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THE FIRST RECORD OF *RHAMPHOMYIA* (*PARARHAMPHOMYIA*) *INTERSITA* (DIPTERA: EMPIDIDAE) IN EUROPE

Miroslav Barták[1] & Bože Kokan[2]

[1]Department of Zoology and Fisheries, Faculty of Agrobiology, Food and Natural Resources, Czech University of Life Sciences Prague, Kamýcká 129, CZ-16500 Praha 6-Suchdol, Czech Republic (e-mail: bartak@af.czu.cz)

[2]Natural History Museum Split, Kolombatovićevo šetalište 2, 21000 Split, Croatia

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A dance fly (Diptera: Empididae) *Rhamphomyia* (*Pararhamphomyia*) *intersita* Collin, 1960, previously known from Israel and Turkey, is recorded for the first time in Europe (Croatia). A new record is presented, with a photo of the voucher specimen. A key to the Palaearctic species of *Rhamphomyia* (*Pararhamphomyia*) with black legs, multiserial dorsocentrals and an at least partly pale setose body is provided.

Key words: Dance flies, Empidoidea, Empididae, Israel, Turkey, Croatia, distribution, identification

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Muha plesačica (Diptera: Empididae) *Rhamphomyia* (*Pararhamphomyia*) *intersita* Collin, 1960, prethodno poznata iz Izraela i Turske, zabilježena je po prvi puta u Europi i to u Hrvatskoj. U radu se predstavlja prvi nalaz, uz sliku dokaznog primjerka. Rad donosi i ključ za palearktičke vrste roda *Rhamphomyia* i podroda *Pararhamphomyia* s crnim nogama, multiserijskim dorzalnocentralnim setama, i barem djelomično blijedim setoznim tijelom.

Ključne riječi: muhe plesačice, Empidoidea, Empididae, Izrael, Turska, Hrvatska, rasprostranjenost, određivanje vrsta

INTRODUCTION

The genus *Rhamphomyia* Meigen, 1822 is one of the three megadiverse groups within the family Empididae (dance flies, dagger flies or balloon flies), together with *Empis* Linnaeus, 1758 and *Hilara* Meigen, 1822. Almost 600 species, distributed mostly in the Northern Hemisphere have been described worldwide (e.g. Yang *et al*., 2007; Barták, 1982, 2007; Barták *et al*., 2007; Barták & Kubík, 2008a, 2008b, 2008c, 2009, 2010, 2012, 2015; Barták *et al*., 2014; Saigusa, 2012), but many more await description.

Rhamphomyia intersita was described by Collin (1960) from Palestine and for a long time it was known only from the area close to the type locality (Barták & Kubík, 2009). Recently it was recorded from south-west Turkey (Barták *et al*., 2014). The species was redescribed and illustrated in details by Barták & Kubík (2009). A recent investigation into Diptera at a site near Split (Croatia, Dalmatia, Dinarides) revealed the presence of the species.

Most *Rhamphomyia* are species occurring in early spring to late summer, and only very few species occur in autumn (or winter – in subtropical climates). In Israel, *R. intersita* was found between 22 October and 17 February, in Turkey approximately at the same time (between November and March).

The aims of this paper are to present a new finding of the species *R. intersita* in a distant region and to present a valid key for distinguishing this species from other, similar, species of the huge *Pararhamphomyia* subgenus.

MATERIAL AND METHODS

The material was collected by means of a Malaise trap situated in the village of Gornji Mući, located 15 km from the Adriatic coast in the hinterland of the city of Split. The trap was placed on a sunny hill slope named Grudina at 500 m a.s.l., in an orchard, at position 43°41′27′′N, 16°29′44′′E on the south-east foothills of Svilaja Mountain (Fig. 1).

Fig. 1. Position of the locality Grudina (arrow and cross) in Gornji Mući near Split.

The cold and dry mountain air from the northeast is mitigated with moist and warmish southern winds creating the sub-Mediterranean climate vegetation zone with dominant *Quercus pubescens* communities. Irregular winter temperature fluctuations bring periods of cold days below zero degrees Celsius, versus short warm periods when insects are active (personal observation B. Kokan). To the south the collecting place was close to the fields and slopes planted with vineyards and orchards and to the north it was open to a small wood and pasture.

The Malaise trap used was a slightly modified Townes type (with only a higher and broader "roof"). The collecting head was made of a plastic bottle with an opening drilled in its upper part from which a short passage-tunnel connected the trap with the collecting bottle. The connection of the trap

with the collecting bottle was made according to the utility model "Insect trap" No. 20571 (Industrial Property Office of the Czech Republic): the polyester fabric of the upper part of the trap was fixed between the middle and the outer of the three concentric cylinders made of small PET bottles; the entire passage-tunnel was fixed to collecting bottle with string. The collecting bottle was filled with 2 litres of 1% formalin solution, with liquid soap added to reduce surface tension (Fig. 2).

Fig. 2. The Malaise trap with collecting head on Grudina hill.

The collecting bottle was emptied every two to three weeks over one period in 2013 (from 27 May to 6 December) and another in 2014 (from 27 April to 10 December) with the goal of estimating the local fauna of flying insects, mainly Diptera. The specimens from each sample were collected from the collecting bottle by means of a fine tea strainer and placed in storage bottles containing 70 % ethyl alcohol and they were kept in a refrigerator.

Dipterans were sorted by means of the morphospecies method and voucher specimens were dried and mounted by the method described by Barták (1997). The authors have presented here only a fragment of first author's original but yet unpublished key of the huge *Rhamphomyia* genus and *Pararhamphmiya* subgenus.

The collected specimens of *Rhamphomyia intersita* will be kept in the collection of the Czech University of Life Sciences in Prague and in the Entomology Collection of the Natural History Museum and Zoo Split.

RESULTS AND DISCUSSION

The first finding of *Rhamphomyia intersita* in Croatia and in Europe (Fig. 3) was recorded. The Malaise trap sample from 10/10/2014 to 216/10/2014, revealed 3 female specimens of *R. intersita*. The sample from 26/10/2014 to 23/11/2014 contained a single female of the species and in the sample from 23/11/2014 to 10/12/2014 a single female of *R. intersita* was found again. This species belongs to the genus *Rhamphomyia* and to its subgenus *Pararhamphomyia*. The original key of the species group of *Pararhamphomyia* is presented to make it easier to separate *R. intersita* from other similar species of the subgenus.

Key to the Palaearctic species of *Rhamphomyia* (*Pararhamphomyia*) with black legs, multiserial dorsocentrals and an at least partly pale setose body

1 All mesonotal setae and setulae pale or mesoscutum polished to subpolished 2

- At least a few setulae dark, mostly both acrostichals and dorsocentrals dark. Mesoscutum grey microtrichose 12

2 (1) Halter black. Male hypopygium very small, smaller than tip of abdomen. Hind femur without setae ventrally, only with "pilosity". Female fore femur dorsally near base, middle and hind femur and all tibiae at least above pennate ..... ***lucidula* Zetterstedt**

- Halter yellow or male genitalia large. Remaining characters different 3

3 (2) At least disc of mesoscutum lustrous, lacking microtrichiae ..... ***tenuiterfilata* Becker**

- Mesoscutum microtrichose to subpolished. 4

4 Male 5
- Female 9

5 (4) Hind legs strongly deformed ..... ***merzi* Barták**

- Hind legs not deformed 6

6 (5) Pregenital segments without processes 7

- Pregenital segments with processes 8

7 (6) Cercus globular. Epandrium simple, without tuft of setae ..... ***physoprocta* Frey**

- Cercus not globular. Epandrium elongated, with very long apical setae and a submedial tuft of yellow setae ..... ***chimganensis* Barták**

8 (6) Phallus forms a fold in middle. Mid tibia with a few very long setae dorsally including preapicals. Fore basitarsus thicker than tip of tibia ..... ***subsultans* Frey**

- Phallus without any fold in middle, forming simple loop. Mid tibia with short setae dorsally at most twice as long as tibia is thick, preapicals short. Fore basitarsus narrower than tip of tibia ..... ***tienshanensis* Barták**

C9 (4) Wings brown. (Additional character: 4 scutellars) ..... ***tienshanensis* Barták**

- Wings clear 10

10 (9) 6 scutellars. (Additional characters: larger species, body length over 3.5 mm, abdominal tergites 6-8 polished, propleuron bare, costal seta absent) ..... ***subsultans* Frey**

- 2-4 scutellars 11

11 (10) Wings milky white. Propleuron bare ..... ***physoprocta* Frey**

- Wing not milky white. Propleuron setulose ..... ***merzi* Barták**

12 (1) First abdominal sternite setulose. Male phallus rather thick. (Additional characters: face very narrow, about as front ocellus. Female legs not pennate.) ..... ***angustifacies* Saigusa**

- First abdominal sternite bare. Male phallus thin, hair like 13

13 (12) Male: 8th syntergosternite lustrous, armed with processes. (If mesoscutum lustrous, compare *R. lucidula*). Female: middle and hind femora virtually bare anteroventrally, hind femur with short posteroventral pennation on apical 2/3, abdomen light grey microtrichose, 8th segment contrastingly lustrous, hind tibia not pennate ..... ***pilimanicula* Saigusa**

- Both male and female characters different 14

14 (13) Male: cercus much broader than epandrium. Female: hind femora and tibiae with short pennate ciliation ..... ***fascipennis* Zetterstedt**

- Male: cercus narrower than epandrium. Female legs not pennate. 15

15 (14) Palpus yellow. Six or more scutellars. Male: legs long haired, especially all basitarsi long setose dorsally (some setae are almost as long as basitarsi); abdomen silvery grey. Female: wing light brownish, discal medial cell elongated, longer than vein M_2 ..... ***intersita* Collin**

- Palpi black. 2-4 scutellars. Other characters in another combination. 16

16 (15) Male 17
- Female 18

17 (16) Wings milky white, veins R_{2+3} and R_{4+5} pale. Mesoscutum light bluish grey. Fore tibia with short posterodorsal ciliation. Epandrium with dense submedial tuft of yellow setae. Halter yellow. 8th sternite long ..... ***niveipennis* Zetterstedt**

- Wings not milky white, veins R_{2+3} and R_{4+5} brown. Mesoscutum dark brownish grey. Fore tibia with posterodorsal ciliation longer than diameter of tibia. Epandrium with only a few submedial setae. Halter brownish yellow. 8th sternite short ..... ***dispar* Zetterstedt**

18 (16) Wings clear. Halter pale yellow ..... ***niveipennis* Zetterstedt**

- Wings at least partly brown at least apically. Halter yellow or darkened. ***dispar* Zetterstedt**

Fig. 3. Female of *Rhamphomyia intersita* from Gornji Muć in Croatia.

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