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NEW CHARIPINAE (HYMENOPTERA CYNIPOIDEA FIGITIDAE) FROM ITALY

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Ferrer-Suay M., Selfa J., Seco M.V., Pujade-Villar J. - New Charipinae (Hymenoptera Cynipoidea Figitidae) from Italy.

Charipinae material from different localities in Italy deposited in the Natural History Museum of London, Canadian National Collection of Insects and the United States National Museum of Natural History (Smithsonian Institution) has been revised. 120 specimens have been examined and 16 species have been determined. 14 Charipinae species are here cited for the first time from Italy: *Alloxysta arcuata* (Kieffer, 1902), *Alloxysta brevis* (Thomson, 1862), *Alloxysta castanea* (Hartig, 1841), *Alloxysta citripes* (Thomson, 1862), *Alloxysta fracticornis* (Thomson, 1862), *Alloxysta consobrina* (Zetterstedt, 1838), *Alloxysta melanogaster* (Hartig, 1840), *Alloxysta mullensis* (Cameron, 1883), *Alloxysta pilipennis* (Hartig, 1840), *Alloxysta ramulifera* (Thomson, 1862), *Alloxysta xanthocera* (Thomson, 1862), *Phaenoglyphis heterocera* (Hartig, 1841), *Phaenoglyphis salicis* (Cameron, 1883) and *Phaenoglyphis villosa* (Hartig, 1841). Diagnoses for the new records are given; their main diagnostic features are shown in different plates. *Alloxysta aphidicida* (Rondani, 1848), *Alloxysta musti* (Rondani, 1876) and *Alloxysta silvestri* (Kieffer, 1908) are considered as *nomina dubia*. A key to identify the Charipinae present in Italy is also given.

KEY WORDS: Hymenoptera, Figitidae, Charipinae, *Alloxysta*, *Phaenoglyphis*, Italy

INTRODUCTION

The Charipinae are widely distributed around the world, mainly the *Alloxysta* genus. The knowledge about the Charipinae from Italy was so far very scarce, knowing that this subfamily is very well distributed in the Palaearctic region. The subfamily includes very small wasp, with smooth and shiny body. The species are very similar between them, resulting on a very difficult taxonomy which made their identification a very complicated task. The early authors performed their studies in their workplace but communicative system then was not as effective as now, so many times some species were described under different names by different authors, this led to the large number of synonyms, especially for the usually known as cosmopolitan species, *Alloxysta victrix* and *Phaenoglyphis villosa*.

Until now, according to the Charipinae worldwide catalogue (FERRER-SUAY *et al.*, 2012), seven Charipinae species were recorded from Italy: *Alloxysta aphidicida* (Rondani, 1848), *A. macrophadna* (Hartig, 1841), *A. musti* (Rondani, 1876), *A. pusilla* (Kieffer, 1902), *A. silvestri* (Kieffer, 1908), *A. victrix* (Westwood, 1833) and *Apocharips eleaphila* (Silvestri, 1915). Three of these species (*Alloxysta aphidicida*, *A. musti* and *A. silvestri*) were described from Italy but regrettably the deposition of their type material is unknown. *Alloxysta macrophadna* was cited by HELLÉN (1963), *A. pusilla* by MANTERO (1906) and *A. victrix* by PAGLIANO (1995).

After studying the Charipinae material deposited in three important institutions, fourteen species are cited for

the first time from Italy: *Alloxysta arcuata* (Kieffer, 1902), *Alloxysta brevis* (Thomson, 1862), *Alloxysta castanea* (Hartig, 1841), *Alloxysta citripes* (Thomson, 1862), *Alloxysta fracticornis* (Thomson, 1862), *Alloxysta consobrina* (Zetterstedt, 1838), *Alloxysta melanogaster* (Hartig, 1840), *Alloxysta mullensis* (Cameron, 1883), *Alloxysta pilipennis* (Hartig, 1840), *Alloxysta ramulifera* (Thomson, 1862), *Alloxysta xanthocera* (Thomson, 1862), *Phaenoglyphis heterocera* (Hartig, 1841), *Phaenoglyphis salicis* (Cameron, 1883) and *Phaenoglyphis villosa* (Hartig, 1841).

MATERIAL AND METHODS

The studied material is deposited in the following institutions:

- BMNH: Natural History Museum (London, United Kingdom).
- USNM: United States National Museum of Natural History (Smithsonian Institution) (Washington, United States).
- CNCI: Canadian National Collection of Insects (Ottawa, Canada).
- UB: Universitat de Barcelona (col. J.P-V, Barcelona, Spain).

The deposition of each specimen is specified after the information present on its label in the material examined section.

Specimens were studied using stereomicroscopy (LEICA WILD M10). The field-emission gun environmental scanning electron microscope (FEI

Quanta 200 ESEM) was used for high-resolution imaging without gold-coating of the specimens.

Morphological terms used are taken from PARETAS-MARTÍNEZ *et al.* (2007). Measurements and 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 of the Rs vein. Females and males have the same morphology unless where indicated.

Figure I shows the two types of mesopleuron present in Charipinae, with mesopleural sulcus (Fig. I, 1) and without mesopleural sulcus (Fig. I, 2). For better comparison, all the female antennae of the *Alloxysta* species included in this study are grouped in figure II, and all radial cells in figure III. Figure IV shows the types of pronotum and propodeum present in the *Alloxysta* genus.

RESULTS

Alloxysta arcuata (Kieffer, 1902)

DIAGNOSIS – *Alloxysta arcuata* is mainly characterized by a small closed radial cell, presence of pronotal carinae, propodeal carinae forming a plate, F1 subequal to pedicel and longer to F2, F2 subequal to F3. *Alloxysta arcuata* is similar to *Alloxysta ramulifera* (Thomson, 1862) but the two species can be differentiated by several features: rhinaria begin in F3 in *A. arcuata* female (Fig. II, 1) instead of F4 in *A. ramulifera* (Fig. II, 11); pronotal carinae are well defined and visible in *A. arcuata* (Fig. IV, 1) but small and sometimes difficult to see under the pubescence in *A. ramulifera*; radial cell is 2.3 times as long as wide in *A. arcuata* (Fig. III, 1) instead of 2.0 in *A. ramulifera* (Fig. III, 11); propodeal carinae are curved in *A. arcuata* (Fig. IV, III) and straight in *A. ramulifera*.

MATERIAL EXAMINED – (4♂ & 13♀). “Italy: Lazio, Viterbo Prov., Roccaccio Provincial Rd. between Tarquina & Poggio Martino, 42° 19.809’N, 11° 45.6711’E, El 125m, *Quercus* Forest, grassland Bologna, Munro, Owen & Pinto, sweep, 10.vi.2003, PEET03-0985”: 1♀ (USNM); “C252, Italy: Puglia, 2.5 km S Holadi Bari, 28.v.1992, J.D. Pinto, PT, cultivated area”: 1♂ (CNCI); “C244, Italy: Lazio (RM), Caldoni di Manziara, 26.vi.88, J.D. Pinto”: 2♀ (CNCI); “C250, Italy: Calabria (CS),

Camigliatello Silano, 23.vi.1988, J.D. Pinto”: 1♀ (CNCI); “C261, Italy: Perugia, Monte Peglia, 23.vi-4.vii.1978, MT”: 1♀ (CNCI); “C254, Italy: Abruzzo (AQ), Gran Sasso area, base of Monte Cristo, 1350m, 21.vi.1992, J.D. Pinto, steppe zone, sweeping *Populus* & wild flowers”: 3♀ (CNCI); “C245, Italy: Lazio, Tolfa Mts. near Tolfa, 22.vi.88, J.D. Pinto”: 1♀ (UB); “C249, Italy: Basilicata (PR) 5 km NW Picerro, 21.vi.88, J.D. Pinto”: 1♀ (UBI); “C256, Italy: Sicily (PA) Bosco della Ficuzza, ca. 8 km NE Corleone, 1200m, 7.vi.1992, J.D. Pinto, sweep”: 2♂ (CNCI); “C260, Italy: South Tyrol, 1400m, 46°28’40”N 11°34’11”E, 4.vii.2011, M. Bartak, forest edge”: 1♂ & 3♀ (UB).

SHORT DESCRIPTION – Head yellowish brown in female (more yellowish in male), mesosoma and metasoma dark brown; scape, pedicel, F1 and F2 dark yellow, F3–F12 brown; legs yellow and veins yellowish brown. Female antenna 13-segmented; F1–F2 smooth, thinner than remaining ones; club begins in F3 but it is more evident from F4, F3–F11 with rhinaria; F1 subequal to pedicel, F1 longer than F2, F2–F4 subequal (Fig. II, 1). Male antenna 14-segmented; F1 smooth, thinner than remaining flagellomeres, F2–F12 with rhinaria and club shaped; F2 sometimes slightly curved, F1 longer than pedicel, F1 subequal to F2, F2 shorter than F3 and F3 shorter than F4. Pronotum densely pubescent with two carinae clearly visible (Fig. IV, 1). Propodeum densely pubescent, with a central plate formed by two carinae bearing several apical setae; plate margins slightly curved outward (Fig. IV, 3). Forewing longer than body, radial cell closed, 2.3 times as long as wide in both sexes (Fig. III, 1).

DISTRIBUTION – Species known from Holarctic, Neotropic, Africa and Oriental regions (FERRER-SUAY *et al.*, 2012a, 2013b, in press). Mediterranean Basin: Andorra (FERRER-SUAY *et al.*, 2011: 240); Corsica (FERRER-SUAY *et al.*, 2013d: 5); Spain (KIEFFER, 1902: 12). First record from Italy.

Alloxysta brevis (Thomson, 1862)

DIAGNOSIS – *Alloxysta brevis* is mainly characterized by having a small closed radial cell, pronotal carina absent, propodeal carinae present, rhinaria and club beginning in F4. This species is similar to *A. mullensis*

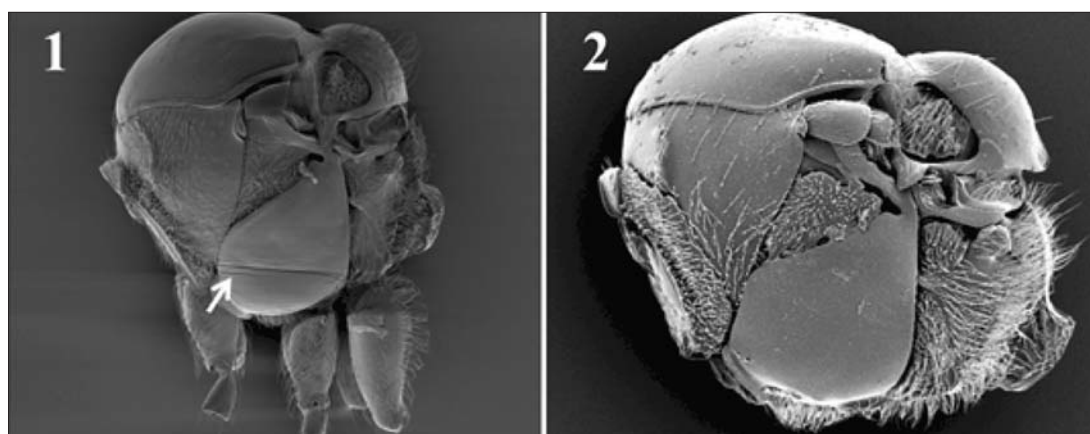


Fig. I – Mesopleuron of: 1) *Phaenoglyphis* sp.; 2) *Alloxysta* sp. Download from the www.morphbank.com website

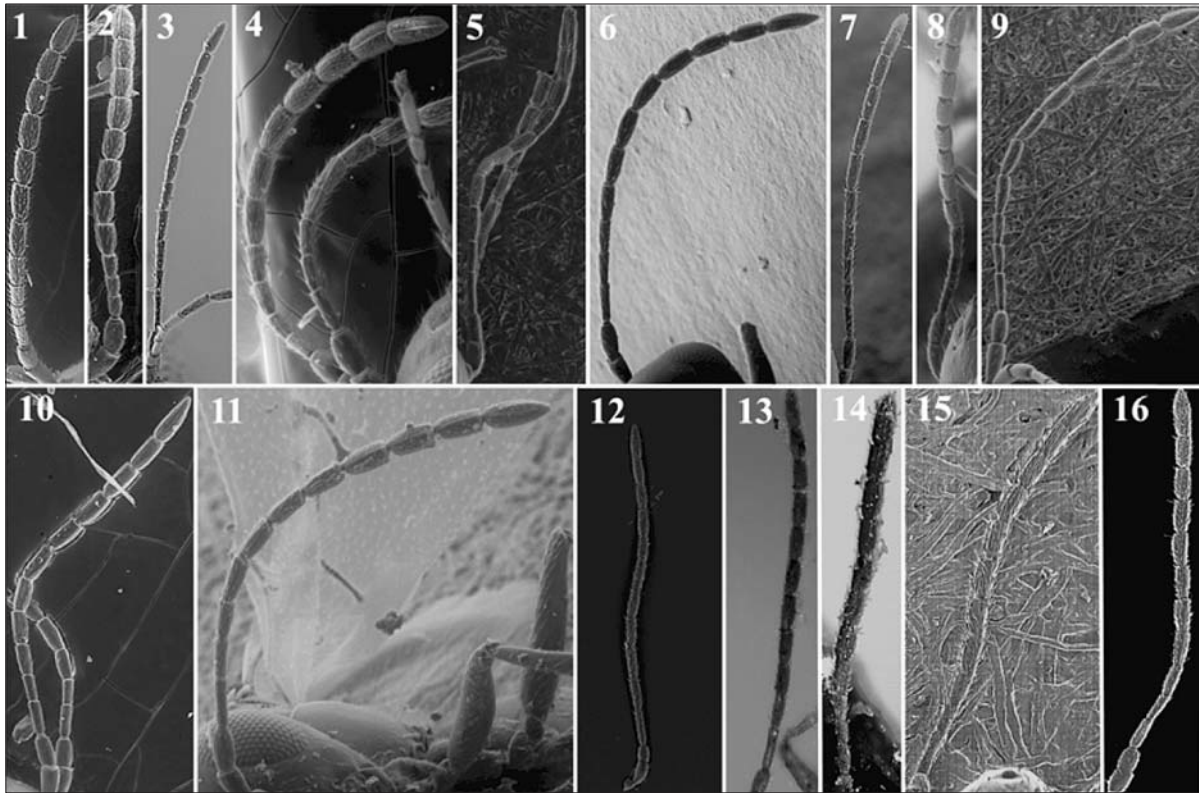


Fig. II – Antennae of: 1) *Alloxysta arcuata*; 2) *A. brevis*; 3) *A. castanea*; 4) *A. citripes*; 5) *A. fracticornis*; 6) *A. consobrina*; 7) *A. melanogaster*; 8) *A. mullensis*; 9) *A. pilipennis*; 10) *A. pusilla*; 11) *A. ramulifera*; 12) *A. victrix*; 13) *A. xanthocera*; 14) *Phaenoglyphis heterocera*; 15) *P. salicis*; 16) *P. villosa*.

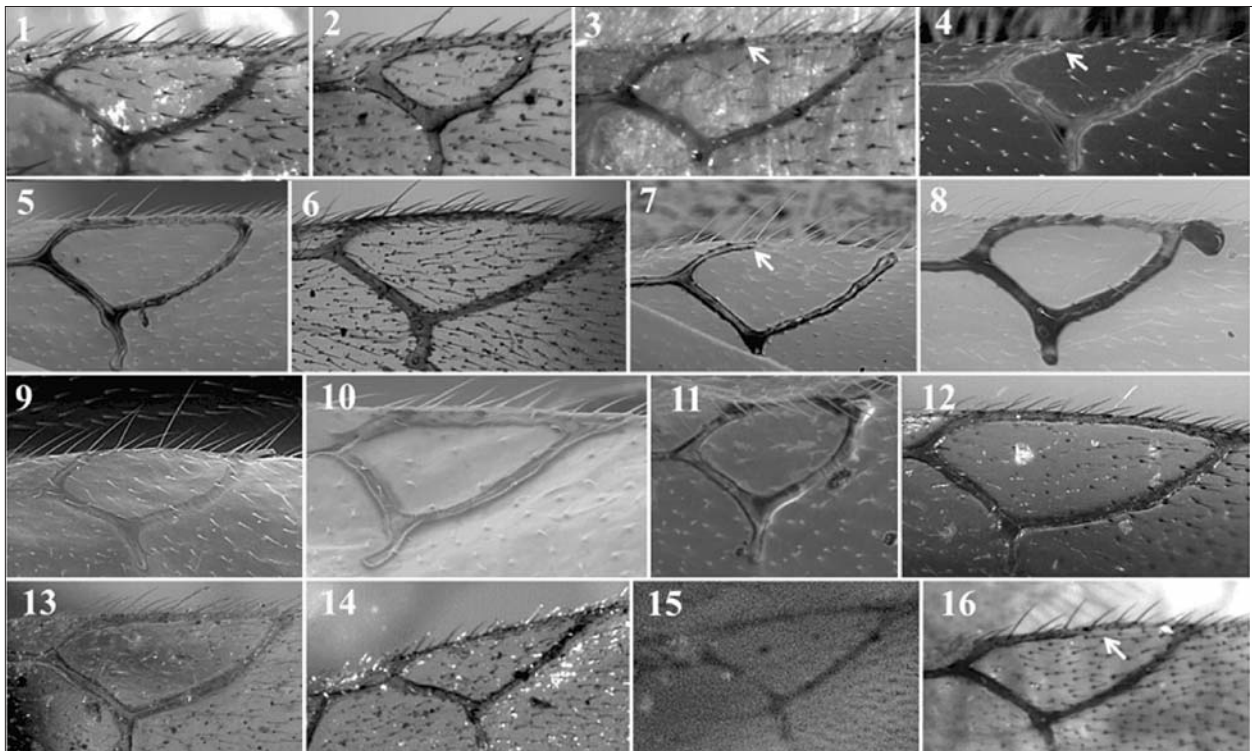


Fig. III – Radial cell of: 1) *Alloxysta arcuata*; 2) *A. brevis*; 3) *A. castanea*; 4) *A. citripes*; 5) *A. fracticornis*; 6) *A. consobrina*; 7) *A. melanogaster*; 8) *A. mullensis*; 9) *A. pilipennis*; 10) *A. pusilla*; 11) *A. ramulifera*; 12) *A. victrix*; 13) *A. xanthocera*; 14) *Phaenoglyphis heterocera*; 15) *P. salicis*; 16) *P. villosa*.

but the species can be differentiated by the antenna's length: shorter than body length in *A. brevis* while longer in *A. mullensis*; and proportion between flagellomeres: F1 shorter than pedicel, F1-F3 subequal in length in *A. brevis* (Fig. II, 2) while F1 subequal to pedicel, F1 longer than F2, F2 subequal to F3 in *A. mullensis* (Fig. II, 8).

MATERIAL EXAMINED – (7 ♂ & 13 ♀). “C252, Italy: Puglia, 2.5 km S Holadi Bari, 28.v.1992, J.D. Pinto, PT, cultivated area”: 1 ♀ (CNCI); “C255, Italy: Abruzzo (AQ) Gran Sasso area, Monte Cristo nr. Assergi, 1000m, 21.vi.1992, J.D. Pinto, sweeping *Quercus cerris*, open area”: 1 ♂ (CNCI); “C250, Italy: Calabria (CS), Camigliatello Silano, 23.vi.1988, J.D. Pinto”: 2 ♀ (CNCI); “C251, Italy: Sicily (AG), 3 km NW Montallegro, Laghetto Gorgo, 7.vi.1992, J.D. Pinto”: 1 ♂ & 1 ♀ (CNCI); “C257, Italy: Sicily (SR), Penisola Magnisi, 4.vi.92, J. Pinto”: ♀ (CNCI); “C254, Italy: Abruzzo (AQ), Gran Sasso area, base of Monte Cristo, 1350m, 21.vi.1992, J.D. Pinto, steppe zone, sweeping *Populus* & wild flowers”: 3 ♂ & 2 ♀ (CNCI); “C249, Italy: Basilicata (PR) 5 km NW Picerno, 21.vi.88, J.D. Pinto”: 4 ♀ (UB); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 2 ♂ & 1 ♀ (UB).

SHORT DESCRIPTION – Head yellowish brown, mesosoma and metasoma dark brown; scape, pedicel, F1-F3 yellow, F4-F12 brown; legs yellowish testaceous and veins yellowish brown. Female antenna 13-segmented; F1-F3 smooth and thinner than remaining ones, F4-F11 with rhinaria and club shaped; F1 shorter than pedicel, F1-F3 subequal in width and length, F3 shorter than F4 (Fig. II, 2). Male antenna 14-segmented; segments with same proportions as in female without any flagellomere curved. Pronotum covered by sparse setae, without carinae. Propodeum covered by abundant pubescence with two carinae present, separated by few setae and forming a plate in the lower two-thirds, sides slightly curved. Forewing longer than body; radial cell closed, 2.1 times as long as wide (Fig. III, 2).

DISTRIBUTION – Species known from Holarctic, Neotropic, Africa and Oriental regions (FERRER-SUAY et al., 2012a, 2013b, in press). Mediterranean Basin: Andorra (FERRER-SUAY et al., 2011: 350); Corsica (FERRER-SUAY et al., 2013d: 5); France (KIEFFER, 1904a: 602). First record from Italy.

Alloxysta castanea (Hartig, 1841)

DIAGNOSIS – *Alloxysta castanea* is mainly characterized by having a partially open radial cell, pronotal and propodeal carinae present, rhinaria and club beginning in F3. It is similar to *Alloxysta aurata* Belizin, 1968 but they can be differentiated by the ratio between F2 and F3 and the size of radial cell: F2 subequal to F3 in *A. castanea* (Fig. II, 3) but F2 shorter than F3 in *A. aurata*; radial cell 2.3 times as long as wide in *A. castanea* (Fig. III, 3) while 3.0 in *A. aurata*.

MATERIAL EXAMINED – (6 ♀). “C249, Italy: Basilicata (PR) 5 km NW Picerno, 21.vi.88, J.D. Pinto”: 1 ♀ (CNCI); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 5 ♀ (3 ♀ in CNCI, 2 ♀ in UB).

SHORT DESCRIPTION – Head yellowish brown, mesosoma brown and metasoma dark brown; scape, pedicel, F1-F2 yellow, F3-F12 yellowish brown; legs yellow and veins yellowish brown. Female antenna 13-segmented; F1-F2 smooth, thinner than remaining flagellomeres, F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2-F4 subequal in length (Fig. II, 3). Male antenna 14-segmented; segments with same proportions as in female but F1 and F2 slightly curved. Pronotum pubescent with two strong carinae. Propodeum densely covered by long setae with two carinae forming a plate with slightly curved lateral margins, its top sparsely pubescent. Forewing longer than body; radial cell partially open, 2.4 times as long as wide (Fig. III, 3).

DISTRIBUTION – Species known from Holarctic, Neotropic, Africa and Oriental regions (FERRER-SUAY et al., 2012a, 2013b, in press). Mediterranean Basin: Corsica (FERRER-SUAY et al., 2013d: 6); France (KIEFFER, 1902a: 10, 15; KIEFFER, 1904a: 595; DE GAULLE, 1908: 26; CAVRO, 1954: 12). First record from Italy.

Alloxysta citripes (Thomson, 1862)

DIAGNOSIS – *Alloxysta citripes* is mainly characterized by a small partially open radial cell, pronotal carinae present, propodeal carinae forming a plate but not protruding, rhinaria beginning in F4 and F1 subequal to pedicel. The combination of these features makes this species easily distinguishable from all the others *Alloxysta* species.

MATERIAL EXAMINED – (1 ♂ & 1 ♀). “Italy: Lazio, Roma Prov. nr. Maccarese Cemetery, el 40m, 41° 52.836'N, 012° 16.190'E, mixed *Quercus* savannah, screen sweep 11.vi.2003, Bologna, Munro, Owen & Pinto, PEET 03-093C”: 1 ♂ (USNM); “Italy: Lazio, Viterbo Prov., Roccaccio Provincial Rd. between Tarquina & Poggio Martino, 42° 19.809'N, 11° 45.6711'E, El 125m, *Quercus* Forest, grassland Bologna, Munro, Owen & Pinto, sweep, 10.vi.2003, PEET03-0985”: 1 ♀ (USNM).

SHORT DESCRIPTION – Head and mesosoma brown, metasoma yellowish brown; antennae, legs and veins yellowish. Female antenna 13-segmented; F1-F3 smooth, thinner than remaining flagellomeres, F4-F11 with rhinaria and club shaped; F1 subequal to pedicel and longer than F2, F2-F4 subequal in length (Fig. II, 4). Male antenna 14-segmented; F1-F12 with rhinaria and club shaped; pedicel-F3 subequal, F3 slightly shorter than F4. Pronotum with few setae and two thick carinae clearly visible. Propodeum densely setose with two carinae not protruding, well defined in its anterior half and forming a plate posteriorly. Forewing longer than body; radial cell partially open, 2.1 times as long as wide (Fig. III, 4).

DISTRIBUTION – Species known from Holarctic, Neotropic and Africa (FERRER-SUAY et al., 2012a, in press). Mediterranean Basin: Andorra (FERRER-SUAY et al., 2011c: 355); Corsica (FERRER-SUAY et al., 2013d: 6); France (KIEFFER, 1904a: 600; DE GAULLE, 1908: 26); Spain (FERRER-SUAY et al., 2012b: 124). First record from Italy.

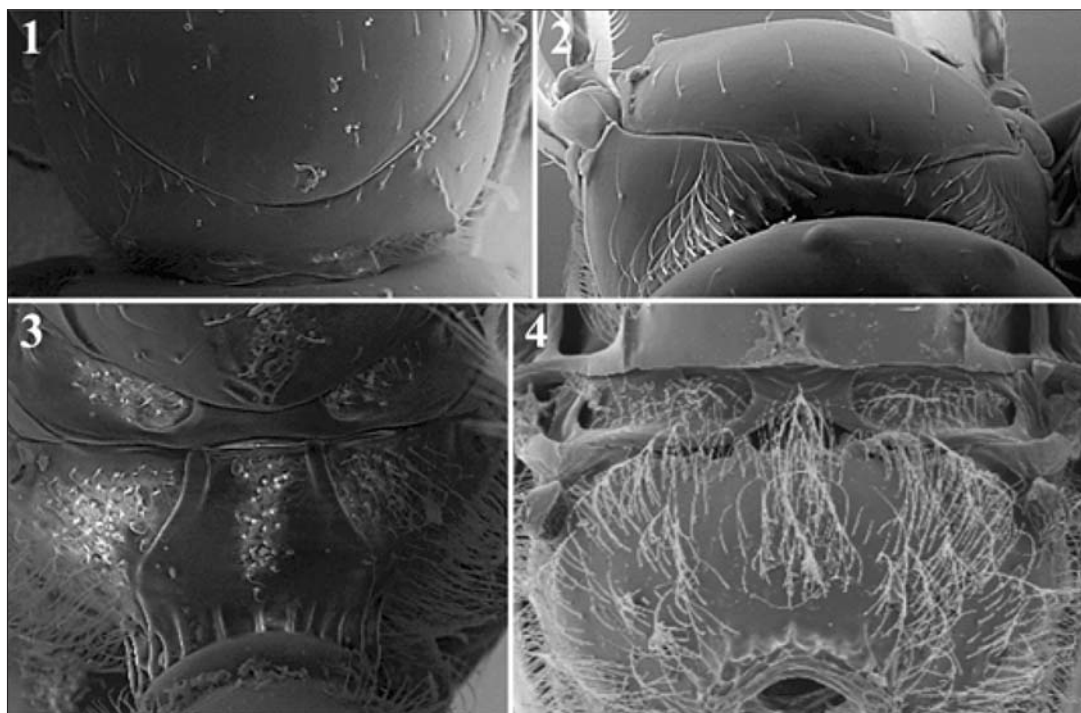


Fig. IV – Pronotum and propodeum of: 1) *A. arcuata*, pronotal carinae present; 2) *A. brevis*, pronotal carinae absent; 3) *Alloxysta arcuata*, propodeal carinae present and forming a plate; 4) *A. victrix*, propodeal carinae absent.

Alloxysta consobrina (Zetterstedt, 1838)

DIAGNOSIS – *Alloxysta consobrina* is mainly characterized by having a closed radial cell, pronotal carinae present, propodeal carinae absent, rhinaria and club beginning in F3. It is similar to *A. circumscripta* (Hartig, 1841) but these species can be differentiated by ratios between flagellomeres and size of radial cell: F1 longer than F2, F2 subequal to F3 in *A. consobrina* (Fig. II, 6) while F1 subequal to F2, F2 shorter or subequal to F3 in *A. circumscripta*; radial cell: 2.7 times as long as wide in *A. consobrina* (Fig. III, 6) but 2.5 in *A. circumscripta*.

MATERIAL EXAMINED – (3 ♀) “C260, Italy: South Tyrol, 1400m, 46°28'40”N 11°34'11”E, 4.vii.2011, M. Bartak, forest edge”: 3 ♀ (2 ♀ in CNCI and 1 ♀ in UB).

SHORT DESCRIPTION – Head, mesosoma and metasoma brown; scape, pedicel, F1 and F2 yellow and F3-F12 yellowish brown; legs yellow and veins brown. Female antenna 13-segmented; F1-F2 smooth and thinner than remaining ones, F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2 longer than F3, F3 shorter than F4 (Fig. II, 6). Male antenna 14-segmented; with the same proportion as in female but F1-F3 curved (F1 slightly curved while F2 and F3 clearly curved). Pronotum setose with two protuberant carinae clearly visible. Propodeum densely setose and lacking carinae. Forewing longer than body; radial cell closed, 2.7 times as long as wide (Fig. III, 6).

DISTRIBUTION – Cosmopolitan (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: Andorra (FERRER-SUAY *et al.*, 2011: 356); France (KIEFFER, 1902a: 16; DE GAULLE, 1908: 26); Spain (FERRER-SUAY *et al.*, 2012b: 126). First record from Italy.

Alloxysta fracticornis (Thomson, 1862)

DIAGNOSIS – *Alloxysta fracticornis* is mainly characterized by having a closed radial cell, pronotal carinae absent, propodeal carinae present, rhinaria and club beginning in F3. It is similar to *A. mullensis* but they can be differentiated by the ratio between F1 and pedicel: F1 longer than pedicel in *A. fracticornis* (Fig. II, 5) while F1 subequal to pedicel in *A. mullensis* (Fig. II, 8); F1-F3 subequal in length in *A. fracticornis* (Fig. II, 5) but F1 longer than F2 and F2 subequal to F3 in *A. mullensis* (Fig. II, 8); and F3 curved in *A. fracticornis* male but male antenna without any flagellomere curved in *A. mullensis*.

MATERIAL EXAMINED – (1 ♂ & 3 ♀). “C250, Italy: Calabria (CS), Camigliatello Silano, 23.vi.1988, J.D. Pinto”: 2 ♀ (CNCI); “C254, Italy: Abruzzo (AQ), Gran Sasso area, base of Monte Cristo, 1350m, 21.vi.1992, J.D. Pinto, steppe zone, sweeping *Populus* & wild flowers”: 1 ♂ (CNCI); “C249, Italy: Basilicata (PR) 5 km NW Picerro, 21.vi.88, J.D. Pinto”: 1 ♀ (UB).

SHORT DESCRIPTION – Head reddish, mesosoma and metasoma brown; antenna yellow, darkening towards apex; legs yellow and veins yellowish. Female antenna 13-segmented; F1-F2 smooth, thinner than remaining flagellomeres, F3-F11 with rhinaria and club shaped; F1 longer than pedicel, F1-F3 subequal in length, F3 shorter than F4 (Fig. II, 5). Male antenna 14-segmented; F1-F2 smooth, thinner than remaining flagellomeres, F3-F12 with rhinaria and club shaped; F1 longer than pedicel, F1-F3 subequal in length, F3 curved, F3 longer than F4. Pronotum covered by setae, without carinae present. Propodeum with few setae, with two straight and parallel carinae joining at base. Forewing longer than body; radial cell closed, 2.2 times as long as wide (Fig. III, 5).

DISTRIBUTION – Species known from Holarctic and Neotropic (FERRER-SUAY *et al.*, 2012a, 2013b). Mediterranean Basin: Spain (FERRER-SUAY *et al.*, 2013: 325). First record from Italy.

Alloxysta melanogaster (Hartig, 1840)

DIAGNOSIS – *Alloxysta melanogaster* is mainly characterized by having a partially open radial cell, pronotal and propodeal carinae present, rhinaria and club beginning in F3. It is similar to *A. castanea* but the species can be differentiated by the ratio between pedicel and F1-F3 in female: pedicel-F3 subequal in *A. melanogaster* (Fig. II, 7) while F1 longer than F2 and F2 subequal to F3 in *A. castanea* (Fig. II, 3); and size of radial cell: 2.0 times as long as wide in *A. melanogaster* (Fig. III, 7) but 2.3 in *A. castanea* (Fig. IIIc).

MATERIAL EXAMINED – (1 ♀). “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 1 ♀ (CNCI).

SHORT DESCRIPTION – Head yellow, mesosoma and metasoma yellowish brown; antenna yellow with last flagellomeres brown; legs and veins yellow. Female antenna 13-segmented; F1-F2 smooth, thinner than remaining ones, F3-F11 with rhinaria and club shaped; F1 subequal to pedicel, F1 longer than F2, F2 subequal to F3, F4 longer than F3 (Fig. II, 7). Male antenna 14-segmented; F1 smooth, thinner than remaining ones, F2-F12 with rhinaria and club shaped; F1 longer than pedicel and F2, F2-F4 subequal in length. Pronotum densely covered by long setae, with two carinae present. Propodeum densely setose, carinae present forming a plate with margins very slightly curved and few setae on top. Forewing longer than body; radial cell partially open, 2.3 times as long as wide (Fig. III, 7).

DISTRIBUTION – Species known from Palaearctic and Neotropical regions (FERRER-SUAY *et al.*, 2012a, in press). Mediterranean Basin: France (DE GAULLE, 1908: 26; DALLA TORRE & KIEFFER, 1910: 279). First record from Italy.

Alloxysta mullensis (Cameron, 1883)

DIAGNOSIS – *Alloxysta mullensis* is mainly characterized by having a small closed radial cell, pronotal carinae absent, propodeal carinae present, rhinaria and club beginning in F4. It is similar to *A. fracticornis* but they can be differentiated by the relation between F1 and pedicel: F1 subequal to pedicel in *A. mullensis* (Fig. II, 8) while F1 longer than pedicel in *A. fracticornis* (Fig. II, 5); proportion between flagellomeres: F1 longer than F2 and F2 subequal to F3 in *A. mullensis* female (Fig. II, 8) but F1-F3 subequal in length in *A. fracticornis* female (Fig. II, 5); and shape of flagellomeres: without any flagellomere curved in *A. mullensis* male but F3 curved in *A. fracticornis* male.

MATERIAL EXAMINED – (1 ♀). “C249, Italy: Basilicata (PR) 5 km NW Picerno, 21.vi.88, J.D. Pinto”: 1 ♀ (CNCI).

SHORT DESCRIPTION – Head brown, mesosoma and metasoma dark brown; scape, pedicel and F1-F3 dark

yellow, F4-F12 yellowish brown; legs and veins yellow. Female antenna 13-segmented; F1-F3 smooth and thinner than remaining ones, F4-F11 with rhinaria and club shaped; pedicel subequal to F1, F1 longer than F2, F2 subequal to F3, F3 shorter than F4 (Fig. II, 8). Male antenna 14-segmented; as in female and without any flagellomere curved. Pronotum covered by sparse setae, without carinae. Propodeum densely pubescent, with two carinae forming a plate with sides slightly curved. Forewing longer than body; radial cell closed, 2.2 times as long as wide (Fig. III, 8).

DISTRIBUTION – Species known from Holarctic, Neotropic and Africa (FERRER-SUAY *et al.*, 2012a, 2013b, in press). Mediterranean Basin: Spain (FERRER-SUAY *et al.*, 2013e: 327). First record from Italy.

Alloxysta pilipennis (Hartig, 1840)

DIAGNOSIS – *Alloxysta pilipennis* is mainly characterized by having a closed radial cell, pronotal and propodeal carinae present and F1 longer than pedicel. It is similar to *A. pusilla* but they can be differentiated by the proportion between flagellomeres in both male and female: F2 subequal to F3 in *A. pilipennis* female (Fig. II, 9) but F2 shorter than F3 in *A. pusilla* female (Fig. II, 10); 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; and size of radial cell: 2.4 times as long as wide in *A. pilipennis* female (Fig. III, 9) but 2.7 in *A. pusilla* female (Fig. III, 10).

MATERIAL EXAMINED – (2 ♂ & 8 ♀). “Italy, Pordenone 1989 ex”, “*Eucallipterus tiliae* sp. 1-7, CIE A 20663”: 2 ♀ (BMNH); “Italy Morisi, San Giovanni in P (BO), 7/26/1999, Ex agromyzid on *Cirsium arvense*, A. Masetti”, “*Alloxysta* sp Det. by ML Buffington 2003”: 1 ♀ (BMNH); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 2 ♂ & 5 ♀ (1 ♂ & 3 ♀ in CNCI, 1 ♂ & 2 ♀).

SHORT DESCRIPTION – Head dark yellow, mesosoma yellowish brown and metasoma brown; antenna yellow darkening towards the end; legs yellow and veins yellowish brown. Female antenna 13-segmented; F1-F2 smooth and thinner than remaining ones, F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2-F4 subequal in length (Fig. II, 9). Male antenna 14-segmented; as in female. Pronotum entirely setose with two carinae. Propodeum densely setose, with two carinae forming a plate with curved sides. Forewing longer than body; radial cell closed, 2.5 times as long as wide (Fig. III, 9).

DISTRIBUTION – Species known from Holarctic, Neotropic and Africa (FERRER-SUAY *et al.*, 2012a, 2013b, in press). Mediterranean Basin: France (DE GAULLE, 1908: 26; DALLA TORRE & KIEFFER, 1910: 282); Israel (ARGAMAN, 1988: 115); Spain (Spain (FERRER-SUAY *et al.*, 2012b: 125, FERRER-SUAY *et al.*, 2013e: 327). First record from Italy.

Alloxysta pusilla (Kieffer, 1902)

DIAGNOSIS – *Alloxysta pusilla* is mainly characterized by having a closed radial cell, pronotal and propodeal

carinae present and F1 longer than pedicel. It is similar to *A. pilipennis* but they can be differentiated by the proportion between flagellomeres in both male and female: F2 shorter than F3 in *A. pusilla* female (Fig. II, 10) but F2 subequal to F3 in *A. pilipennis* female (Fig. II, 9); F1-F3 subequal in length and slightly curved in *A. pusilla* male but F1-F3 not subequal and without any flagellomere curved in *A. pilipennis* male; and size of radial cell: 2.7 times as long as wide in *A. pusilla* female (Fig. III, 10) but 2.4 times in *A. pilipennis* female (Fig. III, 9).

MATERIAL EXAMINED – (2♂). “C254, Italy: Abruzzo (AQ), Gran Sasso area, base of Monte Cristo, 1350m, 21.vi.1992, J.D. Pinto, steppe zone, sweeping *Populus* & wild flowers”: 1♂ (CNCI); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 1♂ (UB).

SHORT DESCRIPTION – Head, mesosoma and metasoma dark brown; scape, pedicel and F1-F3 dark yellow, F4-F12 yellowish brown; legs dark yellow and veins yellowish brown. Female antenna 13-segmented; F1-F2 smooth, thinner than remaining flagellomeres, F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2 shorter than F3 and F3 shorter than F4. Male antenna 14-segmented, filiform, F1-F12 with rhinaria and club shaped; pedicel-F3 subequal in length, F4 longer than F3, F1-F3 slightly curved (Fig. II, 10). Pronotum sparsely setose, with two clearly visible carinae. Propodeum densely pubescent, with two carinae separated on upper half by few setae and forming a plate with curved margins on lower half. Forewing longer than body; radial cell closed, 2.7 times as long as wide in female (Fig. III, 10) and 2.4 times in male.

DISTRIBUTION - Species known from Palaearctic and Neotropic (FERRER-SUAY *et al.*, 2012a, in press). Mediterranean Basin: Andorra (FERRER-SUAY *et al.*, 2011: 358); France (KIEFFER, 1902a: 13; DE GAULLE, 1908: 26); Italy (Genova) (MANTERO, 1906); Spain (FERRER-SUAY *et al.*, 2012b: 128).

Alloxysta ramulifera (Thomson, 1862)

DIAGNOSIS – *Alloxysta ramulifera* is mainly characterized by having a small closed radial cell, pronotal carinae and propodeal plate present, rhinaria and club shaped beginning in F4. It is very similar to *A. arcuata*. They can be distinguished by shape of pronotal carinae and size of radial cell: pronotal carinae are small and sometimes very difficult to see under the pubescence in *A. ramulifera* while thick and clearly visible in *A. arcuata*; in *A. ramulifera* the carinae are straight, separated by setae in the first 1/3 and forming a plate in the last 2/3 while they form a complete plate in *A. arcuata*; radial cell is 2.0 times as long as wide in *A. ramulifera* (Fig. III, 11) and 2.3 times as long as wide in *A. arcuata* (Fig. III, 1).

MATERIAL EXAMINED – (2♀). “C245, Italy: Lazio, Tolfa Mts. near Tolfa, 22.vi.88, J.D. Pinto”: 2♀ (1♀ CNCI and 1♀ UB).

SHORT DESCRIPTION – Head, mesosoma and metasoma yellowish brown; scape, pedicel, F1-F3 dark yellow, F4-F12 yellowish brown; legs yellow and veins yellowish

brown. Female antenna 13-segmented; F1-F3 smooth and thinner than remaining ones, F4-F11 with rhinaria and club shaped; F1 subequal to pedicel, F1 longer than F2, F2 subequal to F3, F3 shorter than F4 (Fig. II, 11). Male antenna as in female, without any flagellomere curved. Pronotum covered by setae, scarcer in central area and distolateral margins; with two small carinae under the pubescence. Propodeum covered by abundant setae, with two carinae forming a plate and separated by setae in the first third. Forewing longer than body; radial cell closed, 2.0 times as long as wide (Fig. III, 11).

DISTRIBUTION – Holarctic (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: France (KIEFFER, 1904a: 601; DE GAULLE, 1908: 26); Israel (ARGAMAN, 1988: 115); Spain (FERRER-SUAY *et al.*, 2013e: 329). First record from Italy.

Alloxysta victrix (Westwood, 1833)

DIAGNOSIS – *Alloxysta victrix* is mainly characterized by having a big closed radial cell, pronotal carinae present, propodeal carinae absent and a yellow head. It is similar to *A. consobrina* but they can be differentiated by the color of the head: dark yellow in *A. victrix* but brown in *A. consobrina*; size of radial cell: 3.0 times as long as wide in *A. victrix* (Fig. II, 12) while 2.7 times in *A. consobrina* (Fig. II, 6); grade of pubescence on propodeum: lack of setae where the carinae are normally present in Charipinae in *A. victrix* while completely covered by setae in *A. consobrina*; and proportion between flagellomeres: F2-F4 subequal in *A. victrix* (Fig. II, 12) but F2 subequal to F3, F3 shorter than F4 in *A. consobrina* (Fig. II, 6).

MATERIAL EXAMINED – (1♂ & 38♀). “C252, Italy: Puglia, 2.5 km S Holadi Bari, 28.v.1992, J.D. Pinto, PT, cultivated area”: 1♀ (CNCI); “C259, Italy: Sicily (PA), Piana degli Albanesi, 3 km N, 7.vi.1992, J.D. Pinto”: 1♀ (CNCI); “C248, Italy: Abruzzo (TE), Gran Sasso, 1200-2000m, Pradi di Tivo, 17.vi.88, J.D. Pinto”: 1♂ & 19♀ (CNCI); “C255, Italy: Abruzzo (AQ) Gran Sasso area, Monte Cristo nr. Assergi, 1000m, 21.vi.1992, J.D. Pinto, sweeping *Quercus cerris*, open area”: 3♀ (CNCI); “C261, Italy: Perugia, Monte Peglia, 23.vi-4.vii.1978, MT”: 1♀ (CNCI); “C254, Italy: Abruzzo (AQ), Gran Sasso area, base of Monte Cristo, 1350m, 21.vi.1992, J.D. Pinto, steppe zone, sweeping *Populus* & wild flowers”: 3♀ (CNCI); “C249, Italy: Basilicata (PR) 5 km NW Picerno, 21.vi.88, J.D. Pinto”: 2♀ (CNCI); “C256, Italy: Sicily (PA) Bosco della Ficuzza, ca. 8 km NE Corleone, 1200m, 7.vi.1992, J.D. Pinto, sweep”: 1♀ (CNCI); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 7♀ (UB).

SHORT DESCRIPTION – Head dark yellow, mesosoma and metasoma dark brown; scape, pedicel, F1-F2 yellow, F3-F12 yellowish brown; legs yellow and veins brown. Female antenna 13-segmented; F1-F2 smooth, thinner than remaining flagellomeres, F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2-F4 subequal (Fig. II, 12). Male antenna 14-segmented, similar to female but with F1-F3 curved (F1 slightly curved while F2 and F3 clearly curved). Pronotum covered by sparse setae, two carinae clearly visible. Propodeum with abundant pubescence, no carinae present, lacking setae on longitudinal areas where carinae

are present in other species (Fig. IV, 4). Forewing longer than body; radial cell closed, 3.0 times as long as wide (Fig. III, 12).

DISTRIBUTION – Cosmopolitan (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: Andorra (FERRER-SUAY *et al.*, 2011: 359); Corsica (FERRER-SUAY *et al.*, 2013d: 7); France (KIEFFER, 1902a: 15, 16; KIEFFER, 1902b: 70; KIEFFER, 1904a: 600; DE GAULLE, 1908: 26); Israel (ARGAMAN, 1988: 114); Italy (PAGLIANO, 1995: 3).

Alloxysta xanthocera (Thomson, 1862)

DIAGNOSIS – *Alloxysta xanthocera* is mainly characterized by having closed radial cell, pronotal and propodeal carinae present. It is easily characterized and easily differentiated from the other *Alloxysta* species because rhinaria and club shape begin in different flagellomeres: the rhinaria in F1 and the club shape in F2.

MATERIAL EXAMINED – (1 ♀). “C260, Italy: South Tyrol, 1400m, 46°28’40”N 11°34’11”E, 4.vii.2011, M. Bartak, forest edge”: 1 ♀ (CNCI).

SHORT DESCRIPTION – Head dark yellow, mesosoma and metasoma dark brown; antenna yellow, darkening towards the end; legs and veins yellow. Female antenna 13-segmented; F1 thinner than remaining flagellomeres, F1-F11 club-shaped; F1-F11 with rhinaria; F1 longer than pedicel and F2, F2-F4 subequal (Fig. II, 13). Male unknown. Pronotum covered by long and abundant setae, two carinae clearly visible. Propodeum with abundant pubescence, two carinae present forming a wide plate with very curved sides. Forewing longer than body; radial cell closed, 2.6 times as long as wide (Fig. III, 13).

DISTRIBUTION – Palaearctic (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: Israel (ARGAMAN, 1988: 115). First record from Italy.

Phaenoglyphis heterocera (Hartig, 1841)

DIAGNOSIS – *Phaenoglyphis heterocera* is mainly characterized by having F1 shorter than pedicel in female but longer in male, rhinaria and club shape beginning in F3, rounded scutellar foveae not delimited apically and basally. It is similar to *Phaenoglyphis stenosis* Andrews, 1978 but they can be differentiated by the beginning of rhinaria: in F3 in *P. heterocera* but F2 in *P. stenosis*; F1 shorter than pedicel in *P. heterocera* female but F1 longer than pedicel in *P. stenosis* female; F1-F3 subequal in length in *P. heterocera* female while F1-F3 not subequal in *P. stenosis* female; scutellar fovea separated by a carina in *P. heterocera* but slightly fused in *P. stenosis*.

MATERIAL EXAMINED – (3 ♂ & 2 ♀). “C260, Italy: South Tyrol, 1400m, 46°28’40”N 11°34’11”E, 4.vii.2011, M. Bartak, forest edge”: 3 ♂ & 2 ♀ (2 ♂ & 1 ♀ in CNCI, 1 ♂ & 1 ♀ in UB).

SHORT DESCRIPTION – Head, mesosoma and metasoma dark brown; scape yellowish brown, pedicel-F2 yellow,

F3-F12 yellowish brown; legs yellow and veins yellowish brown. Female antenna 13-segmented; F1 and F2 smooth and thinner than remaining flagellomeres; F3-F11 with rhinaria and club shaped; F1 shorter than pedicel, F1-F3 subequal in length (Fig. II, 14). Male antenna 14-segmented; F1 and F2 smooth and thinner than remaining flagellomeres; F3-F11 with rhinaria and club shaped; F1 curved; F1 longer than pedicel and F2, F2 shorter than F3, F3 subequal to F4. Pronotum covered by setae, with two thick carinae clearly visible. Mesoscutum with notauli and rounded scutellar foveae not delimited apically and basally. Propodeum densely setose and with two straight carinae reaching the base separately. Forewing longer than body; radial cell closed, 2.7 times as long as wide (Fig. III, 14).

DISTRIBUTION – Previously known from the Holarctic region (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: France (KIEFFER, 1904a: 598; DE GAULLE, 1908: 26). First record from Italy.

Phaenoglyphis salicis (Cameron, 1883)

DIAGNOSIS – *Phaenoglyphis salicis* is mainly characterized by having notauli present, small and rounded scutellar foveae, rhinaria and club shape beginning in F3. It is similar to *Phaenoglyphis gutierrezii* Andrews, 1978 but they can be differentiated by the ratio between flagellomeres: F2 shorter than F3, F3-F4 subequal in length in *P. salicis* (Fig. II, 15) while F2-F4 subequal in length in *P. gutierrezii*; shape of scutellar foveae: scutellar foveae completely defined and with two lines apically in *P. salicis* but scutellar foveae slightly open basally in *P. gutierrezii*.

MATERIAL EXAMINED – (1 ♂). “N. Italy: Dolomites, Seis aur Schlein, 1-13.vi.1964”, “BM” (red): 1 ♂ (BMNH).

SHORT DESCRIPTION – Head and mesosoma brown, metasoma dark brown; F1 and F2 yellow, F3-F11 yellowish brown; legs dark yellow and veins yellowish brown. Female antenna 13-segmented; F1 and F2 smooth and thinner than remaining flagellomeres; F3-F11 with rhinaria and club shaped; F1 longer than pedicel and F2, F2 shorter than F3, F3 subequal to F4 (Fig. II, 15). Male antenna 14-segmented, as in female. Pronotum setose, with two thick carinae clearly visible. Mesoscutum with notauli weak, oval scutellar foveae completely defined and with two lines apically. Propodeum densely setose with two short and straight carinae, reaching the base separately. Forewing longer than body; radial cell closed, 2.5 times as long as wide (Fig. III, 15).

DISTRIBUTION – Previously known from the Holarctic region (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: Spain (TORRAS-CASALS, 1996: 196, 197). First record from Italy.

Phaenoglyphis villosa (Hartig, 1841)

DIAGNOSIS – *Phaenoglyphis villosa* is easily differentiated from the other *Phaenoglyphis* species by having the radial cell partially open (Fig. III, 16).

MATERIAL EXAMINED – (6♀) “C252, Italy: Puglia, 2.5 km S Holadi Bari, 28.v.1992, J.D. Pinto, PT, cultivated area”: 2♀ (CNCI); “C258, Italy: Sicily (ME), Portella Femmina Morte, Nebrodi Mts, 1524m, sweeping, *Fagus* forest, open areas, 9.vi.1992, J.D. Pinto”: 1♀ (CNCI); “C246, Italy: Calabria (CS) ≈ 5 km NW Lungro, 1345m, 22.vi.88, J.D. Pinto”: 1♀ (UB); “C249, Italy: Basilicata (PR) 5 km NW Picerro, 21.vi.88, J.D. Pinto”: 1♀ (UB); “C260, Italy: South Tyrol, 1400m, 46°28'40"N 11°34'11"E, 4.vii.2011, M. Bartak, forest edge”: 1♀ (UB).

SHORT DESCRIPTION – Head, mesosoma and metasoma dark brown to blackish-brown; scape, pedicel, F1-F2 and sometimes F3 yellow to light brown, subsequent flagellomeres dark, reddish-brown; legs yellow and veins yellowish to brownish. Female antenna 13-segmented; F1 and F2 smooth and thinner than remaining ones, F3-F11 with rhinaria and club shaped; F1 as long as pedicel or slightly longer, F1 subequal to F2, F2 shorter than F3, F3 shorter than F4 (Fig. II, 16). Male antenna 14-segmented; F1 and F2 smooth and thinner than remaining flagellomeres, F3-F12 with rhinaria and club shaped; F1 slightly bowed and longer than pedicel, F1 subequal to F2, F2 shorter than F3. Pronotum covered by sparse setae with pronotal carinae present. Mesoscutum without notauli, scutellum with two deep oval foveae more or less separated by a carina or completely fused. Propodeum covered by dense long setae, with two well defined, straight and parallel carinae. Forewing longer than body; radial cell partially open, 2.1-2.7 times as long as wide (Fig. III, 16).

DISTRIBUTION – Cosmopolitan (FERRER-SUAY *et al.*, 2012a). Mediterranean Basin: Algeria (KIEFFER, 1909: 482); Andorra (PUJADE-VILLAR *et al.*, 2007: 171); France (KIEFFER, 1902a: 11, 12, 13; KIEFFER, 1904a: 595, 597; DE GAULLE, 1908: 26; ANDREWS, 1978: 84); Greece (PUJADE-VILLAR *et al.*, 2007: 171); Menorca Island (Spain) (PUJADE-VILLAR *et al.*, 2001: 85); Spain (TORRAS-CASALS, 1996: 196, 197; SUAY *et al.*, 1998: 106). First record from Italy.

DISCUSSION

Until now only seven Charipinae species had been cited from Italy: *Alloxysta aphidicida*, *A. macrophadna*, *A. musti*, *A. pusilla*, *A. silvestri*, *A. victrix* and *Apocharips eleaphila*. The deposition of the type material of three of these species (*A. aphidicida*, *A. musti* and *A. silvestri*) is still unknown, the original descriptions are very poor and some important characters are not mentioned, then, these species are here considered as *nomina dubia*, until type material is found. *Alloxysta macrophadna*, *A. pusilla* and *A. victrix* are nowadays considered as valid species (FERRER-SUAY *et al.*, 2012a). Although useful features to identify *A. pusilla* have been previously evidenced by Evenhuis, the type material of this species remains to be revised. As for *Apocharips eleaphila*, it has been recently synonymized with *A. trapezoidea* (FERRER-SUAY *et al.*, 2013a).

After the study of Charipinae material collected in different localities of Italy and deposited in different entomological institutions, 14 species are here cited for the first time from this area: *A. arcuata*, *A. brevis*, *A. castanea*, *A. citripes*, *A. fracticornis*, *A. consobrina*, *A.*

melanogaster, *A. mullensis*, *A. pilipennis*, *A. ramulifera*, *A. xanthocera*, *P. heterocera*, *P. salicis* and *P. villosa*. With this revision the knowledge about the Charipinae fauna present in Italy has been greatly improved, this fact emphasized the necessity to continue with the collects and studies of the Charipinae in order to know the real distribution patterns. The Charipinae species present in Italy follow the line of the Charipinae present in other Palaearctic countries (FERRER-SUAY *et al.*, in prep). Most of the species present in Italy have been also found in Spain (FERRER-SUAY *et al.*, 2012b, 2013e), in the Mercantour National Park (Alpes-Maritimes, France) (FERRER-SUAY *et al.*, in prep) and recently published the Charipinae present in Corsica (FERRER-SUAY *et al.*, 2013d).

Below is presented a key for the Charipinae nowadays know in Italy.

1. Lower part of mesopleuron with horizontal sulcus (Fig. I, 1).
..... *Phaenoglyphis* 2
- Mesopleuron lacks horizontal sulcus (Fig. I, 2). *Alloxysta* 4
2. Notauli completely absent and scutum smooth and shining; radial cell partially open; scutellar foveae rounded, sometimes slightly fused. *P. villosa*
- Notauli present, at least in the posterior half of mesoscutum and/or scutum sculptured; radial cell closed; scutellar foveae rounded and separated by a carina 3
3. Antennae longer than body; F1-F3 subequal in length, F4 longer than F3 (Fig. II, n); mesoscutum with few scattered setae, mostly present on anterior margin; scutellar foveae not fused and open basally and apically; radial cell 2.7 times as long as wide (Fig. III, 14). Male antenna with rhinaria and club shape beginning in F3, F1 slightly curved and longer than pedicel and F2, F2 shorter than F3, F3 subequal to F4.
..... *P. heterocera*
- Antennae subequal or shorter than body; F1 longer than F2, F2 shorter than F3, F3-F4 subequal in length (Fig. II, 15); mesoscutum with a line of setae next to each notaulus, notauli weak; scutellar foveae completely defined and with two lines at apex; radial cell 2.5 times as long as wide (Fig. III, 15). Male antennae as in female. *P. salicis*
4. Radial cell partially open. 5
- Radial cell closed. 7
5. Propodeal carinae not protruding. Radial cell 2.1 times as long as wide (Fig. III, 4). *A. citripes*
- Propodeal carinae well defined and protruding. Radial cell more than 2.1 times as long as wide. 6
6. Female: F1 longer than pedicel and F2, F2 subequal to F3 (Fig. II, 3). Male antenna with the same proportion as in female, without any flagellomere curved or F1-F2 slightly curved. Radial cell 2.3 times as long as wide (Fig. III, 3) (sometimes the club shape begin in F3). *A. castanea*
- Female: pedicel-F3 subequal in length (Fig. II, 7). Male: F1 longer than pedicel and F2, F2 subequal to F3; radial cell 2.0 times as long as wide (Fig. III, 7). *A. melanogaster*
7. Propodeal carinae present. 8
- Propodeal carinae absent. 15
8. Pronotal carinae present. 9
- Pronotal carinae absent. 13
9. Rhinaria and club shape beginning in different flagellomeres: club shape begins in F2 and rhinaria in F1, F2 subequal to F3 (Fig. II, 13). Male unknown.
..... *A. xanthocera*

- Rhinaria and club shape beginning in the same flagellomeres. 10
- 10. F1 subequal to pedicel. 11
- F1 longer than pedicel. 12
- 11. Female: rhinaria and club shaped begin in F3 (Fig. II, 1). Male: F2 slightly curved; radial cell 2.3 times as long as wide (Fig. III, 1). Propodeal carinae with curved sides. *A. arcuata*
- Female: rhinaria and club shaped begin in F4 (Fig. II, 11). Male: without any flagellomere curved; radial cell 2.0 times as long as wide (Fig. III, 11). Propodeal carinae with straight sides. *A. ramulifera*
- 12. Female: F1 shorter than F3 (Fig. II, 10). Male: rhinaria beginning in F1, pedicel-F3 subequal and slightly curved; propodeal plate with slightly curved sides; radial cell 2.7 times as long as wide in female (Fig. III, 10) and 2.4 times in male. *A. pusilla*
- Female: F2 subequal to F3 (Fig. II, 9). Male: rhinaria beginning in F2, pedicel-F3 not subequal and without any flagellomere curved; propodeal plate with curved sides; radial cell 2.4 times as long as wide (Fig. III, 9). *A. pilipennis*
- 13. F1 shorter than pedicel; F1-F3 subequal in length (Fig. II, 2). *A. brevis*
- F1 subequal or longer than pedicel; F1-F3 not subequal in length. 14
- 14. F1 longer than pedicel; F1-F3 subequal in length (Fig. II, 5). Male: F3 curved. *A. fracticornis*
- F1 subequal to pedicel; F1 longer than F2, F2 subequal to F3 (Fig. II, 8). Male: without any flagellomere curved. *A. mullensis*
- 15. Head yellowish; F2-F4 subequal in length (Fig. II, 12); radial cell 3.0 times as long as wide (Fig. III, 12); propodeum without setae in the longitudinal area where the carinae are present in other Charipinae (Fig. IV, 4). *A. victrix*
- Head brown. Female: rhinaria and club shape beginning in F3 or F4; F1 longer than F2, F2 subequal to F3 (Fig. II, 6); radial cell 2.7 times as long as wide; propodeum completely covered by setae. *A. consobrina*

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