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***Astata* LATREILLE, 1796 (Hymenoptera, Astatidae) from the Palearctic region with descriptions of nine new taxa and a key to species**

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A b s t r a c t : Nine new species of *Astata* LATREILLE, 1796 are described from the Palearctic: *Astata arabica* nov.sp. from Yemen, Oman and Jordan; *A. bulbosa* nov.sp., *A. gobiensis* nov.sp. and *A. mongolica* nov.sp. from Mongolia; *A. hirsuta* from Saudi Arabia, *A. iranica* nov.sp. from Iran; *A. maghrebensis* nov.sp. from Morocco; *A. rubra* nov.sp. from Turkmenistan and Uzbekistan and *A. schmideggeri* nov.sp. from Tunisia. *A. boops canariensis* PULAWSKI, 1974 is raised to species rank (stat.nov.). The species status of *A. picea* A. COSTA, 1867 has been restored. Descriptions and keys to Western Palearctic species are provided.

K e y w o r d s : *Astata*, new species, Iran, Mongolia, North Africa, Palearctic, key

Introduction

About 40 species and subspecies of *Astata* LATREILLE, 1796 have been described from the Palearctic (PULAWSKI 2024). MAID & KLIMA (1939) provided a first world catalog of Astatinae. Revisions and keys are provided by GUSSAKOVSKIJ (1927) for the Palearctic, GINER MARI (1945, 1946) for respectively Spain and Morocco, PULAWSKI (1956, 1978) for Europe, BEAUMONT (1964) for Switzerland, KAZENAS (1978, 2000) for Kazakhstan, SCHMIDT & BITSCH (2007, 2020) for Western Europe and SCHMID-EGGER (2014) for the United Arab Emirates. The current taxonomy of the genus, especially in the Middle East and the central Palearctic is unsatisfactory. Examination of approximately 2800 *Astata* specimens mainly deposited in the Biodiversitätszentrum of the Oberösterreichische Landes-Kultur GmbH (former Oberösterreichisches Landesmuseum) (Linz, Austria) and in the collection of C. Schmid-Egger (Berlin, Germany) result here in the description of eight species new to science.

Material and methods

Specimens were examined using a Bresser stereomicroscope with maximal 80× magnification and a MK-S144T ring light. Photos were taken with an USB Microscope Camera MOC-510 and then processed with the stacking program CombineZM. Final adjustment of images and montage of plates was carried out with the software Ulead PhotolImpact X3 of COREL. To avoid confusion the conventional terms scape, pedicel and flagellum are not used. Instead, these are referred to respectively as antennomere I,

antennomere II and the remaining antennomeres. As for antennomeres, terga and sterna are designated with Latin numbers. In the description of punctate structures: Densely punctate structures are such with interspaces maximal as wide as puncture diameter, structures with scattered puncture are such with interspaces at least about twice as wide as puncture diameter. The label data are cited verbatim, without linguistic corrections and updating of historical place names. Faunistic literature data are cited only for which the author has not seen specimens. To save space, only one source is quoted. Abbreviations for institutions in which type specimens are housed follow the list given by Pulawski at

https://researcharchive.calacademy.org/research/entomology/entomology_resources/hymenoptera/sphecidae/institutional_abbreviations.pdf.

The chapter distribution is organized according to regions: Europe includes for practical reasons the Canary Islands. Maghreb includes the north African countries Western Sahara, Morocco, Algeria, Tunisia and Libya. Middle East includes all countries of the Caucasus region between Black Sea and Caspian Sea, Türkiye, Egypt, Israel, Syria, Jordan, Arabian Peninsula and Iran. Central Asia includes Turkmenistan, Kazakhstan, Uzbekistan, Afghanistan, Tajikistan and Mongolia.

Abbreviations of collections

BOL	Biodiversitätszentrum of the Oberösterreichische Landes-Kultur GmbH (Linz, Austria)
JIAU.	Jarom Branch, Islamic Azad University (Jarom, Iran)
LI	coll. Wolf-Harald Liebig (Bad Muskau, Germany)
MMW	Müritzmuseum Waren (Waren/Müritz, Germany)
SDEI	Senckenberg Deutsches Entomologisches Institut (Müncheberg, Germany)
SMG	Senckenberg Museum für Naturkunde Görlitz (Görlitz, Germany)
SE	coll. Christian Schmid-Egger (Berlin, Germany)
WS	coll. Wolfgang Schlaefle (Basel, Switzerland)
ZMG	Zoologisches Museum der Universität Greifswald (Greifswald, Germany)
ZSBS	Zoologische Sammlung des Bayerischen Staates (Munich, Germany)

Keys to Palearctic species of *Astata* LATREILLE, 1796

Key to males

U n k n o w n : *Astata ljubomirovi* JACOBS, REZAEI & FALLAHZADEH, 2023; *A. diabolica* BALTHASAR, 1957; *A. rubra* nov.sp. (Türkiye, Uzbekistan); *A. rubriventris* JACOBS, REZAEI & FALLAHZADEH, 2023 (Iran).

N o t e x a m i n e d a n d n o t i n c l u d e d : *A. moralesi* GINER MARÍ, 1945 (West Sahara) (may be identical with *A. cleopatra*, see PULAWSKI 1959); *A. nigra* F.

SMITH, 1856 (Algeria, description insufficient); *A. fumipennis* SAUNDERS, 1910 (male described by SCHULTHESS (1926) from Tunisia, description insufficient).

- 1 (1) Dorsal surface of propodeum with setae. Tegula and usually pronotal lobe yellow or whitish.2
- Dorsal surface of propodeum glabrous. Tegula and usually pronotal lobe always black or brown.4
- 2 (1) Surface of middle clypeal lobe evenly concave, spoon-like, anterior margin raised and shiny, wider than inner distance between antennal insertions, without lateral tubercles (Fig. 1). Terga I-II mostly red, distal terga always black, metasoma black in specimens from southwestern Europe. 9-12 mm. Southern Europe, Northwest-Africa, Türkiye, Central Asia.....*A. miegii* DUFOR, 1861
- Surface of middle clypeal lobe distinctly produced, about as wide as inner distance between antennal insertions, with indistinctly raised borders, laterally with small edges or teeth (Figs 2, 3) Metasoma completely red or black.....3
- 3 (2) Metasoma black. Mesopleuron often with yellow spot below wing insertion. Middle clypeal lobe with small basal tubercles (Fig. 2). Lower margin of mandible with small angle basally. Pygidium smooth and shiny, with distinct longitudinal keel. 9-12 mm. Iran, Central Asia.*A. maculata* RADOSZKOWSKI, 1877
- Metasoma red, sometimes with brownish darkened distal segments. Mesopleuron black. Middle clypeal lobe with posterolateral angle (Fig. 3). Lower margin of mandible with distinct angle basally. Pygidium dull, densely punctured. 8-9 mm. India, Middle East, Ethiopia, Kenya.*A. lubricata* NURSE, 1903
- 4 (1) Metasoma completely black. Tergum I sometimes with blurred reddish shimmer or terga I-II with reddish or brown posterior margins.5
- Metasoma red and black or completely red; if red, sometimes apical terga brownish darkened.12
- 5 (4) Midcoxa on inner side concave.6
- Midcoxa normal, on inner side without concavity.8
- 6 (5) Lateral setae of metasomal hairbrush twice as long as setae on sternum II. Middle clypeal lobe distinctly protruding beyond lateral lobe (Fig. 4). Legs black, foretibia on inner side brown. External surface of hindcoxa rounded. Middle antennomeres basally distinctly concave in profile (cf. Fig. 17). 7.5 mm. Sudan.*A. enslini* MAIDL, 1924
- Setae of metasomal hairbrush distinctly shorter than those of sternum II (Figs 25, 134). Middle clypeal lobe hardly protruding beyond lateral lobe (Fig. 5). Middle antennomeres different in profile.7
- 7 (6) Tibiae and often femora apically red. External surface of hindcoxa concave. Middle antennomeres in profile nearly cylindrical or slightly convex (Fig. 13). 9-13 mm. Southern France.*A. rufipes* MORICE, 1902 (melanistic variant)
- Legs black, foretibia with brownish inner surface. Hindcoxa unmodified. Middle antennomeres weakly concave in profile (Fig. 14). Syria.*A. kashmirensis* (melanistic variant)
- 8 (5) At least terga I-II with brown posterior margins (cf. Fig. 19), sometimes with lateral spots. Lateral setae of metasomal hairbrush about as long as setae on sternum II or not distinctly developed.....9
- Terga completely black. Lateral setae of metasomal hairbrush distinctly longer than setae on sternum II.10

- 9 (8) Malar space very short, base of mandible almost touching eye margin. Mesopleuron densely sculptured, dull. Only terga I-II with reddish-brown posterior margins, remaining black. Setae on head and mesosoma black. Antennomere I on inner side with black bristles. Mid- and hindfemora ventrally with black setae. 10 mm. Turkmenistan.....*A. aschabadensis* RADOSZKOWSKI, 1893
- Malar space distinctly longer, about as wide as diameter of posterior ocellus. Mesopleuron shiny, with scattered punctures (Fig. 20). All terga with brown posterior margins (Fig. 19). Setae on head and mesosoma white. Antennomere I on inner side with white bristles. Mid- and hindfemora ventrally with white setae. 9 mm. India, Iran.....*A. compta* NURSE, 1909
- 10 (8) Tergum I smooth and shiny, impunctate. Antennomeres V-IX basally concave in profile (cf. Fig. 17), tyloids of middle antennomeres basally and distally with distinct pale tubercles of nearly equal size (cf. Fig. 18). Hindfemur laterally with white setae. 9-11 mm. Corsica, Sardinia, Southern France, Iberian Peninsula.....*A. picea* A. COSTA, 1867
- Tergum I completely and II anterolaterally coriaceous, densely punctured. Shape of antennomeres and setation of hindfemur different.....11
- 11 (10) Outer side of hindfemur with short black bristles. Antennomeres V-XI nearly straight in profile (cf. Fig. 15); tyloids carinate, basally and distally slightly pale (cf. Fig. 16). Posterior surface of mesopleuron dull, very densely punctate, punctures often confluent. Epimeron strongly reticulate, dull. Sternum II-III with short setae, about half as long as hindtarsomere II. 10-11 mm. Middle East.*A. affinis* VANDER LINDEN, 1829 (melanistic variant)
- Outer side of hindfemur with white setae, without black bristles. Antennomeres V-XI basally concave in profile (cf. Fig. 17); carinate tyloids of antennomeres V-X inconspicuous, without pale tubercles. Posterior surface of mesopleuron shiny, more scattered punctate, interspaces nearly about as wide as puncture diameter, punctures never confluent. Ventral surface of epimeron smooth and shiny, dorsal part densely punctate. Sterna II-IV with long white setae, about as long as hindtarsomere II. 10 mm. Saudi Arabia.*A. hirsuta* nov.sp.
- 12 (4) Anterior margin of middle clypeal lobe roundly protruding or triangular (Fig. 7). Metasomal hairbrush beginning on sternum IV, central setae short and appressed, lateral setae brown, shorter than those of sternum II. Posterior margin of sterna IV-VI emarginate; V-VI with small notch mesally, with short spine on each side of the notch (Fig. 22). Distal two thirds of ventral surface of forefemur strongly flattened, foretibia weakly curved and concave ventrally, forebasitarsus curved and flattened (Fig. 21). Midcoxa strongly lobularly widened, hindcoxa with longitudinal impression and lateral carina (Fig. 22). Antennomeres VII-XI evenly convex in profile. Large species, 14-15 mm. Türkiye, Syria, Jordan, Israel.*A. diversipes* PULAWSKI, 1955
- Anterior margin of middle clypeal lobe straight or weakly convex. Metasomal sterna (III)VI-VII with long hairbrush, lateral setae often as long as or longer than setae of sternum II (except *A. rufipes* and *A. kashmirensis*). Posterior margin of apical sterna without notch mesally. Forelegs unmodified. Mid- and hindcoxae as well as antenna different. Mostly smaller species, 9-12 mm.13
- 13 (12) Mandible lemon-yellow with black tip or mesally extensive lemon-yellow. Femora and tibiae always black. Tyloids carinate or with two tubercles. If midcoxa on inner side concave, hindtrochanter with lobular appendix (Fig. 12). Hindcoxa ventrally with shallow longitudinal impression.14

- Mandible black, often reddish or reddish-yellow mesally; if yellowish-red, then femora apically as well as tibiae and tarsi red or middle antennomeres with tripartite tyloids or midcoxa rectangularly widened. Mid- and hindcoxae different.....15
- 14 (13) Hindtrochanter with lobular appendix (Fig. 12). Midcoxa on inner side concave. Lateral setae of metasomal hairbrush maximally 1.5× as long as those on sternum II. 12 mm. Morocco. *A. trochanterica* BEAUMONT, 1953
- Hindtrochanter rounded apically. Midcoxa on inner side convex. Lateral setae of metasomal hairbrush about 3× as long as those on sternum II. 9-11 mm. Sicily, Malta. *A. sicula* KOHL, 1885
- 15 (13) Complete metasomal hairbrush distinctly shorter than setae on sternum II (Figs 25, 134). Middle clypeal lobe hardly protruding beyond lateral lobe (Fig. 5). Midcoxa on inner side always concave.16
- Lateral setae of metasomal hairbrush at least as long as setae of sternum II (cf. Figs 26, 39, 51, 52, 58) or hairbrush extended, completely covering sterna III-VI (Figs 23, 37). Middle clypeal lobe distinctly protruding beyond lateral lobe (cf. Fig. 6) (except *A. quettae*). Midcoxa different.17
- 16 (15) Femora apically, tibiae and tarsi red. Hindcoxa with longitudinal impression, bulging basally. Middle antennomeres nearly cylindrical or slightly convex (Fig. 13); tyloids carinate. 9-13 mm. Southern Europe to Central Asia. *A. rufipes* MOCSÁRY, 1883
- Legs black, inner surface of foretibia pale brown. Hindcoxa unmodified. Middle antennomeres weakly concave in profile (Fig. 14); tyloids flat, inconspicuous, with shiny surface. 8-10 mm. South and Central Europe to Central Asia, Morocco, Northwest India. *A. kashmirensis* NURSE, 1909
- 17 (15) Hindcoxa with longitudinal carina ending in an anteroventral triangular extension or a pointed spine (Figs 11, 24).....18
- Hindcoxa unmodified.....19
- 18 (17) Hindcoxa with large triangular basal extension and indistinct longitudinal carina (Fig. 11). Hindtrochanter with triangular apical spine. Posterior margin of sterna III-VI straight. Central setae of metasomal hairbrush not separated from long lateral ones by a smooth and glabrous area. 10-11 mm. Türkiye. *A. leila* PULAWSKI, 1967
- Hindcoxa with short apical spine, longitudinal keel and ventral longitudinal impression (Fig. 24). Hindtrochanter obtuse-angled apically. Posterior margin of sterna III-VI in the middle slightly emarginate. Short central setae of metasomal hairbrush separated from the long lateral setae by a smooth and glabrous stripe. 8-10 mm. Southeastern Europe, Türkiye..... *A. pontica* PULAWSKI, 1958
- 19 (17) Femora apically, tibiae and tarsi mostly red, sometimes more or less darker brownish. Metasoma red or red with brownish or blackish apical segments. Hindtrochanter often with apical spine or apically triangular. Pubescence of head and mesosoma sometimes exceptionally long and dense.20
- Legs black, sometimes foretibia on inner side brownish. Metasoma with black apical segments. Hindtrochanter mostly rounded apically. Pubescence of head and mesosoma always normal and more or less scattered.....26
- 20 (19) Tergum I with apical impression, separated from II by a transverse furrow. Pubescence of head and metasoma very long and dense, masking surface. 8-9 mm. Turkmenistan, Kazakhstan. *A. sabulosa* GUSSAKOVSKIJ, 1927
- Tergum I without apical impression, not separated from II by a transverse furrow. Pubescence different.21

- 21 (20) Midcoxa unmodified, inner side convex.22
- Midcoxa on inner side concave with round or triangular extension.24
- 22 (21) Antennomeres V-XI slightly convex in profile (Fig. 27), with conspicuous pale tyloids (Fig. 28). Head and mesosoma with normal pubescence, on mesoscutum about as long as antennomere II. Sternum III without long setae. Central setae of metasomal hairbrush about half as long as lateral ones, latter longer than those of sternum II (Fig. 26). Longest ventral setae of hindfemur shorter than two thirds of maximal femur diameter. Hindtrochanter unmodified. Frons with smooth spot in front of anterior ocellus. 8-10 mm. North Africa. *A. laeta* E. SAUNDERS, 1910
- Middle antennomeres weakly concave basally or nearly cylindrical (Figs 29, 30), with inconspicuous carinate tyloids, often with more or less developed pale basal and distal tubercles. Head and mesosoma with conspicuous long and dense pubescence, sometimes covering the surface, especially on face (Fig. 37). Sternum III with long white setae. Metasomal hairbrush different. Longest ventral setae of hindfemur longer than maximal femur diameter. Hindtrochanter with short triangular apical spine. Frons without smooth spot in front of anterior ocellus.23
- 23 (22) Sterna completely covered with long white and dense pubescence, longest setae on sternum II (Fig. 37). Metasomal hairbrush on sterna IV-VII with long more or less appressed setae, distinctly shorter than longest setae of sternum II. Antennomeres VII-X nearly cylindrical in profile (Fig. 30). 8 mm. India, Arabia, Ethiopia. *A. selecta* NURSE, 1909
- Sterna II-III with scattered erect setae. Central setae of metasomal hairbrush about half as long as lateral ones, the latter about as long as those of sternum II (Fig. 39). Antennomeres V-IX weakly concave in basal half (Fig. 29). 8-10 mm. Northwest Africa. *A. radialis* E. SAUNDERS, 1910
- 24 (21) Mesopleuron shiny, finely punctate, distances between punctures wider than puncture diameter (Fig. 38). Midcoxa on inner side concave, with weak round extension. Pubescence of head and mesosoma normal, on mesoscutum and mesopleuron sparse. Middle clypeal lobe hardly protruding beyond lateral lobe (cf. Fig. 5). Antennomeres VI-VIII in profile slightly concave mesally (Fig. 31), with large pale basal tubercle. 7-9 mm. Southeastern Europe to China, India. *A. quettae* NURSE, 1903
- Mesopleuron dull, densely punctate or reticulate, distances between punctures narrower than puncture diameter. Midcoxa on inner side with round or triangular extension (Fig. 8). Pubescence of head and mesosoma long and dense. Middle clypeal lobe distinctly protruding beyond lateral lobe (cf. Fig. 6). Middle antennomeres different.25
- 25 (24) Central setae of metasomal hairbrush about one third or half as long as lateral ones; more or less erect. Lower margin of mandible mesally with obtuse corner (Fig. 10). Midcoxa on inner side with triangular extension (Fig. 8). Hindtrochanter with distinct pointed spine apically (Fig. 9). Antennomeres VI-IX concave in proximal third, X-XI cylindrical. Tyloids on antennomeres VII-XI at least apically with distinct yellowish tubercle. 7-9 mm. Egypt, Arabia. *A. cleopatra* PULAWSKI, 1959
- Central setae of metasomal hairbrush about a quarter as long as lateral ones; very short and dense. Lower margin of mandible simple. Midcoxa on inner side with round extension. Hindtrochanter apically round or oval. Antennomeres VI-XI concave mesally. Tyloids carinate, slightly lightened apically. 8-10 mm. Arabia. *A. prosii* SCHMID-EGGER, 2014

- 26 (19) Metasomal hairbrush extended, completely covering sterna III-VI (Fig. 23). Middle clypeal lobe short, hardly protruding beyond lateral lobe (cf. Fig. 5). Antennomere VI short, only twice as long as apically wide. Middle antennomeres stout and strongly convex mesally (Fig. 32). Tyloids of antennomeres VI-IX trifold with strongly developed middle tubercle. Inner surface of foretibia and foretarsus reddish brown. Midcoxa slightly concave on inner side, with fine carina. 6-8 mm. Southern Europe, Northwest Africa, Central Asia..... *A. apostata* MERCET, 1910
- Metasomal hairbrush much narrower, developed only in the middle of sterna (III)IV-VI (cf. Figs 26, 39, 51, 52, 58). Middle clypeal lobe different, mostly distinctly protruding beyond lateral lobe (cf. Fig. 6). Antenna and midcoxa different.....27
- 27 (26) Midcoxa distinctly rectangularly enlarged, inner side rounded (Fig. 35). Area occupied by short central setae of metasomal hairbrush very wide, covering at least one third of sterna IV-VI (Fig. 36). Middle antennomeres in profile slightly concave basally (Fig. 33), with carinate tyloids (Fig. 34). 8 mm. Tunisia. *A. schmideggeri* nov.sp.
- Midcoxa normal, not rectangular enlarged, sometimes inner side concave or angular extended. Metasomal hairbrush distinctly narrower, short central setae covering less than one third of sterna IV-VI. Antenna different.28
- 28 (27) Midcoxa on inner side concave, often with more or less distinct longitudinal carina. Tyloids of middle antennomeres with three tubercles (Figs 41, 43).29
- Midcoxa normal, inner side rounded or flattened, seldom with obtuse-angled ventral carina. Tyloids of middle antennomeres carinate or with two tubercles or conspicuously enlarged tubercles.31
- 29 (28) Antennomeres V-X in profile with maximal diameter in the distal third (Fig. 42) with inconspicuous large vesicular tyloids (Fig. 43). Foretibia black. Lower margin of mandible with obtuse corner mesally. Central setae of metasomal hairbrush about one third as long as lateral ones; lateral setae distinctly longer than those of sternum II. Hindtrochanter with rectangular apical margin. 10-11 mm. Mongolia. *A. bulbosa* nov.sp.
- Middle antennomeres with three more inconspicuous tubercles (Fig. 41), maximal diameter in the middle (Figs 40, 46). Lower margin of mandible simple.30
- 30 (29) Hindtrochanter with short pointed apical spine. Mandible reddish yellow with brown tip. Central setae of metasomal hairbrush short, not longer than one third of lateral ones; lateral setae distinctly longer than those on sternum II. 7-9 mm. Iberian Peninsula, Morocco. *A. lusitanica* PULAWSKI, 1974
- Hindtrochanter rounded apically. Mandible black or mesally reddish. Central setae of metasomal hairbrush about half as long as lateral ones; lateral setae about as long as those on sternum II. 8-11 mm. Palearctic. *A. minor* KOHL, 1885
- 31 (28) At least basal tubercle of median antennomeres remarkably enlarged, distinctly larger than distal tubercle (Figs 47-50).32
- Tyloids of median antennomeres different, more or less carinate, basal and distal tubercles often equal in size or inconspicuous (Figs 16, 18, 45, 56, 62, 64, 66, 68). ...35
- 32 (31) Antennomeres V-X slightly concave basally, tyloids with distinctly enlarged yellowish tubercles (Fig. 47). 8-10 mm. Northwest Africa. *A. maghrebensis* nov.sp.
- Middle antennomeres different, only basal tubercle enlarged (Figs 48-50).33

- 33 (32) Tyloids of middle antennomeres with large pale basal tubercle and weakly down-curved carina reaching the tip (Fig. 48). Sterna predominantly black. Midcoxa ventrally with obtuse-angled longitudinal carina. 10-12 mm. Southeast Europe, Türkiye, Iran. *A. hera* ARENS, 2014
- Tyloids of median antennomeres different, with two separate tubercles (Figs 49, 50). Midcoxa ventrally rounded. Sterna more or less red. 34
- 34 (33) Lateral setae of metasomal hairbrush usually longer, about 1.3-1.5× as long as setae of sternum II (Fig. 51). Mesopleuron usually densely punctate (Fig. 53). 8-11 mm. Canary Islands, Morocco, Tunisia. *A. canariensis* PULAWSKI, 1974
- Lateral setae of metasomal hairbrush usually shorter, about as long as setae of sternum II (Fig. 52). Mesopleuron usually more or less wrinkled (Fig. 54). 8-11 mm. Southeast Europe, Türkiye, Middle East. *A. graeca* BEAUMONT, 1965
- 35 (31) Antennomeres V-IX strongly concave in profile, antennomeres short and stout, VI-VIII about 1.5-1.7× as long as maximal width (Fig. 55). Tyloids of antennomeres V-X strongly produced, distal tubercles more strongly developed than proximal ones (Fig. 56). 6-9 mm. Central and South Europe to Central Asia, North Africa. *A. costae* A. COSTA, 1867
- Antennomeres V-IX slightly concave or convex in profile, middle antennomeres slender, at least twice as long as maximal width. Tyloids different. 36
- 36 (35) Hindfemur on outer side with short black bristles between white setae. Tergum I dull, with distinct punctures and reticulate microsculpture (Fig. 57), II laterally with scattered punctures. Antennomeres V-XI nearly cylindrical or slightly convex in profile (Fig. 15); with inconspicuous carinate tyloids, sometimes basally and distally slightly pale, but without distinct pale tubercles (Fig. 16). Antennomere I on inner side with black setae. Larger species, 9-14 mm. Southern Europe, North Africa, Central Asia. *A. affinis* VANDER LINDEN, 1829
- Hindfemur on outer side with white setae only. Tergum I mostly with the same microsculpture as tergum II, without or with very scattered or indistinct punctures (except *A. iranica* nov.sp. with exclusively white setae on antennomeres I-II). Tyloids different. Antennomere I on inner side with black and white or exclusively white setae. Smaller species, 7-12 mm. 37
- 37 (36) Antennomere III about 2.8-3.8× as long as apically wide. Lateral setae of metasomal hairbrush about as long as those of sternum II. 38
- Antennomere III about as 4.0-5.2× as long as apically wide. Lateral setae of metasomal hairbrush as long as or longer than those of sternum II. 40
- 38 (37) Central setae of metasomal hairbrush nearly as long as lateral setae, the latter about as long as those on sternum II. Antennomeres VIII-X evenly convex in profile (Fig. 59). Tyloids of antennomeres VI-X carinate, extending over entire length of antennomere, pale basally and apically. 8-9 mm. Southeastern Europe, Türkiye. *A. brevitorsis* PULAWSKI, 1958
- Central setae of metasomal hairbrush about half as long as lateral ones, the latter about as long as or shorter than those on sternum II (Fig. 58). Antennomeres V-IX in profile slightly concave basally (Fig. 61), carinate tyloids with pale basal and distal tubercles (Fig. 62). 39
- 39 (38) Shortest width of malar space at least as long as diameter of posterior ocellus. Metasomal hairbrush on sterna III-VI. Forewing completely and evenly darkened, except apical margin. 8-12 mm. Southwest Europe, Northwest Africa. *A. gallica* BEAUMONT, 1942

- Shortest width of malar space distinctly shorter than diameter of posterior ocellus. Metasomal hairbrush on sterna IV-VI. Apical part of forewing hyaline. 8-10 mm. Southeastern Europe, Northern Middle East, Central Asia.....
..... *A. jucunda* PULAWSKI, 1959
- 40 (37)** Middle antennomeres convex in profile, maximum width in the middle (Fig. 44). Tyloids on antennomeres VII-X carinate, more or less pale basally and distally (Fig. 45). Central setae of metasomal hairbrush about one quarter as long as lateral ones, the latter distinctly longer than setae on sternum II. Antennomeres V-IX slender, about twice as long as wide. 9-11 mm. Southeastern Europe, Northwest Africa..... *A. cobosi* GINER MARÍ, 1946
- Middle antennomeres basally concave or cylindrical in profile, maximum width in the distal third (Figs 17, 60, 63, 65, 67). Other characters different.....**41**
- 41 (40)** Terga I-II dull, with strong reticulate microsculpture, I completely and II laterally with shallow punctures (Fig. 69). Sterna II-III completely or predominantly black. Foretibia on inner side brown. 8-9 mm. Iran. *A. iranica* nov.sp.
- Terga I-II shagreened, without or with very fine microsculpture, mostly impunctate or with shallow and very indistinct punctures. Sterna II-III different. Foretibia black.**42**
- 42 (41)** Central setae of metasomal hairbrush short and dense, appressed, at most one third as long as lateral ones, lateral setae longer than those of sternum II.....**43**
- Central setae of metasomal hairbrush sparse and erect, at least half as long as lateral ones, the latter about as long as setae of sternum II. Tyloids and mesopleuron different.**44**
- 43 (42)** Tyloids of middle antennomeres carinate, basally and distally with distinct pale tubercle of nearly equal size or distal tubercle somewhat larger than proximal ones (Fig. 18). Mesopleuron moderately shiny, with stronger punctures, interspaces at least posteriorly narrower than puncture diameter, often confluent into rugae. Larger species, 9-11 mm. Palearctic. *A. boops* (SCHRANK, 1781)
- Tyloids of middle antennomeres strongly carinate, with small pale basal tubercle and inconspicuous distal tubercle (Fig. 64). Mesopleuron shiny, finely and regularly punctate, punctures never confluent into rugae (Fig. 70). Smaller species, 7-9 mm. Arabian Peninsula, Israel..... *A. arabica* nov.sp.
- 44 (42)** Posterior surface of mesopleuron densely punctate, interspaces narrower than puncture diameter (Fig. 71). Mesoscutum anteriorly very densely punctate, without noticeable interspaces, dull. Lateral surface of propodeum completely reticulate, without smooth and shiny anterior area. Metapleuron dull, densely punctate. Antennomeres VI-IX in profile concave in proximal half (Fig. 60). Larger species, 9-11 mm. Mongolia..... *A. gobiensis* nov.sp.
- Posterior surface of mesopleuron with scattered punctures, interspaces at least as wide as puncture diameter or wider (Fig. 72). Mesoscutum densely punctate, interspaces shiny. Lateral surface of propodeum anteriorly smooth and shiny with scattered punctures, posteriorly dull, densely punctate. Metapleuron smooth and shiny, with scattered punctures. Antennomeres VI-IX in profile slightly concave in the middle or nearly straight (Fig. 67). Smaller species, 8-9 mm. Mongolia.
..... *A. mongolica* nov.sp.

Key to females

U n k n o w n : *Astata bulbosa* nov.sp. (Mongolia); *A. enslini* MAIDL, 1924 (Northern Sudan); *A. gobiensis* nov.sp. (Mongolia); *A. hera* ARENS, 2014 (Greece, Middle East); *A. iranica* nov.sp. (Iran); *A. hirsuta* (Saudi Arabia); *A. maghrebensis* nov.sp. (Morocco); *A.*

moralesi GINER MARI, 1945 (Western Sahara); *A. nigra* F. SMITH, 1856 (Algeria); *A. schmideggeri* nov.sp. (Tunisia).

N o t i n c l u d e d : *Astata compta* NURSE, 1909 (India, Iran; description insufficient); *A. diabolica* BALTHASAR, 1957 (Afghanistan; description insufficient).

- 1 (1) Dorsal surface of propodeum with long erect setae. Clypeal lamella with three teeth (cf. Fig. 83). Pronotal lobe often pale yellow.2
- Dorsal surface of propodeum glabrous. Clypeal lamella different. Pronotal lobe black or dark brown.4
- 2 (1) Metasoma black. 8-11 mm. Iran, Central Asia.....*A. maculata* RADOSZKOWSKI, 1877
- Metasoma at least basally red.3
- 3 (2) Metasoma completely red, sometimes segments V-VI brownish. Pronotal lobe black. Frons dull, strongly coriaceous with indistinct shallow punctures (Fig. 73). Vertex dull, coriaceous, with very scattered punctures. Anterior third of mesoscutum strongly coriaceous. Mesopleuron dull, reticulate, without punctures (Fig. 75). 8-9 mm. India, Middle East, Ethiopia, Kenya.....*A. lubricata* NURSE, 1903
- Posterior metasomal segments always black. Pronotal lobe pale yellow. Frons and vertex shiny, coarsely punctate (Fig. 74). Mesoscutum anteromedian with strongly wrinkled spot, remaining surface and mesoscutellum smooth and shiny with scattered punctures. Mesopleuron anteriorly smooth and shiny with scattered punctures, posteriorly densely punctate (Fig. 76). 9-12 mm. Southern Europe, Northwest-Africa, Türkiye, Central Asia.....*A. miegii* DUFOUR, 1861
- 4 (1) Hindtrochanter with acute distal tooth ventrally (Fig. 77). Pygidial plate wide, lateral margin straight (Fig. 78).5
- Hindtrochanter unmodified or with triangular apex, but always without tooth. Pygidial plate different.6
- 5 (4) Frons and anterior surface of mesoscutum with black and white setae. Mandible yellow with black tip. Sterna and femora with black setae. Metasoma red, sometimes apical tergum and pygidial plate brown. 8-9 mm. Morocco.....
- Frons and mesoscutum with white setae only. Mandible black, medially reddish. Sterna and femora with white setae. Metasomal segments I-II(III) red, IV-VI black. 10-11 mm. Türkiye.....*A. trochanterica* BEAUMONT, 1953
- 6 (4) Ventral spines of forebasitarsus evenly prolonged towards apex (Figs 79, 80). Fine setae between the spines mostly extend over the entire length of spine row.7
- Ventral spines of forebasitarsus unequal, forming an undulating line (Figs 81, 82, 97, 98, 116). Fine setae between the spines extend maximal over the half length of spine row.21
- 7 (6) Clypeal lamella with three distinct teeth (Fig. 83). Veins of forewing brown to dark brown. Tarsi short, tarsomere IV of foretarsus hardly longer than wide (Fig. 84). Metasoma red, at most apex of pygidial plate brown, sternum II sometimes with black spot basally. Frons beside the ocelli with scattered punctures. Legs black. 8-9 mm. Southeastern Europe, Türkiye.....*A. brevitarsis* PULAWSKI, 1958
- Clypeal lamella straight or roundly protruding; if with three teeth, than apical metasomal segments black and veins of forewing partly whitish. Tarsi longer, tarsomere IV of foretarsus distinctly longer than wide. Other characters different.8

- 8 (7) Large species, 14-15 mm. Clypeal lamella roundly or nearly triangular protruding (cf. Fig. 7). Forewing completely brown. Pygidial plate apically strongly narrowed, lateral margin concave (Fig. 85). Legs black. Coxae, trochanters, femora, sternum II and posterior margins of following sterna with black setae. Metasoma red, pygidial plate and sternum VI partly black. Türkiye, Syria, Jordan, Israel. *A. diversipes* PULAWSKI, 1955
- Smaller species, 8-10 mm. Clypeal lamella straight or slightly convex. Wings hyaline, weakly brownish or greyish. Pygidial plate triangular, lateral margin slightly concave or straight (Figs 86, 87). Metasoma and legs different. 9
- 9 (8) Frons and anterior surface of mesoscutum with stiff upwards directed black and white bristles. Femora, often hindcoxa, terga laterally and sterna with black setae. 10
- Frons and anterior surface of mesoscutum with normal white or greyish setae, sometimes masking the sculpture or with stiff upwards directed white bristles only. Other characters different. 12
- 10 (9) Metasoma completely red. 7-9 mm. Egypt, Arabia. *A. cleopatra* PULAWSKI, 1959
- Metasoma red and black. 11
- 11 (10) Mid- and hindfemora red. Pygidial plate triangular, with straight lateral margin (Fig. 86). Larger species, 9-13 mm. Southern Europe to Central Asia. *A. rufipes* MOCSÁRY, 1883
- Femora black, sometimes knees red. Pygidial plate narrower, with concave lateral margin (Fig. 87). Smaller species, 6-8 mm. Southern Europe, Northwest Africa, Central Asia. *A. apostata* MERCET, 1910
- 12 (9) Metasoma completely black, proximal terga sometimes with reddish shimmer. Syria. *A. kashmirensis* NURSE, 1909 (melanistic variant)
- Metasoma red or red with black apical segments. 13
- 13 (12) Metasoma with red basal and black apical segments. Tegula black. 14
- Metasoma completely red, sometimes apical segments brownish. Tegula at least partly brown. 16
- 14 (13) Frons in front of anterior ocellus, between ocelli and eye margin as well as area between posterior ocelli with scattered punctures, interspaces wider than puncture diameter (Fig. 88). Fore- and midtibiae red or reddish brown. 8-10 mm. South and Central Europe to Central Asia, Morocco, Northwest India. *A. kashmirensis* NURSE, 1909
- Frons between anterior ocellus and eye and also vertex between posterior ocelli densely punctate, interspaces mostly narrower than puncture diameter (Fig. 89). Fore- and midtibiae different. 15
- 15 (14) Tibiae red. Gena behind eyes very narrow (Fig. 90). Hindfemur with long white setae, about as long as maximal femur diameter. Pygidial plate wide, with straight lateral margin (cf. Fig. 86). 8-10 mm. Southeastern Europe, Türkiye. *A. pontica* PULAWSKI, 1958
- Tibiae black, foretibia on inner side mostly light brown. Gena behind eye stronger developed. Pygidial plate narrower, with slightly concave lateral margin (cf. Fig. 87). 9-11 mm. Palearctic. *A. minor* KOHL, 1885

- 16 (13) Frons below and beside anterior ocellus smooth and shiny, face with stiff upwards directed exclusively white bristles (Fig. 91). Mesoscutum smooth and shiny, anterior margin rugose, with stiff white bristles between the normal setae. Mesopleuron shiny, with strong scattered punctures, epimeron smooth and shiny. Mesopleuron and propodeum except propodeal dorsum with long white setation, not masking surface. Marginal cell extremely short, anterior margin at most $1.5\times$ as long as wide (Fig. 92). 7-9 mm. Southeastern Europe to China, India. *A. quettae* NURSE, 1903
- Frons and anterior surface of mesoscutum without stiff upwards directed bristles. Mesoscutum different. Mesopleuron mostly densely punctate or rugose-punctate. Head and mesosoma often with exceptionally dense setation, masking the surface. Marginal cell different. 17
- 17 (16) Marginal cell longer, about $2.5\times$ as long as wide (measured on inner side). Setation of head and mesosoma different. 18
- Marginal cell shorter, about $1.0-2.0\times$ as long as wide (measured on inner side). Head and mesosoma except propodeal dorsum with long and dense setation, partly masking the surface. 19
- 18 (17) Gena smooth and shiny, with isolated punctures and sparse setation. Anterior third or quarter of mesoscutum densely punctate, posterior surface smooth and shiny, with isolated punctures; mesoscutellum smooth and shiny, only posterior margin with row of very fine punctures (Fig. 95). Head and mesosoma with normal setation, not masking the surface (Fig. 93). Antennomeres I-III black. Frons shiny, with sharply defined punctures (Fig. 93). Area behind posterior ocelli scattered punctate. Surface between posterior ocelli and eye smooth and shiny, with small dull spot on the eye rim. 9-10 mm. North Africa. *A. laeta* SAUNDERS, 1910
- Lower surface of gena densely punctate with long and dense white setation. Mesoscutum densely punctate, except posteromedian spot; mesoscutellum densely punctate, with large smooth and shiny anteromedian spot (Fig. 96). Face and mesosoma with exceptionally long and dense setation, almost masking the surface (Fig. 94). Antennomeres I-II and base of III brown. Frons dull, rugose-punctate (Fig. 94). Area behind posterior ocelli densely punctate. Surface between posterior ocelli and eye rim with large dull and impunctate spot. 8-10 mm. Northwest Africa. *A. radialis* SAUNDERS, 1910
- 19 (17) Frons with indistinct microsculpture and weakly defined punctures. Antenna brown. 8-10 mm. Turkmenistan, Kazakhstan. *A. sabulosa* GUSSAKOVSKIJ, 1927
- Frons shiny, with sharply defined punctures, interspaces smooth, without microsculpture. Antennomeres IV-XII black. India, Arabia. 20
- 20 (19) Antennomeres I-III black, inner side with black bristles. 8-10 mm. Arabia. *A. prosii* SCHMID-EGGER, 2014
- Antennomeres I-II and base of III reddish brown, with white setae. 8-9 mm. India, Arabia, Ethiopia. *A. selecta* NURSE, 1909
- 21 (6) Metasoma completely red, sometimes apical terga more or less brownish or terga with brown posterior margins or pygidial plate brown. 22
- At least apical metasomal segments black. 26
- 22 (21) Forewing smoky brown, with weak violet reflections. Anterior margin of mesoscutum with fine black appressed setae. 12 mm. North Africa. *A. fumipennis* SAUNDERS, 1910
- Forewing hyaline, often greyish, yellowish or brownish, but never with violet reflections. Mesoscutum with white setae. 23

- 23 (22) Forebasitarsus long, ventral surface with 13-17 spines, fine setae between the spines end before the middle of the spine row (Fig. 97).24
- Forebasitarsus short, ventral surface with 8-12(13) spines, fine setae between the spines end in or behind the middle of the spine row (cf. Figs 82, 98).25
- 24 (23) Coxae and trochanters with white and black bristles, femora with black setae ventrally. Area between ocellar triangle and eye scattered punctate (interspaces wider than puncture diameter) (Fig. 99). Forewing completely darkened, brownish. Metasoma red, pygidial plate dark brown. 10 mm. Central Asia. *A. rubra* nov.sp.
- Coxae, trochanters and forefemur ventrally with exclusively white bristles. Area between ocellar triangle and eye densely punctate (interspaces as wide as puncture diameter) (Fig. 100). Forewing hyaline, with distinct brownish apical spot. Metasomal segment I with black basal spot, posterior margins of terga more or less brownish, sometimes terga IV–V brownish darkened. 10 mm. Iran. *A. rubriventris* JACOBS, REZAEI & FALLAHZADEH, 2023
- 25 (23) Apical antennomeres short, antennomere XI about 1.2-1.4× as long as maximal width (Fig. 102). Frons in front of anterior ocellus with very fine and scattered punctures, interspaces distinctly wider than puncture diameter (Fig. 101). Area between posterior ocelli scattered punctate. 6-9 mm. Central and South Europe to Central Asia, North Africa. *A. costae* A. COSTA, 1867
- Apical antennomeres IX-XI longer, at least 1.5× as long as maximal width (Fig. 103). Frons in front of anterior ocellus and between anterior ocellus and eye strongly and densely punctate, interspaces at most as wide as puncture diameter. Area between posterior ocelli densely punctate. 7-9 mm. Iberian Peninsula, Morocco. *A. lusitanica* PULAWSKI, 1974
- 26 (21) Mandible lemon yellow mesally. 9-12 mm. Sicily, Malta. *A. sicula* KOHL, 1885
- Mandible black or reddish mesally.27
- 27 (26) Head and mesoscutum with black setae. Mesoscutum with small punctures between the larger ones. Forewing strongly darkened. 12 mm. Turkmenistan. *A. aschabadensis* RADOSZKOWSKI, 1893
- Head and mesoscutum with predominantly white setae. Mesoscutum without smaller punctures between the larger ones. Forewing at most moderately darkened.28
- 28 (27) Forewing veins on the underside whitish, at least costa, subcosta and veins of medial and discoidal cells, yellowish or pale brown on upper side. Hindwing veins yellow. Clypeal lamella trilobate, middle lobe often like a small tooth (Fig. 104). Frons and area between posterior ocelli densely punctate, interspaces shiny (Fig. 105). Posterior surface of mesopleuron smooth and shiny, with scattered punctures; interspaces as wide as or wider than puncture diameter (Fig. 106). 9-11 mm. Iran. *A. ljubomirovi* JACOBS, REZAEI & FALLAHZADEH, 2023
- Wing veins completely brown or dark brown. Clypeal lamella straight, at most weakly tridentate. Mesopleuron different, posterior part often denser punctate, interspaces at most as wide as puncture diameter or punctures confluent into longitudinal wrinkles.29
- 29 (28) Metasoma completely black, proximal segments sometimes with indistinct reddish shimmer. Legs and metasomal sterna with black setae. Forewing completely brownish darkened.30
- Metasoma red and black. Setation of legs and forewing different.31

- 30 (29)** Frons between anterior ocellus and eye densely punctate, interspaces distinctly narrower than puncture diameter, often absent (cf. Fig. 108). Mesoscutum anteriorly dull, densely punctate, interspaces narrower than puncture diameter. Corsica, Sardinia, Southern France, Iberian Peninsula. *A. picea* COSTA, 1867
- Frons between anterior ocellus and eye scattered punctate, interspaces at least as wide as puncture diameter (cf. Fig. 88). Mesoscutum anteriorly shiny, with large scattered punctures, interspaces distinctly wider than puncture diameter. Middle East. *A. affinis* VANDER LINDEN, 1829 (melanistic variant)
- 31 (29)** Antennomere III about 2.3-2.5× as long as apically wide, about as long as IV. Antennomeres I-II on inner side with white setae. Frons between anterior ocellus and eye with scattered punctures, interspaces as wide as or wider than puncture diameter. Hindtrochanter and -coxa with exclusively pale bristles. Forewing hyaline. Pygidial plate with nearly straight lateral margin (cf. Fig. 86). 8-10 mm. Southeastern Europe, Northern Middle East, Central Asia. *A. jucunda* PULAWSKI, 1959
- Antennomere III about 2.8-5.0× as long as apically wide, distinctly longer than IV; in doubt, antennomeres I-II on inner side with black setae and hindcoxa with some black bristles. Other characters different. **32**
- 32 (31)** Sternum II and posterior margins of sterna III-V with black or brown setae. Forewing completely brownish darkened. Femora and trochanters with black or brown setae ventrally, hindfemur on outer side with stiff black bristles. Coxae with black and white bristles. **33**
- Sternum II and posterior margins of sterna III-V with white setae. Forewing mostly hyaline with darker apical margin. Hindfemur with exclusively white or black and white setae ventrally, outer side with pale bristles. Coxae different. **34**
- 33 (32)** Frons between ocelli and eye with scattered punctures, interspaces as wide as or wider than puncture diameter (cf. Fig. 88). Ventral surface of forebasitarsus with 13-15 undulating spines. Anterior quarter of mesoscutum with large scattered punctures, with smooth interspaces mostly wider than puncture diameter. 12-16 mm. Southern Europe, North Africa, Central Asia. *A. affinis* VANDER LINDEN, 1829
- Frons beside anterior ocellus and area between posterior ocelli densely punctate, interspaces narrower than puncture diameter (cf. Fig. 89). Ventral surface of forebasitarsus with 10-12 undulating spines. At least anterior third of mesoscutum densely punctate, interspaces narrower than or as wide as puncture diameter, dull or shiny. 10-12 mm. Southeastern Europe, Northwest Africa. *A. cobosi* GINER MARÍ, 1946
- 34 (32)** Frons in front of and beside anterior ocellus with scattered punctures, interspaces shiny, as wide as or wider than puncture diameter (Fig. 107). **35**
- Frons in front of and beside anterior ocellus densely punctate, dull, interspaces narrower than puncture diameter (cf. Figs 108, 109). **36**
- 35 (34)** Forecoxa with some brown setae. Femora and sternum II with white and black setae. Mesopleuron densely punctate, posteriorly sometimes with rugae (cf. Figs 111, 112). Terga I-II red, III red with dark posterior margin. Sterna IV-V black. 8-12 mm. Southwest Europe, Northwest Africa. *A. gallica* BEAUMONT, 1942
- Forecoxa with white setae. Mesopleuron polished, with scattered punctures, distances mostly wider than puncture diameter, never confluent into rugae (Fig. 110). Terga I-III completely red, IV red with dark posterior margin. Sterna I-V red. 8-9 mm. Mongolia. *A. mongolica* nov.sp.

- 36 (34)** Stigmal area of propodeal dorsum straight or slightly convex. Lower margin of mandible simple. Antennomeres I-II on inner side, hindcoxa and -trochanter with exclusively white bristles. Terga I-III(IV) red. Forewing hyaline, with brown apical spot. 9 mm. Arabian Peninsula, Israel. *A. arabica* nov.sp.
- Stigmal area of propodeal dorsum strongly convex or obtuse-angled. Lower margin of mandible with small corner. Antennomeres I-II on inner side with white and some black bristles. Terga I-II(III) red. Forewing more or less uniformly brownish darkened. **37**
- 37 (36)** Forebasitarsus longer, ventrally with 13-15 spines, fine setae between the spines end before the middle of the spine row (Fig. 81). Midbasitarsus slightly curved (Fig. 135). 9-13 mm. Palearctic. *A. boops* (SCHRANK, 1781)
- Forebasitarsus shorter, ventrally with 9-11 spines, fine setae between the spines end in or behind the middle of the spine row (Fig. 82). Midbasitarsus straight (Fig. 136). **38**
- 38 (36)** Mesopleuron mostly more densely punctate (Fig. 112) (character variable). Southeastern Europe, Türkiye, Middle East. *A. graeca* BEAUMONT, 1965
- Mesopleuron mostly more scattered punctate (Fig. 111) (character variable). Canary Islands, Morocco, Tunisia. *A. canariensis* PULAWSKI, 1974

Astata LATREILLE, 1796

Astatus LATREILLE, 1796: 114. Type species: *Tiphia abdominalis* PANZER, 1798 (= *Sphex boops* SCHRANK, 1781), designated by LATREILLE 1802: 337 (first included species).

Dimorpha PANZER, 1806: 126 Type species: *Tiphia abdominalis* PANZER, 1798 (= *Sphex boops* SCHRANK, 1781), by monotypy.

Species descriptions

Astata affinis VANDER LINDEN, 1829

Astata affinis VAN DER LINDEN, 1829: 28, ♂. Holotype ♂, Spain, no specific locality (IRSN).

Astata jerichoensis PULAWSKI, 1957: 82, ♀. Holotype ♀, Israel, Jericho (NHMW).

Astata affinis ariadne PULAWSKI, 1959: 365, ♀. Holotype ♀, Greece, Crete, Candia (NHMW).

Astata affinis jerichoensis PULAWSKI, 1957: 82. BEAUMONT, 1965: 44 stat. nov.

Material examined: GREECE: Altkorinth, 24.05.1964, 1♂, Aigner (BOL); Amopi, Karpachos, 04.06.2004, 1♀ Tkalcu (BOL); Crete, S Astrousia Ori, SW of Vasiliki, 06.06.2017, 1♂, J. Halada (BOL); Lefkos/Karpachos, 200 m, 24.06.2012, 2♂♂, Tiefenthaler (BOL, JA); Myrtos, Crete, 02-04.06.1990, 1♀ Kudma (BOL); Marmaras N, Westseite Sitonia, 20.07.2001, 1♀, Kwast (LI); Omalos, Kreta occ., 1000 m, 22.06.2002, 1♀, Tkalcu (BOL); Othos/Karpachos, 520 m, 35°32'N 27°09'E, 17.06.2012, 1♀, Tiefenthaler (BOL); Saloniki, 06.1960, 1♀, Schlaefle (WS); Samos, 06.1999, 2♀♀, Schlaefle (WS, JA); Samos W Kokkari, 15.06.1994, 1♀, Degen (SE). IRAN: Golestan, Minudasht 70 km E, 37°26'N 55°99'E, 12.06.2010, 1♂, Mi. Halada (BOL). ITALY: Gargano, Nattinata, 19.06.1992, 1♀, Plicek (BOL). KAZAKHSTAN: Bayaldyr 5 km N, 590 m, 43°35'02"N 66°30'34"E, 25.05.2016, 1♂, J. Halada (BOL); Djambul 10 km E, 31.05.1994, 1♀, Ma. Halada (BOL); Dzambul, Karatau, prysmyk Ujuk, 1000 m, 03.06.1980, 2♀♀, Padr (BOL); Kuyuk 40 km SW Djambul, 01.07.1992, 1♂, M. Halada (BOL); Lepsi 6 km SE, 08.06.1992, 1♀, Jirousek (BOL); Makbal, Dzambul env. 60 km, Kirgis. chrebet, 04.06.1960, 1♂, Padr (BOL); Panfilov 40 km W, 1200 m, 44°14'N 79°28'E, 08.06.2001, 1♀, Hauser (JA); Usturt plat., Beyneu-Aktau road, 05.2000, 1♂, J. Miatleuski (BOL). KYRGYZSTAN: Izkeshant, Nuza

riv., 07.2000, 1♂, V. Gurko (BOL); Tal-di-Bulag 90 km E Talas, 05.07.1992, 1♂, M. Halada (BOL); Tash-Arik 11 km E Talash, 04.07.1992, 1♂, 3♀♀, M. Halada (BOL, JA); Tchon-Aryk, Kirghizskiy Mts., 900 m, 11.07.2001, 1♀, V. Gurko (BOL); Urumbash riv. E, Fergansky Mt. R., 06.2000, 4♂♂, V. Gurko (BOL, JA). MOROCCO: Anti-Atlas SO Agadir, SO Ait Baha, 25.05.1995, 1♀, Hauser (SE); Anti-Atlas, 50 km NW Tafraoute, Bachbett bei Ait Baha, 25.05.1995, 1♀, Brechtel (SE). SPAIN: Madrid env. Helin erial, 06.1991, 1♂, Anonym (BOL); Murcia, Cartagena 25 km SW, 12.05.2003, 1♂, J. Halada (BOL). TURKMENISTAN: Aschabad env., 15.05.1993, 1♂, M. Halada (BOL); Aschabad env., 10.06.1993, 1♂, M. Halada (BOL). TÜRKIYE: Anomu, 06.1993, 1♀, Schlaefle (WS); Gümüşhane, 1200 m, 12.07.1985, 1♀, M. Schwarz (BOL); Halfeti, Birecik, 31.05.1998, 1♀, Ma. Halada (BOL); Mut, 21.06.1969, 1♀, J. Schmidt (BOL); Refahye, Erzincan, 2200 m, 23.08.1991, 1♀, M. Halada (BOL); Silifke, 26.05.2001, 1♂, Snižek (BOL); Ulukisla, 16.06.1998, 1♂, Ma. Halada (BOL); Zelve, Nevşehir, 12.07.1997, 1♀, Ma. Halada (BOL). UZBEKISTAN: Darbaza 40 km N Tachkent, 30.05.1994, 1♂ Ma. Halada (BOL).

Melanistic variant: IRAN: Azer e Shabestar, Sis 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 19.06.2010, 2♀♀, Mi. Halada, (BOL); Qom, 34°38'N 50°52'E, 05.2004, 1♀, H. Ghahari (JIAU). ISRAEL: 10 km E Kiryat Gat, 31.597°N 34.837°E, 13.05.2019, 2♀♀, M. Halada (BOL, JA). JORDAN: Shuna env., 29-30.04.1996, 2♂♂, 1♀, Mi. Halada (BOL); S of At Tafila, 12.05.2010, 1♀, Snižek (BOL); Jordan Valley S Shuna, 25-26.04.1996, 1♀, Ma. Halada (BOL); Jordan Valley, Dayr Alla, 27.04.1996, 1♀, Mi. Halada (BOL); Jordan Valley, Mubalath, 27.04.1996, 2♀♀, Ma. Halada (BOL). SYRIA: Maloulla, 05.06.2006, 1♀, Schlaefle (WS); Dibbin 30 km S Suwayda, 15-17.05.1996, 2♂♂, Mi. Halada (BOL); Kafr, Suwayda, 21.06.2000, 1♀, M. Halada (BOL); Homs 50 km S, 24.05.1996, 1♀, Ma. Halada (BOL). TÜRKIYE: Adyaman, Gölbaz, 21.06.1985, 1♀, M. Schwarz (BOL); Gaziantep 30 km NW, 2001, 1♂, Snižek (BOL); Hakkari, Gözeldere 25 km E, 930 m, 37°32'N 43°49'E, 22.06.2010, 3♂♂, Mi. Halada (BOL); Kahraman Maras 40 km SE, 10.06.1998, 1♀, Ma. Halada (BOL); Halfeti, 37.12, 75°N 37.52, 88°E, 400-500 m, 12.06.2000, 1♀, M. & O. Niehuis, det. Pulawski; Urfa, 02.06.1968, 1♀, K. Kudas (BOL).

Description: ♂. 9-14 mm. Head and mesosoma black. Metasomal tergum I red with black basal spot, II red, III red with more or less extended black posterior margin, IV-VII black. Sterna I-II red with large black spots, remaining sterna black. Melanistic variant: Metasoma completely black, terga I-II with more or less reddish shimmer. Mandible, antenna and legs black; mandible sometimes reddish mesally. Clypeus densely punctate; middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Face and frons with appressed white setae. Lower margin of mandible with small angle. Gena densely punctate, with long white setae. Antennomere III about 3.5-4.0×, VI about 3× as long as apically wide. Antennomeres V-XI nearly cylindrical or slightly convex in profile (Fig. 15); with inconspicuous carinate tyloids, sometimes basally and distally slightly pale, but without distinct pale tubercles (Fig. 16). Pronotal collar densely punctate. Mesoscutum densely punctate, posteromedian with smooth and shiny spot, anterior surface with appressed white setae, especially in front of wing insertion. Mesopleuron dull, densely punctate, ventrally smooth and shiny with scattered punctures; prepectus and epimeron strongly reticulate, with white setae. Mesoscutellum smooth and shiny, laterally and distally densely punctate. Thorax with short white setae. Propodeal dorsum glabrous, strongly reticulate; lateral surface and declivity rugose-punctate, with long white setae. Tergum I dull, with distinct punctures and reticulate microsculpture (Fig. 57), II laterally with scattered punctures. Tergum I, sternum II and posterior margins of sterna III-IV with long white setae. Central setae of metasomal hairbrush short, about one quarter as long as lateral setae, the latter longer than those of sternum II. Coxae and femora with white setae. Longest ventral setae of hindfemur about half as long as maximal diameter of femur. Forewing slightly brownish darkened, marginal cell about 3.5× as long as wide.

♀. 12-16 mm. Head and mesosoma black; mandible black, more or less reddish mesally. Metasomal segments I-II red, III red with black posterior margin; remaining segments black. Melanistic variant: Metasoma completely black, terga I-II with more or less reddish shimmer. Clypeus, frons up to anterior ocellus and area between posterior ocelli densely punctate, interspaces shiny. Clypeal lamella straight. Face with appressed white setae. Vertex and outer orbit smooth and shiny, at most with some isolated punctures. Pronotal collar smooth, with scattered punctures. Mesopleuron including prepectus and epimeron strongly wrinkled, ventral surface densely punctate. Propodeal dorsum glabrous, irregular reticulate, without microsculpture between the rugae. Declivity and posterior part of lateral surface of propodeum reticulate, the latter with smooth anterior area. Stigmal area of propodeum straight or slightly curved. Mesosoma except propodeal dorsum with white setae. Metasomal terga with microsculpture and isolated punctures. Forebasitarsus long, ventral surface with 12-15 undulating spines, fine setae between the spines restricted to the basal third. Midbasitarsus slightly curved, with undulating spines. Coxae, trochanters and femora with black setae; hindfemur on outer side with short black bristles. Longest ventral setae of hindfemur about half as long as maximal femur diameter. Forewing brownish darkened, apical margin darker brown, marginal cell about 3.5× as long as wide.

Distribution: Europe: Portugal (CROSS et al. 2021), Spain, Italy, Greece. Maghreb: Algeria (BEAUMONT 1950), Morocco. Middle East: Türkiye, Israel (PULAWSKI 1973), Iran. Central Asia: Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan.

Melanistic variant: Middle East: Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Iran, Israel, Jordan, Syria, Türkiye.

Remarks: It is impossible for me to detect any morphological characters between specimens with red proximal metasomal segments and those with nearly complete black metasoma. Both forms are sympatric in the Middle East (see above). For this reason, the concept of subspecies does not work. Maybe, the black form represents a separate species, but it should be confirmed by genetic investigations. Until then it should be treated as a regional color variant.

***Astata apostata* MERCET, 1910**

Astata apostata MERCET, 1910: 162, ♀. Syntypes ♀, Spain, Madrid, Escorial (MNCN).

Material examined: BULGARIA: Kiten, 42°14'N 27°46'E, 17.08.1990, 3♂♂, Burger (JA, SDEI); Vlahi, 14.08.1993, 2♂♂, M. Halada (BOL); Zvilengrad 30 km SW, 550 m, 41°43'N 26°02'E, 21.06.2008, 1♂, M. & Z. Halada (BOL); Slancev Brjag, 15.07-08.08.1968, 17♂♂, Kocourek (BOL); Slancev Brjag, 25.07.1968, 1♂, Padr (BOL); Slancev Brjag, 28-14.07.1971, 1♀, Padr (BOL); Varvara, 06-12.08.1970, 1♂, Kocourek (BOL); Beronovo, S. plan., 08-10.09.1997, 5♂♂, Zaykov (BOL); Rhodopi, Hrabrino, 20.08.1996, 2♂♂, 01.09.1997, 1♂, Zaykov (BOL); Plovdiv, 01.07.1997, 1♂, Zaykov (BOL); Trakia, Proslav, 15.08.1996, 1♂, Zaykov (BOL). CYPRUS: Ayia Napa, 20.08.2000, 1♀, Schlaefle (WS). FRANCE: Agde 5 km E, 43°18'N 3°32'E, 10.07.2009, 1♂, Bartak (BOL); Ferrals-les-Corb., 09.06.2014, 1♂, Grouet (JA); Montredon-des-Corbieres, 26.06.2013, 1♂, Grouet (JA); Perpignan, Argeles, 12.09.1987, 1♂, Schmid-Egger (SE). GREECE: Peloponnese, 12 km S of Andritseni, 37°24'N 21°50'E, 500 m, 28.08.2019, 2♂♂, 1♀, J. Halada (BOL); Preveca env., 25.06.1997, 1♂, Deneš sen. (BOL); Mt. Ossa centr., Thessalia, 08.08.2010, 5♂♂, J. Halada (BOL, JA); Monemvasia 5 km S, 14.08.1979, 1♂, Hüttinger (BOL); Zakynthos, Vassilikos, 30.09.2013, 3♀♀, Schlaefle (WS, JA). ITALY: Sardegna, Provinz di Sassari, Oschiri, NW 4 km am Lago del Coghinias, 160 m, 20.05.1966, 1♂, Greb (SE). MOROCCO: Sidi Boukil, 1408 m, *Medicago sativa*, 32.2365°N 4.6689°W, 16.07.2019, 1♂, O. Ihsane (SE); Tizi-n-Test S, 1900 m, 30.06.1987, 1♂, M. Schwarz (BOL); 10 km S Ain Leuh,

1730 m, 15.08.1988, 1♂, Warncke, det. Pulawski (JA); 30 km S Ain Leuh, 1900 m, 15.08.1988, 1♂, Warncke, det. Pulawski (SE); Ain Leuh 32 km S, 1650 m, 14.08.1988, 1♂, Warncke, det. Pulawski (SE). PORTUGAL: Serra Estrella, 1450 m, 40°24'N 7°03'W, 16.07.2009, 1♂, 1♀, V. Bartak (BOL); Matoshinos, 15.09.1991, 1♀, M. Schwarz (BOL). ROMANIA: Dunarea Delta, Chilia Veche, 03.07.2012, 1♀, Volf (BOL); Dunabe Delta, Chilia Veche, 05.2019, 5♂♂, 4♀♀, J. Votycka (BOL, JA). SLOVAKIA: Sturovo, 08.08.1965, 1♂, 2♀♀, Kocourek (BOL); Levice, 06.1960, 1♂, Kocourek (BOL); Pezinok-Baba, 30.06.1952, 1♂, Kocourek (BOL). SPAIN: Salamanca, Aldea del Obispo, Prado Cano, 28.06.1995, 1♀, Tschorsnig, det. Pulawski (JA); Costa Brava, Platja de Aro, 14.09.1991, 1♀, K. Deneš (BOL); Costa Brava, Figueres 15 km SE, -5 m, 42°11'N 3°07'E, 27-30.07.2011, 1♂, 2♀♀, Halada (BOL). TÜRKIYE: Denizli 10 km NE, 290 m, 37°56'N 29°07'E, 04.07.2006, 1♂, J. Halada (BOL); Erkenek, 80 km SW Malatya, 09.07.1997, 1♂, Ma. Halada (BOL); Hakkari, Stadtrand, 1800 m, 24.07.1988, 1♂, Schmid-Egger (SE); Malatya 15 km E, 27.06.2000, 1♂, M. Halada (BOL); Mugla, University Campus, 720 m, 37°09'42"N 28°22'13"E, 19.08.2015, 1♀, H. Kavak (BOL); Manisa, Salihli 15 km SEE, 170 m, 38°26'N 28°19'E, 02.07.2006, 3♂♂, J. Halada (BOL).

Description: ♂. 6-8 mm. Head and mesosoma black. Mandible black, sometimes reddish mesally; lower margin simple. Metasomal tergum I red with black basal spot, II red, III red with black apical margin; sterna I-II red with large black spot, remaining ones black. Legs black; foretibia on inner side and tarsi brown. Clypeus and frons densely punctate, face and frons with white appressed setae. Middle clypeal lobe hardly protruding beyond lateral lobe, anterior margin straight. Gena smooth and shiny, with shallow punctures and white setae. Antenna short and stout; antennomeres I-II with white setae, III about 3× as long as apically wide, middle antennomeres strongly concave in apical half, VI-VIII about 1.5-1.6× as long as maximal width (Fig. 32). Pronotal collar and mesoscutum densely punctate, latter with smooth and shiny spot in front of mesoscutellum. Mesopleuron densely punctate, anterior and ventral surface with more scattered punctures and shiny; prepectus reticulate, epimeron with longitudinal striae. Mesoscutellum densely punctate, anteriorly with large smooth and shiny spot. Propodeal dorsum more or less irregularly reticulate; lateral surface and declivity dull, densely punctate. Mesosoma except propodeal dorsum with white setae. Metasomal terga with microsculpture, impunctate. Hairbrush on sterna III-VI, central setae about half as long as lateral setae; the latter about as long as those on sternum II, forming a close pubescence (Fig. 23). Coxae, trochanters and femora with white setae. Forewing slightly brownish tinged, apical margin hyaline. Marginal cell about 3.5× as long as wide.

♀. 6-8 mm. Head and mesosoma black. Metasomal segments I-II red, sternum II with black spot. Mandible black with red middle. Coxae and trochanters black; femora black, often with red apex, or midfemur dorsally red; tibiae and tarsi red to brown. Clypeus densely punctate, anterior margin of lamella straight. Frons smooth and shiny, with scattered strong punctures and upwards directed stiff black and white bristles. Anterior surface of mesoscutum with strong scattered punctures and stiff erect black bristles between white setae, posterior surface smooth and shiny. Structure of mesopleuron variable, densely punctate up to smooth and shiny with scattered punctures on anterior surface. Ventral mesopleural surface with black or gray bristles. Mesoscutellum smooth and shiny, nearly impunctate. Propodeal dorsum irregularly reticulate. Declivity dull, densely punctate; lateral surface with longitudinal striae, both with white setae. Stigmal area of propodeum straight. Metasomal terga finely micro-striated. Pygidial plate narrower, with concave borders (Fig. 87). Forebasitarsus short, with four rake spines, ventral surface with 6-7 spines extended to the tip. Forewing slightly brownish tinged, apical margin hyaline. Marginal cell about 3.0× as long as wide.

Distribution: Europe: Portugal, Spain, France, Italy, Slovakia, Hungary (BAJARI 1957b), Romania, Bulgaria, Cyprus, Greece, Russia: Central and southern European part (NEMKOV 2017), Ukraine (SHORENKO & KONOVALOV 2010). Maghreb: Morocco, Tunisia (BEN KHEDHER et al. 2021). Middle East: Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Iran (JAHANTIGH et al. 2017), Türkiye. Central Asia: Kazakhstan (KAZENAS 2000).

Astata arabica nov.sp.

Holotype: ♂. YEMEN-E, Hawf NE, Albhaydah, 200-730 m, N16°40' E53°14', 14.X.2005, J. Halada lg. (coll. BOL). **Paratypes:** YEMEN: 1♂, 1♀ with same data as holotype. ISRAEL: 1♀ Arava Valley, Iddan, wadi running east of date palm orchard, -110 m, 30°48,93'N 35°16,79'E, 30.03.1995, Irwin (SE); South Distr., Mahale Kamishar, Mizpe Ramon, Halbwüste, Mailase trap, 30.5688N 34.9083E, 445 m, 08.04.1995, 1♂ M. Irvin (SE). JORDAN: 1♂ Jordania occ., Zarga-Main, 7.5.95, K. Deneš sen., (BOL); 1♂ Wadi al Haidam, 8.5.95, K. Deneš sen. (BOL). OMAN: 2♂♂ Al Ajal, Seeb 30 km SW, 23.531N 57.975E, 13.03.2022, M. Halada (SE); 2♂♂ Dhofar, 13 km N Mirbat, Jb. Samhan, 17.111N 54.711E, 04.09.2019, Om-c12, Schmid-Egger (SE); 1♂ Dhofar, 21 km N Salalah, Wadi Nehess, Agangot, 17.182N 54.081 E, 02.09.2019, Schmid-Egger (SE); 1♂ Dhofar, Ateen mountain, 17.026N 53.923E, 02.09.2019, Ali Al-Jahdhami (SE); 1♀ Hamman, Muscat 13 km SW, 23.470N 58.319E, 11.03.2022, M. Halada (SE); 1♂ Samed Ashan, Asswareeg, 22.824N 58.152E, 3-v-2019, Ali Al-Jahdhami (SE); 13♂♂ Dhofar, Rakhyut 10 km N, 16.839N 53.432E, 950 m, 28.09.2023, M. Halada (SE, JA); 1♂ Dhofar, Rakhyut 12 km N, 16.857N 53.418E, 900 m, 18.09.2023, M. Halada (SE); 1♀ Dhofar, Salalah 21 km N, Wadi Nehess Agangot, 17°10'55"N 4°04'52"E, 340 m, 25.09.2023, W.-H. Liebig (LI); 1♂ Dhofar, Salalah 30 km N, 17.293N 54.248E, 20.09.2023, M. Halada; 2♂♂ Dhofar, Salalah 80 km W, 16.840N 53.311E, 1661 m, 12.10.2021, M. Halada; 1♂ Dhofar, Salalah 80 km W, 16.865N 53.530E, 800 m, 05.10.2021, M. Halada; 1♂ Dhofar, Salalah, Ain Hamra, 17.098N 54.282E, 02.11.2020, Ali Al-Jahdhami (SE); 1♂ Dhofar, Salalah 22 km NW, Ateen Mt., 970 m, 17.103N 53.911E, 22.09.2023, Schmid-Egger (SE); 1♀ Dhofar, Salalah 80 km W, near road 16.8565N 43.5105E, 29.09.2023, Schmid-Egger (SE); 1♂ Dhofar, Sarhar 6 km NW, 17.218N 54.356E, 750 m, 20.09.2023, M. Halada (SE); 1♂ Dhofar, Thalkut 4 km W, coast, 16.699N 53.223E, 09.10.2021, M. Halada (SE); 4♂♂, 1♀ Dhofar, Thalkut 6 km NW, 16.751N 53.204E, 750 m, 30.09.2023, M. Halada (SE, JA) 2♂♂ 10 km SE Súr, 14.3.2015, M. Snížek (BOL).

Diagnosis: ♂. The male of *Astata arabica* nov.sp. is characterized by glabrous dorsal surface of propodeum, black pronotal lobe, red and black metasoma, white setation of body and antennomeres, black legs, unmodified mid- and hindcoxae and hindtrochanter; middle clypeal lobe distinctly protruding beyond the lateral lobe, and long and slender antennomere III (about 4.5-5.0× as long as apically wide). It differs from *A. graeca* and *A. boops* by carinate tyloids with reduced pale tubercles, from *A. gobiensis* nov.sp. by short central setae of metasomal hairbrush, from *A. iranica* nov.sp. by finely micro-shagreened tergum I and from *A. mongolica* nov.sp. by more densely and strongly punctate mesopleuron.

♀. The female of *A. arabica* nov.sp. is characterized by glabrous dorsal surface of propodeum and foretibia on inner side with about 13 undulating spines as for *A. boops*. It differs from *A. lusitanica* and *A. costae* by black terminal segments of metasoma, from *A. sicala* by black and reddish brown mandible and from *A. boops* by straight stigmal area of propodeal dorsum, simple lower margin of mandible, red terga and sterna I-IV (tergum IV with dark posterior margin) and exclusively white setae on inner side of antennomeres I-II and on mid- and hindcoxae.

Description: ♂. 7-9 mm. Habitus dorsal see Fig. 113, lateral see Fig. 114. Head, antenna and mesosoma black. Mandible black, sometimes reddish mesally, lower margin

with small angle. Legs black, tarsi brownish. Metasomal tergum I red with black spot basally, II red, III red with black posterior margin, IV-VII black. Sternum I black, II red with large black basal spot, III red, IV-VII black. Face and lateral parts of frons with appressed white setae. Clypeus densely punctate; middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Gena smooth and shiny, outer orbit glabrous, remaining surface with shallow punctures and long erect white setae. Antennomere I-II with white setae; III about 4.0-5.0 $\times$, VI about 2.0-2.5 $\times$ as long as apically wide; V-VIII slightly convex in profile, maximum width apically (Fig. 63). Tyloids on antennomeres V-X carinate, basal tubercle hardly brightened, distal tubercle inconspicuous (Fig. 64). Mesoscutum shiny, densely punctate except spot in front of the mesoscutellum. Mesoscutellum shiny, densely punctate laterally and posteriorly. Mesopleuron shiny, densely punctate (Fig. 70), prepectus and epimeron reticulate. Propodeal dorsum glabrous, coarsely reticulate; lateral and posterior surface densely granulate, dull. Mesosoma except propodeal dorsum with white setae. Coxae, trochanters and femora with white setae, unmodified. Metasomal terga finely shagreened, tergum I and sterna II-III with long white setae. Hairbrush beginning on sternum III, central setae short, about a quarter as long as lateral setae, the latter distinctly longer than those of sternum II. Forewing hyaline, slightly darkened in the area of radial and submarginal cells. Marginal cell about 3.7-4.0 $\times$ as long as wide.

♀. 9-10 mm. Habitus lateral see Fig. 115. Head, antenna, mesosoma and legs black. Mandible black, sometimes reddish-brown mesally. Metasomal terga I-III(IV) red, V-VI black; sterna I-V red, sometimes darkened; VI black. Wings hyaline, forewing outside of veins apically with distinct brown spot. Wing veins and pterostigma brown. Face with white appressed setae. Face, frons, vertex beside front ocellus and area between posterior ocelli densely punctate, distances between punctures narrower than puncture diameter (Fig. 109), interspaces shiny. Clypeus shiny with distinct scattered punctures. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Lower margin of mandible simple. Vertex moderately punctate, distances between the punctures about as wide as puncture diameter; mesally impunctate. Gena smooth and shiny, outer eye orbit impunctate; occiput densely punctate with erect whitish setae. Antenna black, antennomere I-II with white setae, antennomere III about 3.3 $\times$, VI about twice as long as apically wide. Pronotal collar with fine transverse striae. Mesoscutum shiny, apical third densely punctate, lateral surface with scattered punctures, posteriorly with smooth median spot. Mesoscutellum and postsutellum smooth with dense punctures laterally and distally. Mesopleuron anteriorly and ventrally punctate (diameter of punctures about as wide as puncture diameter), posterior surface densely punctate; prepectus coarsely reticulate. Lower metapleural area smooth and shiny, upper surface wrinkled. Thorax except dorsal surface of propodeum with erect whitish setae not concealing integument. Propodeal dorsum coarsely reticulate. Stigmal area of propodeal dorsum straight. Lateral surface of propodeum below stigmal area smooth, with indistinct microsculpture; remaining surface and declivity strongly reticulate. Coxae, trochanters and femora with white setae; forebasitarsus with four black rake spines and ventrally with 12-13 undulating spines similar to *A. boops* (Fig. 116). Midbasitarsus slightly curved, with undulating spines ventrally. Coxae and trochanters unmodified. Metasomal terga microscopical reticulated, III-IV with some punctures. Pygidial plate densely shagreened, lateral margin weakly concave. Marginal cell about 3 $\times$ as long as wide.

D i s t r i b u t i o n : Middle East: Israel, Jordan, Yemen, Oman (type localities).

***Astata aschabadensis* RADOSZKOWSKI, 1893**

Astata aschabadensis RADOSZKOWSKI, 1893: 491, ♀. Holotype ♀, Turkmenistan, Ashkhabad (ISZP).

Material examined: no material examined.

Description (after GUSSAKOVSKIJ 1927, PULAWSKI 1957 and KAZENAS 1978): ♂. 10 mm. Black. Mesosoma except propodeal dorsum with greyish setae. Metasomal tergum I with reddish-brown posterior margin or lateral spots, II red. Middle clypeal lobe distinctly protruding beyond lateral lobe. Malar space very short, base of mandible almost touching the eye margin. Antennomere I with black setae on inner side, III longer than IV+V together. Middle antennomeres almost cylindrical. Mesoscutum densely punctate. Mesoscutellum smooth and shiny, lateral and posterior margins punctate. Mesopleuron dull, densely punctate, without shiny interspaces. Middle metasomal sterna with short brown setae. Central setae of metasomal hairbrush very short, lateral setae about as long as those of sternum II. Midcoxa on inner side without concavity. Mid- and hindfemora ventrally with black bristles.

♀. 12 mm. Black. Metasomal terga I-III at least partly red, IV-VI black. Legs black or partly reddish, tibiae and tarsi brownish. Setation of head and thorax black, on distal surface paler. Clypeal lamella straight or weakly tridentate. Malar base very short, mandible base nearly touching eye margin. Frons in front of anterior ocellus and area between ocelli densely punctate. Antennomere I on inner side with black bristles. Mesoscutum with smaller punctures between the larger ones. Propodeal dorsum glabrous. Lateral surface of propodeum with whitish setae. Stigmal area of propodeum convex. Midcoxa, hindcoxa and -trochanter unmodified. Ventral surface of forebasitarsus with undulating spines as for *A. boops*. Forewing strongly darkened, especially the apical margin.

Distribution: Central Asia: Turkmenistan (type locality).

***Astata boops* (SCHRANK, 1781)**

Sphex boops SCHRANK, 1781: 384, ♂. Holotype or syntypes ♂, Austria, Wien, Prater (destroyed).

Tiphia abdominalis PANZER, 1798, Heft 53: 5, ♂. Holotype or syntypes ♂, Austria, no specific locality (depository unknown). Synonymized with *Astata boops* by SPINOLA (1806).

Dimorpha oculata JURINE, 1807: 147 and plate 9, ♂. Holotype or syntypes ♂: Europe, no specific locality (MHNG). Synonymized with *Astata boops* by FREI-GESSNER et al. (1882).

Astata victor CURTIS, 1829: 261, ♀, ♂. Syntypes ♂, ♀. Great Britain, no specific locality. (BMNH). Synonymized with *Astata boops* by F. SMITH (1856).

Astata vanderlindenii ROBERT, 1833: 76, ♀. Holotype ♀, Belgium, Liège (depository unknown). Synonymized with *Astata boops* by WESMAEL (1852).

Astata agilis F. SMITH, 1875: 39, ♀. Holotype ♀, Bangladesh, Nishiudipore (OXUM). Synonymized with *Astata boops* by PULAWSKI (1975).

Material examined: ALBANIA: Valbona NE, 20.07.2012, 2♀♀, K. Deneš jun. (BOL). ALGERIA: Sidi Feredj, 13.07.1980, 1♂, Strejček (BOL). ARMENIA: Armyir, Vanand, 900 m, 23.06.2013, 1 ♀, W. Schlaefle (WS); Sisian, Orotnavank, 1300 m, 1♂, W. Schlaefle (WS). AUSTRIA: Austria N, 15 km WNW Horn, 48.7035°N 15.4708°E, 02.07.2022, 1♀, M. Halada (BOL); Kadolz 4 km NW, 48°44.4'N 16.09.3'E, 24.07.2018, 1♀, M. Halada (BOL); Niederösterreich, 20 km N of Mariazell, 47°54'N 15°24'E, 600 m, 09.09.2019, 1♀, J. Halada (BOL); Linz-Urfahr, KGA Riesenhof Parz. 60-61, 48°19'06"N 14°16'13", 16-18.07.2017, 1♀, Tiefenthaler (BOL). BULGARIA: Albena, 03.07.1970, 1♂, Kocourek (BOL); Pirin Mt., Begovica, 13.08.1993, 1♂, M. Halada (BOL); Struma, Sandanski, Valkovo, 41.594°N 23.221°E, 03.07.2019, 2♀♀, M. Halada (BOL); Melnik, Vinogradi, N41°30' E23°23', 370 m, 06.06.2020,

1♂, B. Halada (BOL), Debar, Pervomaj, N42.04' E25.12', 150 m, 14.06.2017, 1♀, B. Halada (BOL); W of Svilengrad, Lozen, N41.48' E26.00', 140 m, 13.06.2017, 1♀, B. Halada (BOL); Kresna, N41°42' E23°11', 24.06.2008, 1♂, leg M. & Z. Halada (BOL); Melnik, 13.08.1993, 1♂, 1♀, leg M. Halada (BOL); Melnik, 25.06.2007, 1♂, 1♀, leg M. & Z. Halada (BOL); Proslav, 25.07.1997, 1♂, Zaykov (BOL); Sandanski, 14.08.1993, 2♂♂, M. Halada (BOL); Ahtopol, Sinemorec, 22.06.1998, 1♀, leg M. Halada (BOL); Slancev Brjag, 30.07.1968, 1♀, 10.06.1972 1♂, 10.07.1972, 1♀ leg Kocourek (BOL); 20.07-05.08.1965, 3♀♀, 14.07.1981, 10♂♂, 8♀♀, 28.06-14.07.1971, 1♂, 1♀, leg. Padr (BOL); Varvara 06.07-12.08.1970, 1♀, Kocourek (BOL); Vlazi 14.08.1993, 2♂♂, M. Halada (BOL); Starosel near Hisarja, 400 m, 27.06.1997, 1♀, Jacobs (JAC). CHINA: Xiexian, Zhongtiao Shan Mt., N34°8' E111°6', 4♂♂, J. Halada (BOL). CROATIA: Istria env., 05.09.1996, 1♀, J. Halada (BOL). CYPRUS: 15 km S Paphos, Kouklia 34.72°N 32.55°E, 1♀, leg Schmid-Egger (SE). CZECHIA: Luhacovice, 27.07.1985, 2♀♀, Jacobs (JA, SDEI); Bohemia mer., Suchdol nad Luznici env., 07.08.2027, 1♂, Halada (BOL); Bohemia, Dobra Voda u C. Bud., 48.9706°N 14.5292°E, 26.06.2020, 1♀, M. Halada (BOL); Bohemia, Zabori W of C. Bud., 49.0007°N 14.2694°E, 04.07.2020, 1♂, 1♀, M. Halada (BOL); Moravia SW, Miroslav, 28.07., 1♂, Snižek (BOL); Moravia, Znojmo, Derfice, 07.07.2018, 1♀, Snižek (BOL); Lhota u Pacl. Env., 31.07.1993, 1♀, Deneš (BOL); Lhota u Pacl. Env., 04-11.07.1996, 2♀♀, Deneš (BOL); C. Budejovice, Cernia env., 06.1992, 1♂, Halada (BOL); Chlum u Trebone, Frantiskov, 07.2001, 1♂, J. Halada (BOL); Chlum u Treb., 07.1993, 1♂, J. Halada (BOL); Chlum u Treb., 08.1997, 1♂, 2♀♀, M. Halada (BOL); Chlum u Treb., 29.07.1991, 1♂, M. Halada (BOL); C. Budejovice, D. Voda, 05.06.2007, 1♂, M. & Z. Halada (BOL); Dehtar 20 km SE Ceske Budejovice, 30.07.2005, 1♀, M. & Z. Halada (BOL); Suchdol n. Luz., 15.07.1995, 1♂, Ma. Halada (BOL); Suchdol n. Luz., 01.08.1996, 1♂, Ma. Halada (BOL); Maj, Ceske Budejovice, 17.07.2004, 1♀, Z. Haladova (BOL); Podhaji, 07.08.1993, 2♂♂, Karas (BOL); Zliv, 04.07.1989, 1♂, Karas (BOL); Cejc, 08.1958, 1♂, Kocourek (BOL); Kobyli, 31.08.1968, 1♀, Kocourek (BOL); Mutenice, 14.08.1971, 1♂, Kocourek (BOL); Vyskov, 29.07.1967, 1♀, Kocourek (BOL); Morav., Lisky, 17.08.1973, 1♀, Padr (BOL); Cesky Krumlov, Kajov, 06.2000, 1♂, Snižek (BOL); Lhenice, 01.08.2000, 1♀, M. Snižek (BOL); Mutejovice nr. Rakovník, 03.08.2002, 1♀, P. Tymer (BOL). FRANCE: St. Aygulf, 06.1961, 2♀♀, Schlaefle, det. Beaumont (WS); Bordeaux, 24.06.1944, 1♂, leg Anonymus; Prades 10 km S, 600 m, 1♀, J. Halada (BOL). GERMANY: 23♂♂, 28♀♀, (BU, JA, SDEI, WS, ZMG). GREECE: Leptokaria, 19.07.1993, 1♀, Jacobs (JA); Chalkidike, Kasandra env., 09.09.1997, 1♀, J. Halada (BOL); Epeiros 20 km N, Preveza 29.08.1997, 2♀♀, J. Halada (BOL); Elea, 20.08.1986, 1♂, Link (BOL); Rhodes, Kolymbia, 36°14'N 29°09'E, 05.06.2013, 1♂, Tiefenthaler (BOL); Kos, Psalidi, 36°56'N 27°19'E, 31.08.2008, 1♂, Tiefenthaler (BOL); Mykene, 100 m, 20.05.1977, 1♂, W. Schedl (BOL); Peloponnese, Vrontamas N of Skala, 100 m, 36°58'N 22°37'E, 31.05.2016, 1♀, M. Halada (BOL); Peloponnese, 20 km S Korinthos, 120 m, 37°50'N 23°02'E, 26.05.2016, 1♀, M. Halada (BOL); Peloponnese, 60 km SE Skala, 36°48'N 22°45'E, 01.06.2016, 1♀, M. Halada (BOL); Peloponnese, 15 km SE Megalopoli, 37°18'N 22°04'E, 05.06.2016, 1♀, M. Halada (BOL); Korinthos prov., 50 km W Megara, 06-07.08.2010, 1♀; Peloponnese, 12 km S of Andritseni, 37°24'N 21°50'E, 500 m, 28.08.2019, 1♀; Peloponnese, 12 km E of Methoni, 46°38'N 21.47'E, 29.08.2019, 1♂, 1♀, all J. Halada (BOL); Lesbos, Skala Polichnitos, 12.06.2011, 1♀, Schlaefle (WS); Monemvasia, 03.07.2003, 1♀, Schlaefle (WS); Kilini, 29.06.2003, 1♀, Schlaefle (WS); Saloniki, 06.1960, 1♀, Schlaefle (WS); Samos, 06.1999, 1♂, Schlaefle (WS); Zakynthos, 07.1988, 1♂; Zakynthos, Vassilikos, 30.09.2013, 2♀♀, Schlaefle (WS); Rhodes, Malona, 25.05.1998, 1♂, Generani & Scaramozzino (WS); Rhodes, Kalathos, 28.05.1998, 1♂, Generani & Scaramozzino (WS); Rhodopi Mts., Drama, 2 km SE Mt. Sara, 1400 m, 20.08.1989, 1♂, Blank (SE). HUNGARY: Tihany, 30.07.1984, 1♂, 1♀, Jacobs (JA); Dunaiölcvar, 05.08.1992, 1♂, M. Halada (BOL); W of Budapest, N of Budaörs, 47.466°N 18.947°E, 13.06.2020, 1♀, M. Halada (BOL); N of Varpalota, N47°12'5"N 18°07'4"E, 26.05.2018, 1♂, Haladova (BOL); Keszthely, 22.07.1984, 1♂, Jacobs (SDEI). IRAN: Semnan, Moalleman 8 km NW, 1289 m, 35°16'41" 54°29'34"E, 08.07.2022, 1♀, W.-H. Liebig (LI); Azer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 1♀, Mi. Halada (BOL); Sistan, Nimrooz, 04.09.2015, 1♀, Derafshan (SE); Zabol, Hamoonwetlands, 28.08-24.09.2015, 2♂♂, 2♀♀, Derafshan (SE); Fars, Jaafarabad, 1795 m, 29°16'N 54°19'E, 04.09.2012 + 07.09.2012 3♂♂ Khosroabadi (JIAU). ISRAEL: Arava valley, Har Badad, Wadi Neqarot, 30°36.09'N 35°03.04'E, 08.04.1995 + 04.05.1995, 4♂♂, 1♀, Irvin, det. Pulawski (SE, JA); Mezada, 17.06.1965, 1♂, Schlaefle (WS). ITALY: Bozen, 30.07.1956, 1♀, Schlaefle (WS); Sardinia, Capoterra 10 km W, 10.07.2012, 1♀, M. Volf (BOL); Gargano NW, 08.09.2000, 1♀, J.

Halada (BOL); Trieste 10 km NW, 27.07.2017, 1♂, J. Halada (BOL); Limone, 07.1986, 1♂, Schlaefle (WS); Novara N of, Monti Peloritani W, 850 m, 10.06.2012, 1♂, J. Halada (BOL); Riviera di Levante 50 km SW Genova, 25.09.2007, 1♀, J. Halada (BOL); Pisa, S Giuliano Terme, C. Freghino, 06.08.1998, 1♀, Generani & Scara (WS); Sicilia, Taormina, Sirinatal, 03.10.1970, 1♀, M. Schwarz (BOL); Molise, Termoli 10 km S, 24.08.1997, 1♀, J. Halada (BOL); Lazio, Todi 100 km N Roma, 27.07.1999, 1♀, J. Halada (BOL). JORDAN: Jordan Valley S Shuna, 30.04.1996, 1♂, leg. Mi. Halada (BOL); Jordan Valley, Dayr Alla, 27.04.1996, 1♀, Mi. Halada (BOL); Karak Safi, 15.04.1996, 1♂, Ma. Halada (BOL); Shuna North, 29-30.04.1996, 2♂♂, Ma. Halada (BOL). KAZAKHSTAN: Lower Ili riv. Valley, Bakanas 4 km N, sand desert, 12.06.2000, 2♀♀, Zonstein (BOL); Bakanas 4 km N, sand desert, 12.06.2000, 1♀, Makogonova (BOL); Bakhbaky 6 km W, Ili River, 44,5617N 76.6388E, 368 m, 14.06.2024, 1♀, Schmid-Egger (SE); Balkhash Lake 50 km E, 28.06.1992, 1♂, K. Deneš (BOL); Charyn valley W Chundza, 650 m, 43°37'N 79°21'E, 31.05.2001, 1♀, Irvin, det. Pulawski (SE); Darbaza 40 km N Tachkent, 30.05.1994, 3♂♂, 1♀, J. & Ma. Halada (BOL); Dzambul 10 km E, 31.05.1994, 2♂♂, 1♀, Ma. Halada (BOL); Dzungarian Alatau, Sharkent 27 km NNW, 44.4113N 79.8538E, 1163 m, 07.06.2024, 1♀, Schmid-Egger (SE); Kirgiz. Chrebet, Dzambul env. 60 km, Makbal, 04.06.1980, 2♂♂, Padr (BOL); Dzambul, Karatau, prysmyk Ujuk, 1000 m, 03.06.1980, 1♀, Padr (BOL); Talas Mt. R., Dzhabagly 3 km W, 42°26'N 69°8'E, 05.08.2000, 1♂, Makogonova (BOL). Koktuma, Lake Alakol, 22.06.1995, 1♀, J. Halada (BOL); Lepsi env., 400 m, 46°13,27'N 78°59,27'E, 02.06.2016, 1♀, J. Halada (BOL); Telek 10 km NNE, Tchu Vall., 550 m, 43°10'N 74°03'E, 17.06.2000, 1♂, Makogonova (BOL). KYRGYZSTAN: Afleatun env., 41°6'N 71°6'E, 01-03.06.1996, 1♀, J. Halada (BOL); Kirghizsky Mt. R., Ala-Archa riv. vall., 1650 m, 17.08.2000, 3♂♂, 1♀, Gurko (BOL); Ala-Buka, 41°5'N 71°2'E, 30.04.1996, 2♂♂, Mučka (BOL); Ferghan. Mt. R., Alash-Too Mt., Alash forest, 08.2000, 6♂♂, 1♀, Gurko (BOL); Aravan 25 km S Osh, 06.2000, 1♂, Gurko (BOL); Burgandi 60 km W Jalal-Abad, 14.06.1995, 2♂♂, Mučka, J. Halada (BOL); Chamadi-Sai, 41°2'N 71°8'N, 30.05.1995, 1♂, J. Halada (BOL); Alai-Tal, Daroot Korgon, Ufer Kysyl Suu, 2400 m, 39°32'N 72°09'E, 25.07.1999, 1♂, 1♀ Jacobs (JA); Kirghizsky Mt. R., Kashasi, Ala-Archa riv. 1800 m, 25.07.1999, 2♂♂ Gurko (BOL); Kashkasu N of Bishkek, Ala-Archa riv., 06.1999, 1♂, Gurko (BOL); Alai Mt. Ridge, N-slope, Katta-Karakol riv., 2600 m, 39°52'N 73°22'E, 22.07.1998, 1♂, Zonstein (BOL); Tchatkal Mt. R., Khodza-Ata river canyon, 1400 m, 41°50'N 71°56'E, 23.08.1998, 1♀, Zonstein (BOL); Malinovka, Ala-Archa riv., 1600 m, 07.05.2000, 1♂, Gurko (BOL); Kirghizsky Mt. R., Ooru-Say, Ala-Archa riv., 1650 m, 07.2000, 1♂, Gurko (BOL); Tash-Arik 11 km E Talas, 04.07.1992, 1♂, M. Halada (BOL); Kirghizskiy Mts., Tchon-Aryk, 900 m, 11.07.2001, 1♀, Gurko (BOL); Toktogul distr., 2000 m, 07.1998, 1♀, Gurko (BOL); Ferghansky Mt. R., Toskool-Ata, Pistacea forest, 08.2000, 1♂, Gurko (BOL); Fergansky Mt. R., Urumbash riv. E, 06.2000, 10♂♂, 1♀, Gurko (BOL); Uzun-Bulag, Ala-Archa riv., 07.2000, 1♂, Gurko (BOL). MALTA: Dingli, 300 m, 35.85°N 14.40°E, 25.06.2014, 1♂, Kafka (BOL). MOROCCO: Ait Sais, 1423 m, 32.2252°N 4.6977°W, 05-06.08.2019, 1♂, O. Ihsane & A. Sentil (SE); Anti-Atlas, Tafraoute N 30-40 km, Ait Baha ESE, 30°00'N 9°02'W, 12.03.1990, 1♂, Blank (SE); El Jadida, 05.1964, 2♀♀, Schlaefle (WS); Khenitra 20 km E, 11.05.1997, 2♂♂, Mučka (BOL); Outat el-Haj NE, 786 m, 33°37'02"N 3°30'26"W, 01.06.2013, 1♂, 1♀, Ljubomirow (SE); Safi, 15.05.1964, 1♂, Schlaefle (WS); Youssoufia, 11.05.1995, 1♂, Ma. Halada (BOL); Zagora 16 km NW, Tafdroust, 30.468°N 5.918°W, 25.04.2018, 1♀, Schmid-Egger (SE). MONGOLIA: Baruun-Urt 100 km SSW, 1100 m, 03.07.2007, 1♂, M. Halada (BOL); Choibalsan 50 km SW, 960 m, 25.07.2007, 1♀, Halada (BOL); Arkhangay prov, Tsetserleg 90 km NE, 1400 m, 48°03'N 102°25'E, 24.07.2004, 2♂♂, Kadlecova (BOL); Ulan Bataar 50 km N, river E of Mandal, 1180 m, 08-13.08.2007, 4♂♂, 4♀♀, J. & M. Halada (BOL); Ulan Bataar 75 km NW, dunes, 02.08.2005, 3♂♂, J. Halada (BOL); Ulan Bataar 90 km N, Segnezer riv., 1450 m, 06-08.07.2003, 4♂♂, 1♀, M. Halada (BOL). RUSSIA: Chasan 7 km W, 42.43°N 130.65°E, 26.08.1986, 1♂, Lelej (BOL); Primorje, Kamnaja Rybacova 20 km N, 05.09.1978, 1♀, Lelej (SE); Bashkiria, Salavat, 04.07.1981, 1♂, Taeger (SDEI); Bashkiria, See Aslikul, Mischwald/Weidesteppe, 09.07.1982, 1♂, Taeger (SDEI); Tuva, Uyuksky rng., 900 m, 13.06.2002, 1♂, Gurko (BOL). SLOVAKIA: Chotin, 26.07.1993, 1♂, M. Halada (BOL); Levice, 07.1974, 1♂, Kocourek (BOL); Malacky env., 07.07.1995, 1♀, Deneš sen. (BOL); Sekule, strk. Mlaky, 48.617°N 17.003°E, 22.07.2020, 1♀, M. Halada (BOL); Somotor, 06.1962, 3♂♂, 1♀, Kocourek (BOL); Sturovo, 19.08.1965, 1♀, Kocourek (BOL). SLOVENIA: Koper 10 km SW, 45.470°N 13.670°E, 31.08.2016, 1♀, Schmid-Egger (SE). SPAIN: Alicante, 26.07.1957, 1♂, Schlaefle (WS); Costa Brava, Plaija de Aro, 14.09.1991, 1♀, Deneš (BOL); Puigcerda, 18.07.1963, 3♂♂,

Hamann (BOL); Pirineos orient, Ripoll 30 km NW, 1750 m, 42°22'N 2°35'E, 22.07.2011, 1♂, J. Halada (BOL); Salamanca, Villar de la Yegua, Vado de la Vina, 27.06.1995, 1♀, Tschorsnig (SE). SWITZERLAND: Basel, 07.1960, 1♂, Schlaefle (WS); Enseigne, 31.07.1966, 1♀, Schlaefle (WS); Martigny, 08.1963, 1♂, Schlaefle (WS); Wallis, Steig, 20.08.2010, 1♂ 2♀♀, Schlaefle (WS); Wallis, Zeneggen, 08.2010, 1♀, Schlaefle (WS). SYRIA: Homs 50 km S, 24.05.1996, 1♀, Ma. Halada (BOL); Kafir, Suwayda, 21.06.2000, 1♂, M. Halada (BOL); Khabab 60 km S Damascus, 14.05.1996, 1♀, Mi. Halada (BOL); Raqqa, Mishirfeh, 04.06.2000, 1♀, Deneš (BOL); Ras al Basit, 19.05.1995, 2♂♂, Deneš (BOL). TAJIKISTAN: Circic 40 km vych. Tashkent, 04.07.1981, 2♂♂, 2♀♀, Kocourek (BOL); Dushanbe, 06.1966, 1♂, Deneš (BOL). TURKMENISTAN: Annau 20 km E Aschabad, 03.06.1993, 1♀, M. Halada (BOL); Aschabad 15 km N, 25-31.05.1993, 1♀, M. Halada (BOL); Sandikatzi env., 13.05.1993, 1♂, J. Halada (BOL); Tzarschanga 45 km NE Kartyuk, 06.05.1993, 2♂♂, M. Halada (BOL). TUNISIA: Kebili, 25.06.2004, 1♀, Schlaefle (WS); Matmata-Douz, 22.06.2004, 1♂, Schlaefle (WS); Monastir Skanes, 35°45'N 10°44'E, 08.05.2001, 1♂, Rosa, det. Pulawski (SE); Hammament, Nabeul pr. Yasmine, 04.05.2006, 1♀, P. Kresl (BOL). TÜRKIYE: Aciö Cardak env., 07.07.1993, 1♂, Mi. Halada (BOL); N of Adana, 16.06.2000, 1♀, M. Halada (BOL); Akyaka, 37°03'N 28°20'E, 09.2012, 1♂, Bartak (BOL); Antakya, 26.05.1970, 1♂, Kusdas (BOL); Ardanun 18 km N, 1583 m, 05.07.1997, 1♂, Ma. Halada (BOL); Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 2♂♂, 1♀, Mi. Halada (BOL); Burdur 20 km SW, 940 m, 37°37'N 30°09'E, 07.07.2006, 2♀♀, J. Halada (BOL); Dalyan, farm, Malaisetrp, 1 m, 36°48.54'N 28°39.04'E, 08-20.08.2015, 3♀♀, Dursun (BOL); Erzincan 55 km W, 1600 m, 13.07.1985, 1♂, M. Schwarz (BOL); Ezine 6 km N Canakkale, 39°51'N 26°19'E, 27.06.2006, 2♂♂, M. Halada (BOL); Gevas, Van Gölü, 29.06.1993, 1♂, Deneš (BOL); Giesandra 8 km NE Gundogmus, 1500 m, 36°85'N 32°05'E, 02.08.2009, 1♀, Schmid-Egger (SE); Hakkari, Esendere, 21.07.1988, 2♂♂, Schmid-Egger (SE); Hakkari, Stadtrand, 1800 m, 24.07.1988, 1♂, 2♀♀, Schmid-Egger (SE); Halfeti (Birecik), 31.05.1998, 2♂♂, 7♀♀, Ma. Halada (BOL); Iğdir 20 km NW, 29.06.1997, 1♀, Ma. Halada (BOL); Isparta 8 km NE, 37°52'N 30°40'E, 09.07.2006, 1♀, J. Halada (BOL); Kahraman Maras, Pazardcık, 24.06.2000, 2♀♀, M. Halada (BOL); Malatya, Kopeksiz 25 km E, 08.07.1997, 1♀, Ma. Halada (BOL); Kutahya 30 km N, Porsuk Baraji, 15.06.1997, 2♂♂, Ma. Halada (BOL); Mardin 20 km N, 05.07.1997, 1♂, Ma. Halada (BOL); Mugla, University Campus, 720 m, 37°09'42"N 28°22'13"E, 19.08.2015, 2♀♀, H. Kavak (BOL); Mugla, University Campus, stony step, 710 m, 37°09'39"N 28°22'20"E, 2013, 1♀, leg Anonymous (BOL). Nemrut Dagı, Karadut, 02.07.1993, 1♂, Mi. Halada (BOL); Manisa, Sahlili 15 km SSE, 170 m, 38°26'N 28°19'E, 02.07.2006, 13♂♂, 2♀♀, M. & J. Halada (BOL); Manisa, Salihli 30 km SEE, 430 m, 38°22'N 28°25'E, 29.06.2006, 1♀, J. Halada (BOL); Manisa, Salihli, 40 km NW, 150 m, 38°40'N 27°45'E, 26.06.2006, 1♀, J. Halada (BOL); Samandagi, 20.05.1995, 1♂, Deneš (BOL); Tatvan 10 km N, 24.06.1997, 1♂, Ma. Halada (BOL); Tuzlagozu (Baykan), 04.06.1998, 1♂, Ma. Halada (BOL); Van 20 km W, 05.07.1997, 1♂, Ma. Halada (BOL); Van, Achtamar, Festland, 1720 m, 17.07.1988, 1♀, Schmid-Egger (SE); Burdur, Yesilova 5 km NE, 1060 m, 37°35'N 29°55'E, 06.07.2006, 1♀, M. Kadlecova (BOL). UKRAINE: Schidni Karpaty, 1 km S Solotvyno, N47°57'E 23°52', 280 m, 23.06.2019, 2♀♀, J. Halada (BOL). UZBEKISTAN: Papngan 20 km NW Kokand, 41°2'N 70°6'E, 12.05.1994, 6♂♂, 1♀, Ma. Halada (BOL); Hissar Mt. R., Tashkurgan near, N-slope, 2000 m, 38°46'N 67°16'E, 15.07.1999, 1♀, Zonstein (BOL).

Description: ♂. 9-11 mm. Head, mesosoma and antenna black; metasomal tergum I red with black basal spot, II red, III red with black posterior margin; sternum I predominantly black, II red with large black spot, III red or predominantly black; segments IV-VII black. Legs black, tarsi sometimes brownish. Forewing brownish darkened, apical margin hyaline, veins and pterostigma dark brown. Mandible black, sometimes reddish mesally. Face with appressed white setae. Lower margin of mandible with small corner. Clypeus and frons densely punctate, dull. Middle clypeal lobe distinctly protruding beyond lateral lobe (Fig. 6). Gena shiny, punctate with white setae. Antennomere I with white setae and some black bristles; II with white setae; III about 4× as long as apical width, about 1.3-1.4× as long as IV. Antennomeres V-IX(X) in profile concave basally (Fig. 17), with carinate tyloids bearing nearly equal tubercles proximally and distally (Fig. 18). Mesoscutum with white setae, densely punctate except round

posteromedian smooth spot. Mesopleuron densely punctate, with white setae. Prepectus reticulate, epimeron with longitudinal striae. Mesoscutellum smooth and shiny, lateral and posterior margin densely punctate. Propodeal dorsum glabrous, irregularly reticulate. Lateral surface and declivity densely punctate, with white setae. Metasomal terga I-III with fine microsculpture, without punctures; I with long white erect setae. Central setae of metasomal hairbrush short, about a quarter as long as lateral ones, the latter at least as long as those of sternum II. Legs unmodified, with exclusively white setae. Marginal cell very long, about 4.0-4.5× as long as wide.

♀. 9-11 mm. Head, mesosoma, antenna and legs black. Metasomal segments I-III red, tergum III with black posterior margin, apical segments black. Frons with white erect setae. Mandible black, sometimes reddish medially, lower margin with small corner. Anterior margin of clypeal lamella straight, indistinctly tridentate in some fresh specimens. Clypeus, frons and area between posterior ocelli densely punctate (Fig. 108). Vertex smooth and shiny with very scattered punctures. Gena smooth and shiny, nearly without punctures. Antennomeres I-II on inner side with black bristles; III about 4× as long as apically wide, about 1.2× as long as IV; VI about 2.4× as long as wide. Pronotal collar and anterior surface of mesoscutum densely punctate, remaining surface smooth and shiny with very scattered punctures. Mesopleuron densely punctate. Prepectus reticulate, epimeron with longitudinal striae. Mesoscutum anteriorly and mesopleuron with white setae. Mesoscutellum smooth and shiny. Propodeal dorsum reticulate, glabrous. Declivity reticulate; lateral surface anteriorly smooth and shiny, posteriorly reticulate. Propodeum except dorsal surface with white setae. Stigmal area of propodeum obtuse-angled. Metasomal terga weakly shiny, tergum I and II with same microsculpture. Sternum II with short white setae. Pygidial plate narrowed apically, lateral margin slightly concave (Fig. 81). Legs with white setae, hindcoxa and -trochanter with some black bristles. Forebasitarsus long, with four rake spines; ventral surface with 13-15 undulating spines, fine setae between the spines restricted to proximal third (Fig. 81). Midbasitarsus slightly curved, ventrally with undulating spines (Fig. 135). Forewing with brownish tinge and indistinct dark apical spot. Marginal cell about 3× as long as wide.

Distribution: Europe: Norway (LOMHOLDT 1976), Sweden (LOMHOLDT 1976), Great Britain (type locality of *A. victor*), Denmark (LOMHOLDT 1976), Finland (LOMHOLDT 1976), Netherlands (KLEIN & LEFEBER 2004), Belgium (type locality), Germany, Poland (OLSZEWSKI et al. 2021), Lithuania (BUDRYS 2001), Switzerland, Austria, Czechia, Hungary, Slovakia, Ukraine, France, Portugal (CROSS et al. 2021), Spain, Italy, Malta (SCHMID-EGGER et al. 2016), Croatia, Romania (SCOBIOILA-PALADE 1987), Albania, Bulgaria, Greece, Cyprus, Crimea (SHORENKO 2017). Russia: European part, Urals, Western Siberia, Eastern Siberia, Far East, (NEMKOV 2017). Maghreb: Morocco, Algeria, Tunisia, Libya (BEAUMONT 1956). Middle East: Armenia, Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Israel, Syria, Jordan, Iran, Saudi Arabia (GADALLAH et al. 2013), Oman (GUICHARD 1980). Central Asia: Kazakhstan, Kyrgyzstan, Turkmenistan, Uzbekistan, Tajikistan, Afghanistan (BEAUMONT 1970), Mongolia. Eastern Palearctic: China, Korea (TSUNEMI 1974).

Remarks: Some of the following reports may concern other species: Afghanistan (BEAUMONT 1970), Algeria (BEAUMONT 1950), Libya (BEAUMONT 1956), Oman (GUICHARD 1980), Saudi Arabia (GADALLAH et al. 2013). The synonymy of *A. agilis* from Bangladesh with *A. boops* (PULAWSKI 1975) is questionable due to the large distribution gape and the difficult identification of females in the *A. boops* group.

***Astata brevitorsis* PULAWSKI, 1958**

Astata brevitorsis PULAWSKI, 1958b: 193, ♀. Holotype ♀, Hungary, Dömsöd, (TMB).
SCHMIDT & WESTRICH 1983: 122. Description male: Greece, Volos, Zagora.

Material examined: BULGARIA: Debar, Pervomaj, 42°04'N 25°12'E, 150 m, 14.06.2017, 1♂, B. Halada (BOL); Slancev Brjag, 28.06-14.07.1971, 1♂, Z. Padr (BOL). GREECE: Korfu, Sidari, 06.1992, 1♂, Schlaefle (WS); Kos, Psalidi, 36°56'N 27°19'E, 31.08.2008, 2♂♂, Tiefenthaler (BOL); Pilos, 30.06.2003, 1♂, Schlaefle (WS). HUNGARY: Örkény 50 km SE Budapest, 05-09.08.2004, 1♀, Ma. Halada (BOL). KYRGYZSTAN: Osh, Mt. Rg., 30 km E, Taldyk riv., 07.1999, 1♂, Gurko (BOL). TÜRKIYE: Dalyan, farm, Malaisetrp, 36°48'54"N 28°39'04"E, 08-20.08.2015, 1♂, 1♀, Dursun (BOL); Erkenek 60 km SW Malatya, 26.06.2000, 1♂, M. Halada (BOL); Hakkari, Yüksekova, 1800 m, 22.07.1988, 2♀♀, Schmid-Egger (SE); Hazar Gölü SE Elazığ, 29.06.2000, 1♀, M. Halada (BOL); İzmir env., 20.06.1998, 1♂, J. Halada (BOL); Mugla, University Campus, 720 m, 37°09'42"N 28°22'13"E, 19.08.2015, 1♀, H. Kavak (BOL); Muradye, 03.07.2000, 1♀, M. Halada (BOL); Osmaneli, 14.06.1997, 1♂, Ma. Halada (BOL); Salmanlı 40 km W Yozgat, 07.06.2002, 1♂, Liebig (LI).

Description: ♂. 8-9 mm. Black, metasomal terga I-III predominantly red. Middle clypeal lobe distinctly protruding beyond lateral lobe. Antennomere III about 3× as long as apically wide. Antennomeres V-VIII concave in profile, without basal concavity (Fig. 59). Tyloids on antennomeres VI-X carinate, extending over the entire length of antennomeres, basally and distally pale. Midcoxa on inner side without concavity. Central setae of metasomal hairbrush hardly shorter than lateral ones. Other characters like *A. minor*.

♀. 8-9 mm. Head and mesosoma black, metasoma red except large black spot on sternum II and the brown tip of pygidial plate. Clypeal lamella with three distinct teeth (Fig. 83). Frons with white setae; area beside ocelli and between posterior ocelli shiny, with scattered punctures. Antennomere III about 2.2× as long as apically wide, about as long as IV. Declivity of mesoscutum densely punctate, remaining surface smooth and shiny with scattered punctures. Mesopleuron with striae and punctures. Stigmal area of propodeum obtuse-angled. Legs black, tibiae dark reddish, tarsi reddish. Tarsi short, tarsomere IV of foretarsus hardly longer than wide (Fig. 84). Forebasitarsus with four rake spines. Fore- and midbasitarsi ventrally with spines evenly elongated towards apex.

Distribution: Europe: Hungary, Bulgaria, Greece, Crimea (SHORENKO 2017), Russia: European part (NEMKOV 2017). Middle East: Türkiye.

***Astata bulbosa* nov.sp.**

Holotype: ♂. Mongolia, 90 km N Ulanbatar, Segnezer riv., 1460 m, 6-8.VII.2003, J. Halada (BOL).

Paratype: Mongolia. 1♂ Arkhangay, 90 km NE Tsetsereg, N48°03' E102°25,5', 1400 m, 24.VII.2004, J. Halada (BOL).

Diagnosis: ♂. *Astata bulbosa* is characterized by asetose dorsal surface of propodeum, black pronotal lobe and tegula. It is distinguished from other species of the *A. boops* group with red and black metasoma and black legs by concave midcoxa on inner side, hindtrochanter with short rectangular tip and by conspicuous vesicular tripartite tyloids of middle antennomeres. It differs from other species with hardly protruding middle clypeal lobe like *A. kashmirensis* by long lateral setae of metasomal hairbrush, from *A. rufipes* additionally by black legs and from *A. apostata* by limitation of metasomal hairbrush on the sterna IV-VI. It is distinguished from other species with tripartite tyloids and concave inner side of midcoxa (*A. minor*, *A. lusitanica*) by the conspicuous size of vesicular tyloids, shorter middle clypeal lobe and rectangular apical margin of hindtrochanter.

Description: ♂. 10-11 mm. Habitus dorsal see Fig. 117, lateral see Fig. 118. Head, antenna and mesosoma black. Mandible black (holotype) or black with reddish shimmer medially (paratype). Legs black, tarsi brownish. Metasomal tergum I red with black basal spot; II red, III red with black posterior margin, IV-VII black. Sternum I black, II red with large black central spot, III red with black posterior margin or predominantly black, IV-VII black. Frons and face between antennal socket and eye densely punctate, with white setae. Middle clypeal lobe short, hardly protruding beyond lateral lobe; apical lamella straight. Lower margin of mandible with obtuse corner. Antennomeres I-II with exclusively white setae, III about 3× as long as apically wide; V-IX apically widened in profile (Fig. 42), with tripartite tyloids, middle tubercle vesicular and conspicuously enlarged (Fig. 43). Gena smooth and shiny with fine punctures bearing erect white setae. Pronotal collar densely reticulate, dull. Mesoscutum very finely and densely punctate, anterior half nearly without interspaces; posterior surface with scattered punctures and distinct shiny interspaces. Mesopleuron finely and densely punctate, distribution of punctures remarkably regular. Dorsal surface of propodeum glabrous, coarsely reticulate, without carinae. Lateral and posterior surface of propodeum densely punctate. Mesosoma except dorsal surface of propodeum with white setae not masking the surface. Midcoxa on inner side concave. Hindcoxa unmodified. Hindtrochanter with rectangular apex. Coxae, trochanters and femora with white setae. Ventral setae of mid- and hindfemora not longer than maximal femur diameter. Metasomal tergum I with reticulate microsculpture and erect white setae, other terga with very fine microstriae and very scattered punctures. Sterna with whitish setae. Metasomal hairbrush on sterna IV-VI brownish, central setae about one third as long as lateral ones, longest lateral setae distinctly longer than those of sternum II. Forewing slightly brownish tinged. Marginal cell about 3.6× as long as wide. Forewing veins and pterostigma dark brown.

♀. Unknown.

Distribution: Central Asia: Mongolia (type locality).

***Astata canariensis* PULAWSKI, 1974 stat.nov.**

Astata boops canariensis PULAWSKI, 1974, ♀: 299 Holotype ♀, Spain, Canary Islands, Gran Canaria, Maspalomas (CAS).

Material examined: CANARY ISLANDS: Gran Canaria, 2 km W Tasartico, 27°56'N 15°59'W 28.02.2002, 1♂, Schmid-Egger (JA); Gran Canaria, Malpalomas, Dünen, 18.04.1976, 9♂♂, 6♀♀, Wolf, det. Wolf (SE); Gran Canaria, San Augustin, 27-08.04.1970, 1♀, Wolf (BOL). MOROCCO: Ait Baha ESE, 30-40 km N Tafraoute, 30°00'N 9°02'W, 12.03.1997, 1♂, S. M. Blank, det. Pulawski as *A. cobosi* (SE); Aouluz 40 km E Taroudant, 17.05.1997, 1♂, J. Halada (BOL); Assa 15 km S, 15-18.04.1995, 1♀, Ma. Halada (BOL); Bouarfia 10 km S, 20.05.1996, 1♂, Ma. Halada (BOL); Bouzakame 100 km E Icht, 04.05.1995, 1♀, Ma. Halada (BOL); Guelmin 10 km E, 15-16.04.1995, 1♂, Ma. Halada (BOL); Guelmin SE of, 09.05.2003, 1♂, M. Halada (BOL); Guercif 40 km S, 15-17.05.1995, 8♀♀, Mi. Halada (BOL); Er Rhashidia-Goulmina, rdN10, 28.04.2017, 1♂, M. Snižek (BOL); Quaouzagour 30 km E Agdz, 30°41'N 6°08'W, 15.04.1996, 1♀, M. Schwarz (BOL); Quarzazate, 30°47'N 6°43'W, 10.04.1996, 1♀, M. Schwarz (BOL); Rich 10 km N, 23.05.1995, 2♀♀, Mi. Halada (BOL); Rich 10 km S, 22.05.1995, 1♀, Ma. Halada (BOL); Tata, 30 km SWW, Imitek, 29.656°N 8.260°W, 13.04.2015, 1♂, Schmid-Egger (SE); Zagora-Mahmid, 600 m, 30°01'N 5°34'E, 04.05.2015, 1♂, Deneš (BOL).

Description: ♂. 8-11 mm. Head and mesosoma black. Metasoma: Segment I red with black basal spot, tergum II red, sternum II red with black spot, segment III red with black posterior margins, remaining segments black. Legs black, tarsi sometimes brownish. Face with appressed white setae. Clypeus and frons densely punctate. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Mandible black with more or less reddish middle. Antennomeres I-II with white setae, III about 4.0-5.0× as long as apically wide, about 1.5-1.6× as long as IV; V-X concave in profile, maximal diameter apically; tyloids carinate, basal tubercle enlarged, distinctly larger than distal tubercle (Fig. 49). Pronotal collar densely punctate, with fine oblique striae. Mesoscutum dull, densely punctate. Mesoscutellum smooth and shiny, laterally and posteriorly densely punctate. Mesopleuron dull, densely punctate (Fig. 53). Propodeal dorsum reticulate; lateral surface and declivity dull, densely punctate-rugose. Mesosoma except dorsal surface of propodeum, legs and metasoma with white setae. Central setae of metasomal hairbrush very short, about one fifth as long as lateral setae, the latter longer than those of sternum II (Fig. 51). Mid- and hindcoxae and hindtrochanter unmodified. Forewing with brownish tinge. Marginal cell about 3.5× as long as wide.

♀. 8-11 mm. Head, mesosoma, antenna and legs black; metasomal segments I-III red, IV black or red with black posterior margin; remaining segments black. Frons and gena with white setae. Face, frons and area between posterior ocelli densely punctate. Vertex and gena smooth and shiny, with scattered punctures. Antennomeres I-II on inner side with brown bristles. Antennomere III about 3.0× long as apically wide, about 1.2-1.5× as IV. Pronotal collar and anterior surface of mesoscutum densely punctate. Mesopleuron densely punctate, sometimes anterior surface with distinctly isolate punctures, posteriorly often confluent punctures into striae (Fig. 111). Epimeron with longitudinal striae, sometimes with smooth and shiny area. Mesoscutellum smooth and shiny. Thorax with white setae. Propodeal dorsum dull, glabrous, irregularly reticulate. Declivity rugose, lateral surface anteriorly smooth and shiny, posteriorly with longitudinal carinae, both with long white setae. Stigmal area of propodeum slightly convex. Forebasitarsus with four rake spines; ventrally with 9-10 undulating spines, fine setae between basal spines extending to half of tarsomere length. Midbasitarsus straight, ventrally with undulating spines. Forewing brownish darkened, marginal cell about 2.7-3.0× as long as wide.

Remarks: PULAWSKI (1974) described *Astata boops canariensis* from Gran Canaria. In the same paper he raised *Astata boops graeca* BEAUMONT, 1965 because of similar characteristics to species rank. In the present material are specimens of *A. boops canariensis* as well as *A. boops boops* from Morocco. A single male was recorded from Tunisia. Due to the distinct morphological separation without transitions (see key) and the sympatric distribution, two separate species must be assumed to exist. The separation between *A. canariensis* and *A. graeca* is much more difficult. The males of *A. canariensis* are characterized by longer lateral setae of metasomal hairbrush (Fig. 79) and more scattered punctation of mesopleuron (Fig. 80); the females cannot be separated morphologically with certainty. However, these species are clearly separated by distribution pattern.

Distribution: Europe: Canary Islands. Maghreb: Morocco, Tunisia.

***Astata cleopatra* PULAWSKI, 1959**

Astata cleopatra PULAWSKI, 1959: 372, ♀, ♂. Holotype ♀, Egypt, Kom Osheim on Cairo-Fayum road (CAS).

Material examined: JORDAN: Jordan Valley S Shuna, 17.04.1996, 1♀, 25-26.04.1996, 1♀, Mi. Halada (BOL); Zarga-Main, 07.05.1995, 3♀♀, Deneš (BOL). OMAN: Al Ajal, 30 km SW Seeb, N23.531 E57.975, 14.03.2022, 1♀, 26.03.2022 2♂♂, M. Halada (SE); Bidbid 17 km SSE, 23.268°N 58.180°E, 13.03.2022 1♂, M. Halada (SE); Kahal, 8 km NW Mahda, N24.449° E55.906°, 18.03.2022, 1♂, M. Halada (SE); Dhofar prov., Wadi Muqshin, 120 m, 19°35'N 54°53'E, 09.04.2013, 1♀, J. Halada (BOL). SAUDI ARABIA: Riyad r., Riyadh S of, 25.425N 46.653E, 06.03.2024, 1♀, M. Halada (SE); Riyad r., Mulham 40 km NE, 25.469N 46.587E, 07.03.2024 2♀♀, M. Halada (SE, JA). UNITED ARAB EMIRATES: Ras Alkhaymah Airport, 10 km SW, 26.56°N 55.88°E, 19.03.2009, 1♀, Schmid-Egger (JA); Al-Jazirat al Hamra 7 km S, 25.17°N 55.42°E, 01.12.2004, 1♂, van Harten, det. Pulawski (SE); Sharjah Desert Park, 25.28°N 55.70°E, 12.02.2009, 1♀, 19.03.2009 1♂ 2♀♀ van Harten (SE, JA); Wadi Bih, dam, 25.80°N 56.07°E, 26.03.2009, 2♂♂, 1♀, 29.11.2009, 4♀♀, 03.12.2009, 1♀, 3.12.2009, 1♀ van Harten (SE, JA); Wadi Shawka, 27.13°N 56.02°E, 15.03.2011, 2♂♂, 1♀, van Harten (SE).

Description: ♂. 7-9 mm. Head and mesosoma black. Metasoma red with large black spot on sternum II, sometimes terga IV-VII reddish brown. Femora apically, tibiae and tarsi red. Mandible black, lower margin with distinct angle medially (Fig. 10). Face, frons and clypeus with exceptionally dense white setation masking the sculpture. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Gena smooth, outer orbit impunctate, remaining surface with dense punctures and long white setae. Antennomere III slightly curved, about 4.0× as long as apical width, about 1.2-1.3× as long as IV. Antennomeres (VI)VII-XI with carinate tyloids, with small basal yellow tubercle and larger distal ones. Mesoscutum and mesopleuron dull, densely punctate. Propodeal dorsum finely reticulate, dull; declivity and lateral surface densely punctate, dull. Mesosoma (except propodeal dorsum) and tergum I with exceptionally dense white setation. Central setae of metasomal hairbrush beginning on sternum IV, about one third as long as lateral ones, the latter about as long as those of sternum II. Coxae, trochanters and femora with white setae. Midcoxa on inner side concave, posterolaterally lobularly widened (Fig. 8). Hindcoxa unmodified. Hindtrochanter with short triangular apical process (Fig. 9). Forewing with brownish tinge, apical margin hyaline; marginal cell about 3.4-3.5× as long as wide.

♀. 7-9 mm. Head and mesosoma black. Metasoma red. Femora, tibiae and tarsi red. Mandible yellowish red, black apically and basally. Face and frons with upward directed white and black stiff bristles. Gena smooth and shiny, with white setae. Middle clypeal lobe protruding beyond lateral lobe, anterior margin straight. Antennomere III about 3× as long as apical width, about 1.5× as long as IV. Frons densely punctate, with shiny interspaces. Area between posterior ocelli dull, very densely punctate. Vertex smooth and shiny, with scattered punctures. Mesoscutum anterior densely punctate, with stiff black bristles between the white setae; posterior surface smooth and shiny. Mesopleuron anteriorly with punctures, posterior surface with longitudinal striae, with long white setae. Mesoscutellum smooth and shiny. Propodeal dorsum glabrous, reticulate; declivity rugose-punctate; lateral surface with more or less distinct longitudinal carinae. Stigmal area of propodeal dorsum slightly concave. Forebasitarsus short, with four rake spines; ventral surface with five spines evenly prolonged. Midbasitarsus straight, ventrally with spines evenly prolonged to the tip. Femora with black setae. Forewing with brownish tinge, apical margin with indistinct brown spot; marginal cell about 2.5× as long as wide.

Distribution: Middle East: Egypt (type locality), Israel (Pulawski in BEAUMONT 1973), Jordan, Oman, Saudi Arabia, United Arab Emirates.

***Astata cobosi* GINER MARÍ, 1945**

Astata cobosi GINER MARÍ, 1945: 10, ♀. Syntypes ♀, Morocco, Melilla and Ixmoart (MNCN).

Material examined: ALGERIA: Algeria sept. occ., Les Andalouses, 20-22.05.1984, 1 ♀ Mir. Dvorak (BOL). FRANCE: Baillaury, 04.09.1991, 1 ♀, Kassebeer (SE); Laure Minervois, 08.06.2014, 1 ♂, Grouet (JA); Montredon-des-Corbieres, 26.06.2013, 1 ♂, Grouet (JA). MOROCCO: Agadir env., 18.05.1997, 1 ♂, Deneš (BOL); Ain Benimathar, 18.05.1996, 1 ♀, Ma. Halada (BOL); Ait Baha 10 km SE, 30°02'N 9°05'W, 18.04.1996, 1 ♂, M. Schwarz (BOL); Ait Sais, 1423 m, *Helianthus annuus*, 32.8259°N 7.6368°W, 24.05.2019, 1 ♂, Sentil (BOL); Amesnaz 30 km NNW Agadir, 30°38'N 9.47°W, 21.04.1996, 1 ♂, M. Schwarz (BOL); Aouluz 40 km E Taroudant, 17.05.1997, 1 ♂, J. Halada (BOL); Beni Mellal 50 km SW, 13.05.1997, 1 ♂, J. Halada (BOL); Bouarfa 10 km S, 20.05.1995, 2 ♂♂, 2 ♀♀, Mi. Halada (BOL); Erfoud, 27.05.1990, 1 ♂, Schlaefle (WS); Fom-Zguid 20 km N, 30.04.1995, 1 ♂, Mi. Halada (BOL); Guelmin 10 km E, 05.05.1996, 1 ♂, Mi. Halada (BOL); Guelmin SE of, 09.05.2003, 1 ♂, 5 ♀♀, M. Halada, (BOL); Guercif 40 km S, 15-17.05.1995, 7 ♂♂, 18 ♀♀, M. Halada (BOL); Hoher Atlas, Tal zw. Asni-Imlil, 22.05.1995, 1 ♂, Brechtel (JA); Kenitra, 05.06.1990, 2 ♀♀, Schlaefle (WS); Kenitra 20 km E, 11.05.1997, 1 ♂, Mučka (BOL); Meknes 50 km W, 19.05.1997, 1 ♂, 1 ♀, J. Halada (BOL); Ain Khareuba W of, 491 m, 34°31'22"N 02°43'01"W, 02.05.2013, 1 ♂, Ljubomir (JA); Ouarzazate, 10 km SE, 27.05.1995, 1 ♀, Schmid-Egger, det. Pulawski (SE); Rich 10 km S, 22.05.1996, 1 ♂, 1 ♀, M. Halada (BOL); Taroudant, Aoulouz, 17.05.1997, 1 ♀, J. Halada (BOL); Tazenagd, 10 km SW, 40 km W Ouarzazate, 30.05.1995, 1 ♀, Brechtel, det. Pulawski (SE); Tischka-Pass, 1900 m, 10.06.2007, 1 ♂, Schlaefle (WS); Volubilis, 23.05.1970, 1 ♂, Schlaefle (WS); Zagora, 30 km SE, 28.05.1995, 1 ♀, Schmid-Egger, det. Pulawski (SE). PORTUGAL: Zambojeira du Mar, Dunes Beach 19.07.2016, 1 ♂, J. Halada (BOL). SPAIN: Cartagena 25 km SW, 12.05.2003, 1 ♂, J. Halada (BOL); Las Neggas, 50 km E Almeria, 27.04.2003, 1 ♂, J. Halada (BOL); Lavavria-Lozoya, 1780 m, 40°56'N 3°49'W, 06.08.1990, 1 ♂, Hradsky (OKML); Mar Minor, 30 km E Cartagena, 13.05.2003, 3 ♂♂, J. Halada (BOL); Platja de Aro, Costa Brava, 14.09.1991, 1 ♂, Deneš (BOL); Soria, 27.06.1989, 5 ♂♂, Schlaefle (WS, JA). TUNISIA: Ghar el Melt, Strand 35 km SÖ Bizerte, 27.06.1994, 1 ♀, Hauser, det. Pulawski (SE); Jerba, 1998, 1 ♂, Hradsky (BOL); Matmata, 17.04.1981, 1 ♀, Schwarz (BOL); Sidi Boubaker, 40 km N Gafsa, 34°39'N 8°27'E, 11.05.1992, 1 ♀, M. Schwarz (BOL).

Description: ♂. 9-11 mm. Black, proximal three metasomal segments predominantly red. Clypeus and frons dull, densely punctate. Middle clypeal lobe distinctly protruding beyond lateral lobe. Mandible black, lower side with indistinct angle. Face with appressed white setae. Antennomere III about 4.0-4.3× as long as apically wide, about 1.5× as long as IV. Antennomeres V-X convex in profile (Fig. 44); tyloids carinate, with pale proximal and distal tubercles (Fig. 45). Mesoscutum densely punctate except round spot in front of mesoscutellum. Mesopleuron densely punctate. Mesoscutellum laterally and posteriorly densely punctate, dull, anteromedian with large smooth and shiny spot. Mesoscutum and mesopleuron with moderately long white setae. Propodeal dorsum glabrous, strongly reticulate; declivity and lateral surface rugose-punctate, both with long white setae. Metasomal tergum I with moderately long erect white setae. Sterna with white setae. Central setae of metasomal hairbrush short, about a quarter as long as lateral ones, the latter longer than those of sternum II. Legs black with exclusively white setae, coxa and trochanters without modifications. Forewing hyaline with brownish tinge. Marginal cell about 4× as long as wide.

♀. 10-12 mm. Black, proximal three metasomal segments predominantly red. Clypeus smooth with scattered punctures. Antennomeres I-II on inner side with black bristles; III about 3.0× as long as apically wide, about 1.4× as long as IV. Frons and area between

posterior ocelli densely punctate. Vertex smooth and shiny with very scattered punctures. Pronotal collar laterally with oblique striae and smooth and shiny spot medially. Mesoscutum smooth and shiny, anterior margin with strong punctures, interspaces at most as wide as puncture diameter. Mesopleuron dull, densely punctate, posterior punctures confluent into striae. Epimeron with smooth and shiny spot. Anterior part of mesoscutum and mesopleuron with relatively short white setae. Propodeal dorsum reticulate, glabrous; declivity rugose-punctate, lateral surface with distinct longitudinal carinae, both with relatively short white setae. Stigmal area of propodeal dorsum obtuse-angled. Metasomal sternum II and posterior margins of following sterna with short black or brown setae. Legs black, hindcoxa with white and black bristles, femora with black setae. Forebasitarsus with four rake spines, ventrally with about 10-12 undulating spines; midbasitarsus ventrally with undulating spines. Forewing brownish, apically darker; veins and pterostigma dark brown. Marginal cell about $3.0\times$ as long as wide.

Distribution: Europe: Portugal, Spain, France, Italy (PAGLIANO & NEGRISOLO 2005). Maghreb: Morocco, Tunisia.

***Astata compta* NURSE, 1909**

Astata compta NURSE, 1909: 510, ♀. Holotype ♀, India, Rajasthan, Mount Abu (BMNH).

Astata absoluta NURSE, 1909: 511, ♂. Holotype ♂, India, Rajasthan, Mount Abu (BMNH).

Synonymized with *Astata compta* by PULAWSKI 1975: 320.

Material examined: IRAN: Fars, Larestan, Hormood Abbasi, 27°32'07"N; 54°59'02"E; 506 m, 29.05-29.06.2015, 1♂, S. Rezaei (JIAU).

Description: ♂ (after JACOBS et al. 2023). 9 mm. Black, metasomal terga and sterna with light brown posterior margins. Head, mesosoma (except propodeal dorsum), metasomal tergum I and posterior margins of sterna II-V with remarkably long white setae (Fig. 19). Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Clypeus and face densely punctate. Frons in front of anterior ocellus with shiny spot twice as wide as the ocellus. Antennomere III about $4\times$ as long as apically wide. Antennomeres VII-IX slightly concave in profile, tyloids carinate with well developed proximal ivory tubercle. Pronotal collar smooth and shiny, with very scattered punctures. Mesoscutum densely punctate in proximal half, scattered punctate on distal surface. Prepectus coarsely reticulate, epimeron smooth and shiny. Mesopleuron smooth and shiny, scattered punctate, interspaces as wide as or wider than puncture diameter (Fig. 20). Distal sterna without typical hairbrush. Legs black with white setae, inner surface of foretibia and all tarsi brown. Mid- and hindcoxae unmodified, hindtrochanter on inner side with blunt tip. Hindfemur flattened basally. Forewing pale yellowish tinged, apical margin hyaline. Marginal cell about $3.3\times$ as long as wide.

♀ (Original description by NURSE 1909). "Clypeus and front moderately closely punctured, the portions near the anterior ocellus and the margins of eyes shining, with scattered punctures, mesonotum, scutellum and postscutellum closely punctured, except the disc of the two former, which are shining and more or less impunctate; median segment rather short, strongly longitudinally striate and reticulate, roundly truncate at apex, the apical portion finely rugose; abdomen smooth, shining. Antennae pilose, the anterior ocellus scarcely longer than the others, the portion of the front below it without a furrow; abdomen nearly as long as the thorax and median segment, the segments very

slightly depressed at apex, legs strongly spined. Black; the mandibles more or less red; pubescence grey, moderately dense; wings hyaline, forewing with a slight flavous tinge, and a very slight infuscation about the radial cell; nervures bright testaceous, tegulae dark testaceous. Hab. Mt Abu. Length 8 mm."

Distribution: South Asia: India (type locality). Middle East: Iran (JACOBS et al. 2023).

Astata costae A. COSTA, 1867

Astata costae A. COSTA, 1867: 90, ♀. Holotype ♀, Italy, Toscana, no specific locality (Napoli).

Astata gracilis GUSSAKOVSKIJ, 1927: 210, ♂. Lectotype ♂, Crimea, Sebastopol (ZIN). Designated by PULAWSKI 1965: 571. Synonymized with *Astata costae* by BEAUMONT 1942: 409.

Astata parvulus GUSSAKOVSKIJ, 1927: 292. Holotype ♀, Uzbekistan, Mayskoe near Tashkent (ZIN). Synonymized by PULAWSKI 1956: 50. New status as *Astata costae parvula* by BEAUMONT 1942: 409.

Material examined: ARMENIA: Shumuch 8 km SE, 10.05.2003, 1♂, Mučka (BOL). BULGARIA: Argutino, 07.1968, 1♂, A. Gortler (BOL); Lozen, W of Svilengrad, 41°48'N 26°00'E, 140 m, 13.06.2017, 1♂, B. Halada (BOL); Kiten, 42°14'N 27°46'E, 19.08.1990, 1♂, Burger (SDEI); Knazevo, 15 km W Elchovo, 42°06'N 26°30'E, 19.06.2008, 2♂♂, M. & Z. Halada (BOL); Lozenek, 15 m, 42°13'N 27°47'E, 16.06.2008, 1♂, M. & Z. Halada (BOL); Melnik, 13.08.1993, 1♂, M. Halada (BOL); Sandanski, 01-17.07.1966, 1♂, 1♀, 06.1969 1♀, Kocourek (BOL); Slancev Brjag, 20-05.08.1965, 1♀, 25.07.1968, 2♂♂, 1♀, 03.08.1968, 1♀, 14.07-14.08.1971, 5♂♂, 4♀♀, 10.06.1972, 1♀, Padr (BOL); Varvara, 06-12.08.1970, 1♂, Kocourek (BOL); Zvilengrad 30 km SW, 550 m, 41°43'N 26°02'E, 21.06.2008, 2♂♂, M. & Z. Halada (BOL). CROATIA: Grbavac, 4 km E Dubrovnik, 42.652°N 18.176°E, 15.09.2018, 1♀, Schmid-Egger (SE); Istria, 15 km SE Pula, Beach SE Litzjan, 44.810°N 13.987°E, 17.07.2021, 1♂, Schmid-Egger (SE); Istria, Laborica, 20.07.2002, 1♂, Ma. Halada (BOL); Rab isl., Lopar 3 km W, 22.08.2010, 1♂, 2♀♀, Halada (BOL). CYPRUS: Kiti, 26.08.2000, 1♂, Schlaefle (WS); Yermasoyia River, 18.09.1962, 1♀, (BOL). FRANCE: Corse, Algajola, Dünen, 01-11.07.1979, 2♂♂, Wolf, det. Pulawski (BOL); Grepiac, 24.06.2011, 1♂, Grouet (JA); Montredon-des-Corbieres, 09.06.2012, 1♂, 26.06.2013, 1♂, Grouet (JA). GREECE: Greece, Peloponnese, 12 km S of Andritsena, N37.24' E21.50', 500 m, 28.08.2019, 3♂♂, J. Halada (BOL); Leptokaria, 09.07.1993, 1♂, 16.07.1993, 1♂, Jacobs (JA); Peloponissos mer., Mt. Tayetos Oros centr., 28-31.07.2010, 1♀, J. Halada (BOL); Rhodos, Faliraki, 04.09.1984, 1♂, Schmid-Egger (SE); Rhodos, Kolimbia, 11.09.1984, 1♂, Schmid-Egger (SE); Rhodos, Kritinia, 11.09.1984, 1♂, Schmid-Egger (SE); Santorin, Akrotiri, Red Beach, 09.05.1992, 1♂, Fiechtner & Leidenroth (JA); Zakynthos, Vassilikos, 30.09.2013, 3♀♀, Schlaefle (WS, JA). HUNGARY: N of Varpalota, 47.212°N 18.130°E, 11.06.2020, 2♀♀, M. Halada (BOL); Pakozd E of Szekesfehervar, 47.222°N 18.521°E, 12.06.2020, 2♂♂, M. Halada (BOL); Örkény 50 km SE Budapest, 05-09.08.2004, 1♀, Ma. Halada (BOL); Pakozd E of Szekesfehervar, 150 m, 47°13'N 18°31'E, 25.06.2015, 1♀, M. Halada (BOL). IRAN: Golestan, Azhad Shahr 5 km S, 300 m, 37°07'N 55°27'E, 11.06.2010, 1♂, Mi. Halada (BOL); Kerman, Deh Bakri, Gebal Barez Mts., 1640 m, 29°08'N 57°91'E, 03.06.2010, 1♂, Mi. Halada (BOL); Golestan, Shakuh-E-Sofla, 2515 m, 23°32'34"N 54°25'10"E, 10.07.2018, 1♂, Liebig (LI); Golestan, Ziarat, 2299 m, 36°40'12"N 54°33'27"E, 05.07.2018, 3♂♂, Liebig (LI); Khorasan N, Bajgiran 27 km SO, 2194 m, *Euphorbia*, 37.41.57N 58.06.01E, 12.07.2022, 1♂, W.-H. Liebig (LI); Teheran prov., Elburz, Serkheh, 2266 m, 35.7396°N 52.9925°E, 06.07.2022, 1♀, Schmid-Egger (SE); Azer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 19.06.2010, 7♂♂, 15♀♀, Mi. Halada (BOL). ISRAEL: Mt. Hermon, Emeq Sal'am, 33.300°N, 35.786°E, 2040 m, 21.06.2019, 1♂, A. Dorchin (BOL). ITALY: Sardegna, Cagliari, 23.07.1959, 2♂♂, 2♀♀, Wolf (BOL); Sicily, Castelbuno env., Mt. Madonie, 600 m, 14.06.2012, 1♀, J. Halada (BOL); Sicily, Castellamare env., 55 km E Trapani, 09-12.06.2002, 1♂, 1♀ J. Halada (BOL); Calabria, Lokri 15 km S, 02.08.1999, 1♂, J. Halada (BOL); Sicily, Ragusa 35 km SW, beach, 18-22.06.2002, 1♂, J. Halada (BOL); Sicily, 55 km E Trapani, Castellammare env., 12.06.2002, 1♀, Halada (SE); Sicily, Randazzo, Mt. Spagnolo, 1200 m, 06.06.1999, 1♀, Merz (SE); Vieste, Valle Izillo, 44°47'27"N 16°6'37"E, 10.07.2013, 2♂♂, Kafka (BOL). JORDAN: Shuna north, 29-30.04.1996, 1♂, Ma. Halada (BOL). KAZAKHSTAN: Dzungarian Alatau, Sharkent 26 km NW,

44.3737N 79.7773E, 1184 m, 07.06.2024, 1♂, Schmid-Egger (SE); Lepsi, 46°4'N 78°8'E, 19-20.06.1995, 1♀, J. Halada (BOL); Balchasch-Lake, Lepsi 22 km NW, 46.377N 78.724E, 289 m, 12.06.2024, 1♀, Schmid-Egger (SE); Lepsi env., 400 m, 46°13'27"N 78°59'27"E, 02.06.2016, 1♀, J. Halada (BOL); Malaysari 144 km N Alma-Ata, 25.06.1992, 2♂♂, M. Halada (BOL). KYRGYZSTAN: Jalal-Abad, Ala-Buka 20 km SSW, 980-1100 m, 41°13'8"N 71°23'39"E, 28-30.05.2008, 1♀, E. & J. Hüttinger (BOL); Jalal-Abad, Ala-Buka, Umg. Kara-Uhkur u. Sovet-Sai, 41°13'48"N 71°23'39"E, 28-30.05.2008, 1♀; E. & J. Hüttinger (BOL); Alash Forest, Alash-Too Mts., Ferghan. Mt. R., 08.2000, 1♂, Gurko (BOL); Burgandi 60 km W Jalal-Abad, 14.06.1995, 1♂, J. Halada (BOL); Naryn-Tal westl. Naryn, 1850 m, 41.22°N 75.36°E, 16.07.1999, 2♂♂, Jacobs (JA). MALTA: Dingli, 300 m, 35°85'N 14°40'E, 25.06.2014, 1♂, Kafka (BOL); Gozo, Mgarr-ix-Xini, 16.06.1999, 1♀, Merz (SE). MOROCCO: Ait Baha, Lake 2 km SE, 610 m, 30.051°N 9.108°W, 11.06.2014, 1♂, Schmid-Egger (SE); Col du Kerdous, 15.06.2003, 1♂, Schlaefle (WS); Essaouria, 09.05.1995, 1♀, Mi. Halada (BOL); Gorges du Tetra, 29.05.1990, 1♂, Schlaefle (WS); Guelmin 10 km E, 05.05.1995, 1♂, Mi. Halada (BOL); Haddada, 65 m, 34.1397°N 6.5352°W, 17.07.2019, 2♂♂, El Abdouni & L Hamroud (SE); Rich 10 km N, 23.05.1995, 1♂, Mi. Halada (BOL); Tamri, 70 km N Agadir, 08.05.1995, 1♀, Mi. Halada (BOL); Tizi-n-Test S, 1900 m, 30.06.1987, 1♀, M. Schwarz (BOL). OMAN: SW of Sar, 03-05.03.2017, 1♂, M. Snižek (BOL). ROMANIA: Dunabe Delta, Chilia Veche, 05.2019, 1♀, J. Votpyka (BOL). SLOVAKIA: Chotin, 22.07.1962, 1♀, Padr (BOL); Gbelce, 14.08.1965, 1♀, Kocourek (BOL); Somotor, 07.19??, 1♂, Kocourek (BOL); Sturovo, 06.1960, 1♀, Kocourek (BOL). SPAIN: Puigcerda, Schottergrube, 18.07.1963, 1♂, 1♀, Hamann (BOL); Segovia, 28.06.1989, 1♀, Schlaefle (WS). SWITZERLAND: Wallis, Chandolin, 2150 m, 29.08.1984, 1♂, Wolf (BOL); Wallis, Zeneggen, 1500 m, 08.2001, 1♂, 07.2006, 2♂♂, Schlaefle (WS, JA). SYRIA: Dibbin 30 km S Suwayda, 15-17.05.1996, 1♂, Ma. Halada (BOL); Kafr, Suwayda, 21.06.2000, 2♂♂, M. Halada (BOL); Mishirfeh, Ar Raqqa, 04.06.2000, 1♂ 1♀, Deneš (BOL); Rankus 40 km N Damascus, 23.05.1996, 1♂, Ma. Halada (BOL). TURKMENISTAN: Annau, Aschabad 20 km E, 03.06.1993, 1♀, M. Halada (BOL); Vanovskij, Firjusa 3 km N, 13-14.06.1988, 2♀♀, Lelej (SE). TÜRKIYE: Agri env., 27.06.1993, 2♂♂, Mi. Halada (BOL); Camardi, Nigde, 1800 m, 16.08.1991, 1♂, M. Halada (BOL); Chamaldi-Sai, 41°2'N 71°8'E, 30.05.1995, 1♂, J. Halada (BOL); Dalyan, Farm, Malaisetrup, 1 m, 36°48'54"N 28°39'04"E, 08-20.08.2015, 1♀, Dursun (BOL); Denizli, 10 km NE Denizli, N37.56° E29.07°, 290 m, 04.07.2006, 1♂, M. Halada (BOL); Dogubayazit N, Pr-Agri, 1700 m, 03.07.1985, 1♀, W. Schacht (BOL); Ercis 10 km E, Van Golu, 25.06.1997, 1♂, Halada (BOL); Erzurum 15 km SW, 39°48'N 41°10'E, 02.07.2001, 2♂♂, J. Straka (BOL); Erzurum E of, 06.07.2000, 1♂, M. Halada (BOL); Gevas, Van Gölü, 29.06.1993, 2♀♀, Mi. Halada (BOL); Gözeldere 25 km E, 930 m, 37°32'N 43°49'E, 22.06.2010, 1♂, 2♀♀, Mi. Halada (BOL); Gündoğmus 7 km NE, W Giesandra, 30 km N Alanya, 1730 m, 36.86°N 32.03°E, 02.08.2009, 4♂♂, Schmid-Egger (SE); Gurun 20 km E, Mezikiran Gecidi, 10.07.1997, 5♂♂, Ma. Halada (BOL); Hakkari, Cemdinli, 1700 m, 20.07.1988, 1♂, Schmid-Egger (SE); Hakkari, Esendere, 21.07.1988, 2♀♀, Schmid-Egger (BOL); Hakkari, Stadtrand, 1800 m, 24.07.1988, 1♂, Schmid-Egger (SE); Hakkari, Oramar, 1700 m, 29.06.1985, 1♀, M. Schwarz (BOL); Hakkari, Suvvari-Halil-Paß, E Beytüssebap, 2300 m, 03.08.1982, 1♀, Warncke (JA); Halfeti (Birecik), 31.05.1998, 2♂♂ 1♀, Ma. Halada (BOL); Ihlarn, Nigde, 09.08.1991, 1♂, Halada (BOL); Kozluk (Baykan), 03.06.1998, 2♂♂, Ma. Halada (BOL); Muradiye, 03.07.2000, 2♂♂, 05.07.2000, 2♂♂, M. Halada (BOL); Muradye 10 km N, 27.08.1997, 1♂, Ma. Halada (BOL); Nemrut Dag, 2000 m, 16.08.1991, 2♂♂, 2♀♀, M. Halada (BOL); Nemrut Dag, Bitlis, 2000 m, 16.08.1991, 2♂♂, Ma. Halada (BOL); Pamukkale, 08-09.06.1964, 1♀, J. Gusenleitner (BOL); Porsuk Baraji, Sebran, 08.07.1993, 1♂, Mi. Halada (BOL); Salihi/Manisa, 15 km SEE, 170 m, 38°26'N 28°19'E, 02.07.2006, 1♂, 1♀, J. & M. Halada (BOL); Side E, Dunes, 06.10.2011, 1♂, J. Halada (BOL); Sille near Konya, 16.06.1968, 1♀, leg J. Schmidt (BOL); Tatvan 10 km N, 24.06.1997, 2♂♂, Ma. Halada (BOL); Tatvan 30 km E, 07.07.1997, 5♂♂, Ma. Halada (BOL); Tatvan, Van G., 01.07.2000, 1♂, M. Halada (BOL); Zelve (Nevşehir), 1100 m, 25.08.1991, 1♀, Halada (BOL). UNITED ARAB EMIRATES: Abu Dhabi pr., New Shwaib, 24°44'N 55°47'E, 280 m, 08.03.2017, 2♀♀, M. & B. Halada (BOL); Sarjan pr., W of Dhaid, 25°17'N 55°51'E, 120 m, 02.03.2017, 1♀, M. & B. Halada (BOL). ÜZBEKISTAN: Aman-Kutan-Pass, W-Zeravshan MT. R., 1700 m, 39°18'N 66°54'E, 27.06.1999, 1♀, I. Makogonova (BOL); Papngan 20 km NW Kokand, 41°2'N 70°6'E, 12.05.1994, 1♀, Ma. Halada (BOL). YEMEN: Wadi Aniz SSW Sana, 14°60'N 44°09'E, 1520 m, 07.10.2005, 1♀, J. Halada (BOL).

Description: ♂. 6-9 mm. Black, tergum I red with large black basal spot, II red, III with red proximal margin. Legs black, tarsi brownish. Middle clypeal lobe distinctly protruding beyond lateral lobe, apical margin straight. Clypeus and frons densely punctate. Face with white appressed setae. Mandible simple; black, sometimes red medially. Gena smooth and shiny, with shallow punctures and white setae. Antennomeres I-II with white setae; III about 5× as long as apically wide, about 1.3× as long as IV. Antennomeres V-IX strongly concave mesally, about 1.5-1.7× as long as maximal width (Fig. 55). Proximal tubercles of tyloids yellowish (Fig. 56). Pronotal collar and mesoscutum dull, very densely punctate. Mesoscutellum densely punctate with smooth and shiny spot anteriorly. Mesopleuron densely punctate, without striae. Propodeal dorsum strongly reticulate, sometimes with distinct oblique longitudinal carinae. Mesosoma except propodeal dorsum with erect white setae. Central setae of metasomal hairbrush dense and about a quarter as long as lateral ones, the latter about as long as those on sternum II. Terga dull, with oblique microstriae. Legs unmodified, with white setae. Forewing with light yellowish tinge, apical margin hyaline. Marginal cell about 3.5-4.0× as long as wide.

♀. 6-9 mm. Head and mesosoma black. Mandible reddish with black base and tip. Metasoma red, sometimes with reddish brown apical segments. Coxae and femora black, tibiae and tarsi reddish, mid- and hindtibiae often brownish darkened. Clypeal lamella distinctly protruding beyond lateral lobe, apical margin straight. Frons in front of anterior ocellus smooth and shiny, with fine scattered punctures, interspaces at least as wide as puncture diameter; between anterior ocellus and eye more scattered punctate, interspaces distinctly wider than puncture diameter (Fig. 101). Vertex and gena smooth and shiny, with very isolated punctures. Antennomere III about 2.4-2.8× as long as apically wide, about 1.1-1.4× as long as IV. Apical antennomeres short, about 1.2-1.5× as long as maximal width (Fig. 102). Mesoscutum smooth and shiny, anterior surface densely punctate, remaining part with isolated punctures. Mesoscutellum smooth and shiny. Mesopleuron strongly punctured, ventral surface nearly impunctate. Propodeal dorsum strongly reticulate, lateral surface with longitudinal carinae. Stigmal area of propodeum straight or slightly convex. Proximal metasomal terga with very fine oblique microstriae. Head, mesosoma (except propodeal dorsum) and legs with sparse and short white setae. Coxae and trochanters unmodified. Forebasitarsus short, with four rake spines; ventral surface with 8-10 undulating spines, fine setae between the spines covering half of tarsomere length. Midbasitarsus straight, ventrally with undulating spines. Forewing with light brownish tinge, apically more strongly. Marginal cell about 2.5-2.8× as long as wide.

Distribution: Europe: Switzerland, Slovakia, Hungary, Croatia, France, Portugal (CROSS et al. 2021), Spain, Italy, Malta, Romania, Bulgaria, Greece, Cyprus, Ukraine (SHORENKO & KONOVALOV 2010), Crimea (SHORENKO 2017). Russia: European part, Western Siberia (NEMKOV 2017). Maghreb: Morocco, Tunisia (BEN KHEDHER et al. 2020). Middle East: Armenia, Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Israel, Syria, Jordan, Oman, Yemen, Iran. Central Asia: Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, Tajikistan (NAZAROVA 1998).

***Astata diabolica* BALTHASAR, 1957**

Astata diabolica BALTHASAR, 1957: 188, ♀. Holotype ♀, Afghanistan, Kundus Valley, Doab (NMPC).
 Material examined: no material examined.

Description: ♂. Unknown.

♀ (after BALTHASAR 1957). 12 mm. Black, only metasomal tergum II with indistinct lateral reddish spots. Clypeus and face densely punctate; frons with strong and scattered punctures and nearly invisible microsculpture. Face with dark setae. Gena with very sparse setation, occiput with long brownish setae. Pronotal collar with oblique striae and some punctures between it. Anterior margin of mesoscutum densely punctate, posterior surface with isolated strong punctures and smaller scattered punctures between them. Mesoscutellum with isolated strong punctures and sparse smaller punctures. Mesopleuron dull, strongly rugose-punctate, with long brown setae. Propodeum strongly reticulate, declivity and lateral surface with very long erect brownish setae. Metasomal terga with oblique microstriae. Pygidial plate dull, lateral margin with strong bristles. Wings brown, apical margin darker. Marginal cell about 3× as long as wide.

Distribution: Central Asia: Afghanistan (type locality).

***Astata diversipes* PULAWSKI, 1955**

Astata diversipes PULAWSKI, 1955: 93, ♂. Holotype ♂, Türkiye, Sivas (CAS).

Material examined: ISRAEL: Har Karmel, Bet Oren, 10 km S Haifa, 32°44'N 35°00'E, 14.05.1996, 1♀, Schmid-Egger, det. Pulawski (SE); Jerusalem, 28.05.1958, 1♀, Anonym (BOL). JORDAN: Zerka-Tal, 12.05.1963, 2♂♂, Klapperich (WS, JA). SYRIA: Anata 50 km SE Suwayda, 21.05.1996, 1♂, 1♀, Ma. Halada (BOL); Dibbin 30 km S Suwayda, 15-17.05.1996, 3♀♀, Ma. Halada (BOL); Kafr 10 km SE Suwayda, 19.05.1996, 1♂, Ma. Halada (BOL); Khabab 60 km S Damascus, 14.05.1996, 2♀♀, Ma. Halada (BOL); Nawa 30 km N Dara, 18.05.1996, 5♂♂, 2♀♀, Ma. Halada (BOL). TÜRKIYE: Ayas 40 km W of Ankara, 26.06.1998, 1♀, J. Halada (BOL); Gaziantep 30 km NW, 2001, 2♂♂, 3♀♀, Snižek (BOL); Hazar Gölü SE Elazığ, 29.06.2000, 1♂, M. Halada (BOL); Karaman Maras 40 km SE, 10.06.1998, 1♂, 1♀, Ma. Halada (BOL); Kahta (Adiyaman), 10.06.1998, 5♂♂, Ma. Halada (BOL); Karaman Maras 40 km SE, 10.06.1999, 14♂♂, 11♀♀, Ma. Halada (BOL, JA); Kutahya NNE, 13.07.2006, 1♂, M. Halada (BOL).

Description: ♂. 14-15 mm. Head and mesosoma black. Metasoma terga I-III predominantly red, distal segments black. Tergum I with long white setae. Sterna black, II-III with red lateral spots. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin triangular or convex (Fig. 7). Clypeus shiny, densely punctate. Frons dull, very densely punctate with dense appressed setation. Gena moderately punctured, interspaces with distinct micropunctures. Antennomere III about 3.6× as long as apically wide, about 1.8× as long as IV; antennomere VI twice as long as wide; IV-XI convex in profile, with flat brownish tyloids. Pronotal collar densely punctate. Mesoscutum densely punctate with short erect white setae and smooth and shiny posteromedian spot. Mesoscutellum smooth and shiny, lateral and posterior margins densely punctate. Mesopleuron densely punctate, dull, with moderately long white setae, ventral part with conspicuous long greyish-brown setation. Propodeal dorsum glabrous, irregularly reticulate; lateral surface and declivity rugose-punctate, with long white setae. Posterior margin of metasomal sternum II with shallow concave impression, III with semicircular impression. Posterior margins of sterna V-VI mesally with small semicircular incision with short spines laterally, VII with deep oval incision (Fig. 22). Metasomal hairbrush

beginning on sternum IV, central setae short and appressed, lateral setae brown, shorter than those of sternum II. Sterna I-III with white setae, those of IV-VII brown. Legs black with short white setae. Forecoxa strongly thickened. Ventral surface of forefemur strongly flattened on distal two thirds, maximal diameter on the end of this point; foretibia and -basitarsus curved and with concave ventral surface; foretarsomeres II-III slightly concave in profile (Fig. 21). Midcoxa strongly lobularly widened. Base of midfemur ventrally with sharp longitudinal carina. Hindcoxa with longitudinal impression and lateral carina. Hindtrochanter with blunt angle apicoventrally. Hindfemur flattened below. Forewing with brownish tinge, basal sclerites and subcosta black, remaining veins brown. Marginal cell about $4.5\times$ as long as wide.

♀. 14-15 mm. Head, antenna, mesosoma and legs black. Metasoma red, pygidial plate and middle surface of sternum VI black. Mandible simple, black. Clypeal lamella distinctly protruding beyond lateral lobe, anterior margin roundly or triangularly protruding (cf. Fig. 7). Clypeus smooth and shiny, with scattered punctures. Face, frons and area between posterior ocelli densely punctate. Vertex and gena smooth and shiny, vertex with isolated punctures, gena nearly impunctate, occiput with moderately long white setae. Antennomere III about $3\times$ as long as apically wide, $1.4-1.5\times$ as long as IV. Pronotal collar smooth and shiny with scattered punctures. Mesoscutum anteromedian densely punctate, anterolaterally with scattered punctures, remaining surface smooth and shiny with isolated punctures. Mesoscutellum smooth and shiny with isolated punctures, laterally and distally densely punctate. Mesopleuron irregularly reticulate, ventral surface smooth and shiny, nearly impunctate, with very short white setae. Propodeal dorsum glabrous, irregularly and strongly reticulate. Declivity and lateral surface rugose-punctate, with short white setae. Pygidial plate apically strongly narrowed, with concave lateral margin (Fig. 85). Sternum II with short black setae, apical margin of sterna II-V with short black bristles. Coxae, trochanters and femora of fore- and hindlegs with black setae. Ventral setae of hindfemur shorter than maximal femur diameter. Forewing strongly brownish darkened, with darker brown spot after the marginal cell. Marginal cell about $3.5\times$ as long as wide.

D i s t r i b u t i o n : Middle East: Türkiye (type locality), Israel, Jordan, Syria.

***Astata enslini* MAIDL, 1924**

Astata enslini MAIDL, 1924: 239, ♂. Holotype ♂, Sudan, Kordofan, Sennar (NHMW).

M a t e r i a l e x a m i n e d : no material examined.

D e s c r i p t i o n : ♂ (after MAIDL 1924 and PULAWSKI 1959). 7.5 mm. Head, mesosoma and metasoma black; mandible simple, mesally reddish brown. Legs black, with white setae, foretibia on inner side and tarsi brown. Face, frons and gena with scattered white setae. Frons with large shiny spot in front of the anterior ocellus. Middle clypeal lobe distinctly protruding beyond lateral lobe, hardly wider than distance between antennal insertions (Fig. 4). Antennomere I with white setae on inner side, IV about $2\times$ as long as apically wide. Antennomeres V-VIII concave in profile, maximal width apically. Mesoscutum anteriorly densely punctate, posteriorly smooth. Mesoscutellum smooth and shiny, with densely punctate lateral and posterior margins. Propodeal dorsum reticulate with distinct longitudinal carinae. Metasomal terga dull, with fine coriaceous microsculpture; sternum V distinctly, VI slightly emarginate. Metasomal hairbrush beginning on sternum IV, central setae very short, lateral setae

twice as long as those on sternum II. Foretibia on inner side brown. Proximal half of hindfemur ventrally flattened. Midcoxa on inner side distinctly concave. Forewing with light yellowish tinge, apical margin hyaline. Marginal cell short, about twice as long as wide.

♀. Unknown.

D i s t r i b u t i o n : Northeast Africa: Sudan (type locality).

***Astata fumipennis* E. SAUNDERS, 1910**

Astata fumipennis E. SAUNDERS, 1910: 519, ♀. Holotype ♀, Algeria, Biskra (OXUM).

M a t e r i a l e x a m i n e d : no material examined.

D e s c r i p t i o n : ♂ (after SCHULTHESS 1926). 12 mm. Antennomeres V-X concave in profile. Tibiae and tarsi reddish. Other characters similar to those of the female.

♀ (after SAUNDERS 1910 and PULAWSKI 1957). 12 mm. Head and mesosoma black, metasoma completely red. Mandible basally red. Face, frons and occiput with white setae. Frons beside ocelli and between posterior ocelli densely punctate, the latter with shiny spot mesally. Vertex shiny, strongly and scattered punctate. Antennomere I outside with white setae, inner side with thick black bristles; II-III with black bristles; III about 3× as long as II and distinctly longer than IV. Mesoscutum and mesoscutellum strongly shiny, with isolated punctures. Mesopleuron punctate, ventrally with white setae. Epimeron wrinkled. Propodeal dorsum finely reticulate with oblique longitudinal carinae. Stigmal area of propodeum slightly convex. Pygidial plate with strongly concave lateral margin. Legs black with black setae, foretarsus piceous. Fore- and midbasitarsus like *A. boops*. Wings strongly smoky brown, more darkened apically, with light violet reflections. Marginal cell about twice as long as wide.

D i s t r i b u t i o n : Maghreb: Algeria (type locality), Tunisia (SCHULTHESS 1926). Middle East: Egypt (HONORÉ 1942).

***Astata gallica* BEAUMONT, 1942**

Astata gallica BEAUMONT, 1942: 413, ♀, ♂. Holotype ♀, France, Var, Callian (Basel).

M a t e r i a l e x a m i n e d : FRANCE: Corse, Algajola, Dunes, 01-11.07.1979, 1♂, Wolf, det. Pulawski (BOL); Montredon-des-Corbieres, 26.06.2013, 1♂, Grouet (JA). ITALY: Lazio, Todi 100 km N Roma, 27.07.1999, 1♀, J. Halada (BOL); Puglia, Taranto env., 25.08.1997, 1♀, J. Halada (BOL); Sardegna, Valledoria, 07.1991, 1♀, Schlaefle (WS). MOROCCO: Essaouria, 09.05.1995, 1♂, Mi. Halada (BOL); Guercif 40 km S, 15-17.05.1995, 3♀♀, Ma. Halada (BOL); Ifkern 25 km E Boulemane, 13.05.1997, 1♂, Ma. Halada (BOL); Rich 10 km N, 23.05.1995, 1♀, Mi. Halada (BOL); Rich 10 km S, 22.05.1995, 1♀, Mi. Halada (BOL). SPAIN: Mallorca, Cals Mitlor, 13-29.05.1986, 1♀, A. Fuss (BOL).

D e s c r i p t i o n : ♂. 8-12 mm. Head and mesosoma black, metasomal terga I-III red, proximal sterna often partly black. Mandible simple, reddish mesally. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Clypeus and face densely punctate, the latter with white appressed setae. Malar space about as long as diameter of posterior ocellus. Antennomere III about 3.2-3.3× as long as apically wide. Antennomeres V-X in profile slightly concave in basal half; tyloids carinate, basally and proximally with pale tubercles. Mesoscutum densely punctate, posterolaterally with smooth spot. Mesopleuron densely punctate. Mesoscutellum smooth and shiny, posteriorly and laterally densely punctate. Propodeal dorsum irregularly reticulate, lateral

surface densely punctate. Mesosoma except propodeal dorsum with white setae. Metasomal hairbrush beginning on sternum III; scattered central setae about half as long as lateral ones, the latter not longer than setae of sternum II (Fig. 58). Legs black with white setae, tarsi dark brown, coxae and trochanters without modifications. Forewing brownish darkened, except apical margin.

♀. 8-12 mm. Head and mesosoma black, with white setae. Metasomal terga I-II red, III red with dark posterior margin. Face shiny, densely punctate; frons in front of and beside anterior ocellus as well as area between posterior ocelli smooth and shiny, scattered punctate, interspaces wider than puncture diameter; vertex with isolated punctures. Antennomere III about 3×, IV about 2.5× as long as apically wide. Apical antennomeres about twice as long as wide. Mesoscutum smooth and shiny, anterior margin densely punctate. Mesoscutellum smooth and shiny, laterally densely punctate. Mesopleuron densely punctate, posteriorly sometimes with rugae (cf. Figs 111, 112). Prepectus punctate, epimeron smooth and shiny, at most with indistinct scattered punctures. Propodeal dorsum and lateral surface strongly reticulate. Stigmal area of propodeum slightly convex. Mesosoma except propodeal dorsum with white setae. Metasomal sternum II with short setae. Pygidial plate wide, with nearly straight lateral margin. Legs black, with white setae. Forebasitarsus ventrally with 11-13 undulating spines, fine setae between basal spines on half up to two third of spine row. Midbasitarsus straight, ventrally with undulating spines. Forecoxa with brown setae, midcoxa, hindcoxa and -femur with black and white setae.

Distribution: Europe: Portugal (CROSS et al. 2021), Spain, France, Italy. Maghreb: Morocco, Tunisia (BEN KHEDHER et al. 2021).

Questionable Records: GAYUBO et al. (2003) recorded a single female from Türkiye, Eastern Anatolia, province Erzurum. YILDIRIM (2012) and YILDIRIM et al. (2016) reported four females from the same province. The occurrence in Türkiye is very doubtful due to the considerable distribution gap and the difficulties in determination of females in the *A. boops* group in combination with lack of males from Türkiye.

***Astata gobiensis* nov.sp.**

Holotype: ♂. Mongolia, Gobi, 100 km SW Dalanzadgad, Bayanzag, des. Saxaulus, 1-2.VII.2003, J. Halada (BOL).

Paratypes: 3♂♂ with same data as holotype (BOL, JA).

Diagnosis: ♂. *Astata gobiensis* nov.sp. is characterized by its glabrous dorsal surface of propodeum, red and black metasoma, unmodified midcoxa, hindcoxa and -trochanter, as well as metasomal hairbrush covering the middle of sterna IV-VI. It differs from species like *A. kashmirensis*, *A. rufipes* and *A. bulbosa* nov.sp. by unmodified midcoxa, additionally by its distinctly longer middle clypeal lobe, longer setae of metasomal hairbrush and from *A. rufipes* additionally by black legs. It is distinguished from other species of the *A. boops* group with basally concave antennomeres V-IX and long antennomere III (about at least 4× as long as apically wide) as *A. iranica* nov.sp., *A. mongolica* nov.sp. and *A. boops* by black mandible, carinate tyloids with small and indistinct pale tubercles, from *A. iranica* nov.sp. additionally by black inner surface of foretibia. From *A. affinis* it differs by lacking black bristles on antennomere I and hindfemur, from *A. boops* by its long central setae of metasomal hairbrush, from *A. mongolica* nov.sp. by its denser and more strongly sculptured mesoscutum and mesopleuron.

Description: ♂. 9-11 mm. Habitus dorsal see Fig. 119, lateral see Fig. 120. Head, antenna and mesosoma black. Mandible black. Legs black, tarsi brownish. Metasoma: Tergum I red with black spot apically, II-III red, sternum I black, sterna II-III red, segments IV-VII black. Face with appressed white setae masking the surface; gena beneath eyes smooth and shiny, otherwise densely and finely punctate with erect white setae. Lower margin of mandible simple. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Clypeus densely punctate. Antenna slender, antennomere III about 4.4-5.2×, VI about 3× as long as wide. Antennomeres V-IX in profile slightly concave in proximal half (Fig. 60); tyloids carinate, basally and distally with little inconspicuous pale tubercles. Antennomeres I-II with exclusively white setae. Pronotal collar densely reticulate, dull. Mesoscutum anteriorly densely punctate, nearly without interspaces; posterior surface with more scattered punctures and distinct shiny interspaces. Mesopleuron dull, finely and densely punctate, distances between punctures narrower than puncture diameter; posterior surface without rugae (Fig. 71). Dorsal surface of propodeum glabrous, coarsely reticulated, with weakly diagonally running longitudinal carinae. Lateral and posterior surface of propodeum granulate. All parts of metasoma except dorsal surface of propodeum with erect white setae not concealing the integument. Mid- and hindcoxae as well as hindtrochanter unmodified. Coxae, trochanters and femora exclusively with white setae. Longest ventral setae of hindfemur about as long as two thirds of maximal femur diameter. Metasomal tergum I with long erect white setae. Terga I-II very finely reticulate. Sterna I-III with scattered white setae. Metasomal hairbrush of sterna IV-VI white, sparse, central setae hardly shorter than lateral ones; latter as long as or slightly longer than those on sternum II. Setae of sterna III-IV nearly as long as lateral setae of hairbrush. Forewing hyaline. Marginal cell of forewing about 3.3× as long as wide. Veins and forewing pterostigma brown.

♀. Unknown.

Distribution: Central Asia: Mongolia (type locality).

***Astata graeca* BEAUMONT, 1965**

Astata boops graeca BEAUMONT, 1965: 42, ♀, ♂. Holotype ♀, Greece, Corinth (BOL). New status as *Astata graeca* by PULAWSKI (1974).

Material examined: BULGARIA: Slancev Brjag, 25.07.1968, 1♂, 28.06-14.07.1971, 1♂, 1♀, Padr (BOL). CRIMEA: Eupatoria, 28.06.1999, 1♂, 10.07.1999, 1♀, 13.07.1999, 1♀, Gurko (BOL). GREECE: Peloponnes, Acrokorinth, 23.05.1962, 2♀♀, Hamann (BOL); Ag. Anagiri 20 km E Sparta, 05.07.1996, 1♀, Ma. Halada (BOL); Andikira 15 km SE Delphi, 08.05.2005, 1♂, J. Halada (BOL); Rhodos, Apolakkia, 22.09.2001, 1♂, Schlaefle (WS); Athen, 03.06.1963, 2♀♀ (paratypes), Schlaefle (WS); Chalkis, 01.06.1963, 2♂♂ (paratypes), Schlaefle (BOL); Delphi, 09.05.2005, 1♂, J. Halada (BOL); Ermioni, 06.1992, 2♀♀, Schlaefle (WS, JA); Kassandra, Afitos, 06.2012, 1♂, Schlaefle (WS); Rhodos, Kolymbia, 36°14'N 29°09'E, 01-05.06.2013, 1♂, 1♀, Tiefenthaler (BOL); Korinth, 05.06.1963, 1♂ (paratype), Schlaefle (WS); Kos, Kardamona, 13.09.2004, 1♀, Schlaefle (WS); Lamia, 05.1963, 1♀ (paratype), Linsenmaier (BOL); Lamia, 05.1963, 10♂♂ (paratypes), 3♀♀ (paratypes), Schlaefle (WS); Monemvasia, 03.07.2003, 1♂, Schlaefle (WS); Peloponnes, Neo-, Acro-Korinth, 22-25.05.1962, 1♂, 1♀, Hamann (BOL); Olympia, 06.1963, 1♂ (paratype), Schlaefle (WS); Santorin, Akrotiri, Red Beach, 09.05.1992, 2♀♀, Fiechtner & Leidenroth (SE); Sonnion, 06.1966, 1♂, Schlaefle (WS); Tolon, 06.1966, 1♀, Schlaefle (WS); Zakynthos, 07.1988, 1♀, Schlaefle (WS). IRAN: Khorasan N, Bajgiran 27 km SO, 2194 m, 37°41'57"N 58°06'01"E, 12.07.2022, 3♂♂, W.-H. Liebig (LI); Khorasan N, Shirvan 34 km NO, 1743 m, 37°43'05"N 58°02'34"E, 12.07.2022, 1♂, W.-H. Liebig (LI); Khorasan North prov., Bajgiran 27 km SE, 2194 m, 37.6991°N 58.1002°E, 12.07.2022, 1♂, Schmid-Egger (SE); Semnan prov., Elburz, Shahmirzad 8 km N, 2046 m, 35.853°N 53.2888°E,

07.07.2022, 1♀, Schmid-Egger (SE); Teheran prov., Elburz, Serkeh, 2266 m, 35.7396°N 52.9925°E, 06.07.2022, 1♀, Schmid-Egger (SE); Teheran, Dashteban 1 km W, 2225 m, 35°44'39"N 52°02'38"E, 05.07.2022, 6♂♂, W.-H. Liebig (LI); Kerman, Sirac, 1640 m, 30°19'N 57°57'E, 03.06.2010, 1♂, Mi. Halada (BOL). ISRAEL: Jericho 5 km W, Wadi Qelet St. Georg, 31°50'N 35°23'E, 07.05.1996, 1♂, Niehuis (SE); Arava Valley, En Dohar, spring 2 km W of hwy90 at km 147, 30°43'03"N 35°11'62"E, -60 m, 08.04.1995, 1♂, Irvin, det. Pulawski (SE); Arava Valley, Har Badad, Wadi Neqarot, 30°36'09"N 35°03'04"E, 1♂ 1♀, Irvin, det. Pulawski (SE); Arava Valley, Iddan, wadi running east of date palm orchard, -110 m, 30°48'93"N 35°16'79"E, 22.03.1995, 1♀, Irvin (SE); Arava Valley, Iddan, wadi running east of date palm orchard, -110 m, 30°48'93"N 35°16'79"E, 30.03.1995, 1♀, Irvin (JA); Arava Valley, Mozhaav Hazeva, 30°46'33"N 35°16'32"E, 05.05.1995, 1♀, Irwin (SE); Nizzana 10 km N, 30.944°N 34.401°E, 02.05.2019 M. 1♂, 10.05.2019, 1♂, Halada (BOL); Mezada, 17.06.1965, 1♀, Schlaefle (WS); Negev, Wadi Yamin, 30°56'83"N 35°04'44"E, 01.05.1995, 1♀, Schmid-Egger, det. Pulawski (SE); Shore of Dead Sea, 5 km N Massada, En Zeelim, 31°23'N 35°20'E, 07.05.1996, 1♂, Niehuis (SE); Valley, 2 km N Hazewa Field School in Wadi Gidron, 30°46'77"N 35°14'58"E, -110 m, 30.05.1995, 3♀♀, Irvin, det. Pulawski (SE); Zin Wilderness, En Zin, -61 m, 30°53'38"N 35°09'39"E, 04.05.1995, 1♀, 05.05.1995, 1♀, Irvin, det. Pulawski (SE); Zin Wilderness, Nakhal Zin at En Akribim, -61 m, 01.04.1995, 1♂, Irvin, det. Pulawski (SE). JORDAN: Al Huna, Jarash, Burma env., 15.05.2010, 1♂, Snižek (BOL); Jordan Valley S Shuna, 25-26.04.1996, 3♂♂, Ma. Halada (BOL); Jordan Valley, Dayr Alla, 27.04.1996, 3♂♂, Mi. Halada (BOL); Jordan, Wadi Al Haldam, 08.05.1995, 1♀, K. Deneš (BOL); Shuna N env., 29-30.04.1996, 3♀♀, Halada (BOL). KAZAKHSTAN: Makbal, Dzambul env. (60 km), Kirgiz. Chrebet, 04.06.1980, 1♀, Z. Padr (BOL). KYRGYZSTAN: Kashkasu N of Bishkek, Ala-Archa riv., 06.1999, 1♀, Gurko (BOL). BOLAN: Hamman, 13 km SW Muscat, 23.470°N 58.319°E, 11.03.2022, 2♀♀, M. Halada (SE). SYRIA: Ar Raqqa, Ar-Rasafa, 05.06.2000, 1♂, Deneš (BOL); Damascus 30 km NW, 19.06.2000, 1♂, 2♀♀, M. Halada (BOL); Dibbin 30 km S Suwayda, 15-17.05.1996, 2♀♀, Mi. Halada (BOL); Homs 50 km S, 24.05.1996, 2♂♂, Mi. Halada (BOL); Maloulla, 05.06.2006, 1♀, Schlaefle (WS); Palmira, 70 km Dayr as Zawr, 11.06.2006, 1♀, Schlaefle (WS). TAJIKISTAN: Circik 40 km vych., 04.07.1981, 1♀, M. Kocourek (BOL). TÜRKIYE: Bingöl, Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 2♂♂, 1♀, Mi. Halada (BOL); Burdur 20 km SW, 940 m, 37°37'N 30°09'E, 07.07.2006, 3♂♂, 3♀♀, J. Halada (BOL); Erzurum env., 01.07.2001, 1♀, J. Straka (BOL); Hakkari, Stadtrand, 1800 m, 24.07.1988, 1♀, Schmid-Egger (BOL); Halfeti (Birecik), 31.05.1998, 2♂♂ 2♀♀, Ma. Halada (BOL); Isikli Golu, Denizli, 22.06.1998, 1♀, J. Halada (BOL); Kahraman Maras 40 km SE, 10.06.1998, 2♂♂, Ma. Halada (BOL); Kahraman Maras, Pazardcik, 24.06.2000, 1♀, M. Halada (BOL); Konya, 60 km W, Eflatun Pinar, 37°51'N 31°37'E, 15.07.1998, 1♀, Schmid-Egger (SE); Kopeksiz 25 km E Malatya, 08.07.1997, 3♀♀, Ma. Halada (BOL); Mardin 20 km N, 21.06.1997, 1♀, Ma. Halada (BOL); Salmanli 40 km W Yozgat, 07.06.2002, 3♂♂, Liebig (LI); Yesilova/Burdur 5 km NE, 1060 m, 37°35'N 29°55'E, 06.07.2006, 1♂, 2♀♀, M. Halada (BOL). UNITED ARAB EMIRATES: Wadi Madaq, 25.18°N 56.07°E, 10.04.2006, 1♀, 25.01.2006, 1♂, Van Harten (SE).

Description: ♂. 8-11 mm. Head, antenna and mesosoma black. Metasoma red and black, tergum I red with black basal spot, II red, III red with black posterior margin. Sternum I black, II red with large black spot (black color of sterna variable), segments IV-VII black. Face and frons with white appressed setae. Middle clypeal lobe distinctly protruding beyond lateral lobe. Clypeus and frons densely punctate. Mandible black, lower side with very small angle. Gena smooth and shiny, with shallow punctures and long white setae. Antennomere III slightly curved, about 3.0-3.4×, IV about 2.5-2.8× as long as apically wide. Antennomeres V-X concave in profile, maximal diameter in apical third; with carinate tyloids, basal tubercle distinctly larger than distal ones (Fig. 50). Pronotal collar and mesoscutum densely punctate, the latter anteriorly with white setae and posteromedian smooth spot. Mesoscutellum smooth and shiny, with densely punctate lateral and posterior margins. Mesopleuron dull, densely punctate, with short white setae (Fig. 54). Propodeal dorsum irregularly reticulate, glabrous. Declivity and lateral surface rugose-punctate, with long white setae. Metasomal tergum I with

indistinct shallow punctures and white setae. Sterna with white setae. Metasomal hairbrush beginning on sternum IV, central setae short and appressed, lateral setae about as long as or longer than those on sternum II (Fig. 52). Legs black with white setae, tarsi brown. Coxae and trochanters without modifications. Forewing brownish darkened, apical margin hyaline. Marginal cell about 3.5-4.0× as long as wide.

♀. 8-11 mm. Head, antenna and mesosoma black, metasomal segments I-III red, sterna with variable black markings. Clypeus, face, frons up to the area between anterior ocellus and eye as well as area between posterior ocelli densely punctate. Face and frons with white setae. Vertex smooth with isolated punctures. Gena smooth and shiny, with long white setae. Antennomeres I-II on inner side with black bristles, III about 3.0-3.6× as long as apically wide. Mesoscutum anteriorly with scattered punctures (interspaces about as wide as puncture diameter), remaining surface smooth with isolated punctures. Mesoscutellum smooth and shiny, with some isolated punctures laterally and distally. Mesopleuron strongly and densely punctate, with moderately long white setae (Fig. 112). Propodeal dorsum glabrous, irregularly reticulate. Declivity rugose; anterior lateral surface smooth and moderately shiny, posterior surface reticulate, both with white setae. Stigmal area of propodeum obtusely angled. Metasomal terga I-III with very fine microsculpture. Legs black with white setae. Forebasitarsus ventrally with 10-11 undulating spines, fine setae between basal spines up to the half length of spine row (Fig. 82). Midbasitarsus very slightly curved, ventrally with undulating spines (Fig. 136). Forewing brownish darkened, apical margin more strongly. Marginal cell about 3.0-3.3× as long as wide.

Distribution: Europe: Italy (PAGLIANO & NEGRISOLO 2005), Bulgaria, Greece, Crimea. Middle East: Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Israel, Syria, Jordan, Oman, United Arab Emirates, Iran. Central Asia: Kazakhstan, Kyrgyzstan.

***Astata hera* ARENS, 2014**

Astata hera ARENS, 2014: 133, ♂. Holotype ♂, Greece, Peloponnesus, Plateau near Kato Loussi (ZSBS).

Material examined: BULGARIA: Lozenec, 15 m, 42°13'N 27°47'E, 16.06.2008, 1♂, M. & Z. Halada (BOL); Slancev Brjag, 28.06-14.07.1971, 7♂♂ 15.06.1977, 1♂, Padr (BOL). CROATIA: Pula/Istria 10 km N, 27.08.1998, 1♂, J. Halada (BOL). CYPRUS: Pafos 10 km NO, 20.05.1993, 1♂, J. Wimmer (BOL). GEORGIA: Borzomi SW of, riv Kura, 27.06.2014, 1♂, Snížek (BOL). GREECE: Cephallonia S, Paliki Peninsula env., 09.07.2006, 1♂, P. Bulirsch (BOL); Peloponnese, 12 km S of Andritsena, N37°24' E21°50', 500 m, 28.08.2019, 3♂♂, J. Halada (BOL); Kos, Psalidi, 36°56'N 27°19'E, 31.08.2008, 1♂, J. Tiefenthaler (BOL); Leptokaria, 07.07-16.07.1993, 5♂♂, Jacobs (JA); Lesbos, Sigri, 06.2011, 1♂, Schlaefle (WS); Mt. Kilini Oros, 05.08.2010, 1♂, J. Halada (BOL); Preveza/Epeiros 20 km N, 29.08.1997, 1♂, J. Halada (BOL); Ptolemais 16 km N, 930 m, 16.06.1988, 1♂, J. Tiefenthaler (BOL); Saloniki, 06.1960, 1♂, Schlaefle (WS). IRAN: Khorasan N, Bajgiran 27 km SO, 2194 m, 37°41'57"N 58°06'01"E, 12.07.2022, 2♂♂, Liebig (LI); Baghtiyari, Lordegan 20 km SE, 1900 m, 31°21'N 51°09'E, 31.05.2014, 2♂♂, J. Halada (BOL); Azer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 06.2010, 1♂, Mi. Halada (BOL). TÜRKIYE: Ankara, 26.08.1991, 1♂, Ma. Halada (BOL); Baykan 30 km W, 30.06.2000, 2♂♂, M. Halada (BOL, JA); Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 1♂, Mi. Halada (BOL); Erkenek 60 km SW Malatya, 1300 m, 26.06.2000, 1♂, M. Halada (BOL); Gaziantep 30 km NW, 2001, 3♂♂, Snížek (BOL, JA); Gaziantep 30 km NW, 2001, 1♂, Snížek (BOL); Hakkari, Gözeldere 25 km E, 930 m, 37°32'N 43°49'E, 22.06.2010, 2♂♂, Mi. Halada (BOL); Halfeti, Birecik, 31.05.1998, 2♂♂, Ma. Halada (BOL); Halfeti env., 05.05.1994, 1♂, Mi. Halada (BOL); Kahraman Maras 40 km SE,

10.06.1998, 1♂, Ma. Halada (BOL); Nemrut Dag, 2000 m, 16.08.1991, 1♂, M. Halada (BOL); Tuzlagözü, Baykan, 04.06.1998, 1♂, Ma. Halada (BOL).

Description: ♂. 10-12 mm. Head, antenna and mesosoma black. Metasoma: Tergum I red with black basal spot, II red, III red with black posterior margin, IV-VII black. Sterna predominantly black. Clypeus and frons very densely punctate, dull. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Lower side of mandible with small angle. Frons in front of anterior ocellus with distinct smooth and shiny spot. Frons and face with white appressed setae; gena smooth and shiny, with shallow punctures and erect white setae. Antennomere III about 4.0-5.0× as long as apically wide, about 1.3-1.5× as long as IV; V-XI very slightly concave in profile, maximal width apically; tyloids with pale oval basal tubercle and pale curved carina up to the apex (Fig. 48). Pronotal collar rugose-punctate. Mesoscutum and mesopleuron densely punctate, with short white setae. Mesoscutellum densely punctate with large anteromedian smooth and shiny spot. Propodeal dorsum glabrous, reticulate, with distinct oblique carinae. Declivity and lateral surface of propodeum rugose-punctate, with long white setae. Tergum I and sterna with white setae. Metasomal hairbrush starting on sternum IV, central setae short, about a quarter as long as lateral ones, the latter distinctly longer than setae of sternum II. Legs black, without modifications, coxae, trochanters and femora with white setae. Forewing slightly brownish tinged, apical margin paler. Marginal cell about 3.8-4.0× as long as wide.

♀. Unknown.

Distribution: Europe: Croatia, Bulgaria, Greece, Cyprus. Middle East: Georgia, Türkiye, Iran.

***Astata hirsuta* nov.sp.**

Holotype: ♂. Saudi Arabia, Jizan r., 2km ES Al Hasamah, 16.824N 42.978E, 22.2.2024, M. Halada. (SE).

Diagnosis: ♂. *Astata hirsuta* nov.sp. is characterized by a glabrous dorsal surface of the propodeum and a completely black metasoma. From *A. enslini* it differs by unmodified midcoxa; from the melanistic forms of *A. rufipes* and *A. kashmirensis* by longer lateral setae of metasomal hairbrush and distinctly protruding middle clypeal lobe; from the melanistic form of *A. affinis* due to the absence of black bristle of hindfemur and basally concave middle antennomeres; from *A. picea* by the coriaceous and densely punctate metasomal tergum I and from *A. aschabandensis* and *A. compta* due to the absence of apical brown tergite bands.

Description: ♂. 10 mm. Habitus dorsal see Fig. 141, lateral see Fig. 142. Black, foretarsus and metasomal tergum VII brown. Clypeus and frons densely punctate, with long erect white setae. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Mandible simple. Gena and occiput finely and densely punctate, with long white setae. Antennomeres I-II with white setae; III about 4× as long as apically wide, distinctly longer than IV; V-X with inconspicuous carinate tyloids, without pale tubercles. Mesoscutum very densely punctate, moderately shiny. Mesoscutellum densely punctate, with large smooth and shiny anteromedian spot. Mesopleuron shiny, densely punctate, punctures never confluent. Ventral surface of epimeron smooth and shiny, dorsal part densely punctate. Propodeal dorsum glabrous, with distinct keels running diagonally backwards and weaker oblique keels between it.

Lateral surface of propodeum and declivity strongly reticulate. Mesosoma except propodeal dorsum with white setae. Metasomal tergum I completely and II anterolaterally coriaceous, densely punctured, with white setae. Terga II-IV with dense microsculpture, dull; V-VI brownish medially. Sterna II-IV with long white setae, about as long as hindtarsomere II. Metasomal hairbrush beginning on tergum IV, central setae very short and appressed, lateral setae very long, about 1.5× as long as those of sternum II. Legs black; coxae, trochanters and femora with white setae, unmodified. Hindfemur flattened ventrally, longest ventral setae about as long as maximal width of femur. Forewing hyaline, with weak brownish tinge; basal sclerites, veins and pterostigma dark brown. Anterior margin of marginal cell about twice as long as cell height.

♀. Unknown.

D i s t r i b u t i o n : Saudi Arabia (type locality).

***Astata iranica* nov.sp.**

Holotype: ♂. Iran, Azer e Sh. Prov., Sis 10 km E Shabestar, N38°26' E45°86', 1540 m, 19.6.2010, Mi. Halada lg. (BOL).

Paratypes: Iran. 4♂♂ with same data as holotype. 1♂ Iran, Baghtiyari prov., 20 km SE Lordegan, 31°21'N 51°09'E, 1900 m, 31.5.2014, J. Halada (BOL).

D i a g n o s i s : ♂. *A. iranica* nov.sp. is characterized by its glabrous dorsal surface of the propodeum, red and black metasoma, middle clypeal lobe clearly projecting beyond lateral lobe, unmodified mid- and hindcoxae and hindtrochanter, in profile concave middle antennomeres and long antennomere III (longer than 4.5× as its maximum width). It is distinguished from other species with this combination of characters such as *A. boops*, *A. gobiensis* nov.sp. and *A. mongolica* nov.sp. by its conspicuous reticulate and punctate tergum I as well as mostly black proximal sterna. It differs from *A. boops* additionally by carinate tyloids without distinct pale tubercles, from *A. affinis* by the exclusively white setae of antennomeres I-II and hindfemur.

D e s c r i p t i o n : ♂. 8-9 mm. Habitus dorsal see Fig. 121, lateral see Fig. 122. Head, antenna and mesosoma black. Mandible black, mesally more or less brownish. Legs black, foretibia on inner side pale brownish, tarsi brown. Metasomal tergum I red with black basal spot, II red, III red with black posterior margin. Sterna I-III variable, often black, sometimes II laterally red. Metasomal segments IV-VII black. Face with appressed white setae. Clypeus and face densely punctate. Frons in front of anterior ocellus with smooth spot as wide as ocellar diameter. Gena smooth and shiny with very fine punctures and scattered erect whitish setae. Middle clypeal lobe distinctly protruding beyond lateral lobe; anterior margin straight. Lower margin of mandible simple. Antennomere I-II with exclusively white setae, III about 4.8-5.0×, VI about 2.0× as long as maximal width. Antennomeres IV-IX concave in profile (Fig. 65). Tyloids carinate, without pale tubercles basally and distally (Fig. 66). Mesoscutum densely punctate on anterior third, more scattered posteriorly, hardly shiny. Mesopleuron densely punctate, epimeron reticulate. Dorsal area of propodeum glabrous, coarsely reticulate with carinae diagonally running backwards. Lateral and posterior surface of propodeum coarsely reticulate. Mesosoma except propodeal dorsum with whitish setae not concealing the surface. Coxae, trochanters and femora with white setae. Mid- and hindcoxae and hindtrochanter unmodified. Metasomal tergum I dull, strongly reticulate with distinct flat punctures, with white setae (Fig. 69). Remaining terga with reticulate microsculpture,

distinctly different from tergum I. Tergum II with flat punctures laterally. Metasomal hairbrush starting on sternum IV, central setae about half as long as lateral ones, the latter about as long as those of sternum II. Forewing pale yellowish, apical margin hyaline. Veins and pterostigma brown. Marginal cell of forewing about $3.3\times$ as long as wide.

♀. Unknown.

Distribution: Middle East: Iran (type locality).

Astata jucunda PULAWSKI, 1959

Astata jucunda PULAWSKI, 1959: 361. ♀, ♂. Holotype ♀, Bulgaria, Kniazhevo south of Sofia (CAS).

Material examined: BULGARIA: Rhodopi, Hrabrino, 20.08.1996, 1♂, A. Zaykov (BOL); Sandanski, 22.07.1966, 1♀, 06.1969, 1♂, Kocourek (BOL); Sandanski, 24.06.1978, 1♂, Padr (BOL); Slancev Brjag, 07.1964, 1♀, M. & E. Hrubant (BOL); Slancev Brjag, 21.07.1968, 1♀, Kocourek (BOL); Slancev Brjag, 20-05.08.1965, 8♂♂, 12♀♀, 28.06-14.07.1971, 23♂♂, 10♀♀, 05-15.06.1977, 2♂♂, 1♀, 02.07.1978, 1♂, 08.08.1986, 1♀, Padr (BOL, JA). GREECE: Ag. Anagiri, 20 km E Sparta, 05.07.1996, 1♂, Ma. Halada (BOL); Elea, 17.08.1986, 1♂, Link (BOL); Kos-Psalidi, 36°56'N 27°19'E, 28-31.08.2008, 1♂, Tiefenthaler (BOL); Kos-Psalidi, 36°56'N 27°19'E, 28-31.08.2008, 1♂, 1♀, J. Tiefenthaler (BOL); Preveza env., 25.06.1997, 1♂, J. Halada (BOL). HUNGARY: Akszto, Salzsteppe, 02.07.1996, 1♀, Liebig (LI); Varpalota N of, 47.212°N 18.130°E, 11.06.2020, 1♀, M. Halada (BOL); Varpalota, 220 m, 47°13'N 18°08'E, 08.07.2016, 1♀, M. Halada (BOL). KAZAKHSTAN: Alma Ata, 35 km zap. Aksa, 16.07.1981, 1♂, Kocourek (BOL); Djambul 10 km E, 31.05.1994 2♂♂, J. & Ma. Halada, (BOL); Kuyuk 40 km SW Djambul, 01.07.1992, 1♂, 1♀, M. Halada (BOL); Taldi-Kurgan, 200 km NE Tscherkaskoe, 27.06.1992, 1♂, M. Halada (BOL). KYRGYZSTAN: Kashkasu N of Bishkek, Ala Archa riv., 06.1999, 2♂♂, Gurko (BOL); Tash Arik 11 km E Talas, 04.07.1992, 2♂♂, M. Halada (BOL); Uzun-Bulag, Ala-Archa riv., 07.2000, 2♂♂, Gurko (BOL). ROMANIA: Dunabe Delta, Chilia Veche, 05.2019, 1♀, J. Votypka (BOL). SLOVAKIA: Kamenica n. H., 06.1960, 1♀, Kocourek (BOL); Perinek-Baba, 30.06.1952, 1♂, Kocourek (BOL). SYRIA: Khabab 60 km S Damascus, 14.05.1996, 1♀, Mi. Halada (BOL). TÜRKIYE: Aciöl, Cardak env., 07.07.1993, 3♂♂, Mi. Halada (BOL); Adana N of, 16.06.2000, 1♂, M. Halada (BOL); Konya, Aksehir 30 km S, 24.06.1998, 2♂♂, J. Halada (BOL); Burdur 20 km SW, 940 m, 37°37'N 30°09'E, 07.07.2006, 13♂♂, 2♀♀, J. & M. Halada (BOL, JA); Erkenek, 80 km SW Malatya, 09.07.1997, 1♀, Ma. Halada (BOL); Erzincan, Tanyeri, 05.08.1979, 1♀, Warncke, det. Pulawski (SE); Gevas, Van Gölü, 29.06.1993, 1♂, Jiruosek (BOL); Gurun 20 km E, Mezikiran Gecidi, 10.07.1997, 1♀, Ma. Halada (BOL); Halfeti, Birecik, 31.05.1998, 2♂♂, Ma. Halada (BOL); Muradya 10 km N, 27.06.1997, 1♂, Ma. Halada (BOL).

Description: ♂. 8-10 mm. Head and mesosoma black. Metasoma: Tergum I red with black basal spot, II red, III red with black posterior margin. Sternum I black, II with large black spot, III red with black posterior margin. Segments IV-VII black. Legs black with white setae; inner surface of foretibia and foretarsus pale brown. Clypeus and frons densely punctate. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Mandible black, simple. Antennomere III about $3.2-3.8\times$ as long as apically wide, $1.2-1.3\times$ as long as IV. Antennomeres (IV)V-X(XI) in profile basally slightly concave and distally strongly widened, VI and VII about $1.5-1.6\times$ as long as maximal width (Fig. 61); with carinate tyloids over the entire segment length, basally and distally pale (Fig. 62). Gena smooth and shiny, with shallow punctures and long white setae. Mesoscutum densely punctate, with posteromedian smooth spot and short white setae. Mesoscutellum smooth and shiny, laterally and distally densely punctate. Mesopleuron densely punctate, with whitish setae. Propodeal dorsum glabrous, reticulate; declivity and lateral surface rugose-punctate, with long whitish setae.

Metasomal terga dull, with distinct microsculpture. Tergum I and sterna with whitish setae. Hairbrush on terga IV-VI, central setae about half as long as lateral ones, the latter about as long as setae of sternum II. Coxae and trochanters without modifications. Forewing slightly yellowish tinged, apical margin hyaline. Marginal cell about $3.2\text{--}3.5\times$ as long as wide.

♀. 8-10 mm. Head and mesosoma black. Metasomal segments I-II(III) red, sternum II with black spot, apical segments black. Mandible black with reddish middle, lower margin simple. Legs black with white setae. Clypeus and frons in front of anterior ocellus densely punctate. Surface between anterior ocellus and eye smooth and shiny with isolated punctures. Area between posterior ocelli densely punctate. Vertex and gena smooth and shiny, with isolated punctures. Antennomere III about $2.3\text{--}2.5\times$ as long as apically wide, hardly longer than IV. Mesoscutum anterior densely punctate, posterior surface smooth and shiny, with scattered punctures. Mesoscutellum smooth and shiny, lateral and posterior margins densely punctate. Prepectus strongly and densely punctate. Epimeron punctate, ventrally with large smooth and shiny spot. Remaining mesopleuron anteriorly with strong scattered punctures, posteriorly densely punctate. Head and thorax with white setae. Propodeal dorsum glabrous, irregularly reticulate. Lateral surface of propodeum anterior smooth, posterior rugose-punctate like declivity, both with long white setae. Stigmal area of propodeum concave. Pygidial plate granulate, with straight lateral margin. Forebasitarsus ventrally with 12-13 undulating spines, fine setae between basal spines extending over basal third of the spine row. Forewing with pale brownish tinge, marginal cell about $3.5\times$ as long as wide.

D i s t r i b u t i o n : Europe: Slovakia, Hungary, Romania, Bulgaria, Greece, Ukraine (SHORENKO & KONOVALOV 2010), Crimea (SHORENKO 2017). Russia: European part, Western Siberia (NEMKOV 2017). Middle East: Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019) Türkiye, Syria, Iran (JAHANTIGH et al. 2017). Central Asia: Kazakhstan, Kyrgyzstan.

***Astata kashmirensis* NURSE, 1909**

Astata kashmirensis NURSE, 1909: 511, ♂. Holotype ♂, Kashmir, no specific locality (BMNH).

Astata stecki BEAUMONT, 1942: 407, ♀, ♂. Holotype ♀, Switzerland, Valais, Eusigne (Basel).
Synonymized with *Astata kashmirensis* by PULAWSKI 1975: 320.

Astata stecki melanotica PULAWSKI, 1973: 2, ♀, ♂. Holotype ♀, Syria, Damascus (Torino?).

M a t e r i a l e x a m i n e d : ALBANIA: Valbona, $42^{\circ}27'N$ $19^{\circ}53'E$, 08.07.2012, 1♂, Deneš (BOL). ARMENIA: Jerewan, 1000 m, 10.06.2013, 1♀, Schlaefle (WS). BULGARIA: Beronovo, S. Plan., 10.08.1997, 5♂♂, Zaykov (BOL); Galabovo, Rodopi, 18.06.1996, 1♂, 15.08.1997, 1♂, 20.08.1997, 1♂, Zaykov (BOL); Hrabrino, Rodopi, 20.08.1996, 1♂, Zaykov (BOL); Ludogorsko Plato, W Vetovo vill., $43^{\circ}41'57"N$ $26^{\circ}14'31"E$, 202 m, 14.09.2010, 1♀, Ljubomirov (SE); Nesebar, 08.1970, 1♂, Kocourek (BOL); Parvenez, Rodopi, 10.07.1996, 1♂, Zaykov (BOL); Plovdiv, 05.07.1997, 1♂, Zaykov (BOL); Proslav, Trakia, 15.08.1996, 2♂♂, Zaykov (BOL); Slancev Brjag, 05.08.1965, 2♂♂, 27.07.1968, 1♂, 28.06-14.07.1971, 9♂♂, 23♀♀, Padr (BOL); Slancev Brjag, 10.06.1972, 1♂, Kocourek (BOL); Studenec, Rodopi, 25.07.1997, 1♂, Zaykov (BOL); Vlahi, 14.08.1993, 1♂, M. Halada (BOL); Voivodino, Trakia, 05.09.1997, 1♂, Zaykov (BOL). CRIMEA: Eupatoria, 10.07.1999, 2♂♂, 1♀, Gurko (BOL); Simferopol, Anatra, 07.2000, 1♀, V. Gurko (BOL); Sevastopol, $44^{\circ}36'N$ $33^{\circ}47'E$, 08.2009, 1♂, Kantner (BOL). CROATIA: Istrien, Strand 5 km SO Rovinj, 11.08.1994, 1♂, Schmid-Egger (SE); Pula 10 km N, 27.08.1998, 2♀♀, J. Halada (BOL); Vodnjan env., Istria, 09.07.1999, 1♂, J. Halada (BOL). CYPRUS: Ayia Napa, 20.08.2000, 1♂ Schlaefle (WS); Kouklia, 15 km Se Pafos, $34.72^{\circ}N$ $32.55^{\circ}E$, 20.06.2013, 1♂, Schmid-Egger (SE). CZECHIA: Moravia, Znojmo, $48.753^{\circ}N$ $16.139^{\circ}E$, 20.07.2020, 1♀, M. Halada (BOL); Pouzdrany, 01.08.1993, 2♂♂, M. Halada (BOL). FRANCE: Conques s. O.,

25.06.2008, 1♂, Grouet (JA); Port la Nouvelle, 26.06.2011, 1♂, Grouet (JA); Alpes maritimes, Tende N, 700-1100 m, 44.09°N 7.60°E, 12.07.2009, 1♀, Schmid-Egger (SE). GERMANY: Waren/Müritz, 53.52°N 12.69°E, 05.08.1940, 1♂, Hainmüller (MMW). GREECE: Kreta, Amoudara, St. Marina, 12.06.1993, 1♂, Tiefenthaler (BOL); Ermioni, 06.1992, 1♀, Schläefle (WS); Peloponnese, 12 km S of Andritsena, 37°24'N 21°50'E, 500 m, 28.08.2019, 31♂♂, J. Halada (BOL); Lesbos, Scala Polichnitos, 09.2014, 1♂, 1♀, Schläefle (WS); Peloponnese, Marathopoli 20 km N Pilos, 08.07.1996, 4♂♂, Ma. Halada (BOL); Epeiros, Preveza, 29.08.1997, 1♂, J. Halada (BOL); Lebos, Skala Eresou, 19.06.2011, 1♂, Schläefle (WS). HUNGARY: N of Varpalota, 47°12'5"N 18°07'4"E, 05.07.2018, 1♂, M. Halada (BOL). IRAN: Mazdaran prov., Chalooos 10 km S, 380 m, 36°51'N 51°33'E, 15.06.2010, 5♂♂, Mi. Halada (BOL); Razawi Ko., Kadkan 2 km S, 1877 m, 35°34'00"N 58°52'41"E, 15.07.2022, 1♂, W.-H. Liebig (LI); Golestan prov., Minudasht 45 km E, 960 m, 37°36'N 55°93'E, 11.06.2010, 4♂♂, Mi. Halada (BOL); Golestan prov., Minudasht NP 40 km E, 750 m, 37°22'N 55°57'E, 01.06.2014, 1♂, Mi. Halada (BOL); Acer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 19.06.2010, 7♂♂, Mi. Halada (BOL, JA). ITALY: Gargano NW, 08.09.2000, 1♀, J. Halada (BOL); Sardinien, Muravera, 02.07.2000, 1♂, J. Halada (BOL); Toskana, Orbetello Isl., 06.08.1999, 15♂♂, 5♀♀, J. Halada (BOL); Sizilia, Mt. Madonie S, Petralia Sot env., 600 m, 16.06.2012, 1♂, J. Halada (BOL); Emilia Romagna, Ravenna 60 km N of, 08.07.2000, 1♀, J. Halada (BOL); Schluderns, 1000 m, 06.08.1992, 1♀, Jacobs (JA). JORDAN: Shuna N env., 29-30.04.1996, 1♀, Mi. Halada (BOL). KAZAKHSTAN: Aksay env. 20 km SE, 19.06.1992, 1♂, K. Deneš (BOL); Alma Ata, 25.06.1992, 4♂♂, 2♀♀, J. Halada, Kocourek, Deneš (BOL); Dzhabagly 3 km W, Talas Mt. R., 42°26'N 69°58'E, 05.08.2000, 1♂, Makogonova (BOL); Fabrichny, 40 km W of Alma Ata, 09.07.1992, 1♂, Jirousek (BOL); NO Bajanaul NP, 410 m, 50°49'08"N 75°20'40"E, 18.06.2008, 1♂, 19.06.2008, 1♂, W.-H. Liebig (LI); NO Bajanaul NP, 443 m, 50°48'57"N 75°19'20"E, 12.06.2008, 1♂, W.-H. Liebig (LI); Koktuma, Lake Alakol, 22.06.1995, 7♂♂, 3♀♀, M. Mučka, J. Halada (BOL, JA); Kuyuk 40 km SW Djambul, 01.07.1992, 1♀, M. Halada (BOL); Lugovoe 150 km W Djambul, 07.1993, 1♂, M. Halada (BOL); Malaysari 144 km N Alma-Ata, 21.06.1992, 1♂, M. Halada (BOL). KYRGYZSTAN: Afleatum env., 41°6'N 71°6'E, 01-03.06.1996, 1♀, J. Halada (BOL); Ala-Buka, 41°5'N 71°2'E, 30.04.1996, 1♀, Mučka (BOL); Alash forest, Alash-Too Mts., Ferghan. Mt. R., 08.2000, 1♂, Gurko (BOL); Aravan 25 km N Osh, 06.2000, 1♂, Gurko (BOL); Burgandi 60 km W Jalal-Abad, 14.06.1995, 3♂♂, J. Halada (BOL); Chamadi-Sai, 41°2'N 71°8'E, 30.05.1995, 1♂, J. Halada (BOL); Frunse (now Bishkek) 75 km S., Cin-Arik, 08.07.1981, 3♂♂, Kocourek (BOL); Kashkasu N of Bishkek, Ala-Archa riv., 06.1999, 1♂, 1♀, Gurko (BOL); Kashka-Suu, Ala-Archa riv., 1650 m, 07.2000, 1♂, Gurko (BOL); Ooru-Say, Ala-Archa riv., Kirghizsky Mt. R., 1650 m, 07.2000, 1♂, Gurko (BOL); Toskol-Ata, Ferghanskyi Mts., 1200 m, 01.08.2001, 2♂♂, Gurko (BOL); Toskool-Ata, Ferghan. Mts., 1500 m, 29.07.2000, 5♂♂, Gurko (BOL); Toskool-Ata, Ferghan. Mts., Pistacea forest, 08.2000, 1♂, Gurko (BOL); Tschui-Tal, Fluß Tschon-Kemin, 1800 m, 42°41'2"N 75°56'42"E, 16.06.2008, 1♂, Hüttinger (BOL); Uzun-Bulag, Ala-Archa riv., 07.2000, 2♀♀, Gurko (BOL). MOROCCO: Agadir 5 km N, 18.05.1997, 2♀♀, J. Halada (BOL); Aghbalou Akourar, 621 m, 33.8627°N 4.6691°W, 17.06.2019, 1♀ L. Hamroud & P. Lhomme (SE); Essaouria, 09.05.1995, 1♂, Mi. Halada (BOL); Guelmin SE of, 09.05.2003, 1♀, M. Halada (BOL); Guercif 40 km S, 15-17.05.1995, 1♀, Ma. Halada (BOL); Meknes, 06.1962, 1♂ Schläefle (WS); Meknes 50 km W, 19.05.1997, 1♂, M. Halada (BOL); Sidi Ahmed Ben Yussef, 769 m, 33.8349°N 4.7476°W, 16.06.2019, 1♂, L. Hamroud & P. Lhomme (SE); Sidi Ahmed Ben Yussef, 792 m, 33.8250°N 4.7542°W, 01-02.07.2019, 1♂, L. Hamroud & P. Lhomme (SE); Taroudant, Aoulouz, 17.05.1997, 1♂, J. Halada (BOL); Tissa env., 08.05.1997, 2♂♂, Deneš (BOL); Yousseoufia, 11.05.1995, 1♂, Ma. Halada (OML). MONGOLIA: Bayankhongor 86 km NW, 2070 m, 46°50'N 100°04'E, 14.07.2004, 1♂, Kadlecova (BOL); Ulaanbataar 50 km N, riv. E of Mandal, 1180 m, 13.08.2007, 1♂, Kadlecova (BOL). RUSSIA: Baschkirien, See Aslikul 120 km SW Ufa, Mischwald-Weidesteppe, 09.07.1982, 1♀, Taeger (JA); Baikal, Ust-Orda, Steppe, 545 m, 52°50'25"N 104°47'14"E, 26.06.2011, 1♀, Liebig (LI); Primorje, Anisimovka, 43.1830°N 132.7603°E, 06.08.1983, 1♂, Lelej (SE). SLOVAKIA: Chotin, 22.06.1960, 1♂, Padr (BOL); Chotin, 26.07.1993 2♂♂, M. Halada (BOL); Malacky, 05.07.1994, 1♂, Deneš (BOL); Modra, 14.06.1976, 1♂, Kocourek (BOL); Pezinok-Baba, 30.06.1952, 1♂, Kocourek (BOL); Sekule SW, strk. Mlaky, 48.617°N 17.003°E, 22.07.2020, 1♀, M. Halada (BOL); Somotor, 07.1952, 1♂, Kocourek (BOL); Somotor, 07.1962, 1♂, Kocourek (BOL); Streda nad Bodrogom, 26.06.1977, 1♂, Padr (BOL); Sturovo, 26.07.1956, 1♂, 08.08.1959, 1♂, 16.07.1962, 1♂, 27.07.1962, 2♂♂, 01.08.1962, 1♂, Padr (BOL); Sturovo, 06.05.1965, 1♂, Kocourek (BOL);

Sturovo, 28.07.1993, 2♂♂, M. Halada (BOL); Vinicky, 06.1952, 1♂, Kocourek (BOL). SPAIN: Palamos, Catal., 07.1994, 1♂, P. Sary (BOL); Puigcerda, 18.07.1963, 3♂♂, 1♀, Hamann (BOL, JA); Pyrenees, Rio Cinqueta-Tal, 32 km SW Bagneres-de-Luchon, 42.40°N 0.30°E, 1200 m, 18.07.1996, 1♂, Geller-Grimm (SE). SWITZERLAND: Lenk, Wallis, 27.07.2004, 1♂, Schlaefle (BOL); Sion, 07.1962, 1♀, Schlaefle (WS). SYRIA: Homs 40 km W, 18.05.2000, 1♂, M. Halada (BOL); Jisr ash Shugur, 10-11.05.1996, 1♀, Ma. Halada (BOL). TAJIKISTAN: Dusanbe 40 km vych. Javrov, 24.06.1981, 1♂, M. Kocourek (BOL); Dusanbe env., 25.06.1981, 1♂, M. Kocourek (BOL). TUNISIA: Monastir Skanes, 35°45'N 10°44'E, 10.05.2001, 1♂, 14.05.2001, 1♂, Rosa, det. Pulawski (SE). TÜRKIYE: Akcali 35 km S Hakkari, 1700 m, 37°71'N 44°03'E, 21.06.2010, 2♂♂, Mi. Halada (BOL); Akyaka, pasture and salty meadow, 3 m, 37°03'N 28°20'E, 09.2012, 1♀, V. Bartak (BOL); Alanya 20 km E, 16.06.1997, 1♂, Ma. Halada (BOL); Avgadi, 30 km NW of Erdemli, 1300 m, 20.06.1996, 1♀, Jelinek (BOL); Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 5♂♂, Mi. Halada (BOL); Denizli 10 km NE, 290 m, 37°56'N 29°07'E, 04.07.2006, 6♂♂, J. Halada (BOL); Denizli 35 km SSE, 970 m, 37°37'N 29°17'E, 05.07.2006, 1♂, M. Halada (BOL); Denizli, Isikli Golu, 22.06.1998, 1♂, J. Halada (BOL); Erkenek 60 km SW Malatya, 1300 m, 26.06.2000, 1♂, M. Halada (BOL); Erzurum E of, 06.07.2000, 5♂♂, M. Halada (BOL); Gaziantep 30 km NW, 2001 3♂♂, Snizek (BOL); Gurun 20 km E, Mezikiran Gecidi, 10.07.1997, 1♂, Ma. Halada (BOL); Hakkari, Esendere, 21.07.1988, 1♂, 1♀, Schmid-Egger (SE, JA); Hakkari, Gözeldere, 20 km E, 930 m, 37°32'N 43°49'E, 22.06.2010, 2♂♂, Mi. Halada (BOL); Isparta, Karakus Dagi centr., 1460 m, 38°15'N 30°39'E, 11.07.2006, 1♂, M. Halada (BOL); Karadut, Nemrut Dagi, 02.07.1993, 1♂, Mi. Halada (BOL); Kopesiz, 25 km E Malatya, 08.07.1997, 1♂, Ma. Halada (BOL); Kutahya 20 km NNE, 13.07.2006, 1♀, M. Halada (BOL); Kuzucebelen, Mersin, 28.05.1998, 1♂, Ma. Halada (BOL); Malatya 15 km E, 27.06.2000, 1♂, M. Halada (BOL); Mugla, University Campus, stony step, 710 m, 37°09'39"N 28°22'20"E, 2013, 1♀, Anonym (BOL); Nemrut Dag, Bitlis, 2000 m, 16.08.1991, 1♂, M. Halada (BOL); Nemrut Dagi, Karadut, 02.07.1993, 3♂♂, Deneš (BOL); Pasli, 50 km S Kars, 01.07.1997, 2♀♀, Ma. Halada (BOL); Pazarcik, Kahramanmaraş, 24.06.2000, 1♂, M. Halada (BOL); Refahiye 15 km W, W of Erzincan, 1600 m, 07.07.2000, 2♂♂, M. Halada (BOL); Sahlili, Manisa 15 km SEE, 170 m, 38°26'N 28°19'E, 02.07.2006, 1♂, M. Halada (BOL); Salihli, Manisa, 15 km SEE, 170 m, 38°26'N 28°19'E, 02.07.2006, 2♂♂, J. Halada (BOL); Salihli, Manisa, 40 km NW, 150 m, 38°40'N 27°45'E, 28.06.2006, 1♀, J. Halada (BOL); Silifke, 26.05.2001, 1♂, Snizek (BOL); Tatvan 30 km E, 07.07.1997, 3♂♂, Ma. Halada (BOL); Tatvan, Van G., 01.07.2000, 1♂, M. Halada (BOL); Van 20 km W, 05.07.1997, 1♂, 3♀♀, Ma. Halada (BOL). TURKMENISTAN: Annau, Ashabad 20 km E, 03.06.1993, 1♂, M. Halada (BOL); Ashabad 15 km N, 25-31.05.1993, 6♂♂, 1♀, M. Halada (BOL); Ashabad env., 10.06.1993, 1♂, M. Halada (BOL); Firyuzu, 40 km W Ashabad, 06.06.1993, 8♂♂, Ma. Halada (BOL); Kizil-Arvat 50 km S Chajagala, Kopet dag, 37°22'N 55°57'E, 17.05.1993, 1♂, M. Halada (BOL). UZBEKISTAN: Circik 40 km vych. Taskent, 04.07.1981, 6♂♂, M. Kocourek (BOL); Djizak 5 km W, 23.05.1994, 1♂, J. Halada (BOL); Papngan 20 km NW Kokand, 41°2'N 70°6'E, 12.05.1994, 2♂♂, Ma. Halada (BOL).

Description: ♂. 8-10 mm. Head and mesosoma black; metasomal tergum I red with black basal spot, II red, III black with read basilateral spots; sterna predominantly black; some specimens from Syria with nearly complete black metasoma (var. *melanotica*). Clypeus and frons densely punctate. Middle clypeal lobe hardly protruding beyond lateral lobe, anterior margin straight (Fig. 5). Face with appressed white setae. Mandible black, simple. Gena smooth and shiny, with long white setae. Antennomere I on inner side with white setae, III about 4× as long as apically wide, about 1.2-1.3× as long as IV; V-VIII slightly concave basally, with maximal width apically (Fig. 14). Pronotal collar with oblique rugae. Mesoscutum densely punctate, with smooth and shiny posteromedian spot and short white setae. Mesoscutellum smooth and shiny, laterally and distally densely punctate. Mesopleuron densely punctate, with white setae. Dorsal surface of propodeum reticulate, glabrous; declivity and lateral surface rugose-punctate, with long white setae. Metasomal tergum I with white setae, with oblique microstriae; sterna with white setae. Hairbrush very short, lateral setae not longer than central ones, all together not longer than one third of those on sternum II (Fig. 25). Legs black,

foretibia on inner side and all tarsi brown. Midcoxa on inner side concave, hindcoxa unmodified, trochanters and femora with white setae. Forewing with pale brownish tinge. Marginal cell about 3.5-4.0× as long as wide.

♀. 8-10 mm. Head, antenna and mesosoma black, metasomal segments I-III red; some specimens from Syria with nearly complete black metasoma (var. *melanotica*). Coxae, trochanters and hindfemur black, fore- and midfemur black with reddish tip, foretibia and -tarsus reddish, midtibia and -tarsus reddish brown, hindtibia and -tarsus brown. Face with white setae. Anterior margin of clypeal lamella slightly curved. Clypeus and face densely punctate, with smooth and shiny heart-shaped spot in front of anterior ocellus. Frons in front of anterior ocellus as well as surface between ocelli and eye shiny, with strong scattered punctures (Fig. 88). Gena smooth and shiny, with isolated shallow punctures and white setae. Mandible black with reddish middle, lower margin simple. Antennomere III about 2.4-2.6× as long as apically wide, about 1.2-1.3× as long as IV. Pronotal collar rugose-punctate. Mesoscutum anteriorly densely punctate, with white setae and some dark bristles between it; posterior surface smooth and shiny, laterally with punctures. Mesoscutellum smooth and shiny, with punctures posterolaterally. Ventral surface of mesopleuron shiny with strong punctures, lateral surface with longitudinal striae. Propodeal dorsum glabrous, irregularly reticulate; declivity rugose-punctate; lateral surface anteriorly smooth, posteriorly with longitudinal rugae; with short white setae. Stigmal area of propodeum concave. Metasomal terga with oblique microstriae. Sternum II and posterior margins of following sterna with white setae. Pygidial plate narrow, lateral margin concave. Forebasitarsus with four rake spines, ventrally with nine spines evenly prolonged towards the tip (Fig. 79). Ventral surface of midbasitarsus with short spines basally and long ones distally. Forewing brownish tinged, apical margin with diffuse brown spot. Marginal cell about 3.0-3.5× as long as wide.

Remarks: Specimens from Syria with nearly complete black metasoma are described by PULAWSKI (1973) as *Astata stecki melanotica*. All specimens examined here agree with the typical coloration. The black form is treated here as color variation.

Distribution: Europe: Germany, Poland (OLSZEWSKI et al. 2021), Switzerland, Czechia, Slovakia, Austria (DOLLFUSS 1987), Hungary, Portugal (CROSS et al. 2021), Spain, France, Italy, Croatia, Bulgaria, Albania, Greece, Cyprus, Ukraine (SHORENKO & KONOVALOV 2010), Crimea. Russia: European part, Western Siberia (NEMKOV 2017), Russia: Eastern Siberia, Far East. Maghreb: Morocco, Tunisia. Middle East: Egypt, Armenia, Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Syria, Jordan, Iran. Central Asia: Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan, Tajikistan, Mongolia. South Asia: India Kashmir (type locality).

***Astata laeta* E. SAUNDERS, 1910**

Astatus laetus E. SAUNDERS, 1910: 520, ♀. Holotype ♀, Algeria, Biskra (OXUM).

Material examined: MOROCCO: Meski, Source bleu, 16.06.2007, 2♂♂, Schlaefle (WS, JA); Sidi Boukil, 1422 m, *Vicia faba*, 32,2251°N 4,6946°W, 25.05.2019, 1♀, O. Ihsane & Y. Bencharki (SE). TUNISIA: Chenini, 2 km W Gabes, Tamarix, 33.89°N 10.07°E, 11.09.2007, 1♀, Schmid-Egger, det. Pulawski (SE); Djerba, Melitta, 21.06.2004, 2♀♀, Schlaefle (WS, JA); Matamata, 17.04.1981, 1♂, M. Schwarz (BOL); Sousses pr. Kala Kebira, 11.05.2006, 1♂, P. Kresl (BOL).

Description: ♂. 8-10 mm. Head, antenna and mesosoma black. Metasoma: Tergum I red with black basal spot, segments II-IV red, V-VII black; sternum I black.

Coxae and trochanters black, femora black with red tip and white setae; tibiae and tarsi red, sometimes brownish. Clypeus and frons densely punctate, with smooth spot in front of anterior ocellus. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Mandible black, medially reddish, lower margin simple. Face with appressed white setae. Gena smooth and shiny, with shallow isolated punctures and white setae. Antennomere I on inner side with white setae, III about $4\times$ as long as apically wide, V-XII slightly convex or nearly cylindrical in profile (Fig. 27), with conspicuous yellow-brownish tyloids (Fig. 28). Anterior and lateral surface of mesoscutum densely punctate, remaining part with scattered punctures. Mesoscutellum smooth and shiny, laterally and posteriorly densely punctate. Thorax with normal white pubescence. Propodeal dorsum glabrous, dull, rugose; declivity and lateral surface rugose-punctate, with long whitish setae. Terga with fine micropunctures, sterna with long white setae. Metasomal hairbrush starting on sternum IV, central setae about half as long as lateral ones, the latter longer than those of sternum II (Fig. 26). Coxae and trochanters unmodified, black with white setae. Forewing with weak brownish tinge, apical margin hyaline, marginal cell about $3\times$ as long as wide.

♀. 9-10 mm. Head, antenna and mesosoma black, metasoma and legs red. Mandible reddish yellow with black tip. Clypeus and face densely punctate. Clypeal lamella bent forward, anterior margin straight or slightly convex. Frons in front of anterior ocellus with large smooth and shiny spot, beside anterior ocellus moderately dense punctate (interspaces about as wide as puncture diameter) (Fig. 93). Area between posterior ocelli scattered punctate. Surface between posterior ocelli and eye smooth and shiny, with small dull spot next to the eye rim. Antennomere III about $4.6\times$ as long as apically wide. Anterior third of mesoscutum densely punctate, posterior surface smooth and shiny with isolated punctures (Fig. 95). Mesoscutellum smooth and shiny, only posterior margin with row of very fine punctures. Anterior and ventral surface of mesopleuron shiny, the former with strong punctures; posterior surface with fine longitudinal striae. Epimeron smooth and shiny, with some longitudinal striae posteriorly. Propodeal dorsum glabrous, finely reticulate; declivity rugose-reticulate; lateral surface anteriorly with dull micropunctate area, posteriorly with distinct longitudinal striae. Head and mesosoma except propodeal dorsum with normal white pubescence. Pygidial plate brown, granulate, with slightly concave lateral margin. Legs with white setae. Forebasitarsus with four rake spines, ventrally with six spines evenly prolonged to the apex (Fig. 82). Forewing completely brownish tinged. Marginal cell about $2.5\times$ as long as wide.

Distribution: Maghreb: Morocco, Algeria (type locality), Tunisia. Middle East: Egypt (HONORÉ 1942).

Astata leila PULAWSKI, 1967

Astata leila PULAWSKI, 1967: 387, ♀, ♂. Holotype ♂, Türkiye, Ankara, 16 km west of Kırıkkale (BMNH).

Material examined: TÜRKİYE: Muradye, 03.07.2000, 1♂, M. Halada (BOL). – Manisa, Sahlili 15 km SEE, 170 m, $38^{\circ}26'N$ $28^{\circ}19'E$, 02.07.2006, 1♂, M. Halada (BOL). – Nigde, Camardi, 13.07.1997, 2♂♂, Ma. Halada (BOL, JA). – Nevşehir, Göreme, ca. 1000 m, 23.07.1995, 1♂, Gelbrecht & Schwabe (LI).

Description: ♂. 10-11 mm. Head and mesosoma black. Metasomal terga I-II red, III with red anterior margin; sterna black. Mandible black, lower margin simple. Legs black, tarsi dark brown. Clypeus and frons densely punctate, with dense appressed white setae. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin

straight. Antennomere III about $4\times$ as long as apically wide. Tyloids of antennomeres V-XII carinate, with conspicuous large basal and distal yellow tubercle. Gena smooth and shiny, with shallow punctures and long white setae. Mesoscutum and mesoscutellum densely punctate, latter with large smooth and shiny anteromedian spot. Mesopleuron densely punctate. Propodeal dorsum glabrous, reticulate; declivity rugose-reticulate, lateral surface densely punctate. Mesosoma except propodeal dorsum with conspicuous white setation. Tergum I and sterna with long white setae. Metasomal hairbrush strongly developed, covering nearly complete surface of sterna IV-VI. Central setae of metasomal hairbrush short, about one fifth as long as lateral ones, the latter about twice as long as those of sternum II (Fig. 133). Legs with white setae. Midcoxa on inner side strongly concave and spoon-like widened. Hindcoxa ventrally with longitudinal carina and triangular basal extension (Fig. 11). Hindtrochanter with apical spine. Forewing completely hyaline. Marginal cell about $3.5\times$ as long as wide.

♀ (after PULAWSKI 1967). 10-11 mm. Head and metasoma black, mandible black with dark red in its middle, metasomal segments I-II red, remaining segments black; pygidial plate brown. Femora black, tibiae dark reddish brown, tarsi reddish or brown. Antennomere III about $2.7\text{--}2.8\times$ as long as apically wide. Anterior margin of clypeal lamella slightly convex. Frons densely punctate, with white setae, with large smooth and shiny spot in front of anterior ocellus. Vertex smooth and shiny, with strong isolated punctures. Mesoscutum anterior scattered punctate, impunctate medially. Mesopleuron densely punctate-striate, without shiny interspaces. Lateral surface of propodeum anteriorly with smooth area, posteriorly with oblique striae. Stigmal area of propodeal dorsum straight. Mesosoma except propodeal dorsum with white setae. Pygidial plate wide. Forebasitarsus with four rake spines; ventrally with seven spines evenly pronged to the apex of tarsomere, with fine setae over the entire length. Midbasitarsus straight, spines ventrally evenly prolonged to the apex of tarsomere. Hindcoxa outer side concave. Hindtrochanter with apical tooth. Ventral setae of hindfemur about as long as maximal femur diameter. Marginal cell about $2.2\text{--}2.3\times$ as long as wide.

D i s t r i b u t i o n : Middle East: Türkiye.

***Astata ljubomirovi* JACOBS, REZAEI & FALLAHZADEH, 2023**

Astata ljubomirovi JACOBS, REZAEI & FALLAHZADEH, 2023: 558. Holotype ♀, Iran, Fars, Larestan County, Karmostaj (ZSBS).

M a t e r i a l e x a m i n e d : IRAN: Larestan, Karmostaj), $27^{\circ}31'55''\text{N } 54^{\circ}26'01''\text{E}$, 781 m, 10-20.04.2018, 1♀, S. Rezaei, holotype (ZSBS). Larestan, Karmostaj, $27^{\circ}31'55''\text{N } 54^{\circ}26'01''\text{E}$, 781 m, 26.07-27.08.2018, 1♀; 28.08-24.09.2019, 1♀; Larestan, Baen, $27^{\circ}39'54''\text{N } 54^{\circ}16'39''\text{E}$, 914 m, 05-09.09.2019, 1♀, S. Rezaei, paratypes (ZSBS).

D e s c r i p t i o n : ♂. Unknown.

♀. 9-11 mm. Head and mesosoma black, basal three metasomal segments red, remaining segments black. Clypeus smooth and shiny, with scattered punctures. Clypeal lamella trilobate, sometimes middle lobe reduced (Fig. 104). Frons and area between posterior ocelli densely punctate, interspaces shiny (Fig. 105). Surface between hind ocelli and eye margin smooth and shiny. Face and frons with white setae. Vertex and gena smooth and shiny, with isolated punctures, occiput densely punctate with long white setae. Antennomere III about $3\times$ as long as apically wide. Pronotal collar densely punctate, interspaces shiny. Mesoscutum shiny, anterior margin densely punctate, remaining surface smooth with isolated punctures. Mesoscutellum smooth and shiny, with some

isolated punctures laterally and distally. Mesopleuron anteriorly densely (interspaces at most as wide as puncture diameter), posteriorly scattered punctate (interspaces distinctly wider than puncture diameter) (Fig. 106). Prepectus coarsely reticulate. Epimeron smooth and shiny, with longitudinal striae dorsally. Propodeal dorsum glabrous, coarsely reticulate; declivity and lateral surface coarsely wrinkled. Stigmal area of propodeal dorsum convex. Mesosoma excluding dorsal surface of propodeum with white setae. Metasomal terga very finely reticulate, sterna with white setae. Pygidial plate granulate, with almost straight lateral margin, black, sometimes with red spot mesally. Legs black with white setae, tibiae dark brown, tarsi brown. Forebasitarsus ventrally with 13-15 undulating spines; midbasitarsus ventrally slightly concave, with undulating spines (Fig. 137). Forewing hyaline with brown apical spot. Forewing veins on upper side brown, whitish on the underside, at least costa and subcosta and veins in the area of medial and discoidal cells. Marginal cell about as 2.6-3.0× as long as wide. Hindwing veins yellow.

D i s t r i b u t i o n : Middle East: Iran (type locality).

***Astata lubricata* NURSE, 1903**

Astata lubricata NURSE, 1903: 514, ♀, ♂. Lectotype ♀, India, Gujarat, Deesa (BMNH). Designated by PULAWSKI (1975).

Astata eremita PULAWSKI, 1959: 359. Holotype ♂, Egypt, Gebel Elba (CAS). Synonymized with *Astata lubricata* by PULAWSKI (1975).

M a t e r i a l e x a m i n e d : IRAN: Fars, Jahrom, 28°30'04"N 53°35'16"E, 1053 m, 25.04.2013, 1♂, B. Majnon Jahromi (JIAU). ISRAEL: 135 km N Elat Iddan, 30°47'N 35°17'E, 08.05.1996, 2♂♂, Schmid-Egger, det. Pulawski (SE); Negev, Beer Sheeva 50 km SE, Wadi En Aqrabbim, 30°57'N 35°08'E, 08.05.1996, 1♀, Schmid-Egger, det. Pulawski (SE); Arava Valley, Iddan, wadi running east of date palm orchard, -110 m, 30°48,93'N 35°16,79'E, 15.05.1995, 1♂, Irwin, det. Pulawski (SE); Arava Valley, Moshav Hazewa, Wadi Shahak, between agricultural fields, -110 m, 30°46,33'N 35°16,32'E, 10.04.1995, 1♀, Irwin, det. Pulawski (SE); En Gedi, 02.06.1965 1♂, 16.06.1965, 1♀, Schlaefle (WS). JORDAN: Wadi Rum, 05.05.1996, 1♂, Ma. Halada (BOL). OMAN: Mahda 7 km S, 24.348°N 55.978°E, 17.03.2022, 1♀, M. Halada (SE); Kahal, 8 km NW Mahda, 24.449°N 55.906°E, 18.03.2022, 1♂, M. Halada (SE). PAKISTAN: Turbat, W Balochistan, 19.04.1993, 1♂, S. Bečvar (BOL). UNITED ARAB EMIRATES: Wadi Madhah W Murba, 25°16.22'N 56°15.68'E, 13.03.2008, 1♂, Hauser, det. Pulawski (SE).

D e s c r i p t i o n : ♂. 8-9 mm. Head and mesosoma black, pronotal lobe and tegula whitish; metasoma red, apical segments sometimes brownish or blackish darkened, black at the male holotype of *A. eremita* (PULAWSKI 1959). Coxae, trochanters and femora black with white setae and some black bristles, foretibia brown, mid- and hindtibia darker; tarsi brown. Clypeus and frons densely punctate. Face and frons with dense appressed white setation. Middle clypeal lobe distinctly protruding beyond lateral lobe, narrow, about as wide as inner distance between antennal insertions, laterally with small tubercles (Fig. 3). Frons with deep central furrow; in front of anterior ocellus with smooth and shiny spot, about as large as two posterior ocelli together. Lower margin of mandible basally with angle. Gena smooth with shallow punctures and long white setae. Antennomeres V-VIII with carinate tyloids. Mesoscutum densely punctate, posteromedian with smooth and shiny spot. Mesoscutellum densely punctured laterally and basally, the large anteromedian spot smooth and shiny with isolated punctures. Mesopleuron dull, densely and strongly punctate. Propodeal dorsum reticulate; declivity and lateral surface densely rugose-punctate. Mesosoma including propodeal dorsum with long white setae. Metasomal tergum I densely punctate, punctures shallow, bearing white setae; other terga with micropunctures. Hairbrush on terga IV-VI poorly developed,

consisting of single short bristles, lateral setae lacking. Forewing hyaline, with apical brown spot.

♀. 8-9 mm. Head and mesosoma including pronotal lobe black; metasoma red, pygidial plate brown. Mandible reddish-yellow with black tip. Legs black, foretibia on inner side and forefemur apically pale brown. Face with white appressed setae. Clypeal lamella with three teeth (cf. Fig. 83). Frons, vertex and gena dull, with shallow punctures, interspaces with dense microsculpture (Fig. 73). Head behind eyes strongly narrowed. Malar space very short, mandible base almost touching the eye margin. Antennomeres I-II on inner side with dark bristles, III about 4× as long as apically wide. Pronotal collar dull, with fine oblique striae. Anterior third or half of mesoscutum very densely punctate, posterior surface with scattered punctures. Mesoscutellum smooth and shiny, with scattered punctures, laterally and distally densely punctate. Mesopleuron dull, reticulate (Fig. 75), ventrally with stiff black backwards directed bristles. Dorsal and lateral surface of propodeum reticulate, declivity rugose-punctate; lateral surface anteriorly with smooth and micropunctate area. Stigmal area of propodeum straight. Mesosoma except ventral surface of mesopleuron with short white setae. Metasomal sternum II and anterior margin of following sterna with short black bristles. Forebasitarsus with four rake spines; ventral surface with about nine spines continuously prolonged to the apex and with fine setae over its entire length. Midbasitarsus ventrally with spines continuously prolonged to the apex. Forewing hyaline with brown apical spot. Marginal cell about 2.0-2.5× as long as wide.

Distribution: North Africa: Ethiopia (JACOBS 2023). Middle East: Egypt (type locality of *A. eremita*), Jordan, Oman, United Arab Emirates, Iran. South Asia: India (type locality of *A. lubricata*), Pakistan.

***Astata lusitanica* PULAWSKI, 1974**

Astata lusitanica PULAWSKI, 1974: 301, ♀, ♂. Holotype ♀, Portugal, Sines (CAS).

Material examined: MOROCCO: Assaka 20 km E Tiznit, 190 m, 29.690°N 9.530°W, 16.06.2014, 1♀, Schmid-Egger (SE); Rich 10 km S, 22.05.1995, 1♀, Mi. Halada (BOL). PORTUGAL: Matoshinos, 15.09.1991, 1♀, M. Schwarz (BOL); Vila do Bispo 15 km N, Praia do Bordeira, 04. 06.1996, 1♂, J. Tiefenthaler (BOL).

Description: ♂. 7-9 mm. Head and mesosoma black. Metasomal terga I-III red; sternum I black, II with black basal spot, III red; segments IV-VII black. Mandible simple, reddish yellow with black base and tip. Legs black, with white setae. Clypeus and frons densely punctate, face with white setae. Middle clypeal lobe distinctly protruding beyond lateral lobe. Head behind eyes strongly narrowed. Antennomere I with white setae, tyloids of antennomeres IV-X with three tubercles, maximal segment diameter in the middle (Fig. 46). Mesoscutum densely punctate, posteromedian with smooth spot. Mesopleuron densely punctate. Central setae of metasomal hairbrush short, about as long as one third of lateral ones, latter distinctly longer than those of sternum II. Midcoxa on inner side concave, hindcoxa unmodified, hindtrochanter with short apical spine. Forewing slightly yellowish tinged, apical margin hyaline.

♀. 7-9 mm. Head and mesosoma black, metasomal terga I-III red, IV-VIII brownish to black. Legs black, foretibia on inner side and apical tarsomeres brown. Clypeus, frons and area between posterior ocelli densely punctate, interspaces at most as wide as puncture diameter. Vertex and gena with scattered punctures. Apical antennomeres at

least about $2.0\times$ as long as maximal width (Fig. 103). Anterior surface of mesoscutum densely punctate, posterior area smooth with scattered punctures. Mesopleuron densely punctate, without striae. Propodeal dorsum reticulate, lateral surface anteriorly with smooth area, posteriorly with irregular oblique striae, declivity rugose-punctate. Mesosoma except propodeal dorsum with white setae. Forebasitarsus ventrally with about 12 undulating spines, fine setae between basal spines extending about half length of spine row. Hindcoxa normal, hindtrochanter with very short apical spine. Longest ventral setae of hindfemur about as long as maximal femur diameter. Marginal cell about $2.4\text{--}2.5\times$ as long as wide.

Distribution: Europe: Portugal, Spain (GAYUBO et al. 2002). Maghreb: Morocco.

***Astata maculata* RADOSZKOWSKI, 1877**

Astata maculata RADOSZKOWSKI, 1877: 31, ♀, ♂. Syntypes, Uzbekistan, Samarkand, Tashkent, Zarafshan valley (ZMMU).

Material examined: IRAN: Bardsir 8 km N, Kerman prov., 2050 m, $29^{\circ}95'N$ $56^{\circ}58'E$, 06.06.2010, 1♀, Mi. Halada (BOL). KAZAKHSTAN: Shonzy 10 km NW, $43.5737^{\circ}N$ $79.3209^{\circ}W$, 654 m, 02.06.2024, 1♂, Schmid-Egger (SE).

Description: ♂. 10-12 mm. Habitus dorsal see Fig. 143, lateral see Fig. 144. Black; pronotal lobe, tegula and often spot below wing insertion yellow (missing from examined male from Kazakhstan). Mandible black with reddish middle, lower margin with basal angle. Legs black; foretibia on inner side reddish or dark brown, basally with small ivory spot. Face with dense appressed white setae; gena, occiput and mesosoma including propodeal dorsum with white setae. Middle clypeal lobe lobularly protruding beyond lateral lobe, anteriorly impressed, with small blunt lateral tubercles (Fig. 2), posterior clypeal surface densely punctate. Frons before anterior ocellus with smooth and shiny spot, between posterior ocelli scattered punctate. Gena densely punctate. Antennomeres I-III on inner side with black bristles, III about $4\times$ as long as apically wide; IV-X with narrow carinate tyloids. Anterior surface of mesoscutum densely punctate, posterior surface smooth with scattered strong punctures (Fig. 146). Mesoscutellum smooth and shiny, with very scattered strong punctures, densely punctate posteriorly and laterally. Mesopleuron densely punctate, dull; ventral surface smooth and shiny, with scattered punctures (Fig. 145). Propodeal dorsum coarsely and irregularly reticulate; lateral surface and declivity densely and coarsely punctate. Mid- and hindcoxae with white setae and some black bristles. Outer side of hindfemur with short black bristles. Ventral setae of hindfemur short, not longer than half maximal femur diameter. Metasomal tergum I smooth and shiny, finely and densely punctate, with white setae; sterna nearly asetose, no metasomal hairbrush. Pygidium smooth and shiny, with distinct longitudinal keel medially. Forewing hyaline, apically brownish darkened. Marginal cell about $3\times$ as long as wide.

♀. 8-11 mm. Black, pronotal lobe and tegula brownish. Head and mesosoma including propodeal dorsum with greyish setae. Frons weakly shiny, with scattered coarse punctures. Middle clypeal lamella tridentate, distinctly protruding beyond lateral lobe, with small tubercle between middle and lateral lobe. Vertex with indistinct punctures. Pronotal collar with oblique striae. Anterior margin of mesoscutum wrinkled, posterior surface smooth and shiny, with scattered coarse punctures. Mesopleuron mesally with scattered punctures, dorsal and distal surface densely punctate, punctures more or less

confluent into rugae. Propodeum irregularly reticulated. Metasomal terga with reticulate microsculpture and isolated punctures, II-IV with a row of punctures in front of the apical impression. Legs black, tarsi brownish. Longest ventral setae of hindfemur about as long as two thirds of maximal femur diameter. Forewing hyaline, brownish darkened apically. Marginal cell about $1.5\times$ as long as wide.

Distribution: Middle East: Iran. Central Asia: Kazakhstan (KAZENAS 2000), Turkmenistan (MYARTSEVA 1963), Uzbekistan (type locality).

***Astata maghrebensis* nov.sp.**

Holotype: ♂. Morocco, Icht 100 km E Bouzakame, 4.5.1995, Ma. Halada lgt. (BOL).

Paratype: 1♂ Tunisia, Nefta, 8.4-9.4.1998, K. Deneš jun. lgt. (BOL).

Diagnosis: ♂. *Astata maghrebensis* nov.sp. is characterized by its glabrous dorsal surface of the propodeum, red and black metasoma; exclusively white setae on body, legs and antennomere I; middle clypeal lobe distinctly protruding beyond lateral lobe; unmodified coxae and trochanters; slender middle antennomeres (more than $2\times$ as long as apically wide). It is distinguished from species of the *A. boops* group by its conspicuous yellowish tyloids which extend almost over the entire length of the middle antennomeres. From *A. laeta* with similarly conspicuous tyloids it differs by its unmodified midcoxa and black legs.

Description: ♂. 8-10 mm. Habitus dorsal see Fig. 123, lateral see Fig. 124. Head, mandible, antenna, mesosoma and legs black. Metasoma: Tergum I red with black basal spot, II red (holotype: darkened in the middle), III black with red anterolateral spots (holotype) or red with black posterior margin (paratype); segments IV-VII black. Sterna I-III red with variable black spots. Legs black with whitish setae. Face with appressed white setae. Clypeus and face densely punctate. Gena smooth and shiny with scattered shallow punctures and erect whitish setae. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Antennomere I with white setae, III about $4.4-5.0\times$, VI about $2.0-2.4\times$ as long as apically wide. Antennomeres V-X in profile slightly concave basally; tyloids with conspicuous yellowish tubercles basally and distally (Fig. 47). Mesoscutum anteriorly densely punctate, posterior surface shiny with scattered punctures. Mesoscutellum smooth and shiny, laterally and distally densely punctate. Mesopleuron shiny, densely punctate, without wrinkles; prepectus coarsely reticulate. Dorsal area of propodeum glabrous, coarsely reticulate. Lateral surface of propodeum and declivity coarsely reticulate. Mesosoma except propodeal dorsum with white setae not concealing the surface. Ventral setae of hindfemur about half as long as maximal femur diameter. Mid- and hindcoxae as well as hindtrochanter unmodified. Metasomal terga with fine microsculpture. Hairbrush on sterna IV-VII, lateral setae somewhat longer than setae of sternum II, central setae short and dense, maximal one third as long as lateral ones. Forewing light brownish, apical margin hyaline; marginal cell about $4\times$ as long as wide.

♀. Unknown.

Distribution: Maghreb: Morocco, Tunisia (type localities).

***Astata miegii* DUFOR, 1861**

Astata miegii DUFOR, 1861: 11, ♀, ♂. Syntypes, Spain, Barcelona, Ferrol, Madrid (MNHN).

Astata provincialis RICHARDS, 1928: 219, ♂. Holotype ♂, France, Var, Le Trayas (BMNH).

Astata scapularis KOHL, 1889: 194, ♀. Syntypes ♀, Armenia, Arax Valley; Russia, Sarepta (now Krasnoarmeysk) (NHMW).

Astata pelops MORICE, 1902: 104, ♂. Syntypes ♂, Greece, Olympia (OXUM). Synonymized with *Astata miegii scapularis* by BEAUMONT (1942).

Astata escalerae GINER MARÍ, 1946: 12, ♀, ♂. Syntypes, Morocco, Mogador (MNCN). New status as *Astata miegii escalerae* by BEAUMONT (1953).

Material examined: ARMENIA: Chor Virap, 1000 m, 12.06.2013, 1♂, 22.06.2013, 1♀, Schläefle (WS); Eriwan, 1898, 1♂, Korb (SE). BULGARIA: Debar, Pervomaj, N42.04' E25.12', 150 m, 14.06.2017, 5♀♀, B. Halada (BOL); Kresna, 10.07.1990, 1♂, Tkalcu (BOL); Kresna, 150 m, 41°42'N 23°11'E, 24.06.2008, 1♀, M. & Z. Halada (BOL); Trakia, Proslav, 30.06.1996, 1♂, Zaykov (BOL); Sandanski, 06.1969, 2♂♂, Kocourek (BOL); Slancev Brjag, 14.07.1971, 4♂♂, 02.07.1978, 1♂, Padr (BOL); Varna-Galata, 09.07.1979, 1♂, Tkalcu (BOL). CROATIA: Vodic 6 km NW Schibenik, 08.09.2008, 1♂, M. Kadlecova (BOL). FRANCE: St. Tropez, 06.1961, 1♂, Schläefle (BOL). GREECE: Hortialis ES of Thessaloniki, 40.593°N 23.093°E, 08.07.2019, 1♀, M. Halada (BOL); Athen env., 05.1999, 1♀, Luhovec (BOL); Kos, Kardamona, 13.09.2004, 1♀, Schläefle (WS); Kos, Psalidi, 36°56'N 27°19'E, 31.08.2008, 2♂♂, Tiefenthaler (BOL); Lesbos, Scala Polichnitos, 09.2014, 1♂, Schläefle (WS); Rhodos, Malona, 25.05.1998, 1♂, Generani & Scaramozzino ((WS); Saloniki, 06.1960, 1♂, Schläefle (WS)); Vatera, 09.2014, 3♂♂, 3♀♀, Schläefle (WS, JA). IRAN: Azer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 38°28'N 45°86'E, 19.06.2010, 12♂♂, 3♀♀, Mi. Halada (BOL, JA); Fars, Dast-e-Arzan 7 km SW, 2085 m, 29°37'N 51°55'E, 26.06.2003, 1♂, Prochazka (BOL); Teheran prov., Elburz, Dashteban 1 km W, 2225 m, 35°44'N 52°04'39"E, 05.07.2022, 17♂♂, 4♀♀, Schmid-Egger (SE); Teheran, Dashteban 1 km W, 2225 m, 35°44'39"N 52°02'38"E, 05.07.2022, 4♂♂, W.-H. Liebig (LI). REPUBLIC OF NORTH MACEDONIA: Pirava, 23.05.1918, 1♂, leg Anonym (SE). MOROCCO: Kenitra, 05.06.1990, 1♀, Schläefle (WS). SPAIN: Alboluduy, Sierra Nevada, Andalucia, 07.05.2003, 1♂, J. Halada, (BOL). TÜRKIYE: Acigöl, Cardak env., 07.07.1993, 1♂, Mi. Halada (BOL); Akyaka, pasture, salty meadow, 3 m, 37°03'N 28°20'E, 09.2012, 1♀, V. Bartak (BOL); Antalya, Side-Titreyengöl, 36.77°N 31.39°E, 25.05.2004, 2♂♂, Jacobs (JA); Bingöl, Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 2♂♂, Mi. Halada (BOL, JA); Burdur 28 km SEE, 1350 m, 37°40'N 30°28'E, 08.07.2006, 3♂♂, 1♀, M. Halada (BOL); Burdur Yesilova 5 km NE, 37°35'N 29°55'E, 1060 m, 06.07.2006, 1♂, Ma. Halada (BOL); Göreme 54 km W Kayseri, 38°39'N 34°52'E, 17.07.1988, 1♂, Schmid-Egger (SE); Gündoğmus 7 km NE, W Giesandra, 30 km N Alanya, 1730 m, 36.86°N 32.03°E, 02.08.2009, 2♂♂, Schmid-Egger (SE); Hakkari, Esendere, 21.07.1988, 1♂, 1♀, Schmid-Egger (SE); Hakkari, Yüksekova, 1800 m, 22.07.1988, 1♂, 1♀, Schmid-Egger (SE); Halfeti, Birecik, 30.05.1998, 3♂♂, Snižek (BOL); Halfeti, Birecik, 31.05.1998, 3♂♂, Ma. Halada (BOL); Haza Gölü SE of Elazig, 29.06.2000, 1♀, M. Halada (BOL); Iğdir 20 km NW, 29.06.1997, 1♂, Ma. Halada (BOL); Ihara valley, 58°15'N 36°18'E, 13.06.2008, 6♂♂, Kafka (BOL, JA); Ihlara 27 km SE Aksaray, 38°14'N 34°18'E, 18.07.1998, 2♂♂, 1♀, Schmid-Egger (SE, JA); Isparta, Karakus Dagi centr, 1460 m, 38°15'N 30°39'E, 11.07.2006, 1♂, J. Halada (BOL); Karakurt 20 km W, Kars, 1600 m, 04.07.1985, 1♂, M. Schwarz (BOL); Kars, Kargisman, 900 m, 12.07.1988, 1♂, Schmid-Egger (SE); Kopeksiz, 25 km E Malatya, 08.07.1997, 2♂♂, 1♀, Ma. Halada (BOL); Muradiye, 03.07.2000, 3♂♂, M. Halada (BOL); Mut, 06.06.1968, 1♀, Kudas (BOL); Porsuk Baraji, Sebran, 08.07.1993, 1♂, Deneš (BOL); Refahye 15 km W, W of Erzincan, 1600 m, 07.07.2000, 1♂, M. Halada (BOL); Salihli/Manisa, 15 km SEE, 170 m, 38°26'N 28°19'E, 02.07.2006, 2♂♂, J. Halada (BOL); Seydisehir, Teke Gec., 07.2000, 1♂, Snižek (BOL); Van 20 km W, 05.07.1997, 3♂♂, 1♀, Ma. Halada (BOL); Van, Achtamar, Festland, 1720 m, 12.07.1988, 1♂, 17.07.1988, 1♂, Schmid-Egger (SE, JA); Zelve, 08.1991, 2♂♂, Anonym (BOL); Zelve, Nevsehir, 12.07.1997, 4♂♂, 1♀, Ma. Halada (BOL).

Description: ♂. 9-12 mm. Head and mesosoma black; pronotal lobe, tegula and basal sclerites of forewing yellow. Metasomal terga I-II red (f. *scapularis*), in specimens

from western Europe nearly completely black (f. *miegii*), remaining terga and sterna predominantly or completely black. Legs black, foretibia with yellow basal spot. Face and frons with white appressed setae. Frons in front of anterior ocellus with smooth and shiny spot. Clypeus and frons densely punctate. Middle clypeal lobe distinctly protruding beyond lateral lobe, spoon-like, with upraised margins, wider than inner distance of antennal insertions (Fig. 1). Mandible black, lower margin with distinct basal angle. Gena shiny, densely punctate, with long white setae. Antennomere III about 3.4-4.0× as long as wide, antennomeres I-II on inner side with black bristles; IV-IX slightly convex in profile, with inconspicuous carinate tyloids. Mesoscutum densely punctate, interspaces shiny. Mesoscutellum densely punctate, anteromedian with large smooth and shiny spot. Mesopleuron densely and strongly punctate, interspaces shiny. Metapleuron dorsally rugose. Propodeal dorsum irregularly reticulate, laterally limited by a row of punctures; declivity and lateral surface of propodeum rugose-punctate. Mesosoma including propodeal dorsum with white setae. Metasomal tergum I densely and shallowly punctate, with white setae; remaining terga slightly shiny, with microsculpture and isolated punctures. Hairbrush sparsely developed, not divided in central and lateral setae, about as long as or somewhat shorter than setae of sternum II. Coxae and trochanters without modifications, with some black bristles between the white setae, femora with white setae. Forewing with weak brownish tinge. Marginal cell about 3.6-3.9× as long as wide.

♀. 9-12 mm. Head and mesosoma black, pronotal lobe pale yellow. Mandible black, more or less reddish mesally. Metasomal terga and sterna I-II(III) red (f. *scapularis*), remaining segments black. Specimens from southwestern Europe with nearly black metasoma (f. *miegii*). Legs black, foretibia and -tarsus dark brown. Clypeal lamella tridentate (cf. Fig. 83). Clypeus and face densely punctate, the latter with short white setae. Frons and area between posterior ocelli smooth and shiny, with scattered strong punctures (Fig. 74). Vertex and gena smooth and shiny, with isolated punctures. Antennomeres I-II on inner side with black bristles, III about 3.9-4.0× as long as apically wide. Pronotal collar with oblique striae mesally and scattered punctures laterally. Mesoscutum anteromedian with strongly wrinkled spot, remaining surface and mesoscutellum smooth and shiny with scattered punctures. Mesopleuron anteriorly with strong scattered punctures and shiny interspaces, posteriorly densely punctate, ventrally with short and stiff black bristles (Fig. 76). Propodeum irregularly wrinkled, anterior area of lateral surface smooth and finely striated. Stigmal area of propodeum straight. Metasomal terga smooth with a row of punctures before apical impression. Sternum II and apical margins of following sterna with short black bristles. Pygidial plate finely granulate, with slightly concave lateral margin. Coxae, trochanters and femora with short black bristles. Forebasitarsus with four rake spines, ventral spines continuously prolonged to the tip of the tarsomere, with fine setae between the bristles over the whole length. Forewing slightly brownish tinged, apical margin darker. Marginal cell about 2.8-3.6× as long as wide.

Distribution: Europe: Portugal (CROSS et al 2021), Spain, France, Croatia, Republic of North Macedonia, Bulgaria, Greece, Crimea (SHORENKO 2017). Russia: European part (NEMKOV 2017). Maghreb: Morocco. Middle East: Armenia, Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Iran. Central Asia: Kazakhstan (KAZENAS 2000).

***Astata minor* KOHL, 1885**

Astata minor KOHL, 1885: 438, ♀, ♂. Syntypes, Austria, Belgium, France, Germany, northern Russia, Switzerland, Yugoslavia (NHMW).

Material examined: ALGERIA: Alger-Zeralda, 10.06.1972, 1♀, A. Hoffer (BOL). AUSTRIA: Linz-Urfahr, Soldatenfriedhof, 48°19'15"N 14°16'06"♂E, 27.05.2018, 1♂, Tiefenthaler (BOL); Linz-Urfahr, KGA Riesenhof Parz. 60-61, 48°19'06" 14.16.13", 16-18.07.2017, 1♀, Tiefenthaler (BOL); Luftenberg, Steninger Bruch, 48°15'45"N 14°24'42", 19.06.2017, 1♂, Tiefenthaler (BOL). BULGARIA: Albena, 03.07.1978, 1♂, Tkalcu (BOL); Arkutino, 07.1968, 1♂, Görtles (BOL); Berenovo, S. Plan., 10.06.1997, 1♂, Zaykov (BOL); Hrabrino, Rhodopi, 01.09.1997, 1♂, Zaykov (BOL); Kaverna ES of, 10 m, 43°25' 28°23', 04.06.2017, 1♂, M. Halada (BOL); Kiten, Coral Beach, 42°13' 27°47', 10.06.2017, 1♂, M. Halada (BOL); Melnik, Vinogradi, 41°30'N 23°23', 370 m, 06.06.2020 + 16.06.2020, 3♂♂, L. Bica (BOL); Knazevo 15 km SW Elchovo, 100 m, 42°06'N 26°30'E, 19.06.2008, 2♂♂, M. & L. Halada (BOL); Krasnovo/Hisarja, 400 m, 42°28'N 24°30'E, 27.06.1997, 12♂♂, Jacobs (SDEI); Ljubimec, 80 m, 41°50'N 26°04'E, 25.05.2010, 2♂♂, 1♀, M. Halada (BOL); Micurin, Dl. Poljana, 26.06.1988, 1♂, Tkalcu (BOL); Novo Panicarevo, 13.06.1979, 1♂ Padr (BOL); Popina Luka, 1800 m, 14.07.1966, 1♂, Kocourek (BOL); Sandanski, 31.05.1967, 2♂♂ 1♀, 08.06.1967, 3♂♂ 1♀, 06.1969, 1♂, 1♀, Kocourek (BOL); Sinemorec, Ahtopol, 22.06.1998, 3♂♂, Ma. Halada (BOL); Slancev Brjag, 07.1966, 1♂, Polasek (BOL); Slancev Brjag, 28.06-14.07.1971, 3♂♂, 15.06.1977, 3♂♂, 2♀♀, 02.07.1978, 1♀, Padr (BOL); Slancev Brjag, 06.1972, 1♂, 10.07.1972, 1♂, Kocourek (BOL); Stara Kresna, 05.06.1984, 1♂, Karas (BOL); Starosel near Hisarja, 400 m, 42.29°N 24.35°E, 22.06.1967, 6♂♂, leg Jacobs (JA, SDEI); Zidarevo E of Burgas, 42°21'N 27°24'E, 20 m, 12.06.2017, 2♂♂, M. Halada (BOL); Sozopol S of, 42°24' E27°42', 40 m, 11.06.2017, 1♂, B. Halada; Zvilengrad 30 km SW, 550 m, 41°43'N 26°02'E, 21.06.2008 2♂♂, M. & Z. Halada (BOL). CRIMEA: Eupatoria, 24.07.1999, 1♀, V. Gurko (BOL). CZECHIA: Brno, Hady, 08.06.2007, 1♂, Z. Halada (BOL); Bucovice, 07.05.1978, 5♂♂ 4♀♀, Deneš (BOL); Bzenec, 25.06.1954, 1♂, Kocourek (BOL); C. Budejovice, 29.07.2001, 1♂, 20.06.2005, 1♂, 27.06.2006, 3♂♂, M. Halada (BOL); C. Budejovice, Airport, 01.08.2004, 1♀, 22.06.2020, 5♂♂ 1♀, 28.06.2020, 1♀, M. Halada (BOL); C. Budejovice, Certyne, 08.2020, 1♂, Snižek (BOL); C. Budejovice, Maj, 04.07.2004, 2♂♂, Z. Haladova (BOL); C. Budejovice, Svabuv Hradek, 12.06.2002, 1♂, M. Halada (BOL); Ceske Budejovice, D. Voda, 09.06.2007, 2♀♀, Halada (BOL); Cesky Krumlov, Visny, 01.06.2002, 5♂♂, Ma. Halada (BOL); Chlum u Trebone, Kosky, 03.07.2019, 1♂, L. Halada (BOL); Chlum na Trebone env., 02.06.2020, 1♂, J. Halada (BOL); Dobra Voda u C. Bud., 48.9706°N 14.5292°E, 26.06.2020, 5♂♂ 3♀♀, M. Halada (BOL); Jecmeriste, Znojmo, 48°44'4"N 16°08'5"E, 10.05.2018, 1♂, Haladova (BOL); Hluboka nad Vltavu, 22.06.2002, 1♂, 1♀, Ma. Halada (BOL); Hodonin, 02.07.1955, 2♂♂, Kocourek (BOL); Kobyli, 05.1963, 1♀, 06.1965, 1♂, 07.1969, 1♀, 14.06.1970, 1♂, 07.1979, 1♂, Kocourek (BOL); Kroclov U Rybaka, 48.966°N 14.3959°E, 10.06.2019, 1♂, M. Halada (BOL); Lounsko, Pisecny Vrch, 27.07.1977, 1♂, Strejcek (BOL); Majdalanev, 08.1971, 1♂, Deneš (BOL); Morkovice 2♂♂, Deneš (BOL); Palava, 12.06.1972, 1♂, Karas (BOL); Pardubice, 29.05.1988, 1♂, Odehnal (BOL); Pouzdrany, 09.06.1959, 2♂♂, 26.06.1959, 1♂, Kocourek (BOL); Razice, Pisek, 25.05.2007, 1♂, Halada (BOL); Skaly u Sedlece, 48.7773°N 16.6728°E, 20.05.2019, 2♂♂, 1♀, M. Halada (BOL); Skaly u Sedlece, 48°46'4"N 16°42'2"E, 11.05.2018, 1♀, M. Halada (BOL); Suchdol nad Luznici, Frantiskov, 08.06.2003, 1♂, Ma. Halada (BOL); Sulava u Prahu, 4♂♂, 1♀, Macek (BOL); Temelin, 24.07.1996, 1♂, Ma. Halada (BOL); Unetice, 08.06.1988, 1♂, Odehnal (BOL); Vyskov, 05.08.1965, 1♀, 09.08.1967, 1♂, 01.06.1974, 1♂, 08.1975, 1♂, 1♀, Kocourek (BOL); Zabori W of C. Bud., 49.0007°N 14.2694°E, 02.06.2020, 2♂♂, 04.07.2020, 1♀, 14.07.2020, 1♂, M. Halada (BOL); Znojmo, Derfice, 07.07.2018, 1♂, Snižek (BOL); Znojmo, S Jecmeniste, 24.05.2003, 4♂♂, Ma. Halada (BOL); Znojmo, PP Vyrovické kopce, 48.925°N 16.116°E, 18.05.2020, 1♂, M. Halada (BOL). FRANCE: Basses Alpes 8 km W Brunet, 03.07.1993, 1♂, Niehuis, det. Pulawski (SE); Alpes Maritimes, Molieres, 44.14°N 7.15°E, 800-1400 m, 16.07.2009, 2♂♂, Schmid-Egger (SE). GERMANY: Flemisdorf, 22.06.1977, 1♂, Oehlke (SDEI); Fürstenberg, 06.07.1883, 1♂, Konow (MMW); Mescherin, 26.06.1983, 1♂, Jacobs (JA); Magdeburg, Kreuzhorst, 01.07.1976, 1♀, Oehlke (SDEI); Forst, 26.06.1996, 1♂, Liebig (LI); Görlitz, 22.06.1966, 1♂, Baldovski (SMG); Kyffhäuser, Ochsenburg, 21.06.1988, 1♀, Schulz (SDEI). GREECE: Asfaka, Sbr. 2 km S, 600 m, 07.06.1988, 1♂, Tiefenthaler (BOL); Florina 2-4 km W, 900 m, 04.06.1988, 4♂♂, Tiefenthaler (BOL); Grevena SE, 500 m, 40°03'N 21°27'E, 24.05.2016, 2♂♂, M. Halada (BOL); Kalogria, Peloponnes,

05.05.1999, 1♂, Liebig (LI); Lamia, 05.1963, 1♂, Schlaefle (WS); Monemvasia, Palia, 36°43'43"N 23°01'34"E, 10.05.2005, 1♀, Rausch (BOL). HUNGARY: Byk, Bykfürdő, 47.383°N 16.785°E, 24.06.2020, 1♀, J. Halada (BOL); Budapest W of, N of Budaörs, 47.13.7 E18.57.2, 21.06.2019, 2♂♂, 13.06.2020, 1♂, M. Halada (BOL); Cseharaszt, 22.06.1982, 4♂♂, Oehlke (SDEI); Pakozd E of Szekesfehervar, 47°13'2"N 18°31'2"E, 04.06.2018, 1♀, M. Halada (BOL); Örkeny 10 km E, 140 m, 47°09'3"N 19°29'3"E, 01.06.2005, 2♂♂, 1♀, M. & Z. Halada (BOL); Örkeny 15 km SW, 120 m, 47°03'9"N 19°27'6"E, 02.06.2005, 2♂♂, 1♀, M. & Z. Halada (BOL); Örkeny, Pisky, 17.07.1981, 1♀, Padr (BOL); Pakozd E of Szekesfehervar, 150 m, 47°13'N 18°31'E, 22.05.2016, 1♂, M. Halada (BOL); Totvazsony/Balaton, 29.06.1996, 2♂♂, Liebig (LI); Varpalota N of, 47°12'5" 18°7'4"E, 26.05.2018, 1♂, 11.06.2020, 1♂, Haladova, M. Halada (BOL). IRAN: Azer e Shabestar, Sis, 10 km E Shabestar, 38°26'N 45°86'E, 1540 m, 38.28°N 45.86°E, 19.06.2010, 1♂, Mi. Halada (BOL); Golestan, Ziarat, 2299 m, 36°40'12"N 54°33'27"E, 05.07.2018, 2♀♀, Liebig (BOL); Kerman, Bam 4 km E, 1000 m, 29°06'58"N 58°25'46"E, 10.05.2019, 1♀, Liebig (LI). ISRAEL: Haifa 10 km S, Har Karmel, Bet Oren, 32°44'N 35°00'E, 10.06.2001, 1♂, Hauser, det. Pulawski (SE); Nahariya, 10 km NNE, R 70, 33°03'N 35°09'2"E, 60 m, 28.04.2018, 1♂, M. Halada (BOL); Ramot Naftali, 10 km S Kiryat Shmona, 33°06'4"N 35°33', 27.04.2018, 1♂, M. Halada (BOL). ITALY: Liguria, Alassio, Panorama-Str., 300 m, 07.07.1996, 1♂, Tiefenthaler (BOL); Basilicata, Mte. Sirino, Lago Sirino, 1500 m, 26.06.1998, 4♂♂, Generani & Scaramozzino (WS); Sizilia, Castellamare env., 55 km E Trapani, 09-12.06.2002 1♀, J. Halada (BOL); Schlanders, 11.08.1992, 2♂♂, Jacobs (JA); Schluderns, Vinschgau, 1500 m, 23.07.1996, 1♂, Tiefenthaler (BOL); Trento, 24.07.1956, 1♂, Schlaefle (WS); Valle di Chisone, 50 km SWW Torino, 1450 m, 45°02'N 6°58'E, 08.08.2011, 2♂♂, J. Halada (BOL). JORDAN: Shuna N env., 29-30.04.1996, 7♂♂, 7♀♀, Mi. & Ma. Halada (BOL); Wadi el Haidam, 08.05.1995, 1♀, K. Deneš (BOL). KAZAKHSTAN: Djambul 10 km E, 31.05.1994, 2♂♂, Ma. Halada (BOL), Altai, Ridder 8 km SE, 980 m, 50°19'3"N 83°38'19"E, 15.07.2009, 1♂, Liebig (LI); Koktal garden, 15. 06.1992, 1♀, K. Deneš (BOL); Koktuma, Lake Alakol, 22.06.1995, 1♂, J. Halada (BOL); Lepsi env., 400 m, 46°13'27"N, 78°59'27"E, 02.06.2016, 1♀, J. Halada (BOL); Rudnichyi NE, Koksul valley, 1300-1400 m, 44°41'N 78°58'E, 10.06.2001, 3♂♂, Hauser, det. Pulawski (SE); Nikitinka 15 km SE, 660 m, 49°28'01"N 82°33'29"E, 31.05.2016, 1♂, J. Halada (BOL); Sargan 7 km E, 45.4025N 80.0261E, 843 m, 09.06.2024, 1♂, Schmid-Egger (SE); Tian-Shan, Shunkar 5 km SE, 43.4433N 80.2227E, 1316 m, 04.06.2024, 1♀, Schmid-Egger (SE). KYRGYZSTAN: Kashkasu N of Bishkek, Ala-Archa riv., 06.1999, 5♂♂, Gurko (BOL); Katta-Karakol riv., Alai Mountain ridge, N-slope, 2600 m, 39°52'N 73°22'E, 22.07.1998, 4♂♂, 3♀♀, Zonstein (BOL); Khodza-Ata r., Tchatkal Mt. R., 41°50'N 71°56'E, 05.07.2000, 2♀♀, Makogonova (BOL); Kichi-Kochkor, Kok-Su riv., Alaj Mt., 07.1998, 1♂, Gurko (BOL); Malinovka, Ala-Archa riv., 1600 m, 06.2000, 1♂, Gurko (BOL); Suusamyrtal, 2260 m, 42.12°N 73.38°E, 31.07.1999, 2♂♂, Jacobs (JA); Tshon-Azyk, Kirgizsky Mt. Rg., 06.2000, 2♂♂, Gurko (BOL); Utsch döbö, Ufer des Gültischö, Alai, 2300 m, 39.54°N 73.26°E, 26.07.1999, 1♂, Jacobs (JA); Uzun-Bulag, Ala-Archa riv., 07.2000, 7♂♂, Gurko (BOL). MOROCCO: Guercif 40 km S, 15-17.05.1995, 1♀, Mi. Halada (BOL); Hoher Atlas, Tal zw. Asni-Imlil, 22.05.1999, 1♂, Brechtel (SE). ROMANIA: Cozia, W of Turnu Severin, 28.05.2002, 3♂♂, M. Halada (BOL). RUSSIA: Evseevka, Primorskij Kraj, 28.06.1985, 1♀, Lelej (SE); Idelbakovo, Baschkiria, 08.07.1981, 1♂ Taeger (SDEI); Isjangulovo, Baschkiria, 09.07.1981, 1♂, Taeger (SDEI). SERBIA: Pozarevac NE, 20.06.2002, 1♂, 1♀, M. Snižek (BOL). SLOVAKIA: Chotin, 18.06.1961, 1♂, Padr (BOL); Chotin, 10.06.1977, 1♀, Kocourek (BOL); Devinska, Nova Ves, 48°12'N 16°59'E, 200 m, 22.05.2017, 1♂, M. Halada (BOL); Gbelce, 28.06.1953 1♂, 06.1960, 1♂, Kocourek (BOL); Kamenica n. H., 27.05.1959, 1♂ Strejcek, 21.06.1960, 2♂♂ Padr, 10.06.1973, 1♂ Padr, 07.06.1994, 2♂♂ Odehnal (BOL); Nitra-Kalv., 27.06.1956, 1♀, Padr (BOL); Sekule SW, strk. Mlaky, 48.617°N 17.003°E, 22.07.2020, 1♀, M. Halada (BOL); Sturovo, 06.1960, 1♂, 06.1974 2♂♂, Kocourek (BOL); Vel. Kamenec 1♀, Odehnal (BOL); Vinosadry u Modre, 01.07.1987, 1♂, Padr (BOL); Zadil, 01.07.1985, 1♂, Deneš (BOL). SPAIN: Albuloduy, Sierra Nevada, 07.05.2003, 1♂, J. Halada (BOL); Nijar 5 km E, Sierra Alhamilla, 26.04.2003, 1♂, J. Halada (BOL); Puigcerda, 18.07.1963, 8♂♂, 5♀♀, Hamann (BOL); Puigcerda, La Cardana, 16.07.1963, 2♂♂, Hamann (BOL). SWITZERLAND: Crans-Montana, 1600 m, 17.07.2001, 1♂, Schlaefle (WS). SYRIA: Jisr ash Shugur, 26.05.1996, 1♂, Ma. Halada (BOL); Tartus env., 25.05.1996, 1♀, Mi. Halada (BOL). TÜRKIYE: Agri env., 17.06.1993, 1♂, Mi. Halada (BOL); Bitlis 20 km S, 23.06.1997, 1♂, Ma. Halada (BOL); Buglan Gecidi 40 km NW Mus, 1600 m, 38°56'N 41°09'E, 24.06.2010, 1♂, Mi. Halada (BOL); Cakiri, Kursunlu 30 km E, 850 m,

14.07.1985, 1♂, M. Schwarz (BOL); Camardi, Nigde, 13.07.1997, 2♂♂, Ma. Halada (BOL); Erzurum E of, 06.07.2000, 4♂♂, 1♀, M. Halada (BOL); Gaziantep 30 km NW, 2001, 2♂♂, Snizek (BOL); Gurun 20 km E, Mezikiran Gecidi, 10.07.1997, 1♀, Ma. Halada (BOL); Hakkari, Esendere, 21.07.1988, 1♀, Schmid-Egger (SE); Halfeti, Birecik, 31.05.1998, 1♂, Ma. Halada, 1♂, M. Snizek (BOL); Hasanbeyli 30 km E Osmaniye, 10.06.1998, 1♂, Ma. Halada (BOL); Ilhara valley, 38°15'N 36°18'E, 13.06.2008, 1♂, Kafka (BOL); Kackar Dagl., Yaylalar bei Yusufeli, 1800 m, 19.07.1995, 1♀, Liebig (LI); Karakurt 20 km W, 1600 m, 04.07.1985, 1♂, M. Schwarz (BOL); Karakus Dagi centr., Isparta, 1460 m, 38°15'N 30°39'E, 11.07.2006, 1♀, M. Halada (BOL); Kayseri 54 km W, Göreme, 36°39'N 34°52'E, 17.07.1998, 1♂, Schmid-Egger (SE); Kayseri, Göreme, 09.07.1988, 1♀, Schmid-Egger (SE); Kayseri, Hacilar, 1600 m, 10.07.1988, 2♂♂, Schmid-Egger (SE); Konya, 05.06.1967, 3♂♂, Schmidt (BOL); Kutahya 30 km N, 13.06.2000, 1♂ M. Halada (BOL); Kutahya 30 km N, Porsuk Baraji, 15.06.1997, 1♂, Ma. Halada (BOL); Muradiye, 03.07.2000, 2♂♂, 2♀♀, M. Halada (BOL); Muradiye 40 km N, 2200 m, 05.07.2000, 1♂, M. Halada (BOL); Opizamonas, Ostanatolien, 570 m, 41°13'06"N 42°02'45"E, 17.06.2010, 1♂, Liebig (LI); Osmaniye, 14.06.1997, 1♂, Ma. Halada (BOL); Porsuk Baraji, Sebran, 08.07.1993, 1♂, Mi. Halada (BOL); Refahye 15 km W, W of Erzincan, 1600 m, 07.07.2000, 4♂♂, 6♀♀, M. Halada (BOL); Salihli, Manisa, 35 km SEE, 900 m, 38°20'N 28°24'E, 30.06.2006, 1♂, J. Halada (BOL); Van 20 km W, 05.07.1997, 1♂, Ma. Halada (BOL); Ürgüp, 11.06.1970, 1♀, J. Schmidt (BOL); Van 20 km W, 05.07.1997, 1♂, Ma. Halada (BOL); Van 20 km W, 05.07.1997, 1♂, Ma. Halada (BOL); Van, Muradye, 1750 m, 16.07.1988, 1♂, Schmid-Egger (SE); Yaladagi, 10.06.1998, 1♀, Ma. Halada (BOL); Yalvac env., Sultan Daglari, 05.07.1993, 1♂, Jirousek (BOL).

Description: ♂. 8-11 mm. Head, mesosoma and mandible black. Metasomal segments I-III red. Tergum I basally and sternum II mesally with large black spot. Legs black, foretibia on inner side and tarsi brown. Clypeus and frons densely punctate, frons with smooth and shiny spot in front of anterior ocellus. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Face with white appressed setae, frons with erect setae. Lower margin of mandible with median angle. Gena smooth and shiny, densely punctate, with long white setae. Antennomeres I-II on inner side with white setae, III about 2.8-3.6× as long as apically wide, VI-X with tripartite tyloids (Fig. 41), maximal width in the middle (Fig. 40). Pronotal collar, mesoscutum and mesoscutellum densely punctate, the latter with smooth anteromedian spot. Mesopleuron densely punctate. Propodeal dorsum variable, irregularly wrinkled or reticulate with oblique carinae, declivity and lateral surface rugose-punctate. Mesosoma except propodeal dorsum with white setae. Metasomal tergum I and sterna with white setae. Central setae of hairbrush about half as long as lateral ones, latter about as long as those of sternum II. Terga with fine microsculpture, without conspicuous punctures. Coxae, trochanters and femora with white setae, midcoxa on inner side concave, hindlegs unmodified. Forewing with brownish tinge. Marginal cell about 3.5-4.1× as long as wide.

♀. 9-11 mm. Head and mesosoma black, mandible black, reddish mesally. Metasomal terga I-III red, remaining black. Coxae, trochanters and femora black, tibiae dark brown, foretibia on inner side light brown; tarsi brown. Clypeus variable punctate, anterior margin of lamella slightly convex or straight. Face, frons and area between posterior ocelli densely punctate, interspaces shiny (Fig. 89). Vertex and gena smooth and shiny, with isolated punctures. Face and gena with white setae. Antennomeres I-II on inner side with black bristles, III about 2.0-2.6× as long as apically wide. Pronotal collar densely punctate, dull. Anterior third of mesoscutum densely punctate, posterior surface smooth and shiny with very scattered punctures. Mesoscutellum smooth and shiny, with some punctures laterally and distally. Mesopleuron densely punctate. Propodeal dorsum glabrous, irregularly reticulate; declivity rugose-punctate; lateral surface anteriorly

smooth and shiny, posteriorly with longitudinal striae. Metasomal terga with fine microsculpture, faintly shiny. Sterna with white setae. Pygidial plate densely and finely granulate, lateral margin slightly concave. Forebasitarsus with four rake spines; ventral surface with nine or ten successively longer spines to apex of tarsomere, with fine setae over the entire length of spine row. Forewing brownish tinged. Marginal cell about 2.5-2.8× as long as wide.

Distribution: Europe: Finland (LOMHOLDT 1976), Sweden (LOMHOLDT 1976), Denmark (LOMHOLDT 1976), Netherlands (KLEIN & LEFEBER 2004), Germany, Poland (OLSZEWSKI et al. 2021), Switzerland, Czechia, Slovakia, Hungary, Portugal (CROSS et al. 2021), Spain, France, Italy, Serbia, Romania, Bulgaria, Greece, Crimea, Ukraine (SHORENKO & KONOVALOV 2010). Russia: European part, Western Siberia, Far East (NEMKOV (2017)). Maghreb: Morocco, Algeria. Middle East: Azerbaijan: Nakhichevan (MOKROUSOV et al. 2019), Türkiye, Israel, Syria, Jordan, Iran. Central Asia: Kazakhstan, Kyrgyzstan.

Astata mongolica nov.sp.

Holotype: ♂. Mongolia-E, 100 km W Choibalsan, 820 m, 23.7.2007, M. Halada (BOL).

Paratypes: MONGOLIA: 1♂ 70 km E Altay city, Guulin, 14.VII.2005, J. Halada leg.; 2♂♂ Övörkhanga, 12 km SW Arvaykheer, N46,22 E102,49, 1770 m, 3.VII.2004, J. Halada leg.; 1♂ same record data, M. Kadlecová leg.; 3♂♂, 3♀♀ 200 km SSE Baruun-Urt, Moltsoy Els., 1250 m, 27.7.2007, M. Halada leg.; 11♂♂ 86 km NW Bayankhongor, N46°50' E100°04', 2070 m, 14.VII.2004, M. Kadlecová leg.; 5♂♂ same record data J. Halada leg.; 8♂♂, 12♀♀ 100 km W Choibalsan, 820 m, 23.7.2007, M. Halada leg.; 1♂, 2♀♀ 15 km W Choibalsan, Kherien riv., 770 m, 24.7.2007, J. Halada leg.; 1♂, 1♀ same record data, M. Halada leg.; 2♀♀ 90 km NE Tsetserleg, 48,03'N 102,25'E, 1400 m, 24.7.2004, J. Halada (BOL, JA, SE). RUSSIA: 1♂ Baikal-Gebiet, Umgeb. Sama, 53.06.01N 106.47.46E, 680 m 17.07.07, W.-H. Liebig (LI).

Diagnosis: ♂. The male of *A. mongolica* nov.sp. is characterized by glabrous dorsal surface of the propodeum, black tegula and pronotal lobe, red and black metasoma, unmodified mid- and hindcoxae as well as hindtrochanter, long antennomere III (4× longer than apically wide) and in profile slightly concave middle antennomeres. It is distinguished from *A. hera*, *A. canariensis* and *A. graeca* by its carinate tyloids without or with slightly developed pale tubercles, from *A. affinis* by the exclusive white setae on antennomere I and hindfemur; from *A. gobiensis* nov.sp. by lateral surface of the propodeum with smooth anterior area, from *A. iranica* nov.sp. by impunctate and finely shagreened terga I-II and from *A. boops* by carinate tyloids without distinct pale tubercles. It differs from the last three species by its shiny mesopleuron with scattered punctures, the shallowly concave middle antennomeres and the smaller body length of about 8-9 mm.

♀. The female of *A. mongolica* nov.sp. is characterized by its glabrous dorsal area of the propodeum, black pronotal lobe and tegula, black mandible, red and black metasoma, unmodified hindtrochanter, white setae on femora, trochanters and coxae and 10-12 undulating spines on ventral surface of forebasitarsus. It is distinguished from other species with short forebasitarsus like *A. graeca*, *A. canariensis* and *A. lusitanica* by the scattered punctate surface between anterior ocellus and eye.

Description: ♂. 8-9 mm. Habitus dorsal see Fig. 125, lateral see Fig. 126. Head, mandible, antenna, and mesosoma black. Legs black, foretarsus brownish. Metasomal segments I-II red, III red with black posterior margin, IV-VII black. Face with appressed white setae. Clypeus and face densely punctate. Middle clypeal lobe distinctly protruding

beyond lateral lobe, anterior margin about as long as clypeus, straight. Lower margin of mandible simple. Gena smooth and shiny, with erect whitish setae. Antennomere I with white setae, III about 4.0-4.5 $\times$, VI about 2.5 $\times$ as long as apically wide. Antennomeres V-VIII slightly concave or almost straight (Fig. 67). Tyloids on antennomeres V-IX(X) carinate, basally and apically thickened; tubercles black, at most slightly pale (Fig. 68). Mesoscutum nearly completely densely punctate, interspaces shiny. Mesoscutellum smooth and shiny, densely punctate laterally and distally. Mesopleuron shiny, scattered punctate, interspaces between punctures at least as wide as puncture diameter or wider (Fig. 72). Prepectus and epimeron with punctures, without reticulation or longitudinal striae. Dorsal area of propodeum glabrous, reticulate, with oblique keels running backwards. Lateral surface and declivity of propodeum irregularly wrinkled. Mesosoma except dorsal area of propodeum with whitish setae not concealing the surface. Coxae and femora with white setae. Mid- and hindcoxae and hindtrochanter unmodified. Longest ventral setae of hindfemur about as long as two thirds of maximal femur diameter. Metasomal terga microscopically reticulate, tergum I more strongly than II, without distinct punctures. Sterna and proximal terga with white setae. Central setae of metasomal hairbrush sparse, about half as long as lateral setae, those about as long as setae on sternum II. Forewing slightly darkened, apical margin hyaline, marginal cell about 3.1-3.9 $\times$ as long as wide.

♀. 8-9 mm. Habitus dorsal see Fig. 127, lateral see Fig. 128. Head, antenna, mesosoma and legs black, foretarsus brownish. Mandible black, more or less red mesally. Metasomal terga I-III red, IV with red base and black posterior margin, segments V-VI black. Pygidial plate black, often more or less reddish, densely shagreened, lateral margin straight. Terga I-II sometimes partially obscured. Sterna I-V red, VI black. Legs black, tarsi brownish. Forewing slightly darkened, apical margin hyaline, veins and pterostigma brown. Frons between anterior ocellus and eye with scattered punctures, interspaces mostly wider than puncture diameter (Fig. 107). Punctures between posterior ocelli denser, interspaces as wide as or smaller than puncture diameter. Vertex behind ocelli and gena smooth and shiny, with very scattered punctures. Mandible simple. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Antennomeres I-II on inner side with white setae, III about 2.6-3.0 $\times$ as long as apically wide, distinctly longer than IV. Mesoscutum polished, anterior margin densely punctate, posterior surface with very scattered punctures. Mesopleuron polished, with distinct punctures, interspaces as wide as or wider than puncture diameter (Fig. 110). Epimeron polished, upper surface punctate. Prepectus coarsely punctate. Dorsal surface of propodeum glabrous, reticulate, with straight or oblique backwards running carinae. Stigmal area of propodeum arcuate or obtuse angled. Lateral surface of propodeum anteriorly smooth and shiny, posteriorly with coarse longitudinal carinae; declivity irregularly wrinkled. Mesosoma except dorsal surface of propodeum with scattered white setae. Legs with whitish setae. Forebasitarsus with four rake spines, ventral surface with 8-10 undulating spines, basal half with short fimbriae (Fig. 98). Midbasitarsus straight, ventrally with undulating spines (Fig. 138). Hindtrochanter unmodified. Longest ventral setae of hind femur about half as long as maximal femur diameter. Metasomal terga with very fine reticulate microsculpture, without punctures. Sterna with white setae. Pygidial plate finely granulate, with nearly straight lateral margin. Marginal cell of forewing about 2.5-3.0 $\times$ as long as wide.

D i s t r i b u t i o n : Central Asia: Mongolia (type locality).

***Astata moralesi* GINER MARÍ, 1945**

Astata moralesi Giner Marí, 1945: 232, ♂. Holotype ♂, Morocco, Western Sahara, Amuiserat (Mus. Barcelona).

M a t e r i a l e x a m i n e d : no material examined.

D e s c r i p t i o n : ♂ (after GINER MARÍ 1945 and PULAWSKI 1959). 9.5 mm. Black with predominantly red sterna I-II. Coxae, trochanters black, femora black with red tip, tibiae and tarsi ferruginous. Tegula brown. Forewing with yellowish tinge, apical margin hyaline. Head as broad as thorax, frontal outline circular. Antennomere III longer than 4× as apically wide, narrowed basally, somewhat longer than IV. Anterior margin of middle clypeal lobe straight. Mesoscutum shiny, with distinct punctures like *A. massiliensis*, sparse on posterior surface. Mesoscutellum without central furrow, strongly shiny, punctate, with smooth posteromedian spot. Mesopleuron with indistinct defined oblique striae. Propodeum similarly sculptured, but reticulation finer. Terminal tergum apically rounded, completely coarsely sculptured. Sterna IV-VI with numerous short yellowish bristles. Forewing marginal cell 2.5× as long as submarginal cells II-III together, anteriorly about as long as pterostigma. Face with rich white setation, on thorax likewise long but less dense, short on metasomal terga, but long on sterna.

♀. Unknown.

D i s t r i b u t i o n : Maghreb: Morocco (type locality).

R e m a r k s : After PULAWSKI (1959) it is very similar to *A. cleopatra*, but middle antennomeres are longer (how much?) and the mesoscutum is somewhat denser punctate. Mandible, midcoxa, hindtrochanter and sterna are similar to *A. cleopatra*. The taxonomic status of *A. moralesi* requires further investigations.

***Astata nigra* F. Smith, 1856**

Astata unicolor LEPELETIER DE SAINT FARGEAU, 1845: 258, ♂. Holotype or syntypes, Algeria, Oran (depository unknown), junior primary homonym of *Astata unicolor* SAY, 1824.

Astata nigra F. SMITH, 1856: 310. Substitute name for *Astata unicolor* LEPELETIER DE SAINT FARGEAU, 1845.

M a t e r i a l e x a m i n e d : no material examined.

D e s c r i p t i o n : ♂ (after LEPELETIER DE SAINT FARGEAU 1845 and KOHL 1885). Long 4½ lines (10 mm). Head black, with a few silver setae in front. Antenna black. Thorax black, with black setae. Propodeal dorsum divided into very small areoles by irregular furrows. Abdomen entirely black dorsally and ventrally, with black setae. Wings entirely transparent, pterostigma ferruginous; tegula black.

♀. Unknown.

D i s t r i b u t i o n : Maghreb: Algeria (type locality).

***Astata picea* A. COSTA, 1867 stat.rev.**

Astata picea A. COSTA, 1867: 90, ♀. Holotype ♀, Italy, Sardegna, no specific locality (Torino?).

Astatius carbonarius KOHL, 1885: 437, ♂. Holotype or syntypes ♂, France, Corse, no specific locality (NHMW).

Astata picea A. COSTA, 1867: 90. *Astata boops picea* (Beaumont in PULAWSKI 1956: 44) stat. nov.

M a t e r i a l e x a m i n e d : FRANCE: Corse, Porto Pollo, 28.07.1975, 1♀, Perraudin (BOL). ITALY: Sardegna, Cagliari, 05-21.07.1959, 2♂♂, 3♀♀, Wolf (BOL); San Nicolao, Tropicca, 03.08.1989, 1♀, Temesvary (SE); Sardegna, Domusnovas, 26.08.1982, 2♀♀, Pagliano (JA); Sardegna, Orosei env., 50 km E of Nuoro, 27.05.2013, 1♀, J. Halada (BOL).

Description: ♂. 9-11 mm. Black. Legs black, tarsi sometimes brownish. Forewing brownish darkened, apically hyaline, veins and pterostigma dark brown. Mandible black. Face with appressed white setae. Lower margin of mandible with small corner. Clypeus and frons densely punctate, dull. Middle clypeal lobe distinctly protruding beyond lateral lobe (cf. Fig. 6). Gena shiny, punctate, with white setae. Antennomere I with white setae and some black bristles; II with white setae; III about 4-4.5× as long as apical width, about 1.3-1.4× as long as IV. Antennomeres V-IX(X) in profile concave basally (cf. Fig. 17), with carinate tyloids bearing nearly equal tubercles proximally and distally (cf. Fig. 18). Mesoscutum with white setae, densely punctate except posteromedian smooth spot. Mesopleuron densely punctate, with white and brownish setae. Prepectus and epimeron densely punctate. Mesoscutellum smooth and shiny, lateral and posterior margin densely punctate. Propodeal dorsum glabrous, irregularly reticulate. Lateral surface and declivity densely punctate, with white setae. Metasomal terga I-III with fine microsculpture, without punctures; I with long white erect setae. Lateral setae of metasomal hairbrush brown, about twice as long as those of sternum II. Central setae of metasomal hairbrush short, about a quarter as long as lateral ones, latter at least as long as those of sternum II. Legs unmodified, with greyish setae. Marginal cell long, about 4.0-4.5× as long as wide.

♀. 9-11 mm. Completely black. Mandible black, lower margin simple or with indistinct angle. Anterior margin of clypeal lamella straight. Clypeus, frons and area between posterior ocelli densely punctate (cf. Fig. 108). Face and frons with white setae. Vertex, gena and occiput smooth and shiny with very scattered punctures and white setae. Antennomeres I-II on inner side with black bristles; III about 4× as long as apically wide, about 1.2-1.3× as long as IV; VI about 3.0× as long as wide. Pronotal collar dull, densely rugose-punctate. Anterior surface of mesoscutum densely punctate, remaining surface smooth and shiny with very scattered punctures. Mesoscutellum smooth and shiny, densely punctate laterally. Mesopleuron densely punctate with pale brownish setae; prepectus reticulate, epimeron with longitudinal striae. Propodeal dorsum strongly reticulate, dull, glabrous. Lateral surface of propodeum and declivity strongly reticulate, dull, with long greyish setae. Stigmal area of propodeum obtuse-angled. Metasomal terga weakly shiny, tergum I and II with same microsculpture. Sternum II and anterior margin of following sterna with short black setae. Pygidial plate narrowed apically, lateral margin slightly concave (cf. Fig. 81). Legs black; midcoxa with white setae, hindcoxa with white setae and on inner side with black bristles; femora with black setae. Longest ventral setae of hindfemur about as half as long as maximal femur diameter. Forebasitarsus long, with four rake spines; ventral surface with 13-15 undulating spines, fine setae between the spines in the proximal third only (cf. Fig. 81). Midbasitarsus slightly curved, ventrally with undulating spines (cf. Fig. 135). Forewing with brownish tinge, with indistinct dark apical spot. Marginal cell about 2.5-2.6× as long as wide.

Distribution: Europe: Portugal (CROSS et al. 2021), Spain (GAYUBO 1982), France, Italy.

Remarks: Schmid-Egger (personal communication) was able to examine two females of *A. picea* from Corsica genetically. Their COI barcodes are clearly distinct from that of *A. boops*. For this reason, the taxon is raised to species rank. This proof is outstanding for specimens from southwestern France and Spain. Their taxonomic status should be clarified genetically, these specimens may represent a different species or a

color variant of *A. boops*. BEAUMONT (1942) mentioned three females from southern France with partly reddish metasomal terga I-II with gray (grise) setation. KOHL (1885) described the male of *A. carbonarius* from Corse with dark brown mesopleural setae (fusco-nigropilosus).

***Astata pontica* PULAWSKI, 1958**

Astata pontica PULAWSKI, 1958a: 171, ♀, ♂. Holotype ♀, Bulgaria, mouth of Ropotamo River (CAS). Additional description: PULAWSKI (1959: 378).

Material examined: BULGARIA: Lozenec, 15 m, 42°13'N 27°47'E, 16.06.2008, 7♂♂, M. & Z. Halada (BOL); Nessebar, 14.08.1982, 1♂, Padr (BOL); Ropotamo, 07.07.1977, 1♂, Karas (BOL); Slancev Brijag, 07.1964, 1♂, Hrubant, 20.07-05.08.1965, 4♂♂, 2♀♀, 28.06-14.07.1971, 2♂♂, Padr, 07.1966, 1♂, Polasek (BOL); Sozopol, 30.07.1978, 1♂, Hoffer (BOL). GREECE: Greece, Peloponnese, 12 km S of Andritsena, 37°24' 21°50'E, 500 m, 28.08.2019, 1♀, J. Halada (BOL); Stomio, Pinios-Lagune, Sandgrube, 28.07.1995, 1♂, Brechtel (SE). HUNGARY: Örkény Pustavacz, 47.1562°N 19.4904°E, 05.06.2018, 1♂, M. Halada (BOL).

Description: ♂. 8-10 mm. Head and mesosoma black. Mandible black with reddish middle, simple. Metasomal terga I-II red, III red with black impressed posterior margin; sterna I and III red, II red with large black spot. Legs black, tarsi brown. Clypeus and frons densely punctate. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Face with appressed white setae. Antennomeres I-I on inner side with white setae, III about 4× as long as apically wide; tyloids of VI-XII with yellow tubercles proximally and distally, in profile distally enlarged; VII-IX about 1.5× as long as maximal width. Gena smooth and shiny, with very fine punctures and white setae. Mesoscutum and mesoscutellum densely punctate, the latter with smooth and shiny anteromedian spot. Mesopleuron dull, very densely punctate. Propodeal dorsum dull, finely reticulate. Declivity and lateral surface dull, densely punctate. Mesosoma except dorsal surface of propodeum with white setae. Metasomal tergum I and sterna with long white setae. Central setae of metasomal hairbrush very short, separated from the long lateral setae by glabrous narrow stripe. Lateral setae of hairbrush longer than those of sternum II. Midcoxa strongly concave, lobular widened apically (Fig. 24). Hindcoxa with short apical spine, longitudinal keel and ventral longitudinal impression (Fig. 24), hindtrochanter with triangular apical process. Coxae, trochanters and femora with white setae. Forewing hyaline, marginal cell about 3.7-4.0× as long as apically wide.

♀. 8-10 mm. Head and mesosoma black. Metasomal segments I-III red, IV-V dark brown, VI red. Coxae and trochanters black, femora black with red apex, tibiae and tarsi red. Anterior clypeal margin convex. Clypeus, frons and area between posterior ocelli densely punctate. Face and frons with white setae. Vertex and gena smooth and shiny, with scattered punctures and white setae. Head behind eyes strongly narrowed (Fig. 90). Antennomere III about 2.3× as long as apically wide. Mesosoma except propodeal dorsum with white setae. Stigmal area of propodeum slightly convex. Metasomal tergum I and sterna with white setae. Pygidial plate wide, with straight lateral margin and pale marginal bristles. Fore- and hindfemur with long white setae, longest ventral setae of hindfemur about as long as maximal femur diameter. Hindcoxa outside impressed. Forebasitarsus ventrally with nine or ten spines successively longer to the apex of tarsomere, with fine setae over the entire length. Midbasitarsus ventrally with continuously prolonged spines.

Distribution: Europe: Hungary, Bulgaria, Greece. Russia: European part (NEMKOV 2017). Middle East: Türkiye (KAPLAN & YILDIRIM 2021).

***Astata prosii* SCHMID-EGGER, 2014**

Astata prosii SCHMID-EGGER, 2014: 525, ♀, ♂. Holotype ♂, United Arab Emirates, Um-al-Quwain at 25.51°N 55.51°E (SE).

Material examined: OMAN: Oman, Dhofar, 13 km N Mirbat, Jb Samhan, 17.111°N 54.711°E, 04.09.2019, 1♂, Schmid-Egger (SE); Boshier, Boshier Sand, 23.559°N 58.405°E, 27.03.2019, 1♀, A. Al-Jadhami (SE). UNITED ARAB EMIRATES: **Holotype:** United Arab Emirates, Um al Qaywayn, 25.51°N 55.51°E, 19.03.2009, 1♂, Schmid-Egger (SE); **Paratypes:** Um al Qaywayn, 25.51°N 55.51°E, 11-19.03.2009, 4♂♂, 3♀♀, Schmid-Egger (SE); 7 km S al-Jazirat al Hamra, 25.17°N 55.42°E, 01.12.2004, 2♂♂, van Harten (SE); North of Ajman, 25.43°N 55.48°E, 30.04.2008, 1♂, 1♀ Van Harten, 19.03.2009, 1♀ Schmid-Egger (SE); Abu Dhabi, Al Wathba, 24.248°N 54.742°E, 15.01.2015, 2♀♀, Saji & van Harten (SE, JA); Al Bida'a Protected Area, 23.608°N 53.972°E, 29.10.2018, 1♀, van Harten (SE).

Description: ♂. 8-10 mm. Head and mesosoma black, tegula brown. Mandible black, lower margin simple. Metasoma red, sternum II with large black spot. Coxae, trochanters black, femora black with red apex, tibiae and tarsi red. Clypeus, face and frons with conspicuously dense setation masking the surface. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Gena behind eyes smooth and glabrous, remaining surface densely punctate, with long setae. Head strongly narrowed behind eyes. Antennomeres I-II on inner side with white setae, III about 3.6× as long as apically wide, IV-XI with inconspicuous black carinate tyloids; VI-X mesally concave in profile with widest diameter basally and apically. Mesoscutum dull, densely punctate. Mesoscutellum densely punctate with smooth anteromedian spot. Mesopleuron dull, rugose. Mesosoma except propodeal dorsum with long white setation. Propodeal dorsum reticulate, glabrous; declivity and lateral surface rugose, sculpture covered by thick and dense pubescence. Metasomal terga with microsculpture and white setae. Hairbrush beginning on tergum IV, central setae very dense and short, about a quarter as long as lateral ones, the latter as long or somewhat longer than setae of sternum II. Sternum III posteromedian with tuft of long white setae. Coxae, trochanters and femora with white setae. Midcoxa on inner side concave, with weak round extension apically. Hindcoxa unmodified, hindtrochanter apically round or oval. Forewing hyaline, veins light brown marginal cell about as 3× as long as wide.

♀. 8-10 mm. Head and mesosoma black. Mandible yellow with black base and tip. Metasoma red, sometimes brownish darkened. Coxae, trochanters, fore- and midfemur basally black; hindfemur, tibiae and tarsi red. Forewing hyaline in the area of veins, apically with conspicuous brown spot. Tegula and veins brown, subcosta and pterostigma yellowish. Clypeus densely punctate, anterior margin of lamella straight. Frons densely punctate basally, shiny and with more scattered punctures in front of anterior ocellus, covered with dense and long setation more or less masking the sculpture. Gena behind the eyes smooth and glabrous, remaining surface densely punctate and with long setae. Antenna black, antennomeres I-II with black bristles, III about 2.6-3.2× as long as apically wide; one specimen from United Arab Emirates with extremely short antennomere III, 2.0 as long as apically wide. Mesoscutum densely punctate, posteromedian with smooth and shiny spot. Mesoscutellum smooth and shiny, with some punctures laterally and distally. Mesopleuron rugose-punctate. Propodeal dorsum glabrous, reticulate, sometimes with oblique longitudinal carinae, declivity and lateral surface of propodeum rugose-punctate. Stigmal area of propodeal dorsum straight. Mesosoma except dorsal surface of propodeum with with long and dense pubescence, widely masking the sculpture. Metasomal terga smooth, with fine microsculpture, tergum

I and sterna with white setae. Coxae, trochanters and femora with long white setae, longest ventral setae of hindfemur about 1.5× as long as maximal femur diameter. Forebasitarsus with four rake spines; ventrally with six or seven spines, successively longer to the apex of spine row, with fine setae over the entire length. Midbasitarsus straight, ventrally with evenly prolonged spines to the apex. Marginal cell of forewing about 1.6-2.0× as long as wide.

D i s t r i b u t i o n : Middle East: Oman, United Arab Emirates.

***Astata quettae* NURSE, 1903**

Astata quettae NURSE, 1903: 1, ♀, ♂ (♂ belongs to *Astata resoluta*). Lectotype ♀, Pakistan, Quetta (BMNH), designated by NURSE 1910: 510.

Dimorpha fletcheri R. TURNER, 1917: 193, ♀. Lectotype ♀, India, Bihar, Pusa (BMNH), designated by PULAWSKI 1975: 320. Synonymized with *Astata quettae* by PULAWSKI 1975: 320.

Astatus hirsutulus GUSSAKOVSKIJ, 1927: 281, ♀. Holotype ♀, China, Sachzhou oasis in Gashun Gobi (ZIN). Synonymized with *Astata quettae* by PULAWSKI 1975: 320.

Astatus tibialis GUSSAKOVSKIJ, 1927: 286, ♂. Holotype ♂, Mongolia, northern slopes of Ikhe-Bogdo near Orokhar Lake 600 km southwest of Ulan Bator (ZIN). Synonymized with *Astata quettae* by PULAWSKI 1965: 572.

Astata hungarica PULAWSKI, 1958b: 195, ♀. Holotype ♀, Hungary, Orszent Miklós (TMB). Synonymized with *Astata hirsutula* by PULAWSKI 1965: 572.

M a t e r i a l e x a m i n e d : IRAN: Fars, Jaafarabad, 1795 m, 29°16'N 54°19'E, 04.09.2012, 1♂, 2♀♀, 21.10.2012, 1♀, Khosroabadi (JIAU). KAZAKHSTAN: Balkhash Lake 50 km E, 28.06.1992, 3♂♂, K. Deneš (BOL); Charyn Valley W Chundza, 650 m, 43°37'N 79°21'E, 31.05.2001, 1♀, Hauser, det. Pulawski (SE); Kagan, Polopoust, 24.05.1990, 1♀, M. Halada (BOL). MONGOLIA: Arvaykheer 139 km SW, 45°17'N 101°41'E, 04.07.2004, 1♂, J. Halada (BOL); Bayankhongor 75 km S, 1330 m, 45°20'N 100°48'5"E, 08.07.2004, 5♂♂, 1♀, J. Halada (BOL, JA); Bayanzag 100 km SW Dalanzadgad, des Saxauls, 02.07.2003, 9♂♂, J. Halada (BOL, JA); Choyr 20 km SE, 1480 m, 07.08.2007, 2♂♂, M. Kadlecova (BOL); Domogov reg., Khuvsogol 2 km SE, 05.08.2007, 2♀♀, J. Halada (BOL). SAUDI ARABIA: Jizan r., Al Khawbah 12 km W, 16°78'N 43°11'E, 24.02.2024, 1♀, M. Halada (SE). TURKMENISTAN: Saynshand 70 km S, 1100 m, 06.08.2007, 4♀♀, M. Halada (BOL, JA). TÜRKIYE: Erzurum E of, 06.07.2000, 4♂♂, M. Halada (BOL). UNITED ARAB EMIRATES: Abu Dhabi pr., New Shwaib, 24°44'N 55°47'E, 280 m, 08.03.2017, 7♀♀, M. & B. Halada (BOL, JA); Sarjan pr., W of Dhaid, 25°17'N 55°51'E, 120 m, 02.03.2017, 3♀♀, M. & B. Halada (BOL, JA).

D e s c r i p t i o n : ♂. 7-9 mm. Head and mesosoma black. Metasomal terga I-III red; sternum I black, II red with large black or dark brown spot, apical segments black or dark brown. Coxae and trochanters black, femora black with red apex, tibiae and tarsi red, sometimes brownish. Clypeus and frons densely punctate. Middle clypeal lobe hardly protruding beyond lateral lobe, anterior margin straight or slightly concave. Face and frons with dense appressed white setae. Mandible black with more or less reddish middle, lower margin simple. Gena smooth and shiny, with shallow punctures and white setae. Antennomeres I-II on inner side with white setae, III about 4× as long as apically wide; V-VII basally concave in profile, maximal diameter apically (Fig. 31); XIII-X slightly convex; tyloids with pale basal tubercle. Anterior half of mesoscutellum densely punctate, posterior surface with scattered punctures, interspaces shiny. Mesoscutellum smooth and shiny, densely punctate laterally and posteriorly. Mesopleuron shiny, finely punctate, distances between punctures wider than puncture diameter (Fig. 38). Propodeal dorsum irregularly reticulate, glabrous; declivity and lateral surface rugose-punctate. Mesosoma except propodeal dorsum with white setae. Coxae, trochanters and femora

with white setae, midcoxa on inner side concave, hindtrochanter with oval apex. Central setae of metasomal hairbrush about one third or half as long as lateral ones, the latter longer than setae of sternum II. Forewing hyaline. Marginal cell about 3.1-3.5× as long as wide.

♀. 7-9 mm. Head and mesosoma black, metasoma red, legs predominantly red or brownish. Mandible red with black tip. Clypeal lamella reddish, as wide as clypeus height, anterior margin straight. Face densely punctate, with stiff upwards directed white bristles. Frons smooth and shiny, area between posterior ocelli with scattered punctures (Fig. 91). Gena smooth and shiny, with white setae. Antennomeres I-II reddish, with white setae on inner side; III about as 2× as long as apically wide. Anterior margin of mesoscutum rugose, with stiff upwards directed white bristles; remaining surface smooth and shiny. Mesoscutellum smooth and shiny, apically densely punctate. Mesopleuron shiny, with coarse scattered punctures; epimeron smooth and shiny. Propodeal dorsum irregularly reticulate, glabrous; declivity and lateral surface rugose. Mesosoma except dorsal area of propodeum with white setae. Legs with white setae, longest ventral setae about as long as maximal femur diameter. Ventral spines of forebasitarsus evenly prolonged towards apex, fine setae between spines mostly extend over the entire length of spine row. Forewing with pale yellowish tinge, apical margin with conspicuous brown spot, marginal cell about 1.5× as long as wide (Fig. 92).

Distribution: Europe: Hungary (type locality of *A. hungarica*), Ukraine (SHORENKO & KONOVALOV 2010). Russia: European part, Western Siberia (NEMKOV 2017). Middle East: Türkiye, Saudi Arabia, United Arab Emirates, Iran. Central Asia: Kazakhstan, Turkmenistan, Mongolia. China: Gobi (type locality of *A. hirsutulus*). South Asia: India: Bihar (type locality of *D. fletcheri*), Pakistan (type locality of *A. quettae*).

***Astata radialis* E. SAUNDERS, 1910**

Astata radialis E. SAUNDERS, 1910: 521, ♀, ♂. Syntypes, Algeria, Bône, Le Tarf (OXUM). Redescription (BEAUMONT 1950).

Material examined: MOROCCO: Beni Bassia 60 km EN Boudnib, 21.05.1995, 2♂♂, Ma. Halada (BOL, JA); Bouarfa 10 km S, 20. 05.1995, 1♂ 1♀, Mi. Halada (BOL); Bouarfa 30 km N, 19.05.1995, 2♂♂, Ma. Halada (BOL, JA); Er Rhashidia-Goulmina, rd. N10, 28.04.2017, 4♂♂, M. Snižek (BOL, JA); Guelmin 10 km E, 15-16.04.1995, 3♂♂, 2♀♀, Ma. Halada (BOL); Ouarzazate 5 km NW, 16.05.1997, 1♂, J. Halada (BOL); Zagora 5 km S, 25.04.1995, 2♂♂, 2♀♀, Mi. & Ma. Halada (BOL, JA). TUNISIA: Djerba, 10 km O Houmt-Souk, Åcker, 10.06.1994, 2♂♂, Schmid-Egger (SE); Gabes 60 km W, 16.04.1981, 1♂, J. Schmidt (BOL).

Description: ♂. 8-10 mm. Head and mesosoma black. Metasomal segments I-III red, IV-VII brown, dark brown to black, proximal sterna often more or less black. Mandible completely black or with reddish middle. Coxae and trochanters black, femora black with red apex, tibiae and tarsi red. Face and frons with dense white setation. Clypeus and frons densely punctate, dull, with smooth spot in front of anterior ocellus. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Gena smooth and shiny, with shallow punctures and white setae. Lower margin of mandible simple. Antennomeres I-II on inner side with white setae, III about 4.0-4.2× as long as apically wide; IV-IX in profile slightly concave basally; tyloids carinate, with pale tubercles basally and distally (Fig. 29). Mesoscutum and mesopleuron dull, rugose-punctate, completely covered with dense white pubescence. Mesoscutellum densely punctate, with large smooth and shiny anteromedian spot. Propodeal dorsum irregularly

reticulate, glabrous. Declivity and lateral surface of propodeum rugose-punctate, with long white setae. Metasomal tergum I and all sterna with long white setae; hairbrush beginning on sternum III, central setae about half as long as lateral ones; the latter about as long as those on sterna II-III (Fig. 39). Coxae unmodified, hindtrochanter with short triangular process, both with long white setae. Longest ventral setae of hindfemur at least about as long as maximal femur diameter. Forewing weakly yellowish tinged, apical margin hyaline, marginal cell about as $2.8-3.5\times$ as long as wide.

♀. 8-10 mm. Head and mesosoma black, tegula and basal sclerites of forewing brown. Metasoma red. Mandible yellowish red, apex and base black. Antennomeres I-II and base of III brown. Legs including tip of coxae red. Clypeus and face with dense appressed pubescence, masking the surface. Frons between anterior ocellus and eye as well as area between posterior ocelli densely punctate, dull (Fig. 94). Vertex shiny, densely punctate behind posterior ocelli, with smooth and shiny median stripe. Outer orbits glabrous, smooth and impunctate; occiput densely punctate with long and dense white setation. Antennomeres I-II on inner side with white setae; III about $3.2\times$ as long as apically wide. Mesoscutum dull, densely punctate, posteromedian with large smooth and shiny spot (Fig. 96). Mesoscutellum smooth and shiny, densely punctate laterally and posteriorly. Mesopleuron and propodeum dull, rugose. Stigmal area of propodeum straight. Mesosoma except propodeal dorsum with long and dense white pubescence. Metasomal terga with microsculpture, without punctures. Pygidial plate finely granulate, lateral margin straight. Tergum I and sterna with white setae. Femora and tibiae with exceptionally long white setae, longest ventral setae of hindfemur about as long as maximal femur diameter. Forebasitarsus with four rake spines, ventrally with nine spines evenly prolonged to the apex of tarsomere. Midbasitarsus straight, ventrally with successively longer spine row. Forewing brownish darkened, apically with darker brown spot, marginal cell about $2.5\times$ as long as wide.

Distribution: Maghreb: Algeria (type locality), Morocco, Tunisia. Questionable record: Egypt (HONORÉ 1942).

***Astata rubra* nov.sp.**

Holotype: ♀: Turkmenia, Tzarschanga 45 km, NE Karlyuk 6.5.93, leg K Deneš. (BOL).

Paratypes: KAZAKHSTAN: 1♀ Sand desert 4 km N Bakanas, 12.06.2000, I. V. Makogonova, (BOL); 1♀ Sand desert 4 km N Bakanas, lower Ili riv. Valley, 12.06.2000, S. Zonstein. (BOL); 1♀ Balchasch-Lake, Lepsy 22 km NW, 46.377N 78.724E, 289 m, 12.06.2024, Schmid-Egger (SE). UZBEKISTAN: 1♀ Papngan 20 km NW Kokand, 41°2'N 70°6'E, 12.5.94, Ma. Halada. (BOL).

Diagnosis: ♀. *Astata rubra* nov.sp. is characterized by unmodified hindtrochanter, long forebasitarsus with 15-17 undulating ventral spines and the red metasoma with dark brown pygidial plate. From other species with red metasoma like *A. costae* and *A. lusitanica* it differs by black bristles on antennomere I, coxae and trochanters; from *A. lusitanica* additionally by the longer forebasitarsus. From *A. rubriventris* it differs by white and black bristles on coxae and trochanters as well as black ventral setae of hindfemur.

Description: ♂. Unknown.

♀. 10 mm. Habitus lateral see Fig. 129, dorsal see Fig. 130. Head, antenna, mesosoma and legs black. Mandible black, mesally brownish. Metasoma: Red, pygidial plate dark brown, sterna I-II more or less darkened. Forewing completely brownish darkened, with

dark apical spot. Hindwing hyaline. Frons in front of anterior ocellus densely punctate, shiny; area between anterior ocellus and eye smooth and shiny, with very scattered punctures (Fig. 99). Anterior margin of clypeal lamella straight. Antenna long and slender, antennomere III about $5\times$ as long as apically wide, I on inner side with short black bristles. Pronotal collar smooth and shiny, with some superficial punctures posteriorly. Mesoscutum shiny, anterior third densely punctate, posterior surface smooth and with isolated punctures; mesoscutellum likewise. Mesopleuron dull, densely punctate-reticulate. Metapleuron smooth and shiny, with strong rugae dorsally. Dorsal surface of propodeum as well as lateral and posterior surface strongly reticulate. Stigmal area of propodeum slightly convex. Head and thorax except propodeal dorsum with white setae. Coxae and trochanters with black and white bristles. Femora ventrally with black setae. Forebasitarsus long, ventrally with 15-17 undulating spines, anterior third with fine setae between spines (Fig. 97), with five rake spines. Midbasitarsus long, slightly curved, with undulating spines ventrally (Fig. 139). Hindcoxa and -trochanter unmodified. Metasomal Terga and sterna glabrous, smooth and shiny, without distinct sculpture. Marginal cell of forewing about as $1.5\times$ as long as wide.

Distribution: Central Asia: Turkmenistan, Kazakhstan, Uzbekistan (type localities).

***Astata rubriventris* JACOBS, REZAEI & FALLAHZADEH, 2023**

Astata rubriventris JACOBS, REZAEI & FALLAHZADEH, 2023: 560, ♀. Holotype ♀, Iran, Fars, Teyhon at 29.36.37N 51.38.08E (ZSBS).

Material examined: IRAN: Holotype ♀, Fars, Teyhon, 29°36'37"N 52°38'08"E, 1491 m, 16-20.V.2014, F. Farzaneh (ZSM). Paratype ♀. Dasht-e Arzahn, 29°39'39"N 51°59'03"E, 2029 m, 24-30.IV.2018, S. Rezaei (ZSBS).

Description: ♂. Unknown.

♀. 10 mm. Head and mesosoma black. Metasoma red, terga and sterna with brown posterior margins, sometimes reduced on basal segments; pygidial plate brown. Mandible black, more or less reddish mesally. Legs black. Face and frons with white setae. Clypeus shiny, with scattered punctures, anterior margin of clypeal lamella straight or weakly tridentate. Antennomeres I-II on inner side with black bristles, III about $4\times$ as long as apically wide. Frons in front of and beside anterior ocellus as well as area between posterior ocelli densely punctate (Fig. 100). Vertex and gena smooth and shiny, with isolated punctures and white setae. Pronotal collar densely punctate. Mesoscutum and mesoscutellum smooth and shiny, the former anteriorly densely punctate, the latter densely punctate laterally. Mesopleuron with strong punctures, interspaces shiny. Propodeal dorsum coarsely reticulate, shiny; lateral surface of propodeum proximally smooth and dull, distally irregularly and coarsely wrinkled; declivity wrinkled. Stigmal area of propodeum obtuse-angled. Mesosoma except dorsal area of propodeum with white setae. Metasomal sterna, coxae, trochanters and femora with white setae. Forebasitarsus with four rake spines, ventral surface with 15-17 undulating spines, with fine setae between the spines in proximal third only. Midbasitarsus ventrally slightly concave, with long spines basally and short ones distally (Fig. 140). Forewing hyaline, with brown spot outside veins. Marginal cell about $3\times$ as long as wide.

Distribution: Middle East: Iran (type locality).

***Astata rufipes* MOCSÁRY, 1883**

Astata rufipes MOCSÁRY, 1883: 22 ♀. Holotype or syntypes ♀, Hungary, Budapest area (TMB).

Astata massiliensis MORICE, 1902: 106, ♂. Holotype ♂, France, Marseille (OXUM). New status by BEAUMONT 1942: 413 as var. *massiliensis*.

Astatus sareptanus GUSSAKOVSKII, 1927: 291, ♂. Syntypes ♂, Russia, Sarepta south of Volgograd (ZIN). Synonymized by BEAUMONT 1942: 409:

Astata rufipes echingol TSUNELI, 1971: 411, ♀. Holotype ♀, Mongolia, Bayanhongor Aymag, Ehingol oasis (TMB).

M a t e r i a l e x a m i n e d : BULGARIA: Galabovo, Rodopi, 25.07.1997, 1♀, Zaykov (BOL); Hrabrino, Rodopi, 01.07.1997 1♂, 05.07.1997, 1♀, Zaykov (BOL); Proslav, Trakia, 30.06.1996, 4♂♂, Zaykov (BOL); Sandanski, 06.1969, 4♂♂, leg. Kocourek (BOL, JA); Slancev Brjag, 20-06.08.1965, 2♀♀, 28.06-14.07.1971, 4♂♂, 26-14.07.1972, 13♂♂, 6♀♀, Padr (BOL, JA); Slancev Brjag, 17.08.1970, 1♀, Kocourek (BOL). FRANCE: Leucate, 09.08.1987, 1♂, J. Bitsch (BOL). HUNGARY: Óskeny, pisky, 13-17.07.1981, 1♂, Z. Padr (BOL); Pakozd E of Szekesfehervar, 47.222°N 18.521°E, 04.06.2020, 4♂♂, 12.06.2020, 1♂, 1♀, M. Halada (BOL, JA); Pakozd E of Szekesfehervar, 150 m, 47°13'N 18°31'E, 25.06.2015, 2♂♂, 6♀♀, M. Halada (BOL, JA). JORDAN: Shuna N env., 29-30.04.1996, 1♀, Mi. Halada (BOL). KAZAKHSTAN: Bakanas 4 km N, Lower Ili riv. Valley, sand desert, 12.06.2000, 1♀, Zonstein (BOL). KYRGYZSTAN: Tash-Arik 11 km E Talas, 04.07.1992, 2♀♀, Jirousek (BOL). SLOVAKIA: Gbelce, 07.1953, 1♀, 1955, 1♀, 14.08.1965, 1♀, 13.07.1974, 1♀, Kocourek (BOL); Sturovo, 10.08.1954, 1♀, Padr (BOL); Sturovo, 06.1960, 2♀♀, 07.1963, 1♂, 10.08.1965, 1♀, 18.08.1965, 1♀, Kocourek (BOL). TÜRKIYE: Acıgöl, Cardak env., 07.07.1993, 1♂, Jirousek (BOL); Acıgöl, Cardak env., 07.07.1993, 4♂♂, Mi. Halada & Deneş (BOL); Nemrut Dag, 2000 m, 16.08.1991, 1♀, M. Halada, (BOL); Tatvan, Van G., 01.07.2000, 1♂, M. Halada (BOL).

D e s c r i p t i o n : ♂. 9-13 mm. Head, antenna and mesosoma black. Metasomal terga I-II red, I with large basal spot; remaining terga and sterna black or metasoma completely black (*A. rufipes* var. *massiliensis*). Coxae and trochanters black, femora black with red apex, tibiae and tarsi red, legs with white setae. Clypeus and frons densely punctate, with white appressed setae. Middle clypeal lobe hardly protruding beyond lateral lobe (cf. Fig. 5). Mandible black, lower margin simple. Gena densely punctate, with white setae. Antennomeres I-II on inner side with white setae, III about 3× as long as apically wide; V-IX nearly cylindrical or slightly convex in profile, with inconspicuous carinate tyloids (Fig. 13). Pronotal collar, mesoscutum and mesopleuron densely punctate, with white setae. Mesoscutellum laterally and posteriorly with dense punctures, anteromedially with large smooth and shiny spot. Mesosoma except propodeal dorsum with white setae. Propodeal dorsum irregularly reticulate, glabrous. Declivity and lateral surface rugose-punctate. Metasomal tergum I and sterna with white setae; hairbrush beginning on sternum III, setae distinctly shorter than those of sternum II (Fig. 134). Midcoxa on inner side concave. External surface of hindcoxa with longitudinal impression, basally bulging. Forewing slightly brownish tinged, apical margin hyaline. Marginal cell of forewing about 4.2-4.3× as long as wide.

♀. 9-13 mm. Head, antenna and mesosoma black. Metasomal terga I-II red, III with red anterior margin; sternum II predominantly red, remaining segments and sterna black. Mandible black with reddish middle. Coxae black, fore- and midtrochanter black, forefemur black with red tip, mid- and hindfemora red, tibiae and tarsi red. Clypeus shiny, densely punctate, anterior margin of lamella slightly convex. Frons densely and strongly punctate, with stiff upwards directed black bristles, smooth and shiny; in front of and beside anterior ocellus as well as area between posterior ocelli, vertex and gena scattered punctate. Occiput and gena with white setae. Antennomeres I-II on inner side

with black bristles, III about twice as long as apically wide. Pronotal collar densely punctate. Anterior surface of mesoscutum densely and strongly punctate, with stiff black bristles between white setae; remaining surface smooth and shiny, with isolated punctures. Mesoscutellum smooth and shiny, with some punctures posteriorly. Mesopleuron densely punctate, interspaces shiny, with white setae. Metapleuron dorsally with longitudinal carinae. Propodeal dorsum glabrous, reticulate. Lateral surface of propodeum proximally smooth, distally rugose-punctate as well as declivity. Sternum II and posterior margins of III-V with short black bristles. Pygidial plate finely granulate, lateral margin straight (Fig. 86). Coxae, trochanters and femora unmodified, with black bristles. Forebasitarsus short, ventrally with nine spines evenly prolonged to the apex of tarsomere (Fig. 80). Forewing slightly brownish tinged, marginal cell about as $2.0-2.3\times$ as long as wide.

Distribution: Europe: Czechia (VEPŘEK & STRAKA 2007), Slovakia, Hungary, Portugal (CROSS et al. 2021), Spain (GINER MARÍ 1945), France, Italy (PAGLIANO & NEGRISOLO 2005), Bulgaria, Greece (BEAUMONT 1965), Crimea (SHORENKO 2017). Russia: European part (NEMKOV 2017). Middle East: Türkiye, Jordan. Central Asia: Kazakhstan, Turkmenistan (MYARTSEVA 1963). Kyrgyzstan, Tajikistan (NAZAROVA 1998). Questionable records: Libya (MANTERO 1915, GUIGLIA 1934).

Remarks:

Astata rufipes echingol: The subspecies is described by TSUNEKI (1971) after a single female. In the key it is running to *A. rufipes*. It differs from the latter as follows:

A. rufipes rufipes: Marginal cell long, about $2.0-2.3\times$ as long as wide. Forebasitarsus slender, with about nine ventral spines. Femora apically red.

A. rufipes echingol: Marginal cell short, about $1.7\times$ as long as wide. Forebasitarsus short and stout, with six ventral spines. Femora completely black.

The taxonomic state of *A. rufipes echingol* is unclear. Because of the here mentioned differences it does not belong to *A. rufipes*. Maybe it is a valid species. Type examination and more material is needed for confirmation of the correct taxonomic status.

Astata massiliensis, after SCHMIDT & BITSCH (2007) distributed in Spain, Southern France and Northwestern Italy, is treated here as melanistic variant of *A. rufipes* in sense of BAUMONT (1942). The correct taxonomic status should be clarified by genetic investigation.

***Astata sabulosa* GUSSAKOVSKIJ, 1927**

Astata sabulosus GUSSAKOVSKIJ, 1927: 293. ♂. Syntypes ♂, Turkmenistan, vicinity of Ashkabad and Repetek (ZIN).

Material examined: no material examined,

Description: ♂ (after GUSSAKOVSKIJ 1927 and KAZENAS 2000). 8-9 mm. Head, antenna and mesosoma black. Metasoma red, more or less brownish apically. Coxae, trochanters and base of femora black, remaining parts of legs red. Mandible black, mesally reddish. Middle clypeal lobe evenly convex. Clypeus and frons densely and finely punctate. Tyloids of antennomeres VII-XII with two large tubercles. Vertex shiny. Mesoscutum densely and finely punctate, with long dense setation. Frons below ocelli with dull and glabrous spot. Vertex smooth and shiny. Gena with long and dense white

setation. Mesoscutum densely punctate, posteromedian with smooth and shiny spot. Mesoscutellum smooth and shiny, densely punctate laterally and distally. Propodeal dorsum glabrous, irregularly reticulate. Lateral surface of propodeum densely punctate, interspaces wrinkled. Face and mesosoma except propodeal dorsum with long and dense setation masking the surface. Metasoma weakly shiny, with fine microsculpture; tergum I densely and shallowly punctate, with white setae, separated from II by a furrow. Metasomal hairbrush beginning on sternum III; central setae short, lateral ones about 1.5× as long as diameter of front ocellus. Forewing hyaline.

♀. 8-10 mm. Head and mesosoma black. Metasoma red. Antenna brown. Legs red; coxae, trochanters and base of femora black. Clypeal lamella rounded. Frons with blurred punctures and diffuse microsculpture. Vertex smooth with scattered punctures. Mesoscutum densely punctate, with smooth and shiny posteromedian spot. Tegula reddish brown. Propodeal dorsum glabrous, reticulate; lateral surface with blurred punctures. Head and mesosoma except propodeal dorsum with long and dense white pubescence. Metasomal terga I-II with long setae. Ventral spines of forebasitarsus continuously prolonged to the apex of tarsomere, with fine setae over its whole length. Forewing hyaline, marginal cell short, anterior margin about as long as cell height.

Distribution: Central Asia: Kazakhstan (KAZENAS 2000), Turkmenistan (type locality).

***Astata schmideggeri* nov.sp.**

Holotype: ♂, N-Tunesien, 35 km SÖ Bizerte, Ghar el Melh/Strand, 27.6.1994, Tu-Gha., Hauser (SE).

Paratypes: 6♂♂ with same data as holotype, Schmid-Egger. (SE, JA).

Diagnosis: ♂. *Astata schmideggeri* nov.sp. is characterized by its glabrous dorsal area of the propodeum, black pronotal lobe and tegula, red and black metasoma, prolonged middle clypeal lobe and obtuse-angled hindtrochanter. It is distinguished from all other species of the *A. boops* group by the combination of the distinctly enlarged midcoxa and very broad metasomal hairbrush covering one third of sterna IV-VI.

Description: ♂. 8 mm. Habitus dorsal see Fig. 131, lateral see Fig. 132. Head, antenna, mesosoma and legs black. Mandible black, reddish-yellow mesally. Metasoma: Terga I-III red; declivity of I with black spot, III with dark posterior margin. Sterna predominantly black, I-II with red spots. Face with appressed white setae. Lower margin of mandible simple. Gena and vertex smooth and shiny, with erect white setae. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Antennomere I with white setae, III about 4.0-5.0×, VI about 2× as long as apically wide (Fig. 33). Tyloids of antennomeres VI-X carinate, extending over the entire length of antennomere, with inconspicuous tubercles proximally and apically (Fig. 34). Mesoscutum densely punctate, dull. Mesoscutellum smooth and shiny, distally and laterally densely punctate. Mesopleuron with punctures, posteriorly confluent into rugae; ventrally smooth and shiny. Prepectus and epimeron densely wrinkled. Dorsal surface of propodeum glabrous, reticulate with oblique longitudinal carinae. Lateral surface of propodeum coarsely wrinkled, with dense whitish setation. Coxae, trochanters and femora with whitish setae, longest ventral setae of hindfemur about as long as two thirds of maximal femur diameter. Midcoxa distinctly rectangularly enlarged, on inner side rounded (Fig. 35). Hindcoxa unmodified. Hindtrochanter with short acute extension apically. Terga finely shagreened, without punctures. Metasomal hairbrush beginning on

sternum IV, very wide, covering about one third of sterna IV-VI, short central setae about as long as a quarter of lateral ones, the latter about as long as those on sternum II (Fig. 36). Forewing weakly yellowish in the area of veins, apical margin hyaline. Hindwing hyaline.

♀. Unknown.

E t y m o l o g y : The species is named in honor of my dear friend and colleague Christian Schmid-Egger (Berlin, Germany).

D i s t r i b u t i o n : Maghreb: Tunisia (type locality).

Astata selecta NURSE, 1909

Astata selecta NURSE, 1909: 511, ♀. Syntypes ♀, India, Gujarat, Deesa (BMNH).

M a t e r i a l e x a m i n e d : ETHIOPIA: Wachile env., 4°32'N 39°03'E, 1070 m, 22.05.2015, 1♀, J. Halada (BOL). ISRAEL: Arava Valley, Hazewa, 30°46.88'N 35°14.56'E, 05.05.1995, 1♀, Schmid-Egger, det. Pulawski (SE); Arava Valley, Shizav Nature Reserve, Hazewa, north of water treatment plant, low sandy hummocks in small wadi, -80 m, 30°06.41'N 35°15.37'E, 31.03.1995, 1♂, 03.04.1995, 1♀, Irwin, det. Pulawski (JA, SE); En Gedi, 18.06.1965, 1♀, Schlaefle (WS); Nizzana 10 km N, 30.944°N 34.401°E, 02.05.2019, M. 1♂, 1♀, Halada. OMAN: Jamma, Mansur 2 km N, 23.521N 57.553E, 16.03.2022, 1♀, M. Halada (SE).

D e s c r i p t i o n : ♂. 8 mm. Habitus lateral see Fig. 37. Head and mesosoma black. Metasomal segments I-III red, sternum II with large black spot, apical segments black. Mandible black, mesally reddish. Coxae and trochanters black, femora black with red apex, tibiae and tarsi red. Clypeus and frons densely punctate, with long and dense setation masking the surface. Middle clypeal lobe distinctly protruding beyond lateral lobe, anterior margin straight. Lower margin of mandible simple. Gena behind eyes smooth and shiny, asetose; remaining surface densely and shallowly punctate, with long white setae. Antennomeres I-II on inner side with white setae, III about 4× as long as apically wide; V-IX in profile nearly straight, maximal diameter apically (Fig. 30); tyloids carinate, with apical tubercle. Mesoscutum, mesoscutellum and mesopleuron very densely punctate, with dense pubescence partly masking the surface (Fig. 37). Propodeal dorsum reticulate, glabrous. Declivity and lateral surface of propodeum very densely punctate, with long white setae. Metasomal terga dull, with microsculpture, I and anterolateral parts of II with long white setae. Sterna I-III with long white setae, hairbrush beginning on sternum III, consisting of long appressed setae, shorter than those of II. Mid- and hindcoxae unmodified. Coxae, trochanters and femora with long white setae, longest ventral setae of hindfemur at least about as long as maximal femur diameter. Forewing hyaline, marginal cell about 3× as long as wide.

♀. 8-9 mm. Head and mesosoma black. Metasoma red. Antennomeres I red, II and base of III brown, with white setae. Mandible yellow with dark brown apex. Clypeal lamella brown, anterior margin straight. Legs red, except black coxae. Face, frons and area between posterior ocelli densely punctate. Vertex with scattered punctures. Face with dense white pubescence masking the sculpture. Head behind eyes strongly narrowed, outer orbit smooth and shiny, without setae; gena with shallow punctures and white setae. Antennomere III about as 4× as long as apically wide. Pronotal collar densely punctate, dull. Mesoscutum densely and finely punctate, posteromedian with smooth and shiny spot. Mesoscutellum smooth and shiny, densely punctate laterally and posteriorly. Mesopleuron dull, densely wrinkled. Mesosoma except propodeal dorsum with dense

and long whitish pubescence. Propodeal dorsum glabrous, densely and finely reticulate; declivity and lateral surface wrinkled, the latter with oblique striae. Metasoma with long white setae. Pygidial plate finely granulate, lateral margin straight. Femora with long white setae; longest ventral setae of hindfemur longer than maximal femur diameter. Forebasitarsus with four rake spines; ventrally with spines evenly prolonged to the apex of spine row. Forewing with light brownish tinge, with brown spot outside veins, marginal cell about $1.5\times$ as long as wide.

Distribution: Middle East: Israel, United Arab Emirates, Oman. Africa: Ethiopia. South Asia: India: Gujarat (type locality).

***Astata sicula* KOHL, 1885**

Astatus boops sculus KOHL, 1885: 436, ♀, ♂. Syntypes, Italy, Sicily, no specific locality (NHMW). New status as *Astata sicula* by KOHL in DALLA TORRE 1897: 655. Synonymized with *Astata boops* by PULAWSKI 1956: 44. Revalidated as *Astata sicula* by BEAUMONT 1959: 24.

Material examined: ITALY: Sizilien, Agrigento, 05.1988, 1♀, Schlaefle (WS); Sicilia, Trapani 55 km E, Castellamare env., 12.06.2002, 1♀, Halada (SE); Sicilia, Taormina, Sirinatal, 03.10.1970, 1♀, M. Schwarz (BOL).

Description: ♂ (after KOHL 1885, BEAUMONT 1959 and SCHMIDT & BITSCH 2007). 9-11 mm. Head and mesosoma black; mandible black, lemon yellow mesally; metasomal segments I-III(IV) red; legs black, tibiae sometimes brownish. Lower margin of mandible with angle. Middle clypeal lobe distinctly protruding beyond lateral lobe. Antennomere III about $4.0-4.5\times$ as long as apically wide; middle antennomeres with carinate tyloids; tyloids with basal and apical tubercle. Mesoscutum densely punctate. Metasomal hairbrush beginning on sternum III, central setae very short, lateral setae about $3\times$ as long as the very short setae of metasomal sternum II. Midcoxa without modifications; hindcoxa on inner side slightly concave; inner surface of hindfemur smooth and shiny, in profile distinctly concave basally.

♀. 9-12 mm. Head and mesosoma black. Metasomal segments I-III red, I with black spot basally; sterna I-II red, remaining segments black. Legs black. Mandible black, lemon yellow mesally. Anterior margin of clypeal lamella slightly concave. Frons densely punctate, with white erect setae. Vertex and gena scattered punctate, latter with white setae. Antennomeres I-II with black bristles on inner side, III about as long as apically wide. Pronotal collar densely punctate, posteromedian with smooth and shiny triangle. Anterior margin of mesoscutum densely punctate, posterior surface smooth and shiny with isolated punctures. Mesopleuron densely punctate, prepectus irregularly reticulate, epimeron with longitudinal striae. Propodeal dorsum glabrous, strongly reticulate; lateral surface anteriorly smooth, posteriorly reticulate; declivity reticulate. Mesosoma except propodeal dorsum with white setae. Pygidial plate with concave lateral margin, wide basally, strongly narrowed distally. Coxae, trochanters and femora with white setae. Forebasitarsus with five rake spines; ventrally with 15-17 undulating spines, short setae between the spines limited to proximal third of spine row. Forewing with brownish tinge, apical margin darker brown.

Distribution: Europe: Italy (Sicily), Malta (SCHMID-EGGER et al. 2016).

***Astata trochanterica* BEAUMONT, 1953**

Astata trochanterica BEAUMONT, 1953: 126, ♀, ♂, Holotype ♀, Morocco, Marrakech (Lausanne).

Material examined: MOROCCO: Agdz 20 km E, 20.04.1995, 1♀, Mi. Halada (BOL); Argana env., 80 km NE Agadir, 07.05.2003, 1♂, Snižek (BOL); Azrou 5 km SE, 31.05.1995, 1♀, Mi. Halada (BOL); Guelmin 10 km E, 05.05.1995, 2♀♀, Ma. & Mi. Halada (BOL); Marrakech, 05.1964, 1♂, Schlaefle (WS); Ouarzazate 10 km SO, 27.05.1995, 1♀, Schmid-Egger, det. Pulawski (SE); Talmest, 10.05.1995, 1♀, Mi. Halada (BOL); Tamri, 70 km N Agadir, 08.05.1995, 4♀♀, Mi. Halada (BOL, JA); Timezgadiouine 2 km E, 76 km NE Agadir, 30.877°N 9.025°W, 16.04.2015, 1♂, Schmid-Egger (SE); Tissint 70 km E Tata, 28.04.1995, 1♂, 4♀♀, Ma. Halada (BOL, JA); Tiznit, Oued Massa, 08.05.2003, 2♂♂, 1♀, M. Halada (BOL, JA); Zagora 5 km S, 25.04.1995, 1♂, 1♀, Ma. Halada (BOL).

Description: ♂. 10-12 mm. Head, antenna and mesosoma black. Metasomal segments I-II red, III red with black posterior margin. Sternum II red with large black spot, III red, remaining sterna black. Mandible yellow with black apex. Coxae, trochanters and femora black, tibiae and tarsi brown to dark brown. Clypeus finely rugose-punctate, middle lobe distinctly protruding beyond lateral lobe, anterior margin straight. Face and frons with dense appressed white setation. Outer orbit glabrous, smooth and shiny, gena densely punctate with long white setae. Antennomeres I-II on inner side with white setae, III about 5× as long as apically wide; VI-VIII slightly concave basally, IX-XI convex in profile; tyloids carinate. Pronotal collar densely punctate, dull. Mesoscutum densely punctate, dull, except shiny posteromedian spot with scattered punctures. Mesoscutellum densely punctate, anteromedian with large smooth and shiny spot. Mesopleuron rugose-punctate. Propodeal dorsum glabrous, reticulate. Declivity and lateral surface of propodeum rugose-punctate. Mesosoma except propodeal dorsum with white setae. Tergum I and sterna (except III) with long white setae. Central setae of metasomal hairbrush very short, about one fifth as long as lateral ones, the latter about 1.5× as long as setae of sternum II. Coxae, trochanters and femora with white setae. Midcoxa on inner side concave. Hindcoxa ventrally with shallow longitudinal impression. Hindtrochanter with spoon-like process apically (Fig. 12). Forewing weakly brownish darkened, marginal cell about 4× as long as apically wide.

♀. 9-11 mm. Head, antenna and mesosoma black. Metasoma red, tergum VI and pygidial plate sometimes brown. Mandible yellow or reddish-yellow, with black tip. Coxae and trochanters black, femora black with red apex, tibiae and tarsi red. Clypeus smooth and shiny, anterior margin of lamella straight. Frons and area between posterior ocelli very densely punctate. Vertex shiny with scattered punctures. Frons and vertex with erect black and white setae. Outer orbit smooth and shiny, glabrous; gena smooth, with scattered punctures and long white setae. Antennomeres I-III with black bristles, III about 4× as long as apically wide. Pronotal collar smooth and shiny, with isolated punctures. Mesoscutum densely punctate, with stiff erect black and white setae, posteromedian with smooth and shiny spot. Mesoscutellum smooth and shiny, with punctures laterally and distally. Mesopleuron dull, rugose-punctate, with greyish setae. Propodeal dorsum glabrous, irregularly wrinkled. Declivity rugose-punctate, lateral surface reticulate, both with white setae. Metasomal tergum I with white setae. Sternum II with black setae, apical margin of terga III-V with long black bristles. Pygidial plate finely granulate, with straight lateral margin (Fig. 78). Forecoxa, -trochanter and femur with greyish setae; coxae, trochanters and femora of mid- and hindlegs with black setae. Forebasitarsus with four rake spines; ventrally with nine or ten spines evenly prolonged

to the apex of tarsomere. Spines of ventral surface of midbasitarsus evenly prolonged to the apex. Hindtrochanter with short spoon-like or triangular extension (Fig. 77). Forewing brownish tinged, with darker brown spot apically, marginal cell about $2.5\times$ as long as wide.

D i s t r i b u t i o n : Maghreb: Morocco.

Names not available

Astata jerichoensis radoszkowskii PULAWSKI, 1957

Astata jerichoensis radoszkowskii PULAWSKI, 1957: 82, ♀. No type designated.

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Zusammenfassung

Neun bisher unbekannte Arten der Gattung *Astata* LATREILLE, 1796 aus der Paläarktis werden beschrieben: *Astata arabica* nov.sp. aus dem Jemen, Oman und Jordanien; *A. bulbosa* nov.sp., *A. gobiensis* nov.sp. und *A. mongolica* nov.sp. von der Mongolei; *A. hirsuta* von Saudi-Arabien, *A. iranica* nov.sp. von Iran; *A. maghrebensis* nov.sp. von Marokko; *A. rubra* nov.sp. von Turkmenistan und Usbekistan und *A. schmideggeri* nov.sp. von Tunesien. *Astata canariensis* PULAWSKI, 1974 stat.nov. erhält Artstaus. Der Artstatus von *Astata picea* A. COSTA, 1867 stat.rev. wird wiederhergestellt. Beschreibungen und Schlüssel der paläarktischen Arten werden präsentiert.

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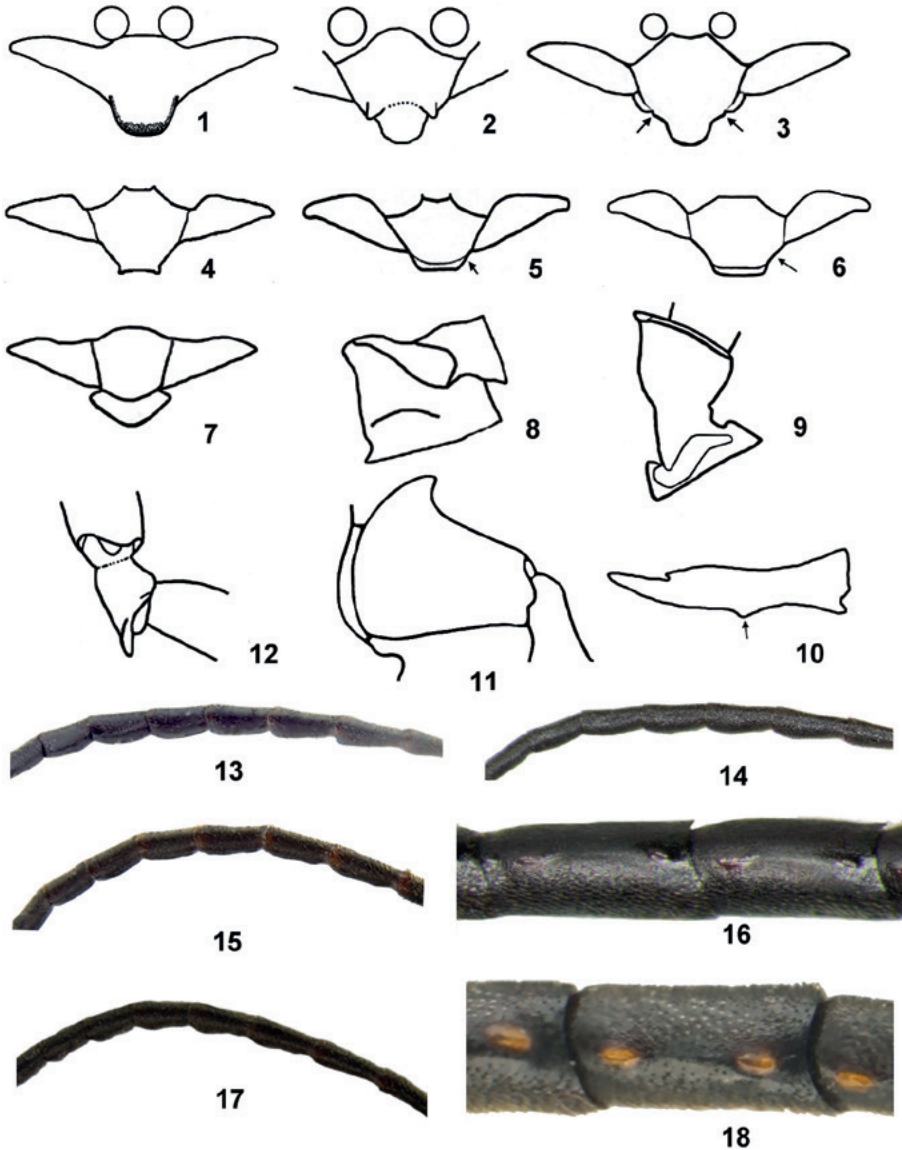
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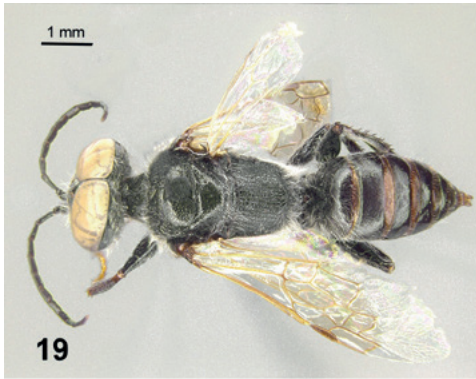
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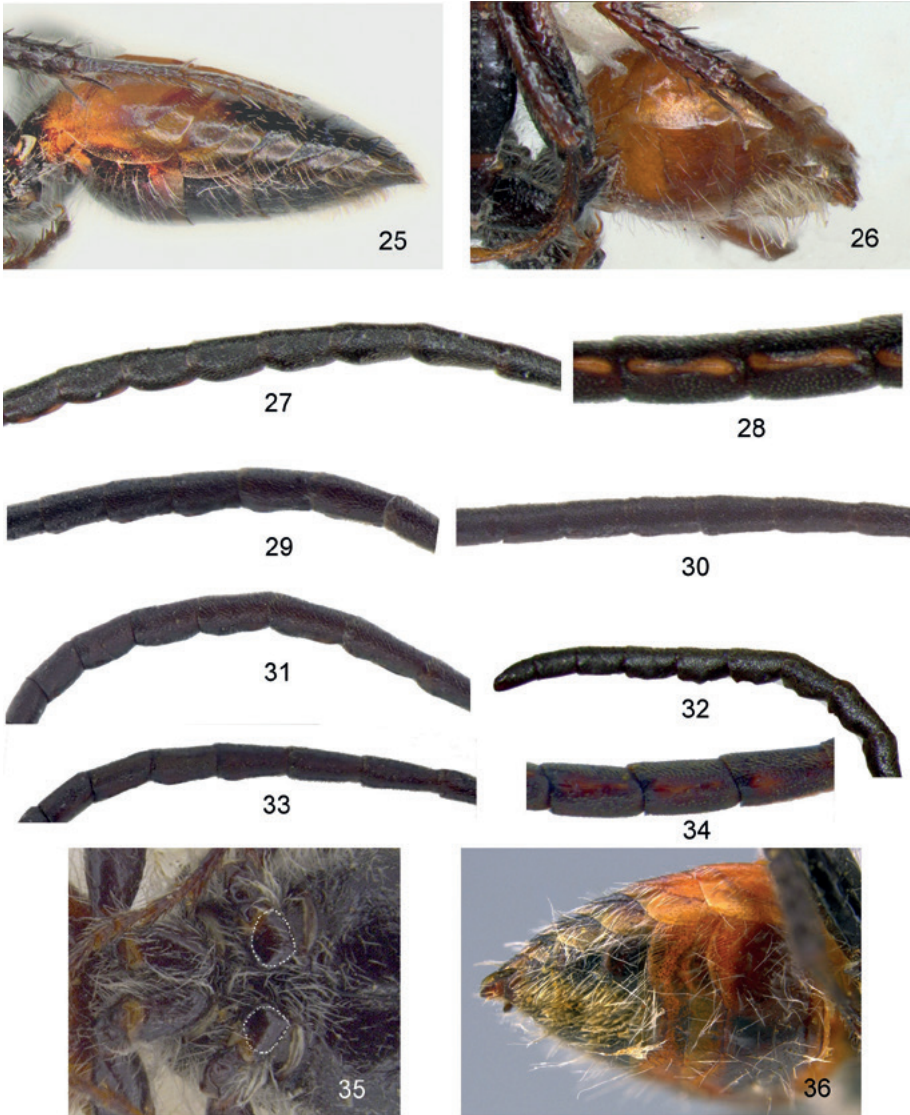
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Figs 1-18. **Figs 1-7:** Clypeus ♂: (1) *A. miegii*, (2) *A. maculata*, (3) *A. lubricata*, (4) *A. enslini*, (5) *A. kashmirensis*, (6) *A. boops*, (7) *A. diversipes*. **Figs 8-10** *A. cleopatra* ♂: (8) midcoxa, (9) hindtrochanter, (10) mandible. **Fig. 11** *A. leila* ♂: hindcoxa. **Fig. 12:** *A. trochanterica* ♂: hindtrochanter. **Figs 13-14:** Middle antennomeres ♂: (13) *A. rufipes*, (14) *A. kashmirensis*. **Figs 15-16:** *A. affinis* ♂: (15) middle antennomeres, (16) tyloids. **Figs 17-18:** *A. boops* ♂: (17) middle antennomeres, (18) tyloids.



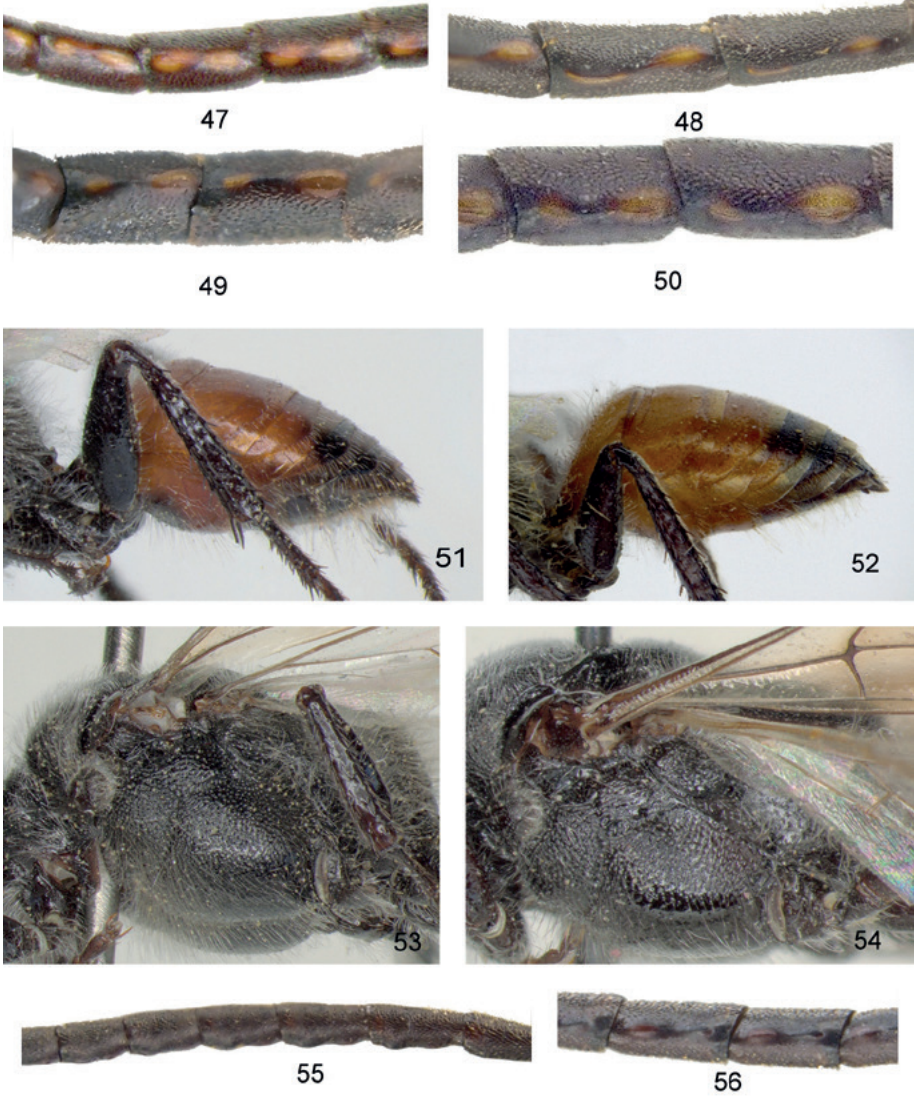
Figs 19-24. **Figs 19-20:** *A. compta* ♂: (19) habitus dorsal, (20) mesopleuron. **Figs 21-22:** *A. diversipes* ♂: (21) foreleg, (22) metasoma ventral. **Fig. 23:** *A. apostata* ♂: metasoma lateral. **Fig. 24:** *A. pontica* ♂: mid- and hindcoxae, hindtrochanter.



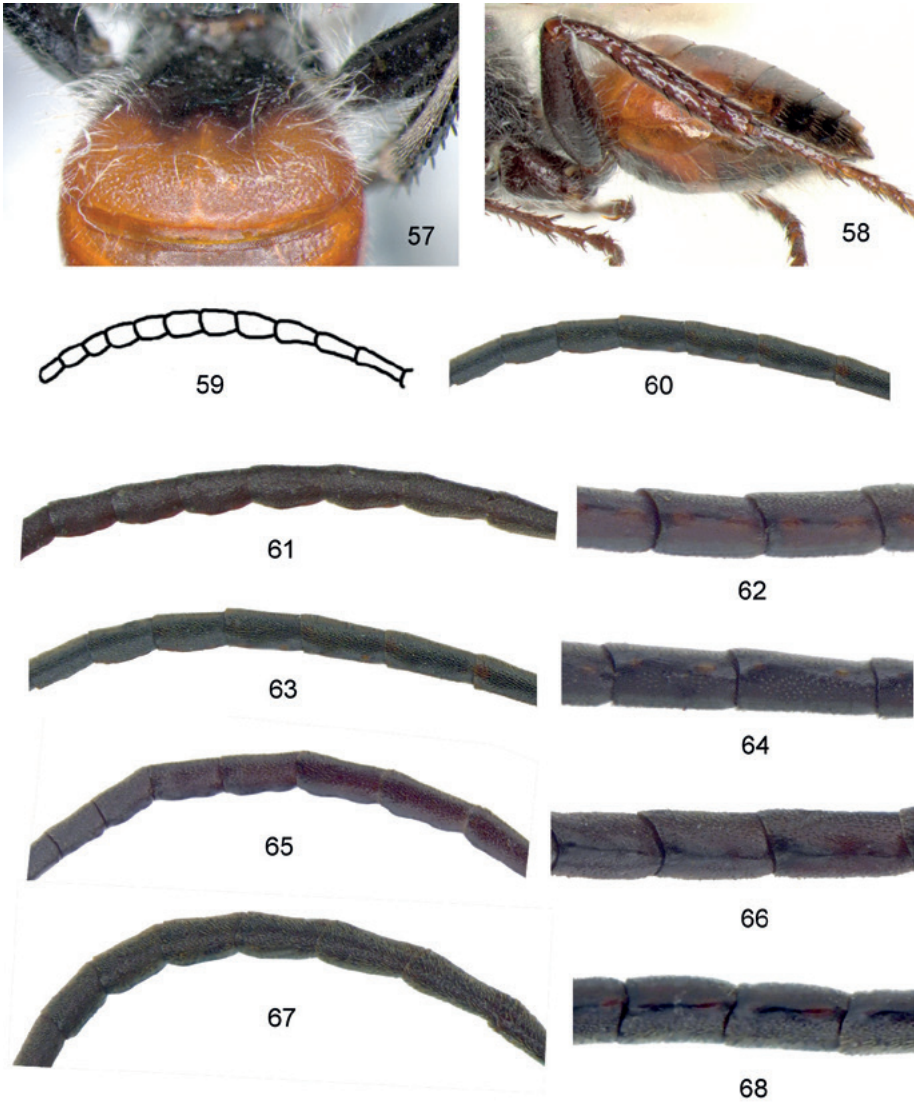
Figs 25-36. Figs 25-26: Metasoma lateral ♂: (25) *A. kashmirensis*, (26) *A. laeta*. Figs 27-28: *A. laeta* ♂: (27) Middle antennomeres, (28) tyloids. Figs 29-32: Middle antennomeres ♂: (29) *A. radialis*, (30) *A. selecta*, (31) *A. quettae*, (32) *A. apostata*. Figs 33-36: *A. schmideggeri* nov.sp. ♂. (33) middle antennomeres, (34) tyloids, (35) midcoxa, (36) metasoma ventrally.



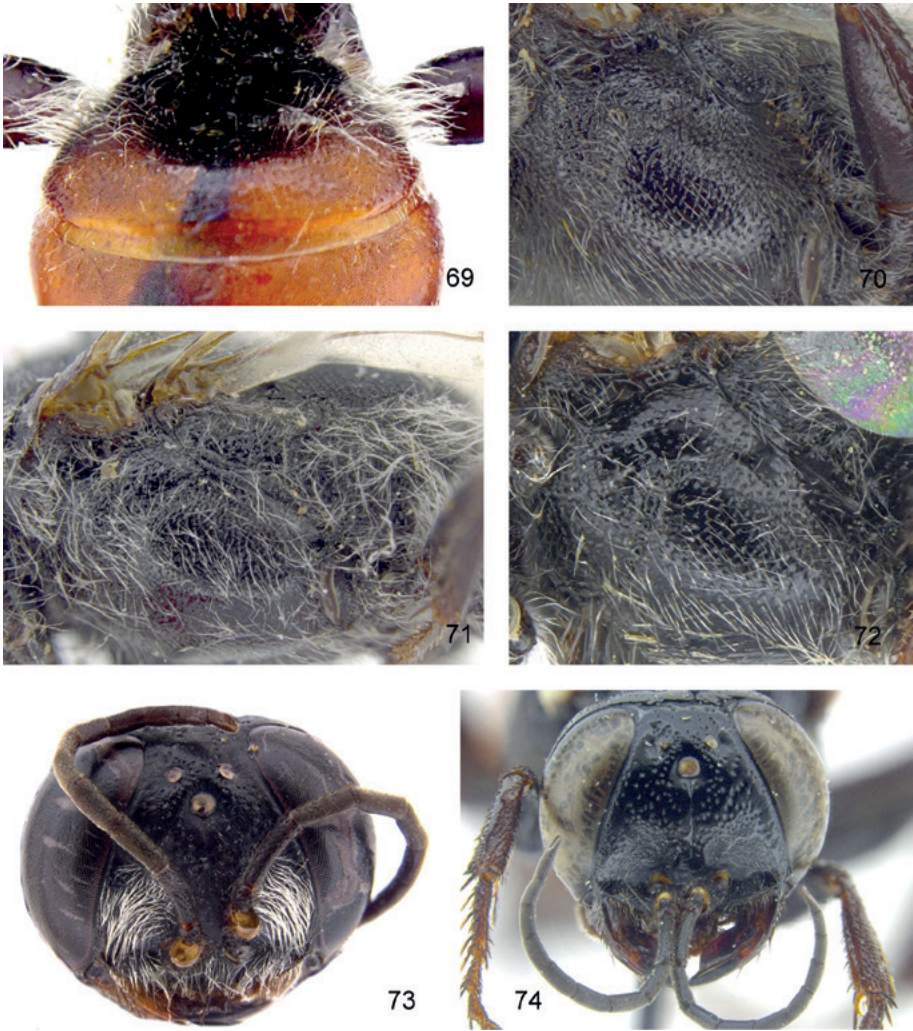
Figs 37-46. Fig. 37: *A. selecta* ♂: habitus lateral. Fig. 38: *A. quettae* ♂: mesopleuron. Fig. 39: *A. radialis* ♂: metasoma lateral. Figs 40-41: *A. minor* ♂: (40) middle antennomeres, (41) tyloids. Figs 42-43: *A. bulbosa* nov.sp. ♂: (42) middle antennomeres, (43) tyloids. Figs 44-45: *A. cobosi* ♂: (44) middle antennomeres, (45) tyloids. Fig. 46: *A. lusitanica* ♂: antenna.



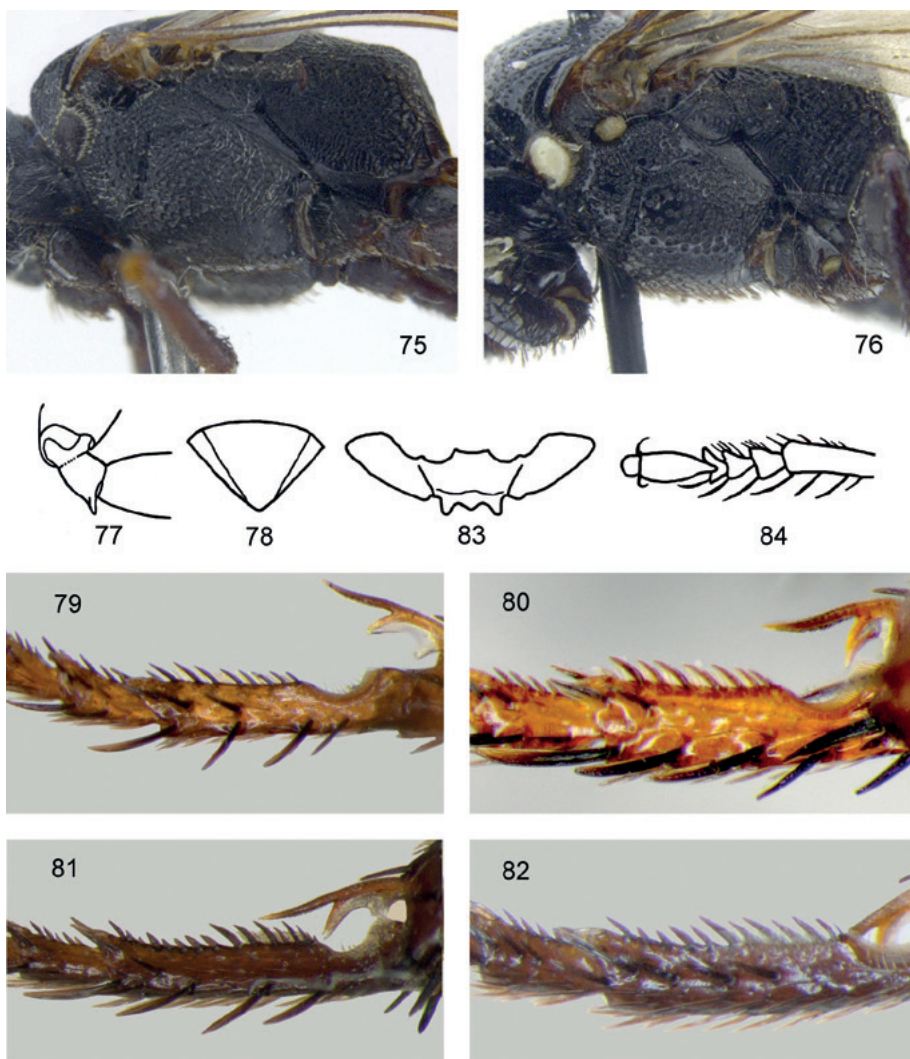
Figs 47-56. Figs 47-50: tyloids ♂: (47) *A. maghrebensis*, (48) *A. hera*, (49) *A. canariensis*, (50) *A. graeca*. Figs 51-52: metasoma lateral ♂: (51) *A. canariensis*, (52) *A. graeca*. Figs 53-54: mesopleuron ♂: (53) *A. canariensis*, (54) *A. graeca*. Figs 55-56: *A. costae* ♂: (55) middle antennomeres, (56) tyloids.



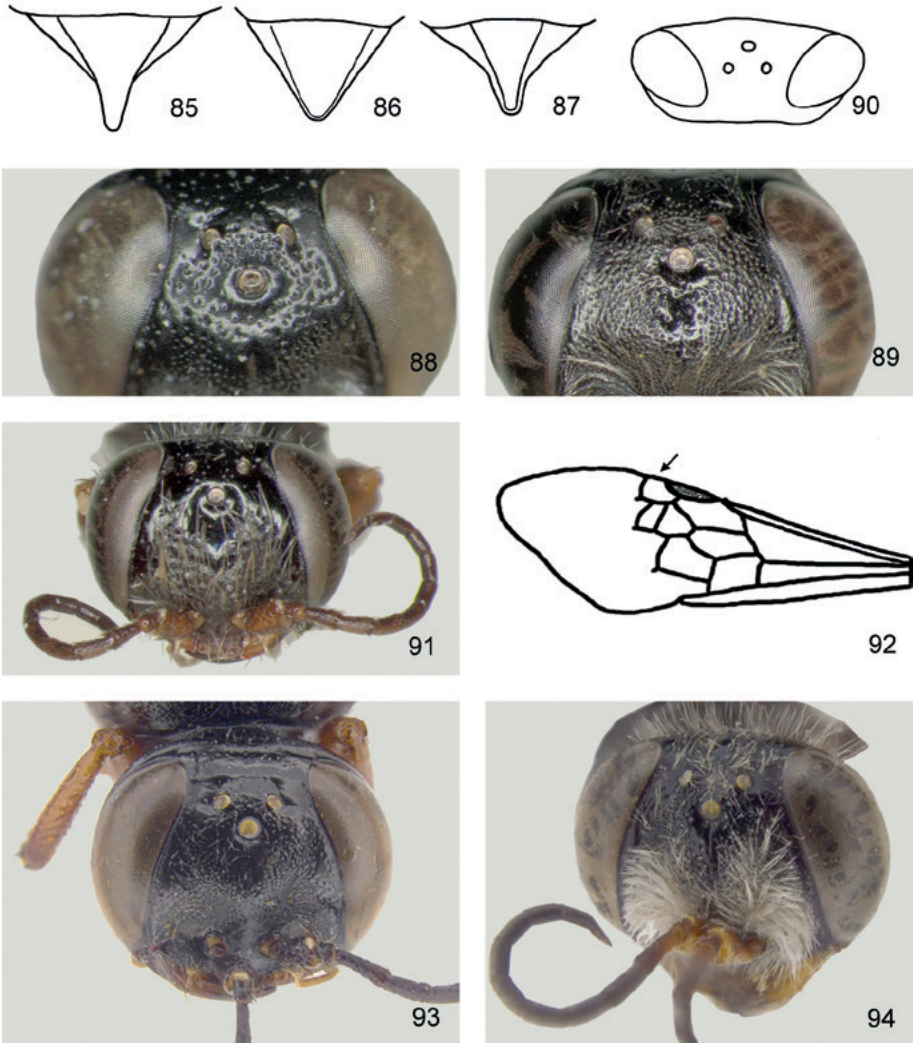
Figs 57-68. Fig. 57: *A. affinis* ♂: tergum I. Fig. 58: *A. gallica* ♂: metasoma lateral. Fig. 59: *A. brevitarsis* ♂: antenna. Fig. 60: *A. gobiensis* nov.sp. ♂ holotype: middle antennomeres. Figs 61-62: *A. jucunda* ♂: (61) middle antennomeres, (62) tyloids. Figs 63-64: *A. arabica* nov.sp. ♂ paratype: (63) middle antennomeres, (64) tyloids. Figs 65-66: *A. iranica* nov.sp. ♂ holotype: (65) middle antennomeres, (66) tyloids. Figs 67-68: *A. mongolica* nov.sp. ♂ paratype: (67) middle antennomeres, (68) tyloids.



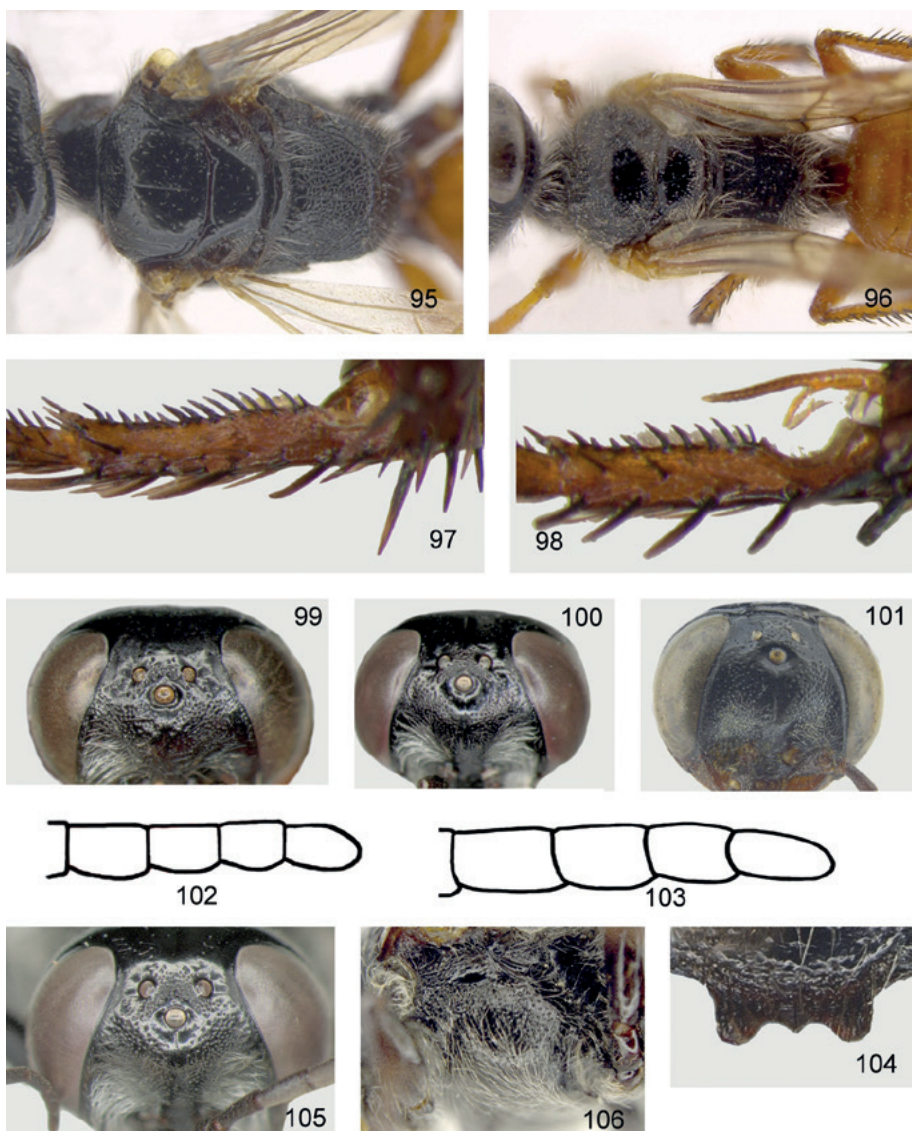
Figs 69-74. Fig. 69: *A. iranica* nov.sp. ♂ holotype: tergum I. **Figs 70-72:** mesopleuron ♂: (70) *A. arabica* nov.sp. holotype, (71) *A. gobiensis* nov.sp. holotype, (72) *A. mongolica* nov.sp. paratype. **Figs 73-74:** frons ♀: (73) *A. lubricata*, (74) *A. miegii*.



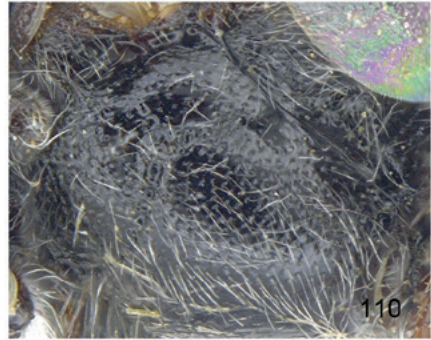
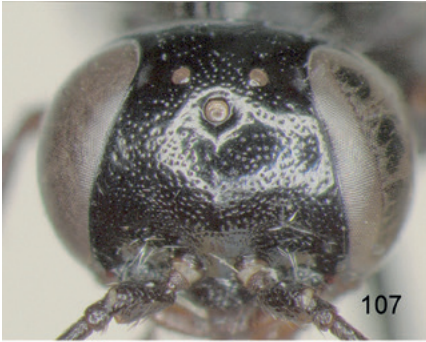
Figs 75-84. **Figs 75-76:** mesopleuron ♀: (75) *A. lubricata*, (76) *A. miegii*. **Figs 77-78:** *A. trochanterica* ♀: (77) hindtrochanter, (78) pygidial plate. **Figs 79-82:** forebasitarsus ♀: (79) *A. kashmirensis*, (80) *A. rufipes*, (81) *A. boops*, (82) *A. graeca*. **Figs 83-84:** *A. brevitarsis* ♀: (83) clypeus, (84) forebasitarsus.



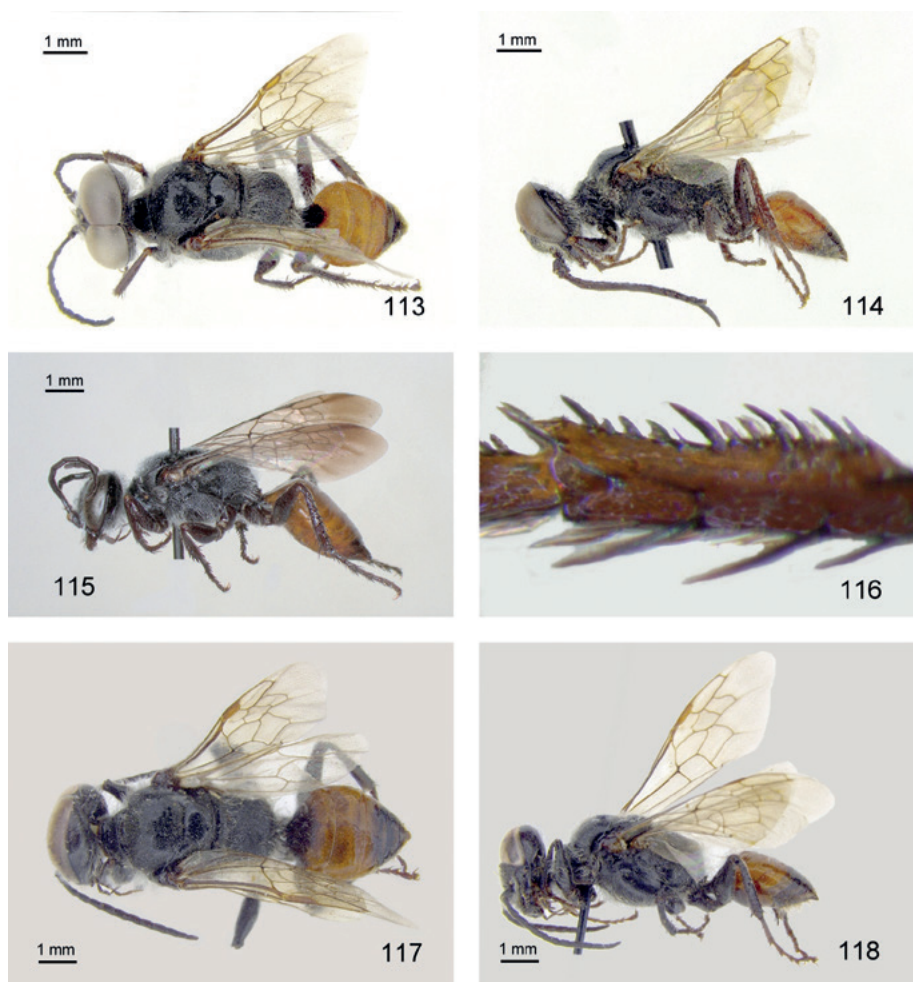
Figs 85-94. Figs 85-87: pygidial plate ♀: (85) *A. diversipes*, (86) *A. rufipes*, (87) *A. apostata*. Figs 88-89: frons ♀: (88) *A. kashmirensis*, (89) *A. minor*. Fig. 90: *A. pontica* ♀: vertex. Figs 91-92: *A. quettae* ♀: (91) head frontal, (92) forewing. Figs 93-94: head frontal ♀: (93) *A. laeta*, (94) *A. radialis*.



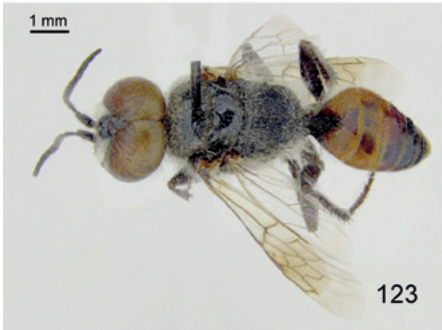
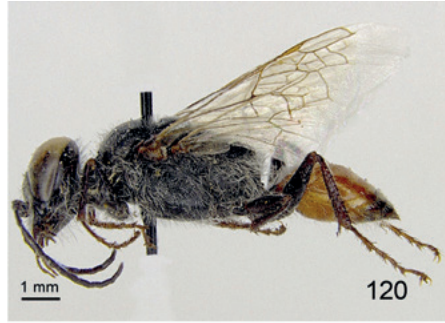
Figs 95-106. **Figs 95-96:** thorax dorsal ♀: (95) *A. laeta*, (96) *A. radialis*. **Figs 97-98:** forebasitarsus ♀: (97) *A. rubra* nov.sp., (98) *A. mongolica* nov.sp. **Figs 99-101:** frons ♀: (99) *A. rubra* nov.sp., (100) *A. rubriventris*, (101) *A. costae*. **Figs 102-103:** antenna ♀: (102) *A. costae*, (103) *A. lusitanica*. **Figs 104-106:** *A. ljubomirovi* ♀: (104) clypeus, (105) frons, (106) mesopleuron.



Figs 107-112. Figs 107-109: frons ♀: (107) *A. mongolica* nov.sp., (108) *A. boops*, (109) *A. arabica* nov.sp. Figs 110-112 mesopleuron ♀: (110) *A. mongolica* nov.sp., (111) *A. canariensis*, (112) *A. graeca*.



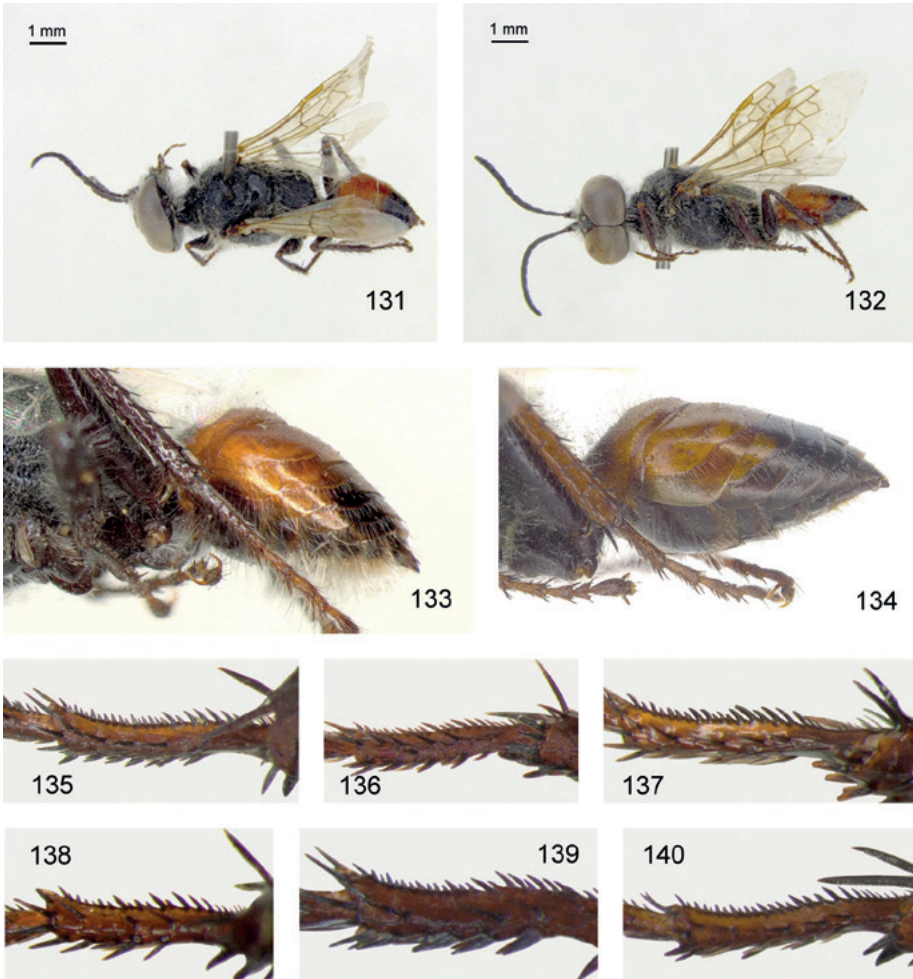
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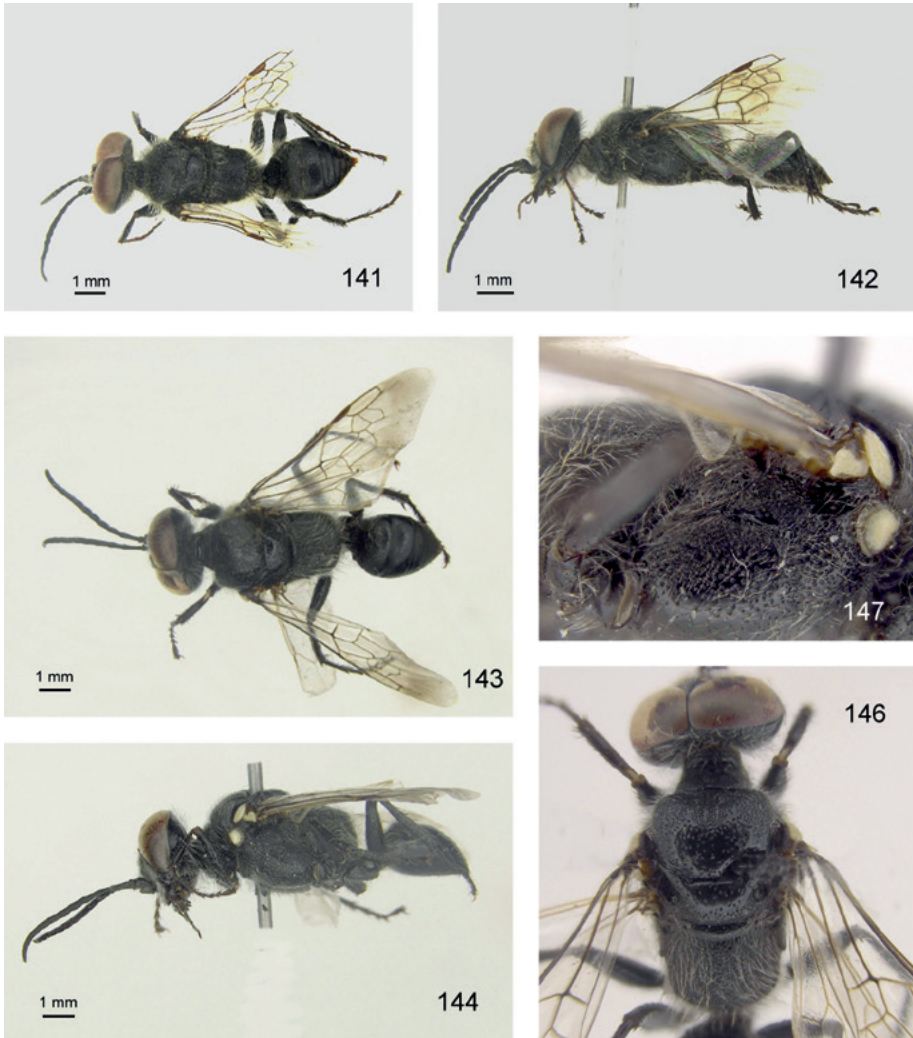
Figs 119-124. Figs 119-120: *A. gobiensis* nov.sp. ♂ holotype: (119) habitus dorsal, (120) habitus lateral. Figs 121-122: *A. iranica* nov.sp. ♂ holotype: (121) habitus dorsal, (122) habitus lateral. Figs 123-124: *A. maghrebensis* nov.sp. ♂: (123) habitus dorsal holotype, (124) habitus lateral paratype.



Figs 125-130. Figs 125-126: *A. mongolica* nov.sp. ♂ holotype: (125) habitus dorsal, (126) habitus lateral. Figs 127-128: *A. mongolica* nov.sp. ♀ paratype: (127) habitus dorsal, (128) habitus lateral. Figs 129-130: *A. rubra* nov.sp. ♀: (129) habitus lateral holotype, (130) habitus dorsal paratype.



Figs 131-140. **Figs 131-132:** *A. schmideggeri* nov.sp. ♂ holotype: (131) habitus dorsal, (132) habitus lateral. **Figs 133-134:** Metasoma lateral ♂: (133) *A. leila*, (134) *A. rufipes*. **Figs 135-140:** Midbasitarsus ♀: (135) *A. boops*, (136) *A. graeca*, (137) *A. ljubomirovi*, (138) *A. mongolica* paratype, (139) *A. rubra* holotype, (140) *A. rubriventris* holotype.



Figs 141-146. Figs 141-142: *A. hirsuta* nov.sp. ♂ holotype: (141) Habitus dorsal, (142) Habitus lateral. Figs 143-146: *A. maculata* ♂: (143) Habitus dorsal, (144) habitus lateral, (145) mesopleuron, (146) mesosoma.

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