

**PSEUDERIMERUS GAHAN, 1919 (HYMENOPTERA:  
TORYMIDAE: MICRODONTOMERINI) SPECIES FROM  
TURKEY, WITH DESCRIPTIONS OF NEW SPECIES**

**Mikdat Doğanlar\***

\* Honorary Professor, Biological Control Research Station/ Adana, TURKEY. E-mail: mikdoganlar@yahoo.com.tr

[Doğanlar, M. 2016. *Pseuderimerus* Gahan, 1919 (Hymenoptera: Torymidae: Microdontomerini) species from Turkey, with descriptions of new species. *Munis Entomology & Zoology*, 11 (1): 230-237]

ABSTRACT: The species of *Pseuderimerus* Gahan 1919 (Hymenoptera: Torymidae), were reviewed: 5 species, *Pseuderimerus bouceki* Zerova & Seregina, 1994; *Pseuderimerus flavus* (Nikol'skaya 1952); *Pseuderimerus irani* Zerova & Seryogina, 2008; *Pseuderimerus luteolus* Zerova & Seregina, 1990 and *Pseuderimerus luteus* Boucek, 1954 were transferred to *Idiomacromerus* Crawford (new combinations). Two new species found in the South-Eastern and Southern Anatolia of Turkey. The species, *P. sanliurfanensis* n. sp. from Şanlıurfa, Bozova, Kangörmez and *P. adananensis* n. sp. from Adana were described, diagnostic characters were illustrated, and an identification key for the palearctic species was provided.

KEY WORDS: *Pseuderimerus* spp., Torymidae, Turkey

The genus *Pseuderimerus* was described by Gahan (1919) having type species *Pseuderimerus mayetiolae* Gahan, 1919 by monotypy. Zerova & Seregina (1990) described *Pseuderimerus luteolus* n. sp. from Tadzhikistan, and gave an identification key for 3 species from Palearctic region. Grissell (1995) recorded *Pseuderimerus* as valid genus in the tribe Microdontomerini (Torymidae), and recorded 8 species all over the world, 3 of them as Nearctic, and 4 of them as Palearctic species, *Pseuderimerus indicus* Subba Rao & Bhatia from the Oriental and Palearctic regions. Later, Burks & Redak (2004) described *Pseuderimerus burgeri* Burks from USA, Zerova & Seryogina (2008) described *Pseuderimerus irani* Zerova & Seryogina from Iran and provided an identification key for the palearctic species. Narendran et al. (2012) described *Pseuderimerus corianderi* Narendran & Mercy from India. Recently Doğanlar (2016a) transferred 3 species from *Idiomacromerus* to *Pseuderimerus*.

Host records have been given for some species as parasitoid of *Mayetiola destructor* (Cecidomyiidae) (Gahan, 1919; Boucek, 1978), *Tetramesa* sp. (Eurytomidae) (Nikol'skaya, 1952) and some other hosts were given by Noyes (2015) for the present species.

In this work morphological characters of the *Pseuderimerus* species from the Palearctic region were studied, their taxonomic status discussed and two species from Turkey were described, and a new identification key for the Palearctic species was provided.

#### **MATERIAL AND METHOD**

This study is based upon examination and identification of the specimens collected from Şanlıurfa and Adana of Turkey, and the figures and descriptions of the species were by the works. The examined specimens and types of the new species were deposited in Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC). Specimens were collected by sweeping net and putting the whole contents of the swept materials directly in 96 % ethanol. After sorting the material, individuals were mounted on cards for further morphological studies.

The species were identified by following the keys of Grissell (1995) and Zerova & Seregina (1999, 2008). Wings and antennae of the holotypes were slide-mounted in Canada balsam. Photographs of diagnostic characters of the genera were taken by using of Leica DM 500 microscopes with a digital Leica ICC 50 camera attached to it.

Terminology and abbreviations

Morphological terminology follows Gibson (1997), and terminology of hypopygia was taken from Doğanlar (2016b). Abbreviations used in the key and descriptions are: OOL= shorter distance between ocello-ocular line, POL= distance between posterior ocelli, F1-6 = funicular segments.

## RESULTS AND DISCUSSION

### *Pseuderimerus* Gahan, 1919

*Pseuderimerus* Gahan 1919:124. Type species *Pseuderimerus mayetirolae* Gahan (orig. desig. and monotypic) USNM.

*Lochitimorpha* Szelenyi 1957: 382. Type species *Lochitimorpha semiaenea* Szelenyi (orig. desig. and monotypic) Hungary. (Synonymized by Grissell (1995).

The distribution and host records of the known species were given by Grissell (1995) and Noyes (2015).

**Diagnostic characters:** Hind femur simple; hind tibia with 1 apical spur; the structure of antennal clava of female with apical spicula, anellus in both sexes wider than long plus 1-5 reduced flagellomeres (appear to be, are, anelli, see figs. 2f, 3b), and males with eyes reduced (Figs. 88-89 of Grissell, 1995). Hypopygium (Fig. 1) with width of hypopygium/median length of hypopygium=3.04; width of hypopygium/lateral length of hypopygium=1.67; width of hypopygium/distance between anterior margin of median lobe and posterior edge of median sclerotized area=2.5. Length of posterior median incision 6.0x as long as length of anterior median incision; median sclerotized area 0.4x as long as posterior median incision; median length of hypopygium 1.8x length of anterior lobe; median sclerotized area 0.5x as long as its own minimum width (Doğanlar, 2016b).

The diagnostic characters of *Pseuderimerus*, especially "the structure of antennal clava of female with apical spicula, anellus in both sexes wider than long plus 1-5 reduced flagellomeres" have been miss-understood by some works (Boucek, 1954, 1965; Szelenyi, 1957; Zerova & Seregina, 1990; Zerova & Seryogina, 1999, 2008; Askew, 2004). Up to now 11 palearctic species were listed by Noyes (2015). By following Doğanlar (2016a) and the works mentioned above the number of the palearctic species of *Pseuderimerus* has been recorded as 14 species.

I have not seen the types but by examining the their descriptions the following species of *Pseuderimerus* were transferred to the genus *Idiomacromerus* which were fits definition given for the characters by Grissell (1995), i.e. hind femur simple; the occipital carina absent or weakly expressed; marginal vein 2.0-4.5x as long as stigmal vein; 2 or more anelli, and the unreduced eyes of the male. Additionally, in females, metaterga 2 and 3 are at most somewhat emarginated, in males only metaterga 2 is very slightly emarginated medially, and based on those assessments, the species would appropriately be placed as species of *Idiomacromerus*, listed below:

*bouceki* (Zerova & Seregina). PALEARCTIC: Turkmenistan (**New combination**).

*Pseuderimerus bouceki* Zerova & Seregina, 1994: 124. New species, Holotype female, ZIKU,

The new combination is a result of the study on the illustrations of female habitus and forewing and female antenna given by Zerova & Seregina, (1994).

*flavus* (Nikol'skaya). PALEARCTIC: Tadjhikistan (**New combination**).

*Ditropinotus flavus* Nikol'skaya, 1952: 140. New species, Types absent.

*Pseuderimerus flavus* (Nikol'skaya), Boucek, 1965: 544. New combination for *Ditropinotus flavus* Nikol'skaya. Zerova & Seryogina (1990) gave the figures of antenna, fore wing veins and metasoma (Fig. 2, 4-6).

*irani* (Zerova & Seryogina). PALEARCTIC: Iran (**New combination**).

*Pseuderimerus irani* Zerova & Seryogina, 2008: 264-265. New species, Holotype female, ZIKU.

The new combination is a result of the study on the illustrations of female habitus and forewing, female antenna and legs (Figs. 1, 1-6, given by Zerova & Seryogina (2008) ex stem galls of *Timaspis lorestanicus* and *T. irani* in stem of *Lactuca orientalis* collected 29-viii-2002, emerged summer, 2003 (Tarakoli leg). deposited in the Zoological Institute Kiev, Ukraine (ZIKU).

*luteolus* (Zerova & Seregina). PALEARCTIC: Tadjhikistan (**New combination**).

*Pseuderimerus luteolus* Zerova & Seregina, 1990: 150-152. New species, Holotype female, ZIKU.

The new combination is a result of the study on the illustrations of female habitus and forewing, female antenna and legs (Figs. 1, 1-8, given by Zerova & Seryogina (1990) ex *Cousinia radians* and *C. refracta* (Astereceae) collected 22-24-iii-1981, (M.D.Zerova leg). deposited in the Zoological Institute Kiev, Ukraine (ZIKU).

*luteus* Boucek. PALEARCTIC: Czechoslovakia (**New combination**).

*Pseuderimerus luteus* Boucek, 1954: 70. New species, figs., Holotype female, NMP,

The new combination is a result of the study on the illustrations of female habitus and forewing, female antenna and hind leg (Figs. 2, 1-3, given by Zerova & Seryogina (1990), and Figs. 28, 1-4, given by Zerova & Seryogina (1999).

### Key to Palearctic species of *Pseuderimerus*

- 1- Antenna with 2 anelli and 6 funicular segments.....2  
 - Antenna with 4-5 anelli form segments, 3-4 funicular segments.....3  
 2- Ovipositor index 1.0-1.1; female metasoma (less ovipositor) 1.1-1.2x as long as mesosoma, gaster plus ovipositor 1.4x as long as rest of body; Antenna with club having spicula, and apical 2 segments yellow; funicular segments transverse, gradually widening apically, F6 1.6x as wide as F1; head and thorax dull yellowish to brown, without metallic coloration abdomen of female is completely brilliant yellow. Ovipositor 0.46x as long as abdomen. 1.7- 2.2 mm. (Figs. 25, 1-3).....*P. semiaeneus* (Szelenyi)  
 - Ovipositor index 1.6; antenna with funicular segments less compacted, gradually widening apically; 1st anellus almost quadrate, 2nd distinctly transverse; F1 slightly transverse (4/5); F2-F3 quadrate; F4-F6 distinctly transverse, about 1.5x wider than long; club with apical 2 segments darker, having distinct spicula, without spicula about twice as long as width; female with gaster plus ovipositor 1.8x as long as rest of body; head and thorax dull yellowish to brown, without metallic coloration; body including ovipositor 3.3 mm.....*P. urospermi* (Askew)  
 3- Ovipositor sheath (Fig. 2d) very long, ovipositor index 2.75; antenna sheath (Fig. 2f) with flagellomers distinctly transverse, gradually widening apically; 1st 4 flagellomers distinctly transverse, anelli form; other flagellomers transverse, 5th-6th almost twice as wide as long; 7th-8th, about 1.5-1.75x wider than long; club with apical segment white, having distinct, fine spicula, about twice as long as width; female sheath (Fig. 2 a,d) with metasoma plus ovipositor 1.66x as long as rest of body; head and thorax brown, with greenish metallic reflexion; body including ovipositor 2.1 mm. (ovi. 0.9 mm).....*P. sanhurfanensis* n. sp.  
 - Ovipositor sheath sheath (Fig. 3a; Figs. 26, 6 of Zerova & Seryogina (1999) distinctly shorter than metasoma, first 5 segments anelli form, distinctly transverse; other characters variable.....4  
 4- Ovipositor sheath (Figs. 26, 6 of Zerova & Seryogina (1999) 0.43x as long as metasoma, and ovipositor index 1.0; antenna pale yellow, except pedicel dorsally darker, with flagellomers gradually widening apically; 6th -8th flagellomers transverse, about 1.8x as wide as long; club with distinct spicula, club without spicula about twice as long as width; metasoma plus ovipositor 1.3x as long as rest of body; head and thorax brown, with greenish metallic reflexion; body including ovipositor. 1.2 mm.....*P. bouceki* (Zerova & Seryogina)

-Ovipositor sheath (Fig. 3a) 0.24x as long as metasoma, and ovipositor index 0.7; only metasomal terga 2 deeply emarginated. Antenna (Fig. 3b) testaceous, with flagellomers gradually widening apically; 6th-8th flagellomers transverse, 6th about 2.8x; 7th 2.17x; 8th 1.7x as wide as long; club with distinct spicula, about twice as long as width; metasoma (Fig. 3 a) 1.1x rest of body and excluding ovipositor 0.95x rest of body; head and thorax brown, with greenish metallic reflexion; metasoma yellow, ovipositor brown; body including ovipositor 1.34 mm (ovip. 0.14 mm).....*P. adananensis* n. sp.

***Pseoderimerus semiaeneus* (Szelenyi)**

*Lochitimorpha semiaenea* Szelenyi 1957:386-387, (Fig. A), Holotype Female, (HNHM) (transferred *semiaenea* to *Pseuderimerus* by Grissell and recorded again in Grissell 1995: 253).

*Idiomacromerus semiaenea* (Szelenyi, 1957): Zerova & Seregina 1999: 58-59, figs. 25, 1-3; Askew et al. 2004: 215, 216.

**Diagnostic characters:** (Based on Zerova & Seregina 1999 and Askew et al. 2004): Head and thorax dull yellowish to brown, without metallic coloration; metatibia with only one distinct apical spur (Fig. 5C of Askew et al., 2004). Ovipositor sheath about as long, or very slightly longer than, metatibia; female gaster (less ovipositor) 1.1-1.2x as long as mesosoma, gaster plus ovipositor 1.4x as long as rest of body; Antenna with club having spicula, and apical 2 segments yellow; funicular segments transverse, gradually widening apically, F6 1.6x as wide as F1, female antenna with a colorless process at apex of clava (Figs. 5A-B of Askew et al., 2004); abdomen of female is completely brilliant yellow. ovipositor 0.46x as long as abdomen. Male with relatively small eyes. 1.7- 2.2 mm. (Figs. 25, 1 of Zerova & Seregina, 1999; Askew et al., 2004).

**Description:** given by Zerova & Seregina (1999).

**Distribution:** Hungary, Somlovasarhely, type was deposited in the Hungarian National History Museum (Szelenyi, 1957); Spain, Madrid, Dehesa de Arganda, 05. x. 1994, F. (Ronquist, leg).

**Host:** reared from *Centaurea* stems, containing galls of *Phanacis centaureae* Förster, but it is not certain that they emerged from the cynipid galls (Askew et al., 2004).

***Pseoderimerus urospermi* (Askew)**

*Idiomacromerus urospermi* Askew 2004: 145-146, (figs. 3,4, 5A-F). Holotype Female, (MNCN).

**Diagnostic characters:** (Based on Askew et al., 2004): Head and thorax dull yellowish to brown, without metallic coloration; metatibia with only one distinct apical spur (Fig. 5C of Askew et al., 2004), Ovipositor sheath almost 1.6x as long as metatibia; funicle segments less compacted, apical 2 segments of club darker; female antenna with a colorless process at apex of clava (Figs. 5A,B); female gaster (less ovipositor) 1.6x as long as mesosoma, metasoma plus ovipositor 1.8x as long as rest of body; body including ovipositor 3.3 mm.. Male with relatively small eyes.

**Description:** given by Askew et al. (2004).

**Distribution:** Spain. Types were deposited in the Museo Nacional de Ciencias Naturales (Madrid) (MNCN).

**Host:** gall of *Timaspis urospermi* in stem of *Urospermum picroides* collected 29-viii-2002, emerged 16.ix-2003 (J. L. Nieves-Aldrey leg).

***Pseoderimerus sanhurfanensis* Doğanlar n. sp.**

(Figs. 1e, 2e, 3e)

**E t y m o l o g y .** The name is derived from the name of Adana, from where the holotype was collected.

**D i a g n o s i s.** Ovipositor sheath very long, almost 2.75x as long as metatibia; antenna with flagellomers distinctly transverse, gradually widening apically; 1st 4 flagellomers distinctly transverse, anelli form; other flagellomers transverse, 5th-6th almost twice as wide as long; 7th-8th, about 1.5-1.75x wider than long; club with apical segment white, about twice as long as width, having distinct, fine spicula; female with metasoma plus ovipositor 1.66x as long as rest of body; head and thorax brown, with greenish metallic reflexion.

**Description:**

Female. Body (Fig. 2a,d) bicolored, head and mesosoma brown dorsally with greenish metallic reflexion, metasoma dorsally black, ventrally yellow, legs yellow, except coxae concolorous with body, except apices of femora, tibiae mostly and tarsi pale yellow; antenna with scape brown, other part of antennae yellow, except apical segment of club and spicula hyaline. Body including ovipositor 2.1 mm. (ovi. 0.9 mm).

Head (Fig. 2g) in dorsal view as wide as mesoscutum, width to length 45:26; POL 2.57x OOL; OOL equal to diameter of lateral ocellus. Head (Fig. 2b,c,e) in frontal view 1.11x as wide as high in ratio 50:45; dorsal margin of torulus slightly below level of lower edge of eyes; head (Fig. 2c) in lateral view with malar space consists 0.43x height of eye; face with fine sculpture; head (Fig. 2c) in hind view with occipital carina absent; antenna (Fig. 2f) with flagellomers distinctly transverse, gradually widening apically; 1st 4 flagellomers distinctly transverse, anelli form; other flagellomers transverse, 5th-6th almost twice as wide as long; 7th-8th, about 1.5-1.75x wider than long; club with apical segment white, about twice as long as width, having distinct, fine spicula.

Mesosoma (Figs. 2a,g) moderately bulged in profile, propodeum declined, distinctly visible from above; sculpture of pronotum, mesoscutum and scutellum with distinct reticulation; pronotum 0.30x as long as mesoscutum; propodeum almost smooth. All coxae with fine reticulation. Forewing lost. Hind femora (Fig. 2a) 3.6x as long as wide.

Metasoma (Fig. 2d) 0.9x rest of body; excluding ovipositor slightly shorter than rest of body; tip of hypopygium about 3/5 length metasoma; Ovipositor 1.7x as long as metasoma; ovipositor index 2.75.

**Male:** unknown

**Material examined:** **Holotype, female**, Turkey: Şanlıurfa, Bozova, Kangörmez, 07.v. 2005, MD M. Doğanlar, swept from wheat field, on card, left antenna slide mounted in Canada balsam, deposited in the Insect collection of Research Station of Biological Control, Adana.

**Distribution:** Turkey: Şanlıurfa, Bozova.

**Host:** unknown.

**Comments:** Female: *Pseuderimerus sanliurfanensis* n.sp. is a unique species in having very long ovipositor, ovipositor index 2.75 (in other Palearctic species of *Pseuderimerus* at most 1.6 in *P. urospermi*).

***Pseuderimerus bouceki* (Zerova & Seryogina)**

*Liodontomerus bouceki* Zerova & Seryogina, 1997: 970-971, Holotype female (ZIKU).

*Idiomacromerus bouceki* (Zerova & Seryogina, 1997): Zerova & Seregina (1999) Figs. 26, 6-8); Zerova et al.(2013) (Figs. 1, 13-15).

**Diagnostic characters:**

**Description:** given by Zerova & Seregina (1997), and Zerova & Seregina (1999), Figs. 26, 6-8); Zerova et al. (2013) gave the Figs. 1, 13-15. **Distribution:** Ukraine. Types were deposited in the Zoological Institute of Kiev, Ukraine (ZIKU).

**Host:** reared from galls of *Tetramesa punctata* Zer. (Eurytomidae) on *Stipa lessingiana* Grin. & Rupr. (Zerova leg.).

***Pseoderimerus adananensis* Doğanlar n. sp.**

(Figs. 1; 3a-d)

**E t y m o l o g y .** The name is derived from the name of Adana, from where the Holotype was collected.

**D i a g n o s i s .** Ovipositor sheath 0.24x as long as metasoma, and ovipositor index 0.7; only metasomal terga 2 deeply emarginated. Antenna testaceous, with flagellomers gradually widening apically; 6th-8th flagellomers transverse, 6th about 2.8x; 7th 2.17x; 8th 1.7x as wide as long; club with distinct spicula, about twice as long as width; head and thorax brown, with greenish metallic reflexion; metasoma yellow, ovipositor brown.

**Description:**

Female. Body (Fig. 3a) bicolored, head and mesosoma brown dorsally with greenish metallic reflexion, except mesosoma laterally, pronotum and propodeum paler, legs and antenna yellow; metasoma yellow, ovipositor sheaths brown. Body including ovipositor 1.34 mm (ovip. 0.14 mm).

Head (Fig. 3a) in dorsal view slightly wider than mesoscutum, width to length 48:25; POL 1.8x OOL; OOL twice diameter of lateral ocellus. Head (Fig. 3c) in frontal view as wide as high in ratio 50:50; dorsal margin of torulus distinctly below level of lower edge of eyes; malar space consists 0.34x height of eye; face with fine sculpture; antenna (Fig. 3b) with flagellomers distinctly transverse, gradually widening apically; 1st 5 flagellomers distinctly transverse, anelli form; other flagellomers transverse, 6th-7th almost 2.5x 8th, twice as wide as long; club about twice as long as width, having distinct spicula.

Mesosoma (Fig. 3a) moderately bulged in profile, propodeum declined, distinctly visible from above; sculpture of pronotum, mesoscutum and scutellum with distinct fine reticulation; pronotum 0.54x as long as mesoscutum; propodeum almost smooth. All coxae with fine reticulation. Forewing (Fig. 3d) with basal cell and speculum closed, basal cell a few setae apically, speculum broad, below marginal vein with a few setae, apical part with very short and dense pubescence; marginal vein 2.2x stigmal vein and 1.57x postmarginal vein. Hind femora large, 2.8x as long as wide; hind tibia slightly longer than hind femora (50:45).

Metasoma (Fig. 3a) 1.1x rest of body and excluding ovipositor 0.95x rest of body; tip of hypopygium about 4/5 length metasoma; Ovipositor sheath 0.24x as long as metasoma, and ovipositor index 0.7.

**Male:** unknown

**Material examined: Holotype, female,** Turkey: Female, Adana, Karataş, 8.viii. 1984. M. Doğanlar, swept from wheat field, on card, left antenna slide mounted in Canada balsam, deposited in the Insect collection of Research Station of Biological Control, Adana. Paratype: 1 female, same data as holotype.

**Distribution:** Turkey: Adana, Karataş,.

**Host:** unknown.

**Comments:** Female: *Pseuderimerus adananensis* n.sp. is similar to *Pseuderimerus bouceki* (Zerova & Seryogina) and *P. corianderi* Narendran & Mercy in having very short ovipositor, but it differs from *P. bouceki* by ovipositor sheath 0.24x as long as metasoma, and ovipositor index 0.7; metasoma (Fig. 1 e) 1.1x rest of body and excluding ovipositor 0.95x rest of body (in *P. bouceki* ovipositor 0.43x as long as metasoma, and ovipositor index 1.0; metasoma plus ovipositor 1.3x as long as rest of body). *Pseuderimerus adananensis* n.sp. differs from *P. corianderi* in having ovipositor index 0.7; malar space consists 0.34x height of eye; POL 1.8x OOL; occipital carina absent; antenna

inserted distinctly below level of ventral margin of eyes (in *P. corianderi* ovipositor index 0.4; malar space consists 0.43x height of eye; POL 2.25x OOL; occipital carina present; antenna inserted at level of ventral margin of eyes).

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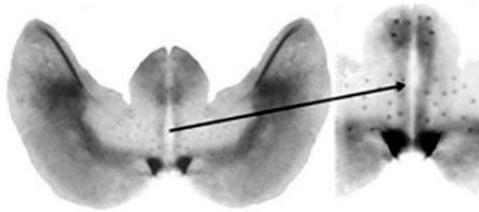


Figure 1. *Pseuderimerus adananensis* n. sp., Hypopygium from Doğanlar (2016b) (scale bar = 0.125 mm).

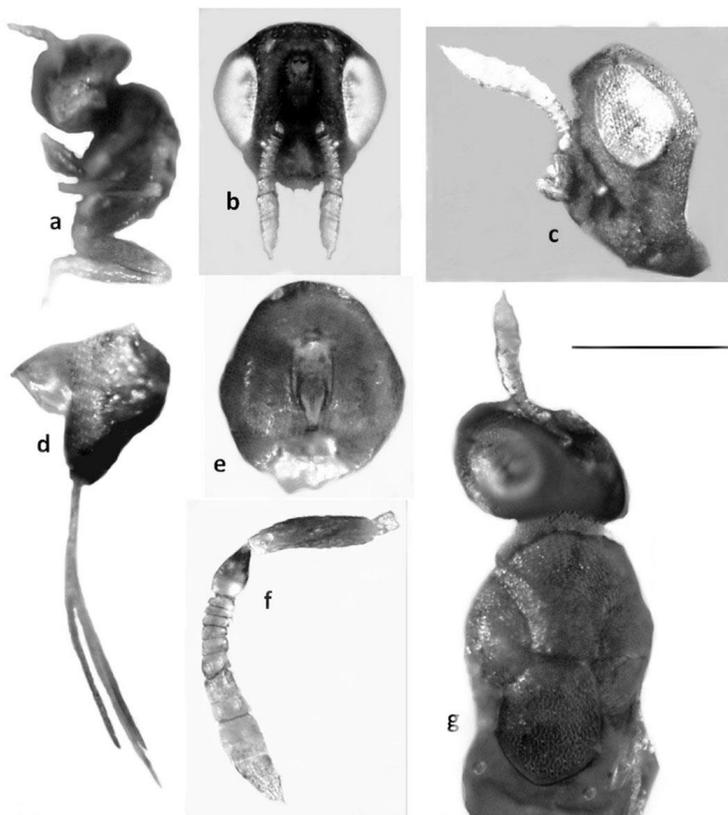


Figure 2. *Pseuderimerus sanliurfanensis* n.sp. female. a. head and mesosoma in lateral view; b. head in frontal view; c. head in lateral view; d. metasoma; e. head in hind view; f. antenna; g. head and mesosoma in dorsal view (scale bar for a,d= 0.5 mm; for b,c,g= 0.25 mm; for f= 0.15 mm;)

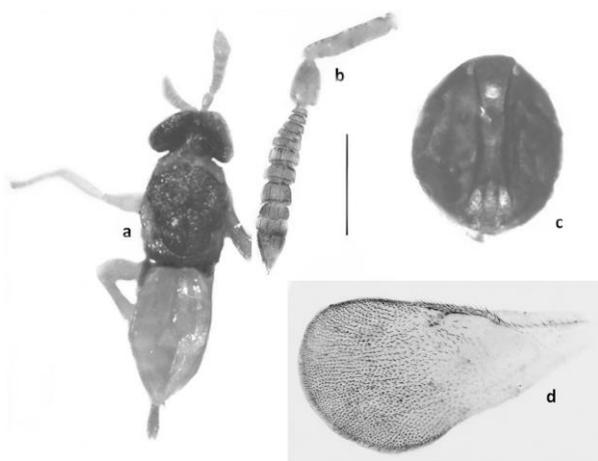


Figure 3. *Pseuderimerus adananensis* n.sp. female. a. body in dorsal view; b. antenna; c. head in frontal view; d. fore wing (scale bar for a= 0.42 mm; for b= 0.15 mm; for c= 0.22 mm; for d= 0.25 mm)