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A revision of the genus *Pelecocera* Meigen with the description of the male of *Pelecocera persiana* Kuznetzov from Iran (Diptera: Syrphidae)

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Abstract

The genus *Pelecocera* Meigen (Diptera: Syrphidae) is revised. Type material of most species was studied to describe, illustrate and delimit the male of *Pelecocera persiana* Kuznetzov, recently discovered from Iran. This is the first known specimen of this species since 1914, when the type female was collected. The diagnostic characters of *P. persiana* are provided, along with an identification key for *Pelecocera* species. The lectotype of *Pelecocera latifrons* Loew is designated.

Key words: Eristalinae, identification key, male description, Rhingiini, lectotype designation

Introduction

Flower flies of the genus *Pelecocera* Meigen are small in size with a flat, elongate abdomen, usually with an overall dark coloration and yellow markings on the abdominal terga. Their biology is unknown but some species are frequently found in or near dunes and in conifer forest with open ground, such as dry *Pinus* forest with heathland, or in open areas within *Castanea* forest (Bartsch *et al.* 2009; Speight 2013). They are usually encountered on flowers of yellow composites such as *Hieracium* and *Hypochaeris* along forest edges, but also visit other genera of plants (Kehlmaier 2002; Van Veen 2004; Speight 2013).

Pelecocera species are rarely encountered in the field (Bagnée 2005; Bartsch *et al.* 2009), and are consequently infrequent in insect collections. Usually collected in small numbers, some populations are very abundant (Kehlmaier 2002; Popov 2009), but population size can vary from year to year (Reemer *et al.* 2009, for *Pelecocera tricincta* Meigen). *Pelecocera tricincta* is listed as rare (Falk 1991) or threatened (Ssymank *et al.* 2011), or with data deficient (Maibach *et al.* 1992), although the distribution of this species in the Palaearctic Region is broad (Speight 2013). Popov (2009) lists *Pelecocera latifrons* Loew as rare for Ukraine.

Pelecocera is characterized by a thick, bare, apical arista, broad and basally expanded basoflagellomere, bare eye, bare metasternum, straight vein R_{4+5} , and crossvein r-m placed before middle of cell dm, and is generally placed in the tribe Rhingiini, which belongs to the Eristalinae (Thompson 1972; Peck 1988; Ståhls *et al.* 2004).

Pelecocera is similar in overall appearance to *Chamaesyrrhus* Mik, and both taxa are often treated as subgenera of *Pelecocera* (Thompson & Rotheray 1998; Ståhls *et al.* 2004; Bartsch *et al.* 2009; Speight 2013), although some authors prefer to retain both genera (Ståhls & Nyblom 2000; Doczkal 2002; Van Veen 2004; Hippa & Ståhls 2005). The main difference between *Pelecocera* and *Chamaesyrrhus* is the shape of the arista and its insertion point in the basoflagellomere, i.e. *Pelecocera* has a very thick arista inserted at the dorsal corner (apex) of the basoflagellomere (apical), while *Chamaesyrrhus* has a relatively thin arista inserted centrally on the dorsal side of the basoflagellomere (subapical). Verlinden (1991) used the shape of vein M_1 to separate these genera, saying

Discussion

Kuznetsov (1989) reviewed the Palaearctic species of *Pelecocera* and listed *P. conjungens* Enderlein, *Pelecocera lugubris* Perris, *P. latifrons*, *P. persiana* and *P. tricincta*. In the catalogue of the Palaearctic Diptera, Peck (1988) listed *Pelecocera sareptana* Enderlein, *P. conjungens* and *Ischyroptera annulipes* Lindner as synonyms of *P. latifrons*. The holotype of *I. annulipes* and *P. sareptana* were available for the present study, and we conclude that both types belong to *P. latifrons*. We also studied the holotype of *P. conjungens*, which is conspecific with *Chamaesyrrhus lusitanicus* Mik, in agreement with Thompson (2013). Enderlein (1937) already mentioned the possibility of the latter synonym in the original description.

Thompson (2013) also considers *P. lugubris* a synonym of *C. lusitanicus*. The original drawings of *P. lugubris* (Perris 1839) show an apical arista such as in other *Pelecocera* species. Peck (1988) is the last to mention this species, which was originally described from Mont-de-Marsan area, southwest France. No other revisionary European work mentions *P. lugubris* and it is not listed by Speight (2013). Since no other published information exists, and we have not been able to examine the type, we therefore follow Thompson (2013), who studied the material in 1983 (Christophe Daugeron, pers. comm.), and treats it as a synonym of *C. lusitanicus*.

Kuznetsov (1989) described *P. persiana* based on a single female collected in Tabriz on April 6th of 1914. The male here described is the first specimen of this species collected since then, a century ago. These two records and its distribution (*P. persiana* is only known from northern central and northern west parts of Iran) give an idea of the rarity of this species.

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