

## Identification key to European genera of the Mymaridae (Hymenoptera: Chalcidoidea), with additional notes

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**Abstract.** A key to genera of the Mymaridae occurring in Europe is given. The European genera of the Mymaridae is briefly reviewed. *Ptilomymar* Annecke & Doutt is identified and reported for the first time from Europe. *Pseudocleruchus* Donev & Huber is introduced for the first time in an identification key. In the key are included 20 fairy fly genera. Some faunistic data is also added.

**Key Words:** Mymaridae, key to genera, taxonomy, *Ptilomymar*, *Pseudocleruchus*, Europe.

**Introduction.** Fairy flies are small wasps, many species being smaller than 0.5 mm. Almost all are smaller than 3 mm. The general color can be black, brown or reddish brown, with various shades of yellow or white. In general the Mymaridae (Figures 1-6) and Mymarommatidae (Figure 4g) are small insects that present interest in terms of systematics, taxonomy, biology and ecology. Although mymarommatids like *Mymaromella* sp. (Figure 4g) or *Palaeomymar anomalum* resemble the mymarids (the true fairy flies), they are probably at most sister groups (regarding Mymarommatidae as a sister group to Chalcidoidea). The mymarommatids are considered to be false fairy flies.

The Mymaridae belong to the Superfamily Chalcidoidea, Ord. Hymenoptera – Subord. Apocrita, (Cls. Insecta). All the Mymaridae are believed to be internal, primary parasitoids, especially of insect eggs. There are more than 1420 described species of Mymaridae, grouped in more than 102 genera. In Europe there are more than 450 valid species (Noyes 2003). Fairy flies are spread in almost all ecosystem types. The Mymaridae are found in many habitat types, from terrestrial to aquatic.

**Morphology:** the mymarid head generally has a vertical disposition; its shape can be trapezoidal and a transverse trabecula (frontal suture) or carina (Figures 5a, 5i, 5j) is always present. The toruli are always near the inner margin of eyes.

The mouth parts are for licking, breaking and sucking; some parts are generally much smaller (reduced) and in a less varied form in many genera; the usual fluctuations involve the tooth number and shape of the mandibles etc. The maxillary and labial palps are reduced to only a basal article with one or more than one setae. Cardo is reduced; the stipes is enlarged and almost ovoid; lacinia is reduced to almost absent; galea well developed with many sensillae. A small and boat-shaped mentum is present, at the apex of mentum there is a small glossa. On the glossa are present only two sensillae (basiconic like sensillae).

The antennae (in females), are long and slender and consists of 5 sectors: the radicle, the scapus (longer than the radicle), the pedicel (ovoid in shape), the funicle (consists in general of 5 to 8 articles; F1 – F8) and clava or club (1, 2 or 3 – segmented).

Fairy fly mesosoma has in general the characteristic appearance of Hymenoptera – Apocrita, but can vary from genus to genus. Mesoscutum always with parapsidal grooves. Mesosoma shelters the phragma, which is a strong hemi-conical structure (spoon-like). Phragma can or cannot project into gaster. Fairy flies have large wings

relative to their body size, but there are species which can be brachypterous or wingless. All wing veins are reduced. Wings usually have long marginal cilia. Legs can have 3, 4 or 5-segmented tarsi (3-segmented tarsi are recorded only from the genus *Kikiki* Huber & Beardsley). The metasoma in females consists of 9 segments. The first metasomal segment is the propodeum, fused with the mesosoma; the second segment is strongly narrowed forming the petiolus or is wide like the other metasomal segments.

A total of 20 fairy fly genera are recorded from Europe.

Regarding past identification keys to the genera of the Mymaridae, relevant contributions have been brought by: Annecke & Doutt (1961), Ashmead (1904), Beardsley & Huber (2000), Debauche (1948, 1949), Girault (1929), Guzman-Larralde et al (2001), Huber (1997), Huber et al (2009), Kryger (1950), Lin & Xu (2000), Lin et al (2007), Luft Albarracin et al (2009), Mathot (1961), Noyes (2003), Noyes & Valentine (1989), Poinar & Huber (2011), Schauff (1984), Subba Rao & Hayat (1983), Triapitsyn (1987), Triapitsyn & Huber (2000), Yoshimoto (1990). In Romania, significant contributions to the study of the Mymaridae have been brought by: Boțoc (1965), Andriescu (1996) and Dimitriu (2001). Current contributions have been brought by Pricop (2008, 2009a, 2009b, 2009c; 2010a, 2010b, 2010c; 2011a, 2011b, 2012) and Pricop & Andriescu (2011).

**Material and Method.** We collected the material between the years 2005–2012, with an entomological sweeping net, but we also used yellow pan traps, the Malaise trap, etc. Sorting and preparing the material were performed using a stereomicroscope. Slides, representing almost all the European genera, were prepared for this study and for general illustration. All the studied specimens were mounted in Faure's medium or in Canada balm. The origin of all studied material is Europe. Almost all determinations were performed under the IOR optical microscope. Photographs were taken using Olympus and Canon digital cameras attached to an IOR optical microscope. Available for this preliminary study, beside my personal collection, was some material from other collections, from the Museum of Natural History of Vienna (NHMW), from "Museo Nacional de Ciencias Naturales de Madrid" (MNCN) and Station Linné. Some information was obtained from publications. We have illustrated the morphology in six figures (Figure 1, 2, 3, 4, 5 and 6). All the figures are original. Terminology follows Gibson (1997).

**Results and Discussion.** A reviewed key to the European Mymaridae is necessary because some genera are not introduced or included in the old identification keys. The old European keys for the Mymaridae are outdated. Our key is a useful tool for genera identification. For identification, female specimens should be examined with an optical microscope. SEM technology will reveal also other characters. In our identification key we included 20 genera belonging to the Family Mymaridae.

Nineteen valid genera of Mymaridae egg parasitoids, known as fairy flies, are recorded before this study from Europe: *Arescon* Walker; *Macrocamptoptera* Girault; *Camptoptera* Förster; *Litus* Haliday; *Alaptus* Westwood; *Dicopus* Enock; *Ooctonus* Haliday; *Gonatocerus* Nees; *Erythmelus* Enock; *Anagrus* Haliday; *Pseudocleruchus* Donev & Huber; *Stethynium* Enock; *Cleruchus* Enock; *Anaphes* Haliday; *Mymar* Curtis; *Caraphractus* Walker; *Eustochus* Haliday; *Stephanodes* Enock and *Polynema* Haliday. Identified and reported for the first time in Europe is *Ptilomymar* Annecke & Doutt. In the Palaeartic Region, besides the genera from above, were recorded in the past also: *Acmopolynema* Ogloblin; *Anagroidea* Girault; *Dicopomorpha* Ogloblin; *Eubroncus* Yoshimoto, Kozlov & Trjapitzin; *Himopolynema* Taguchi; *Palaeoneura* Waterhouse (= *Chaetomymar*); *Pseudanaphes* Noyes & Valentine; *Omyomymar* Schauff; *Australomymar* Girault. Part of recorded fossil genera is not included in this key.

Korge (2008) illustrated in his paper an unidentified mymarid specimen, collected from Germany, near Berlin. That illustrated specimen certainly belongs to the Mymaridae. We had the good opportunity to examine three photos of a single specimen illustrated by Korge (2008), and we have been able to identify it as *Ptilomymar*. We did not have the opportunity to examine the prepared material. *Ptilomymar* Annecke & Doutt is identified and recorded now for the first time from Europe.

*Pseudocleruchus* Donev & Huber is introduced for the first time in an identification key. *Pseudocleruchus* is very close and probably related with *Platystethynium* Ogloblin. We also have illustrated in Figures 4b and 5l an unidentified fairy fly genus related with *Stethynium*. This unidentified specimen was collected by us from the European mainland. In this key we have added numerous useful characters. The rarest fairy fly genera, recorded in very few European countries, seem to be: *Macrocamptoptera*, *Dicopus*, *Ptilomyzmar*, *Pseudocleruchus* and *Eustochus*. Most common genera recorded from many European countries are: *Gonatocerus*, *Anagrus*, *Anaphes*, *Polynema* and *Stephanodes*.

### Preliminary key to European genera of the Mymaridae (females):

1. Tarsi 5-segmented (Figure 2e) ..... **2**  
 - Tarsi 4-segmented (Figure 3c) ..... **9**
  
2. Forewing venation is very long, about half to two-thirds wing length (Figure 1a); funicle 5-segmented; propodeum without pattern of carinae; the stemmaticum is present; gaster with a short petiole (a single brachypterous form is present)..... **Arescon Walker** (= *Neurotes* Enoch)  
 - Forewing venation is short, much less than half wing length (forewing venation about one quarter, at most one third of wing length – except in some brachypterous forms); funicle 5, 6 or 7-segmented; propodeum with or without carinae; the stemmaticum is absent; gaster with or without petiole.....**3**
  
3. Antenna having at most a 7-segmented funicle; forewings are narrow in general, about 5-11 times longer than wide .....**4**  
 - Antenna having a 8-segmented funicle (Figure 2a); forewings are broad (wide) in general, about 2-5 times longer than wide (Figures 1c, 2d) .....**8**
  
4. Gaster with a short but distinct petiole, mesophragma not projecting into gaster; forewings more or less narrow and curved backwards; funicle usually 7-segmented and with ring-like segments; second funicular segment (F2) is minute and like a ring (exception: this anellus or ring-like segment is not present in subgenus *Sphegilla* Debauche, in which case the funicle is only 6-segmented, not 7-segmented).....**5**  
 - Gaster broadly sessile (petiole indistinct); mesophragma projecting into gaster; forewings not curved apically; funicle can vary and without ring-like segments (F2 is normal developed) .....**6**
  
5. Mandibles with two teeth; forewings wider (broader) near apex, the macrochaetae are very short; second funicular segment is always ring-like.....**Macrocamptoptera Girault** (= *Rhila* Donev)  
 - Mandibles with one tooth; forewings are narrow near apex, distinctly curved apically (Figure 4c), the macrochaetae are long; second funicular segment is not always ring-like.....**Camptoptera Förster** (= *Sphegilla* Debauche; = *Stichothrix* Foerster)
  
6. Funicle 6-segmented; mesosoma with distinct reticulated sculpture (mesosoma strongly sculptured); clava much wider (broader), about 3X as wide as compared with all the funicle segments; body strongly sclerotized, strongly chitinized (Figure 4d).....**Litus Haliday**  
 - Funicle 5 or 7-segmented (not 6-segmented); mesosoma with faint sculpture; clava with a more or less narrow appearance; body weakly sclerotized (weakly chitinized).....**7**
  
7. Funicle 5-segmented (Figure 1g); scape without setaceous teeth-like projections but with few setae; posterior margin of forewing with membrane distinctly incised behind venation (strongly notched) (Figure 1d); the mandibles are developed and overlapping.....**Alaptus Westwood** (= *Parvulinus* Mercet)

- Funicle 7-segmented (Figure 1h); scape with 2-3 setaceous teeth-like projections; posterior margin of forewing with the membrane not incised behind venation (not notched – Figure 1b); the mandibles are not overlapping, but projecting downward (beak-like), away from the head .....**Dicopus Enoch** (= *Kubja* Subba Rao)

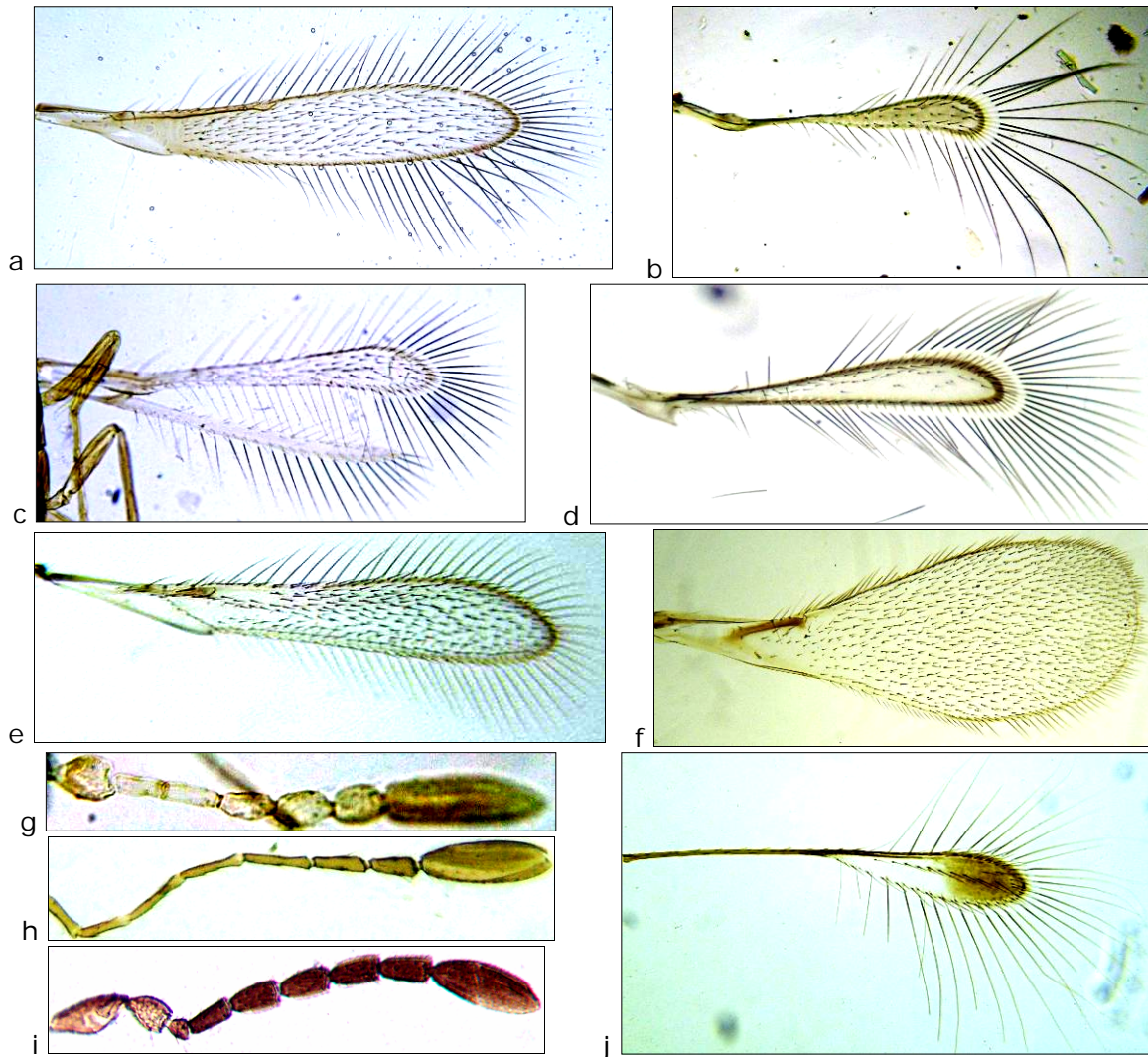


Figure 1. Fairy fly forewings and antennae: a – *Arescon dimidiata*; b – *Dicopus minutissimus*; c – *Anagrus* sp. near *incarnatus*; d – *Alaptus* sp.; e – *Anaphes leptoceras*; f – *Gonatocerus* sp. 1 near *acuminatus*; g – antenna without scape of *Alaptus minimus*; h – antenna of *Dicopus* sp. near *citri*, without scape and pedicel; i – *Anaphes* sp. near *diana*; j - *Mymar pulchellum* (original).

**8.** Face without subantennal grooves; pronotum entire and with transverse carina; propodeum with diamond-like pattern of distinct carinae (Figure 2b); gastral petiole much longer than wide; hypochaeta near proximal macrochaeta; body strongly sclerotized (some brachypterous forms are present) .....**Ooctonus Haliday**  
 - Face with subantennal grooves extending from inner margin of torulus to mouth margin; pronotum divided and without transverse carina; propodeum at most with 2 almost parallel rather faint longitudinal and submedian carinae (Figure 2c), at least with denticles; gastral petiole at most as long as wide; hypochaeta about midway between proximal and distal macrochaetae; body not strongly sclerotized, but weakly chitinized.....**Gonatocerus Nees** (= *Lymaenon* Walker)

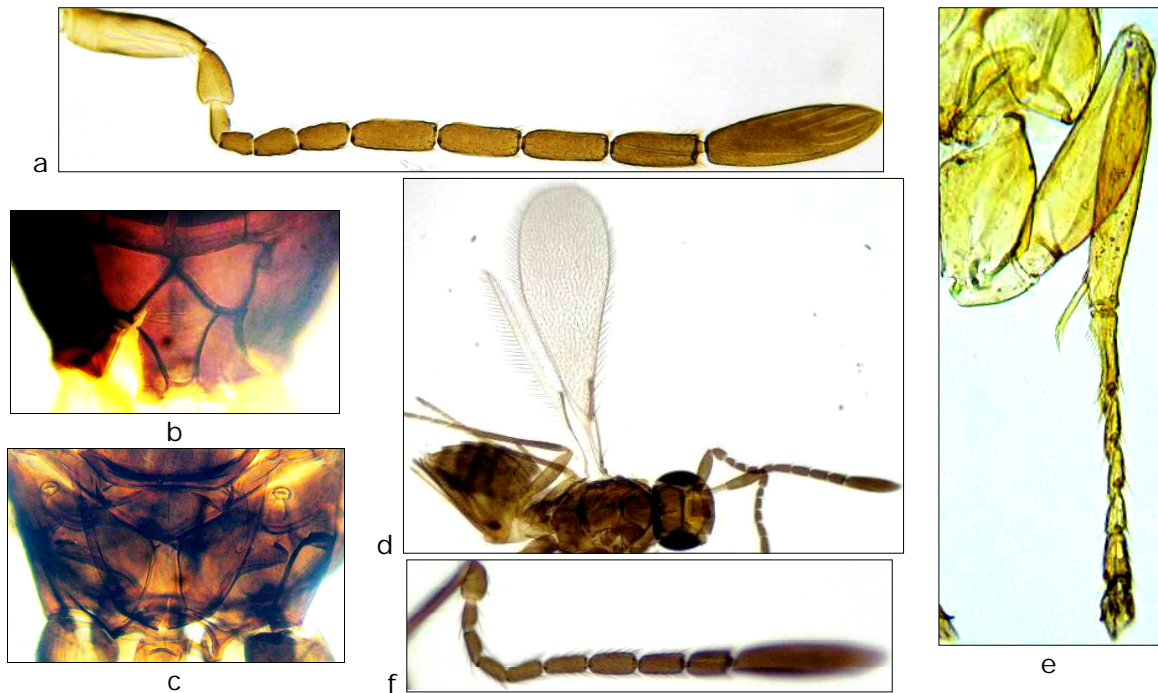


Figure 2. Morphological features of *Gonatocerus* and *Ooctonus*: a – antenna of *Gonatocerus* sp. 2 near *acuminatus*; b – propodeum of *Ooctonus vulgatus*; c – propodeum of *G. sulphuripes*; d, f – habitus and antenna of *Gonatocerus* sp. 3 near *acuminatus*; e – fore leg of *Gonatocerus longicornis* (original).

9. Funicle 8-segmented (Figure 3b); clava entire (1-segmented); propodeum and gaster with submedian longitudinal pair of tall, translucent, areolate carinae (laminae); propodeal setae branched (Figure 3d) ..... ***Ptilomymar* Annecke & Doutt**  
 - Funicle 5 or 6-segmented; clava 1, 2 or 3-segmented; propodeum and gaster without such carinae (laminae); propodeal setae not branched but simple..... **10**

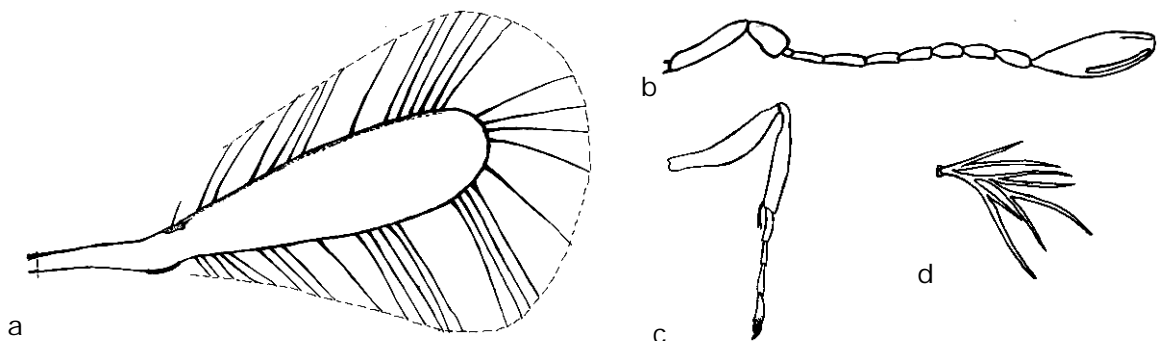


Figure 3. *Ptilomymar* sp.: a – forewing; b – antenna; c – fore leg; d – branched propodeal setae (original).

**10.** Metasoma sessile (the petiole is absent) to subsessile, at most with inconspicuous petiole, usually shorter than wide, no longer than broad, almost ring-like; body weakly sclerotized; funicle 5 to 6-segmented; clava 1, 2 or 3-segmented; base of first gastral segment apparently not projecting into petiole or foramen; scutellum can be divided transversely; first tarsal segment about as long as second tarsal segment..... **11**  
 - Metasoma with distinct petiole (Figures 6a, 6d, 6e), much longer than wide (almost tube-like); body well sclerotized (strongly chitinized); funicle 6-segmented (Figure 6h); clava only 1 or 2 segmented (not 3-segmented); base of first gastral segment usually projecting into petiole; scutellum entire; first tarsal segment (the basitarsus) about 2 times as long as second tarsal segment..... **16**

**11.** Metasoma with a prominent hypopygium, extending to apex of gaster and bearing denticles; funicle 5 to 6-segmented; clava 1-segmented (Figure 4f); mandibles apparently absent (mandibles greatly reduced), without teeth and not meeting medially; fore tibia with several rows of small spines; dorsellum can project out over the propodeum (the dorsellum is usually pointed).....***Erythmelus* Enock** (= *Parallelaptera* Enock)

- Metasoma with a reduced or apparently absent hypopygium; funicle 6-segmented; clava 1, 2 or 3-segmented; mandibles normal developed, usually with 2, 3 to 4 teeth (mandibles meet or overlapp medially in many cases); fore tibia with only 1 or 2 rows of spines; dorsellum is not projecting out over the propodeum.....**12**

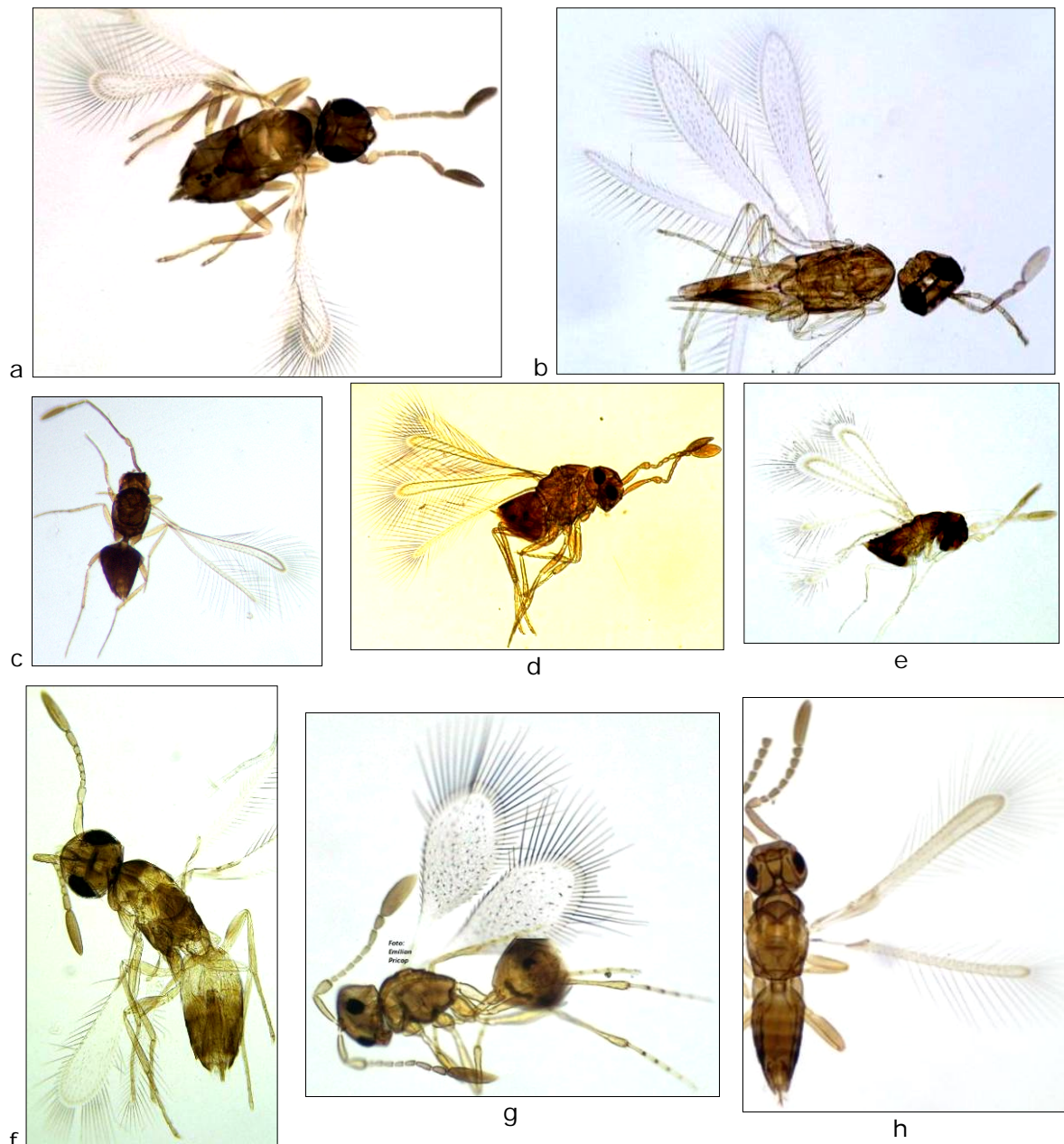


Figure 4. Some Mymaridae and Mymarommatidae – female habitus: a – *Anagrus* sp.; b – unidentified genus; c – *Camptoptera* sp.; d – *Litus cynipseus*; e – *Alaptus minimus*; f – *Erythmelus flavovarius*; g – *Mymaromella* sp.; h – *Cleruchus pluteus* (original).

- 12.** Phragma projecting into gaster (Figures 5k, 5l, 5m); metasoma sessile, without distinct petiole; clava entire (1-segmented) or 3-segmented (Figures 5b, 5c); posterior scutellum can be longitudinally divided, partially or totally, into two lobes by a median groove..... **13**  
 - Phragma is not projecting into gaster; metasoma sessile to subsessile, at most with a short petiole, at least strangled at the base (Figure 5n); clava only 1 or 2-segmented (Figure 5d), not 3-segmented; posterior scutellum not longitudinally divided ..... **15**
- 13.** Clava entire (1-segmented), with 3 or 5 sensory ridges; posterior scutellum with each lobe about as long as wide; forewings are narrow, about 7 to 11 times longer than wide; forewing disk is more or less densely pubescent, rarely with few setae (Figures 1c, 4a)..... **Anagrus Haliday** (= *Anagrella* Bakkendorf; = *Paranagrus* Perkins)  
 - Clava 3-segmented (apparently can be 2-segmented), with many sensory ridges; posterior scutellum, when divided, with each lobe about twice as long as wide; forewings can be wider (forewings vary in width); forewing disk is usually densely pubescent..... **14**
- 14.** Head and mesosoma evidently and strongly flattened dorsoventrally (Figure 5a); head much longer and wider than high, frons and face angled acutely backwards under toruli (Figure 5a); mandibles more or less reduced and not meeting or overlapping, teeth not evident; clava divided almost transversally into 3 segments (clava with transverse or only slightly oblique sutures - Figures 5b, 5e); all the funicular segments are short and wide (Figure 5e); scape without transverse lines or folds (without transverse striation-like lines), but with more than 3 longitudinal lines of setae (Figures 5a, 5e); the cubital line of hairs is not evident, is almost absent; legs relatively short and robust..... **Pseudocleruchus Donev & Huber**  
 - Head and mesosoma not flattened dorsoventrally; head higher than long, frons and face are vertical and straight (Figure 5i); mandibles normal developed and overlapping (mandibles with 4 teeth); clava evidently divided obliquely into 3 segments (Figures 5c, 5h); almost all the funicular segments are much longer than wide (Figure 5h); scape with transversal to oblique lines or folds (transversal striation-like lines) and at most with 2 longitudinal lines of setae (Figure 5g); the cubital line of hairs more or less evident (Figure 5f); legs normal developed, not robust..... **Stethynium Enock**
- 15.** Mandibles with 2 teeth; propodeum without median groove; body strongly flattened dorsoventrally (wider than high), body color dark to light brown, a short petiole is present (Figure 4h); frons angled acutely backwards under toruli; forewings are narrow, forewing disk is partially glabrous, at most with one median line of hairs (Figure 4h); the cubital line of hairs is apparently absent; stigmal vein usually dilatated (brachypterous and apterous forms are present)..... **Cleruchus Enock** (= *Paracleruchus* Yoshimoto)  
 - Mandibles with 3 teeth; propodeum with single median longitudinal groove or carina; body not distinctly flattened dorsoventrally, body color black or dark brown (Figure 5n), the petiole is absent; frons almost vertical (Figure 5j); forewings vary in breadth, forewing disk is pubescent; the cubital line of hairs is obviously present (Figure 1e); stigmal vein not dilatated..... **Anaphes Haliday** (= *Patasson* Walker)
- 16.** Scape elongated (about 7 to 9 times as long as broad), strangled in the middle (scape constricted medially), much longer, at most 2 times longer than the widest part of the head (Figures 6e, 6f); hind wings rudimentary (Figure 6e) and filamentous (hair-like, short or long), distally at most with 3 to 5 marginal cilia; forewings with brown apical area..... **Mymar Curtis**  
 - Scape not elongated (much less than 7 times as long as broad, usually about 2 to 4 times as long as broad), not constricted medially, but wider in the middle (Figures 6a, 6b, 6c, 6d), usually not longer than the widest part of the head (scape at most about as long as the widest part of the head); hind wings not filamentous, but normal developed with a long membrane and many marginal cilia; forewings without distinct brown apical area..... **17**

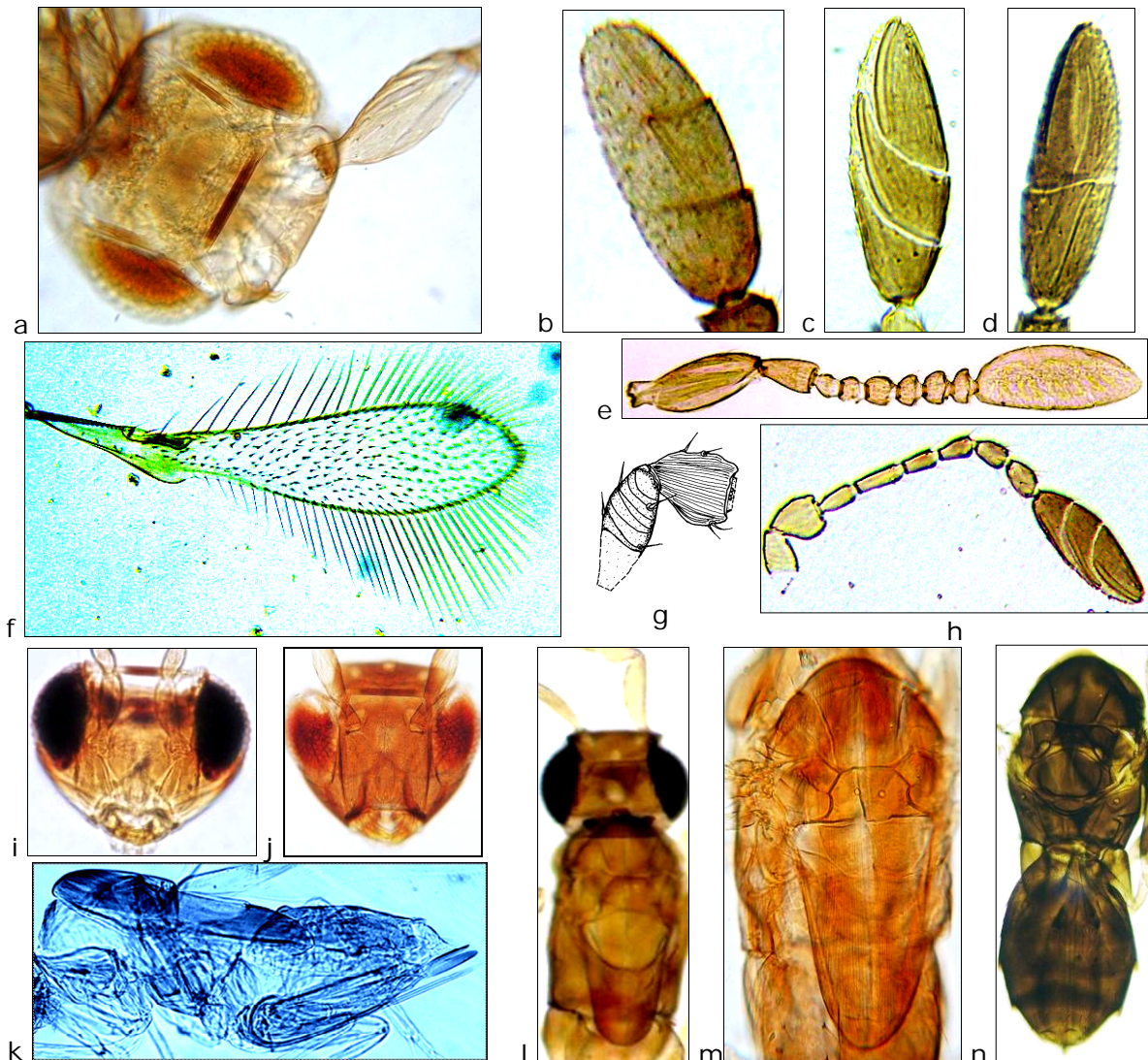


Figure 5. Morphological features of some Myrmecidae: a, b, e – head, clava and antenna of *Pseudocleruchus* spp.; c, f, g, h, i, k – clava, forewing, antenna, head and body of *Stethynium triclavatum*; d, j, n – clava, head and body of *Anaphes* spp.; l – head and mesosoma of an unidentified genus; m – mesosoma of *Anagrus* sp., phragma projecting deep into gaster (original).

- 17.** Marginal vein of forewing oblong, distinctly elongated, almost long as the submarginal vein, in some cases longer (Figures 6g, 6i); forewing setae not always simple; mesosoma strongly reticulated, notauli as depressions; propodeum with 2 more or less noticeable longitudinal carinae; clava 1 or 2-segmented; toruli almost touching the transverse trabecula (frontal carina).....**18**
- 18** - Marginal vein of forewing short, much shorter than submarginal vein (Figures 6a, 6d, 6j, 6k); forewing setae always simple; mesosoma with faint reticulations, notauli as grooves; propodeum at most with one longitudinal carina (the carina can vary in length), in some cases apparently without carina (the carina is reduced or absent); clava not segmented, but entire; toruli not touching the transverse trabecula, usually lower.....**19**
- 18.** Clava 1-segmented; funicle apparently without sensory ridges (brachypterous forms are present)..... ***Caraphractus* Walker (= *Valkerella* Westwood)**
- Clava 2-segmented; funicle with sensory ridges..... ***Eustochus* Haliday**
- 19.** Scape imbricated with rasp-like scales (Figure 6b); face depressed between eyes; marginal vein short and thin (Figures 6a, 6j); prothoracic spiracles advanced; propodeum without median carina ..... ***Stephanodes* Enock (= *Masonana* Yoshimoto)**



- Scape not with rasp-like scales, is almost smooth, at most with faint reticulation or transverse striations or transverse folds (Figure 6c); face not depressed between eyes; marginal vein short and thickened (Figures 6d, 6k); prothoracic spiracles in normal position, not advanced; propodeum usually with a single median carina of varying length (Figure 6l)..... **Polynema Haliday** (= *Doriclytus* Förster)

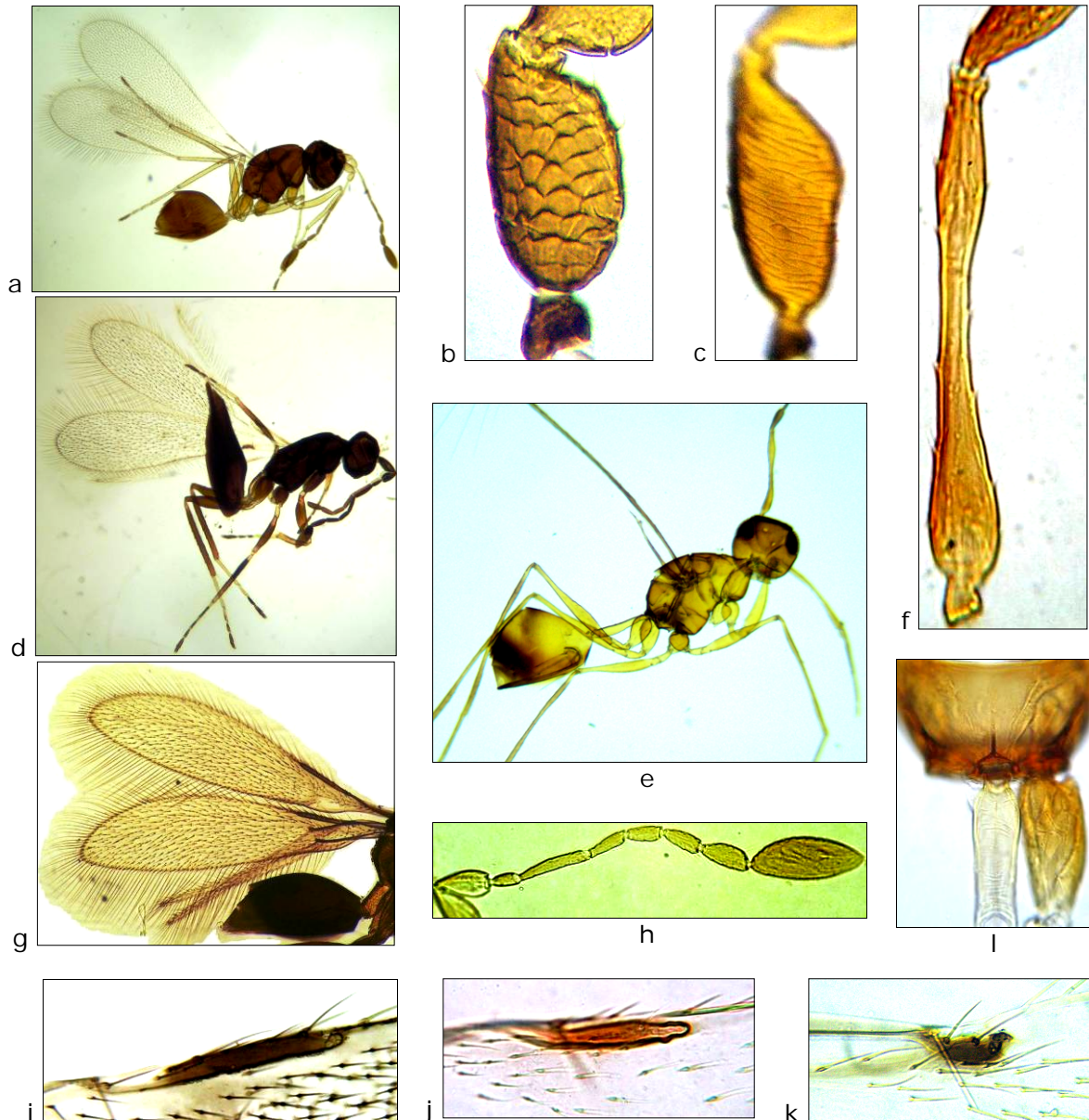


Figure 6. *Stephanodes*, *Polynema* and *Mymar*: a, b, j – habitus, scape and forewing vein of *Stephanodes similis*; c, k – scape and forewing vein of *Polynema valkenburgense*; d, h, l – habitus, antenna and propodeum with petiole of *Polynema* spp.; e, f – habitus and scape of *Mymar pulchellum*; g – wings of *Caraphractus cinctus*; i – forewing vein of *Eustochus* sp. (original).

**Note:** The fossil specimen: fairy wasp (Hymenoptera, Mymaridae; NHMW, N6970), illustrated by Schmidt et al (2010) in Figure 3G (pp. 7332), belongs to *Alaptus* group of genera.

Below we also add some faunistic data on the Romanian Mymaridae. The following genera are recorded for the first time for and from Dobrogea: *Anagrus*, *Gonatocerus*, *Litus*, *Ooctonus*, *Stepahnodes* and *Stethynium*.

## Newly recorded species for Moldova and/or Dobrogea provinces - Eastern part of Romania, with notes

1. ***Alaptus minimus* Westwood, 1839** - Material examined: 1♀ + 2♂, 15.07.2010, Vicovu de Jos, Suceava county (Leg. Chiriliuc A.), rearings from *Tanacetum* sp., probably from Psocoptera eggs. Notes: species characterized by small specimens; the row of discal hairs on forewings comprises on average 11 hairs; antennal segments relatively short (Figure 1g); ovipositor short, slightly protrude (Figure 4e). *Alaptus minimus* is newly recorded for Moldova.

2. ***Anagrus* sp.** – Material examined: 1♀, 15.07.2011, Sulina - Danube Delta, Tulcea county (Leg. Pricop E.), collected with a sweep net from wetland vegetation. Notes: small specimen, all funicle articles short and broad; forewings with a bare area (Figure 4a), ovipositor short (Figure 4a). Our specimen is close to *Anagrus takeyanus* Gordh. Genus newly recorded for Dobrogea.

3. ***Gonatocerus sulphuripes* (Förster, 1847)** - Material examined: 1♀, 15.07.2011, Sulina – Danube Delta, Tulcea county (Leg. Pricop E.), collected with a sweep net from wetland vegetation. Notes: F7–F8 each with 2 sensory ridges (mps), disc of forewings densely setose between marginal vein and cubital line of hairs, propodeum with 2 longitudinal carinae (Figure 2c). *Gonatocerus sulphuripes* is newly recorded for Dobrogea.

4. ***Gonatocerus* sp. 1 near *acuminatus*** – Material examined: 1♂, 14.08.2001, Valea lui David reserve – Miroslava, Iași county (Leg. Dimitriu D. I.). Notes: large specimen belonging to "*litoralis*" species group, body brownish; scape short and with transverse striations or folds; the cubital line of hairs is not present (Figure 1f)., forewing base with a more or less bare area (Figure 1f).

5. ***Gonatocerus* sp. 2 near *acuminatus*** – Material examined: 1♀, 11.08.2010, Piatra Neamț, Neamț county (Leg. Pricop. E.), collected with yellow pan traps. Notes: large specimen belonging to "*litoralis*" species group, but with a smaller ovipositor in comparison with *G. acuminatus*. In our specimen: F5 to F8 each with sensory ridges (mps), F8 with 4 sensory ridges (Figure 2a); forewings broad, a more or less distinct bare area is present between marginal vein and cubital line of hairs.

6. ***Gonatocerus* sp. 3 near *acuminatus*** – Material examined: 2♀, 27.06.2012, Miroslava, Iași county (Leg. Pricop. E.), collected with a sweep net. Notes: large specimens, belonging to "*litoralis*" species group, close to *G. acuminatus*, but is different from *G. acuminatus* because of the much shorter ovipositor (Figure 2d), in female antenna (Figures 2d, f) radicle and scape are long, scape with longitudinal striations, F6 to F8 each with sensory ridges (mps), F8 with 3-4 sensory ridges (mps), forewings broad (Figure 2d), forewing disc densely setose between marginal vein and cubital line of hair.

7. ***Litus cynipseus* (Haliday, 1833)** - Material examined: 4♀, 5.08.2010, Agigea sand dunes reserve, Constanta county (Leg. Ciobanu D.), collected with yellow pan traps. Notes: Small specimens, mesosoma strongly reticulated, antennae with short and broad segments, clava broad and massive. *Litus cynipseus* (Figure 4d) is newly recorded for Dobrogea.

8. ***Ooctonus vulgatus* (Haliday, 1833)** - Material examined: 1♀, 2.09.1983, Tătlăgeac lake, Constanța county (Leg. Andriescu I.), ecotone, wetland vegetation. Notes: F7 and F8 each with 2 sensory ridgers (mps), F1 to F3 each much longer than wide. Areola on propodeum is present (Figure 2b). *Ooctonus vulgatus* is newly recorded for Dobrogea.

9. ***Stepahnodes similis* (Förster, 1847)** - Material examined: 1♀, 27.06.1985, Uzlina – Danube Delta, Tulcea county (Leg. Andriescu I.), wetland area; 1♀, 2.09.1983, Tătlăgeac, Constanța county, (Leg. Andriescu I.), ecotone - wetland zone. Notes: scape

scaly (Figures 6a, b), marginal vein of forewings is slender (Figure 6j). *Stepahnodes similis* is a common species in Eastern part of Romania and is newly recorded for Dobrogea.

**10. *Stethynium triclavatum* Enock, 1909** - Material examined: 1♀, 5.07.1981, Murighiol – Danube Delta, Tulcea county (Leg. Andriescu I.), collected with a sweep net; 2♂, 4.09.1985, Uzlina – Danube Delta, Tulcea county (Leg. Andriescu I.), from *Salix sp.* (wetland area); 10♀ + 3♂, 16.07.2011, near Tulcea city – wetlands of port area, Danube bank, Tulcea county (Leg. Pricop E.), collected with a sweep net from *Salix alba* - associated vegetation. Notes: body not flat (Figure 5k), antennal clava with three segments (Figures 5c, h), forewings broad (Figure 5f). *Stethynium triclavatum* appears to be common in the Danube Delta area, on wetlands and is newly recorded for Dobrogea.

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