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A NEW SPECIES OF *MESOLEPTOGASTER* FREY, 1937 (DIPTERA: ASILIDAE) FROM TURKEY, WITH A KEY TO PALAEARCTIC SPECIES¹

Abdullah Hasbenli² and Üzeyir Çağlar³

ABSTRACT: *Mesoleptogaster cappadocia* n. sp. from Central Anatolia, Turkey, is described. Drawings of the male genitalia, the female spermathecae, wing, leg and antenna are provided. A key to the Palaearctic species of *Mesoleptogaster* is included.

KEY WORDS: Asilidae, Leptogastrinae, *Mesoleptogaster*, new species, Palaearctic, Turkey, key

The genus *Mesoleptogaster* was established by Frey as a subgenus of *Leptogaster* based largely on the presence of strong bristles on the outer margin of the hind tibia and the relative length of the third antennal segment, which is four times as long as broad (Frey, 1937). Hsia (1949) elevated this subgenus to generic level. Details of the current systematic position of *Mesoleptogaster* were provided by Evenhuis (2006). Eight species of *Mesoleptogaster* had been described prior to 2006. This number increased to 12 with 4 new species being described by Evenhuis (2006), who additionally transferred *Leptogaster pacifica* Bezzi (1928) into *Mesoleptogaster*. Of these species, four occur in the Oriental Region, three in the Palaearctic and five in the Australasian region. Within the Palaearctic region *Mesoleptogaster bicoloripes* Hsia, 1949 and *M. fulvicrus* Hsia, 1949 occur in the East Asian subregion and *M. eous* Lehr, 1961 occurs in the Siberian province of the Euro-Siberian subregion. Only females of *M. eous* (Type locality: Primorskiy kray, Kedrovaya pad, Far-Eastern Region, Russia) and *M. bicoloripes* (Type locality: Chekiang, Tienmushan, China) and only the male of *M. fulvicrus* (Type locality: Japan) are known (Frey, 1937; Geller-Grimm, 2007; Hsia, 1949; Hull, 1962; Lehr, 1961, 1988; Evenhuis, 2006).

SYSTEMATIC ENTOMOLOGY

Mesoleptogaster cappadocia Hasbenli and Çağlar, sp. nov.

Figs. 1-9

Etymology: The species is named after the region in Turkey, known as Cappadocia, where some specimens have been collected. Cappadocia is a historical district which is found in the Central Anatolia.

Description of Female: Body length 14 mm. General coloration dark brown. **Head.** Face densely silvery grey pruinose. Oral margin with six thin white setae. Palpus yellowish, proboscis yellowish basally and brownish black apically.

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Palpus and proboscis with white setae. Scape and pedicel reddish yellow with short yellowish white setae. Flagellum mostly black, only yellowish on basal / with very short setae. Flagellum 1.5 times longer than scape and pedicel, style black, shorter than flagellum with apical yellowish white spine. Flagellum and style together about three times combined length of scape and pedicel (Fig. 1). Frons extremely narrow, equal in width to base of antenna, densely grayish white pruinose. Occiput densely grayish white pruinose with 10-11 whitish-yellow postocular setae above and thin yellowish setae below.

Thorax. Mesoscutum black in ground color, except for reddish yellow front, lateral and hind margins, covered with grayish yellow pruinosity; wide central brownish band, not reaching prescutellar area, ending at level of supraalar setae creating a V shape. Mesoscutum with very sparse, short, yellowish and brownish setae. One notopleural and one supraalar setae black. Scutellum black, with grayish yellow pruinosity, scutellar setae short and whitish, scutellum with ridge on middle of posterior margin. Pleura black, with densely grayish yellow pruinosity. Anterior margin of anepisternum with thin yellowish setae. **Legs.** Coxae brownish black with grayish yellow setae. Fore and mid leg brownish yellow. All femora black apically. Apical 2/3 of hind femora swollen gradually, with wide subapical brownish black band (Fig. 2). Fore femur with 1, mid and hind femora with 2 strong black setae apically. Setae on femora short, black. Posterior sides of fore and mid tibiae with yellowish brown longitudinal stripe. Hind tibia at apex with black stripe approximately as long as diameter of tibia. Fore and mid tibia with mostly short yellow setae, with only a few scattered black setae on dorsal surface. Hind tibia with mostly short black setae, posterior surface with short, yellow setae. Hind tibia with 2 thick, black setae near base, then with 10 thick, black setae on apical 2/3 arranged alternately (Fig. 3). Mid tibia with four yellow setae. Apex of hind tibiae with 6-7 strong setae longer than those on ventral surface. Apex of tarsal segments 1-4, last tarsal segment, claws and empodium, black. Empodium half length of claws. Tarsal setae and setae black. **Wings.** (Fig. 5) Length 9.2 mm. Membrane mostly transparent, somewhat brownish basally. Patch of short black setae present at base above costa. Hind edge of wing with short, thin, black setae. Venation same as that described for genus: veins entirely black. Surface of wing with scattered microtrichia. r-m crossvein somewhat basal to middle of discal cell. R4 ends at apex of wing. Haltere with yellowish stalk and brownish knob.

Abdomen. Ground colour mostly blackish brown. Hind margin of tergite 1 laterally with black setae. Basal 2/3 of tergite 2, central base of tergites 3-4, and hind margin of tergites 2 and 6 with reddish brown ground color, but densely greyish white pruinose. One fourth of hind margin of tergite 2; one third of tergite 3, half of tergite 4 with brownish black transverse band present. Tergites 5 and 6 yellow black except for narrow apical margin. Tergite 5 greyish yellow pruinose except for brownish pruinose spot medially. All tergites with short yellow setae on lateral margins. Hind margin of sternite 2 and front margins of all sternites shiny black, other parts greyish white pruinose.

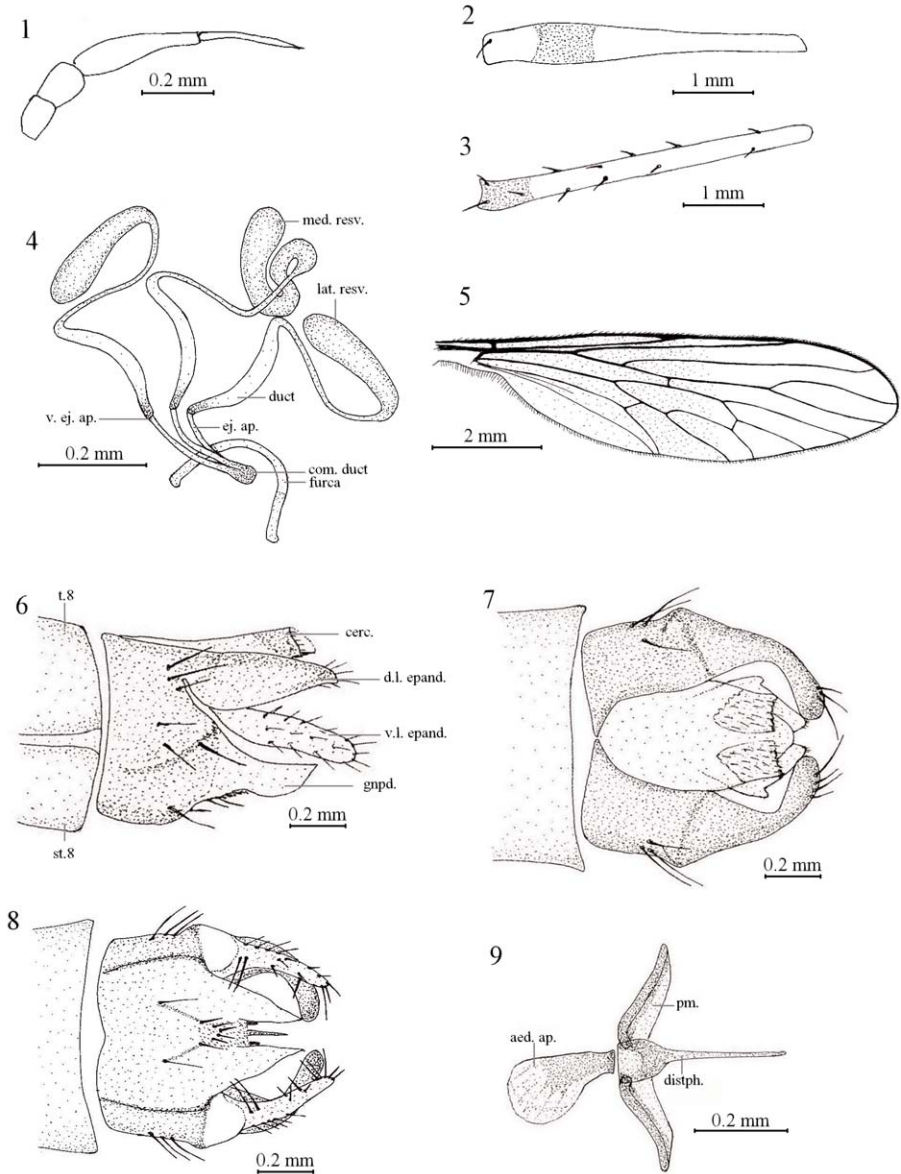
Spermathecae. (Fig. 4). Furca U-shaped with a wide apodeme. Common duct very short. Ejection apparatus thin, straight and approximately as long as 1/3rd of reservoir duct. Valves are simple. First half of reservoir duct like banana shape. Last part of the reservoir duct bend down to opposite side approximately 90 degree and connect to the reservoir. Lateral reservoirs thick, apically wider. Median reservoir longer from the lateral reservoirs and folded like S.

Description of the Male. Body length 10-11 mm. Wing length 4.5-5 mm. Similar to female except as noted. Mesoscutum entirely black. Abdomen entirely brownish black. Hind margins of abdominal tergites with narrow yellow stripes. Apical and basal margins of tergites with greyish pruinose. Only middle of tergites 2-4 without pruinosity. Surface of non-pruinose parts with short black setae. Apical margin of last 2 tergites with black setae. Remaining parts of tergites with short yellowish setae. Sternites 1-7 entirely yellowish grey pruinose. Sternite 8 shiny black.

Genitalia. (Fig. 6-9) Epandrium shiny black, other parts yellowish. Genitalia with yellow bristles. Epandrium with two lobes. Dorsal lobe of epandrium wide, apical 1/3 curled towards the interior, curled widens apically, tip rounded. Ventral lobe of epandrium wide basally, is thinning towards rounded apex. Dististylus resembles a thick dagger when viewed laterally. Aedeagus approximately 1.5 times as long as lateral ejaculatory process, thin, tube-shaped projecting dorsally.

Specimens Examined. Holotype female (spn15858): TURKEY: Nigde, Özyurt, 1627 m., 37.59/N, 34.51/E, 14.07.2005, Leg. Hasbenli & Çağlar. Paratypes (spn15859-15864): 1 male, Nigde, Özyurt, 1627 m., 37.59/N, 34.51/E, 14.07.2005, Leg. Hasbenli & Çağlar; 1 male, Mersin, Çamlıyayla, Alanyalı, 1225 m., 37.06/N, 34.30/E, 07.07.2005; 3 females, Nigde, Özyurt, 1627 m., 37.59/N, 34.51/E, 14.07.2005, Leg. Hasbenli & Çağlar; 1 female, Mersin, Gözne, Fatih, 1120 m., 37.01/N, 34.34/E, 07.07.2005, Leg. Hasbenli & Çağlar. The specimens are deposited in the collection of the Zoological Museum of the Gazi University (ZMGU), Ankara, Turkey. The reason for choosing a female as the holotype is because male specimens are in poor condition.

Diagnosis. *Mesoleptogaster cappadocia* resembles *M. fulvicrus* in that the entire mesoscutum and scutellum are pruinose. It differs from *M. fulvicrus* by having the basal one-quarter of the mesoscutum yellowish with the remaining portion blackish, by having the ground color of the lateral and hind margins of the mesoscutum reddish yellowish, by having a wide median stripe on the mesoscutum, by the presence of a blackish brown transverse band across the middle of the swollen part of the hind femora. The mesoscuta of the other species of this genus known from the Palearctic region are shiny black either in part or in their entirety.



Figures 1-9. *Mesoleptogaster cappadocia* n. sp. 1. antenna; 2. hind femora; 3. hind tibiae; 4. spermatheca; 5. wing; 6-9. male genitalia; 6. lateral view; 7. dorsal view; 8. ventral view; 9. aedeagus. Abbreviations: aed. ap., aedeagal apodeme; cerc., cercus; com. duct., common duct; d.l. epand., dorsal lobe of epandrium; distph., distiphallus; ej. ap., ejection apparatus; gnpd., gonopod; lat. resv., lateral reservoir; med. resv., median reservoir; v. ej. ap., valve of ejection apparatus; v.l. epand., ventral lobe of epandrium; pm., paramere.

**A key to the Palearctic species of *Mesoleptogaster*,
adapted from Hsia (1949)**

1. Mesoscutum entirely pruinose2
- Mesoscutum more or less shiny.....3

2. Margins of mesoscutum yellowish red except for middle part; style approximately as long as segment 3, apical third of tibiae black.....
.....*M. cappadocia* n. sp.
- Mesoscutum entirely pruinose; style short; all tibiae entirely brownish yellow
.....*M. fulvicrus* Hsia, 1949

3. Abdomen and mesoscutum shiny black, only lateral and hind sides of mesoscutum grey pruinose*M. bicoloripes* Hsia, 1949
- Abdomen pruinose, mesoscutum rarely silvery pruinose, at least median stripe shiny black.....*M. eous* Lehr, 1961

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***HARPACTOR ANGULOSUS* (REDUVIIDAE: HARPACTORINAE), A PREDATOR OF NEOTROPICAL SATURNIIDS, *HYLESIA* SPP. IN BRAZIL¹**

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ABSTRACT: Caterpillars of the genus *Hylesia* (Lepidoptera: Saturniidae: Hemileucinae) can cause agricultural damages and dermatological lesions by direct contact to its urticating bristles. The biological control can regulate populations of these insects, but their natural enemies are poorly known. The occurrence of *Harpactor angulosus* (Lepeletier and Serville, 1825) (Reduviidae: Harpactorinae) predating caterpillars of *Hylesia* spp. is described. Adults of this predator were captured in an area of secondary forest in Viçosa, Minas Gerais State, Brazil and their pairs individualized in the field to obtain eggs. Adults of this predator presented sex dimorphism, with smaller males than females. They were found predating caterpillars of *Hylesia* spp., isolated from others to avoid the aposematic defense of this prey, when grouped. The presence of this predator, in the field, demonstrates its potential for the biological control of defoliating caterpillars. Studies on biological aspects and alimentary habits are important to understand the importance of *H. angulosus* in the biological control of defoliating caterpillars.

KEY WORDS: Biological control, predator, Harpactorinae, Saturniidae

Arthropods are important for the public health in several areas of the world because some of its species are vectors of infectious microorganisms (Pereira et al., 1998; Lounibos, 2002; Costa et al., 2007) and the use of poisonous substances to defend themselves against natural enemies. These compounds can cause irritating allergic reactions when in direct contact with humans (Carrijo-Carvalho and Chudzinski-Tavassi, 2007; Pereira et al., 2007).

Neotropical moths of the genus *Hylesia* are distributed from Mexico to Argentina, and they have urticating bristles. The burns caused by its urticating bristles are one of the main causes of dermatological burns in humans in America (Iserhard et al., 2007). These burns occur because the moths possess night habit, and they are attracted by public illumination. Such areas present high population

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