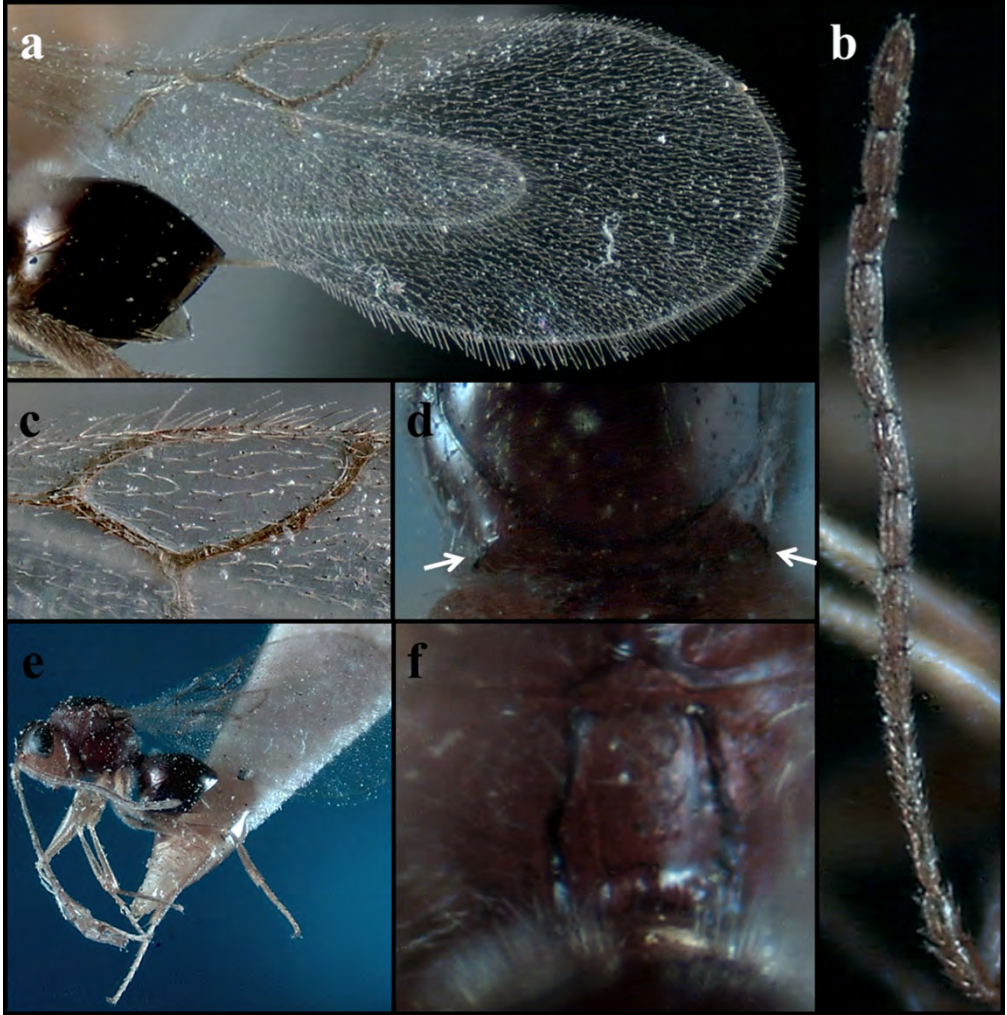


Fig. 11. *Alloxysta pilipennis* (female): a – forewing, b – antenna, c – radial cell, d – pronotum, e – body, f – propodeum.

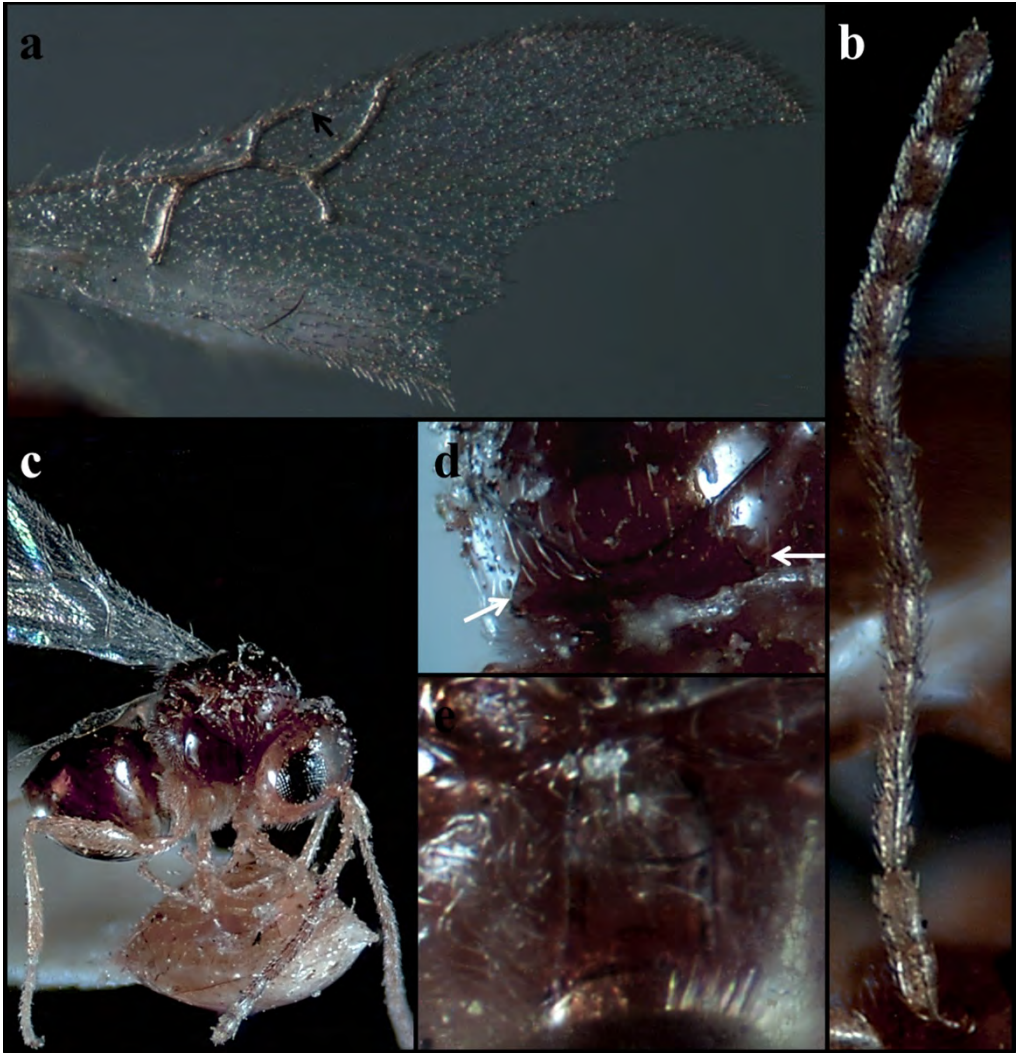


Fig. 12. *Alloxysta postica* (female): a – forewing, b – antenna, c – body, d – pronotum, e – propodeum.

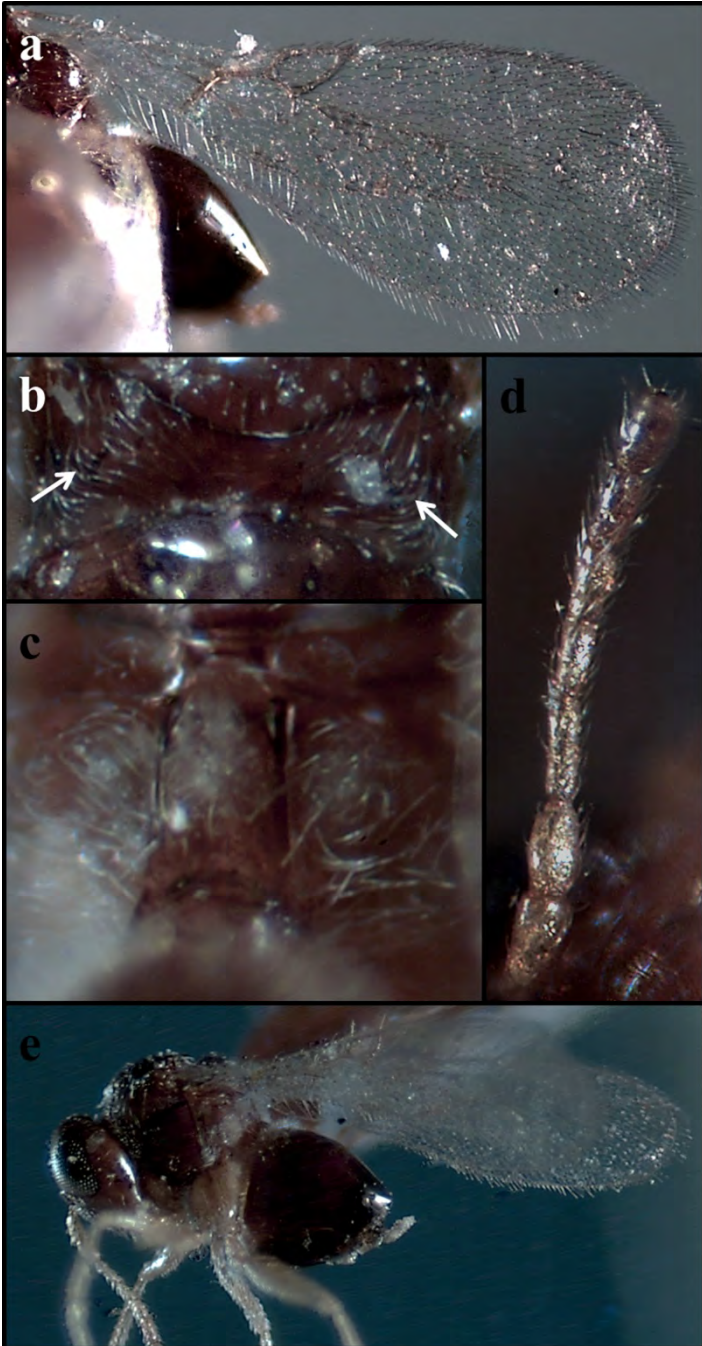


Figure 13. *Alloxysta ramulifera* (female): a) forewing; b) pronotum; c) propodeum; d) antenna; e) body

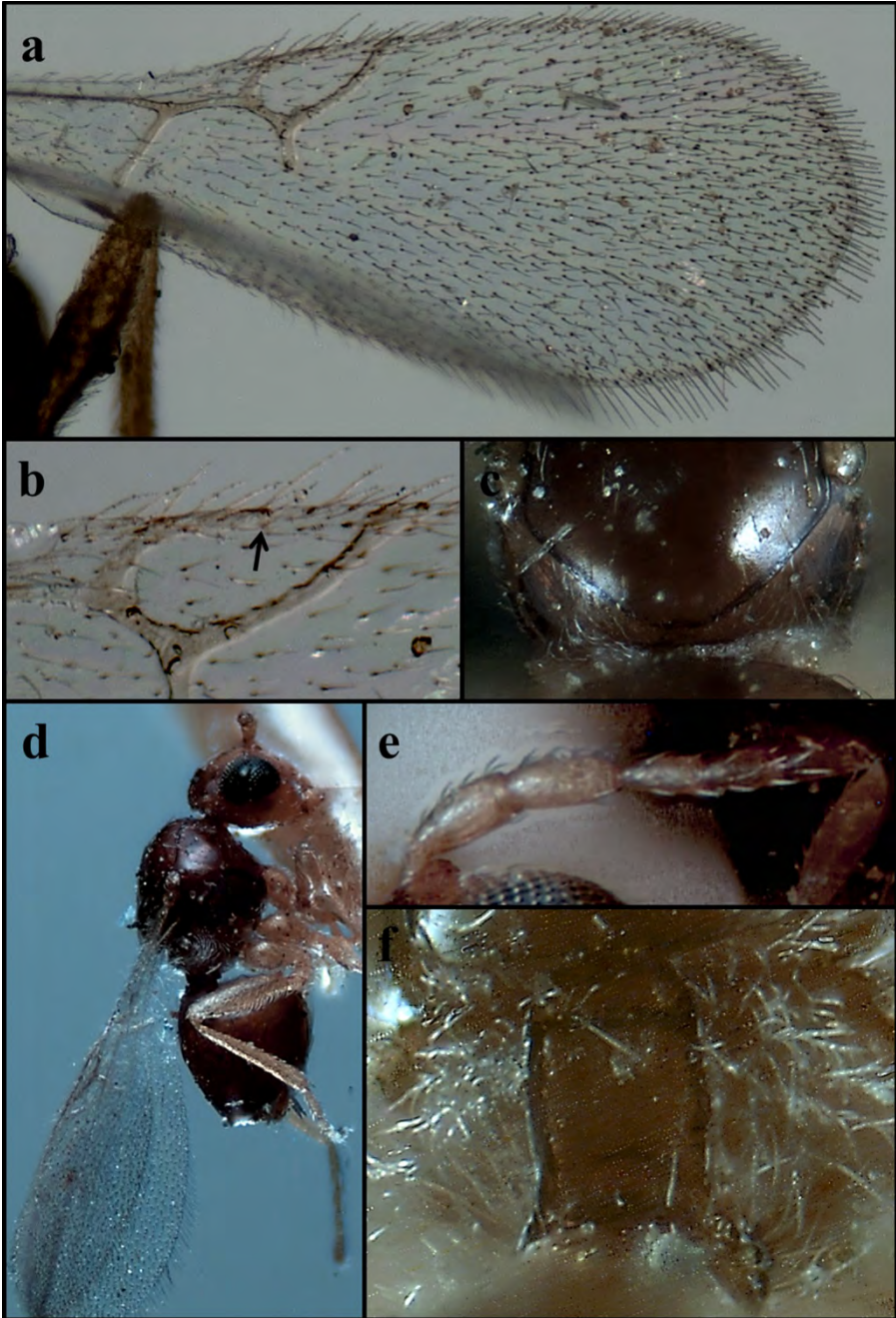


Fig. 14. *Alloxysta rufiventris*: a – forewing of male, b – radial cell of male, c – pronotum of male, d – body of male, e – antenna of female, f – propodeum of male.

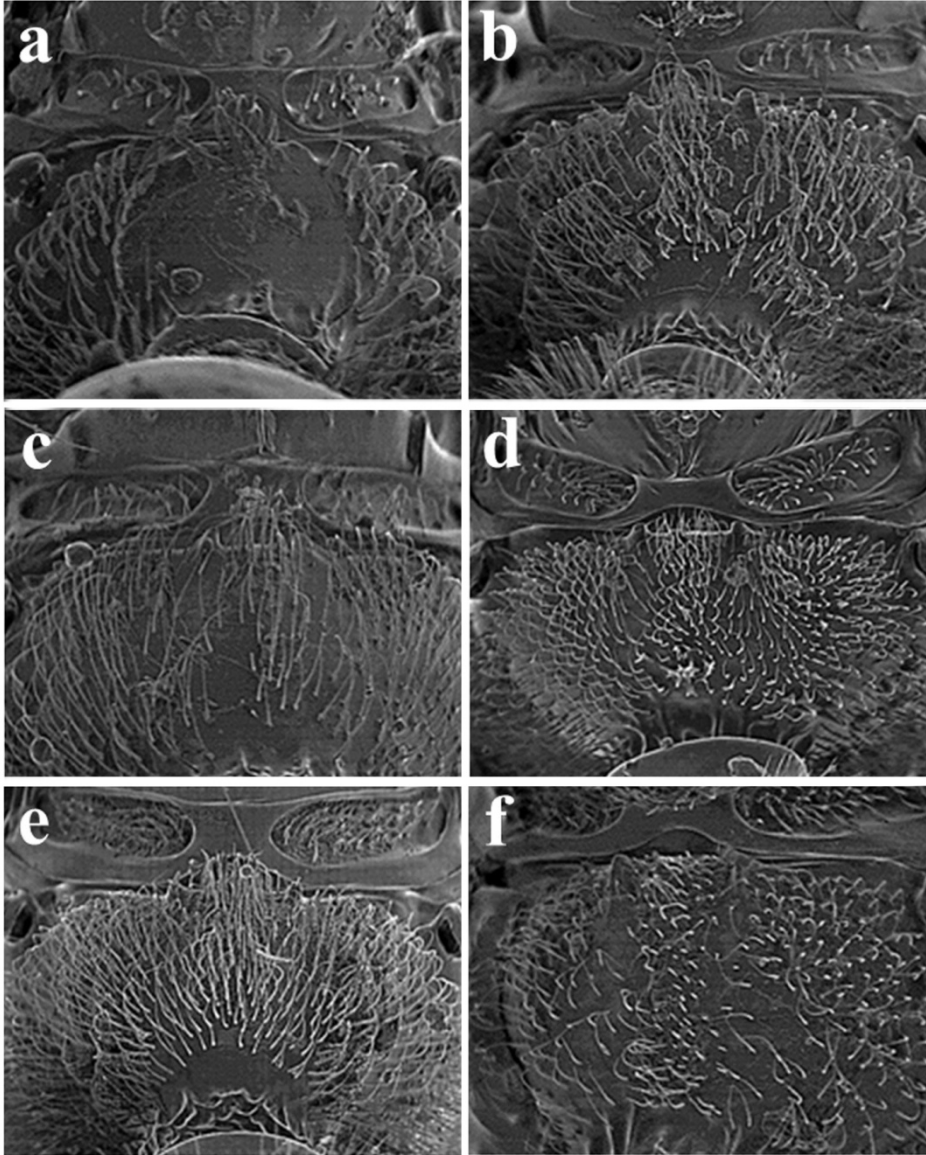


Fig. 15. Propodeum without carinae: a – *A. aperta*, b – *A. circumscripta*, c – *A. fuscicornis*, d – *A. leunisii*, e – *A. macrohadna*, f – *A. obscurata*.

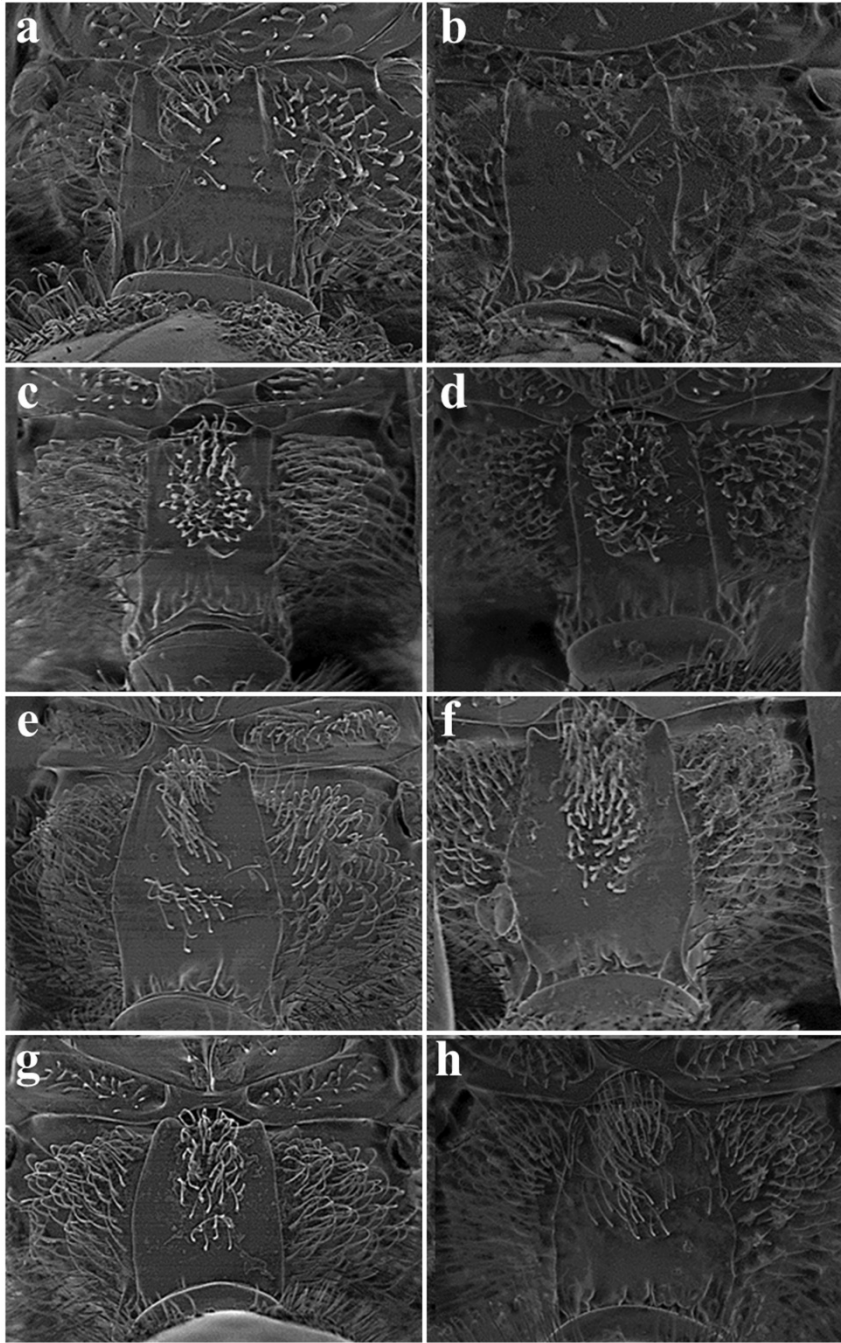


Fig. 16. Propodeum with carinae: a – *A. brachyptera*, b – *A. rufiventris*, c – *A. ramulifera*, d – *A. postica*, e – *A. castanea*, f – *A. longipennis*, g – *A. melanogaster*, h – *A. pilipennis*.

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STRESZCZENIE

[Przegląd kolekcji Hartiga i innych materiałów błonkówek z rodzaju *Alloxysta* (Hymenoptera: Figitidae: Charipinae) w zbiorach Państwowego Muzeum Zoologicznego w Monachium]

Wykonano przegląd błonkówek z rodzaju *Alloxysta* (Förster 1869) w kolekcji Hartiga zdeponowanej w zbiorach Państwowego Muzeum Zoologicznego w Monachium w Niemczech, badając 114 okazów z 19 gatunków. Stwierdzono, iż z uznawanych wcześniej 22 gatunków *Alloxysta* (a 24 opisanych przez Hartiga), tylko 14 można uznać obecnie za gatunki ważne. Są to: *Alloxysta aperta* (Hartig, 1841), *A. brachyptera* (Hartig, 1840), *A. castanea* (Hartig, 1841), *A. circumscripta* (Hartig, 1841), *A. fuscicornis* (Hartig, 1841), *A. leunisii* (Hartig, 1841), *A. longipennis* (Hartig, 1841), *A. macrophadna* (Hartig, 1841), *A. melanogaster* (Hartig, 1840), *A. obscurata* (Hartig, 1840), *A. pilipennis* (Hartig, 1840), *A. postica* (Hartig, 1841), *A. minuta* (Hartig, 1840) i *A. rufiventris* (Hartig, 1840). Gatunki te zostały ponownie opisane a ich cechy morfologiczne zilustrowane kolorowymi zdjęciami. *Alloxysta cursor* (Hartig, 1840) and *A. erythrothorax* (Hartig, 1840) są tu rozważane jako 'nomen dubium'. Ustalono dwa nowe synonimy dla gatunków opisanych przez Hartiga *Alloxysta defecta* (Hartig, 1841) jako synonim *A. castanea* (Hartig, 1841) oraz *A. flavicornis* (Hartig, 1841) jako synonim *A. pilipennis* (Hartig, 1840). Badania wyjaśniają również, że *A. castanea* nie jest synonimem *A. fulviceps* jak sądzono wcześniej. Podsumowano również dotychczasowe zmiany taksonomiczne, jakim podlegały gatunki łączone taksonomicznie z *A. fulviceps* lub *A. castanea*. Dodatkowo, zbadano też inny materiał błonkówek z rodzaju *Alloxysta* zdeponowany w Muzeum, dzięki czemu uzyskano nowe dane o żywicielach kilku gatunków.

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