

## Description of a new species of *Helina* ROBINEAU-DESVOIDY (Diptera, Muscidae) from the Rhodope Mountains of Bulgaria

With 2 figures and 1 key

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### Summary

*Helina momchili* spec. nov. is described from the Rhodope Mountains in Bulgaria and compared to similar species known from the Palearctic Region.

### Key words

*Helina momchili* spec. nov., comparison, Bulgaria

### Zusammenfassung

*Helina momchili* spec. nov. wird als neue Art aus dem Rhodope Gebirge Bulgariens beschrieben und mit bekannten ähnlichen Arten der Palaearktischen Region verglichen.

### Introduction

The study of non-identified material of the Muscidae collection of the Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences in Sofia revealed a new species of the genus *Helina* ROBINEAU-DESVOIDY, 1830 which is distinctly distinguished from known species by several taxonomic characters. The species is described in the following as *Helina momchili* spec. nov. based on a male holotype which has been collected in 1970 at the Rhodope Mountains in Bulgaria.

### Material and Methods

Standard terminologies have been used for the description. External morphological features were examined using a ZEISS Stemi 2000-C stereomicroscope, for illustrations an AxioCam ERC5s camera and for further processing Helicon Focus 6 and Adobe Photoshop CS2 have been applied. Body length was measured in millimeters (mm).

The holotype of the newly described species is deposited in the entomological collection of the Institute of Biodiversity and Ecosystem Research, Sofia (IBER).

## Results

### *Helina momchili* spec. nov.

**Material examined:** Male holotype, Rhodope Mts., Momchilgrad, about 450 m above sea level, 22.6.1970, leg. V. Lavčiev.

**Description: Head.** Ground-colour black with brown tinge. Eyes with several scattered tiny hairs. Shortest distance between eyes about twice the diameter of anterior ocellus. Fronto-orbital plate at narrowest distance between eyes about as broad as anterior ocellus. Fronto-orbital plates touching from middle of frons upwards to frontal triangle, anterior part of frons with a narrow, triangularly shaped frontal vitta. Parafacial at middle about as broad as width of postpedicel. In profile upper mouth margin about in line with profrons. Genal depth below lowest eye margin about 1.5 times the width of postpedicel. In dorsal view ocellar tubercle dusted, tip of frontal triangle in front of anterior ocellus shining black, anterior frontal vitta dull black; fronto-orbital plates, parafacials and anterior and upper bare parts of gena depending on point of view shining silver-white pruinose or grey to dull dark, haired surface of gena and occipital surface grey. Postpedicel 2.4 times as long as broad and about twice as long as pedicel. Basal antennal segments yellowish-orange, in contrast to dark brown postpedicel. Arista twice as long as length of postpedicel; at basal third dorsal hairs of arista conspicuously longer than the ventral ones, length of longest hairs of basal third about equal to width of postpedicel, remaining hair about half as long as width of postpedicel. Ocellar setae strong. Anterior half of fronto-orbital plate with about five strong, inclinate frontal setae and with few very short interstitial hairs between and slightly above the frontal setae, not reaching level of anterior ocellus. Parafacial bare. Vibrissal setae

long and strong, surrounding peristomal setae distinctly weaker, longest ones barely half the length of vibrissals. Lower margin of gena, post-genal and post-occipital surfaces covered with dark setulose hairs. Proboscis short with broad labella, brown with little grey dust on mentum. Palpus slender about as long as mentum, brownish with darkened tip.

**Thorax:** Ground-colour dark, intensely grey dusted (Fig. 1), at some points of view with a weak yellowish tinge. When viewed from behind scutum with a pair of narrow dark brown paramedian vittae inside along the dorsocentral setae from neck reaching almost the 3rd postsutural dorsocentral setae; outside the row of presutural dorsocentrals a nearly triangular-shaped dark patch between dorsocentrals, posthumeral and presutural setae; postsuturally between dorsocentrals and intra-alar setae a short dark brown vitta and above base of wing a dark patch. Scutellum grayish with a median dark patch at base and a larger one apically, laterally and at ventral margin grey with yellow tinge. Pleura dark, grey dusted. Anterior and posterior spiracles yellowish-brown. Scutum and some parts of pleura covered with hairs. Dorsocentral setae 2+4; acrostichals 0+1; notopleuron bare, anterior notopleural seta slightly longer than posterior one; prealar seta only marginally shorter than posterior notopleural seta; two intra-alar setae. Prosternum, proepimeral area, anepimeron, meron and katepimeron bare. Katepisternum covered with some fine hairs and with 1+2 katepisternal setae, the lower one distinctly closer to the posterior seta than to the anterior one. Anepisternum with fine hairs, at posterior margin with a row of about six long setae varying in length and

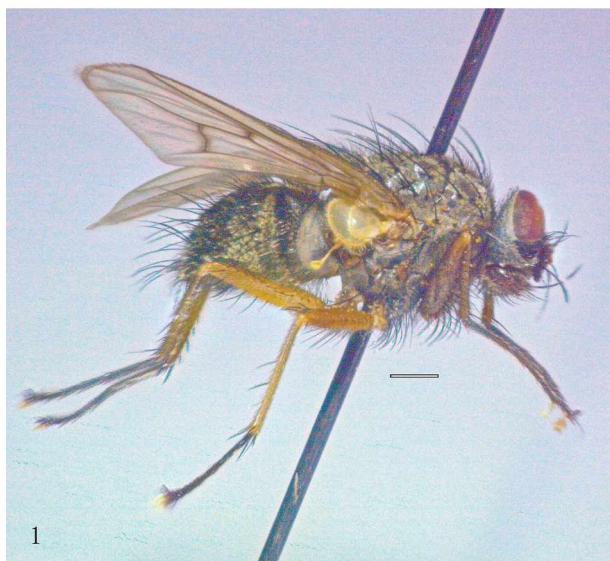


Fig. 1: *Helina momchili* spec. nov., lateral view of male holotype (bar = 1 mm).

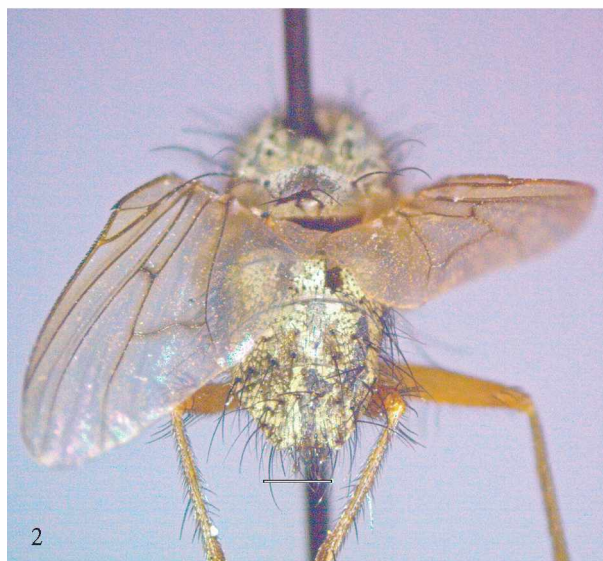


Fig. 2: *H. momchili* spec. nov., male holotype, dorsal view of abdomen with stripe-like dark pattern (somewhat covered by wings) on tergite 3 (bar = 1 mm).



strength and with several interstitial hairs. Scutellum with long apical and lateral setae, basal setae barely half as long as lateral setae and preapical setae not distinguishable from surrounding long hairs; lateral surface bare, ventral surface with yellowish hairs.

**Wing:** Membrane hyaline, infuscated at crossveins (Fig. 1). Basicosta and tegula yellow, veins brown. Costal spine not much longer than three times the length of surrounding bristles. Radial node and basis of R<sub>4+5</sub> only ventrally haired. Vein M<sub>1</sub> straight, diverging from vein R<sub>4+5</sub>. Crossvein r-m slightly basal from the point where vein R<sub>1</sub> enters costa, distal crossvein dm-cu sinuous. Calypters whitish transparent with a slightly yellowish margin, lower calypter nearly 1.5 times as long as upper calypter. Halter entirely yellow.

**Legs** (Fig. 1): Including trochanters predominantly yellow except dark tarsomeres. Pulvilli and claws well developed and of about equal size. Coxae predominantly brownish with some grey dust, hind coxa bare on posterior surface. Fore femur yellowish on anterior surface, posteriorly predominantly brown and in parts grey dusted, at apex yellow; posterior surface covered with hairs and with complete rows of strong posteroventrals and posterodorsals and with an irregular row of posterior setae; all setae about as long or longer than depth of femur. Fore tibia with a median posterior seta distinctly longer than diameter of tibia. Mid femur at basal half a row of anterior setae longer than the ground hair; a complete row of posteroventrals all over the length, strong and longer than depth of femur in basal half and in contrast in apical half much weaker, almost hair-like and barely as long as depth of femur; at apical third a row of posterior setulose hairs nearly as long as depth of femur, pre-apically three strong and long posterodorsal setae and one or two anterodorsals, distinctly weaker than the posterodorsal ones. Mid tibia with three strong posterior setae much longer than diameter of tibia. Hind femur with a complete row of strong anterodorsal setae and in apical half a row of anteroventral setae, most setae longer than depth of femur; at apical third a distinct row of rather short posteroventral setulose hairs, pre-apically two or three strong posterior to posterodorsal setae and one anterior seta. Hind tibia without posterodorsal seta at basal half, at about apical half four anteroventrals somewhat longer than width of tibia, opposite of anteroventrals four or five somewhat shorter posteroventrals, one anterodorsal seta nearly three times as long as diameter of tibia and more apically a second one, distinctly shorter than the submedian one.

**Abdomen:** Ground-colour dark, grey dusted and at certain light conditions with a very weak yellowish tinge. Only tergite 3 with a pair of dark longitudinal paramedian stripe-like patches over the whole length but not reaching the posterior margin of tergite (Fig. 2). Poste-

rior half of syntergite 1+2 with numerous well developed lateral marginal setae, tergite 3 with a complete row of marginals, tergite 4 with a row of significantly longer marginals and a complete row of somewhat shorter discal setae, tergite 5 with a row of very strong discals and a row of significantly shorter marginals. Sternites dark with little grayish dust; sternites 4 and 5 distinctly shorter than sternites 2 and 3; sternite 1 bare; sternite 2 densely haired at anterior half and with an apical and subapical pair of conspicuously long setae each, all four setae distinctly longer than the sternite; sternites 3 and 4 less densely haired and with apical setae longer than the relevant sternites; sternite 5 haired and apically with lateral lobes densely covered with setae.

**Male genitalia:** The species is distinctly distinguished from similar species of the genus by morphological characters, the identification does not depend on comparison of characters of terminalia. Therefore it has been refrained from extracting the genitalia to avoid inflicting damage on the only hitherto available specimen of this new species.

**Measurements:** Length of body about 8,3 mm; length of wing about 8 mm.

Female not known.

**Etymology:** The name of the new species *momchili* is a noun in the genitive case and derives, somewhat modified, from the name of the town Momchilgrad at Rhodope Mountains, where the fly had been collected. Momchil was in the 14th century a ruler of a large area in the Rhodopes and western Thrace.

**Diagnosis:** The male of *H. momchili* runs in HENNIG's key (1964) to couplets 13 and 14 with *Helina moedlingensis* (SCHNABL, 1911) and *Helina maculiventris* (ZETTERSTEDT) respectively. However, *H. maculiventris* has been transferred by PONT (1969) to the genus *Mydaea* ROBINEAU-DESVOIDY, 1830. Additionally, *Helina moedlingensis* as originally defined by HENNIG (1964) has been divided in 1974 by MIHÁLYI into two species. Specimens formerly identified as *H. moedlingensis* were either assigned to the new species *Helina decipiens* MIHÁLYI, 1974 or were confirmed as *H. moedlingensis*. For taking these changes into account the keys of the later published review of the Central European Muscidae (GREGOR et al. 2002) have been used additionally for determination and comparison of *H. momchili*. The species runs in these keys to *H. moedlingensis* and *H. decipiens* at couplet 14 and it can be incorporated as follows:

*Helina richardi* described by PONT (2012) is not listed in the keys of HENNIG (1964) and GREGOR et al. (2002). Although *H. richardi* and *H. momchili* have some taxonomic markings in common, e.g. predominantly yellow legs, haired ventral surface of scutellum and ventrally haired basal part of wing vein R<sub>4+5</sub>, they differ unam-

14. Legs predominantly yellow; basal antennal segments yellowish-orange in contrast to dark brown postpedicel; katepisternals 1 + 2; wings infuscated at crossveins; abdomen with only one pair of longitudinal stripe-like dark markings. .... *H. momchili* spec. nov.
- Legs predominantly dark; antennal segments uniformly dark; katepisternals 2 + 2; wing membrane at crossveins not infuscated; abdomen usually with 2 pairs of black patches. .... 14a
- 14a. Hind tibia with 1-2 posterodorsal setae near base; setae on sternites 2-4 conspicuously long, longer than relevant segments (and other characteristics, see GREGOR et al., couplet 14). .... *H. decipiens* MIHÁLYI
- Hind tibia without posterodorsal setae near base; setae on sternites 2-4 also elongated but shorter than relevant segments (see GREGOR et al.). .... *H. moedlingensis* (SCHNABL)

biguously. The vein R4+5 of *H. richardi* is dorsally haired at base, the postpronotal lobe is yellow below the dust, all legs including most of coxae are yellow except black tarsi and each one of the abdominal tergites 3 and 4 is marked with a pair of paramedian rounded-triangular spots; whereas in *H. momchili* the vein R4+5 is dorsally bare, the postpronotal lobe is predominantly dark below the dust, posterior surface of fore femora and coxae are predominantly brownish and only tergite 3 has a pair of dark longitudinal paramedian stripes.

## Discussion

*Helina* is the second largest genus of the family of Muscidae. Species of the genus are distributed in every zoogeographic region. According to XUE & SUN (2015) the genus comprises more than 530 species. Whilst 229 species of *Helina* are reported from China (XUE & SUN 2015) only 80 species of the genus are listed for the European part of the Palearctic Region (PONT, 2013). Very likely the large majority of *Helina* species which are both common and widely distributed in Europe or which are at least common in their specific biotopes has been identified and described. However, some rare species, which are limited in their geographical distribution and which are not common in the biotopes they inhabit, might still be undetected. The present study for example revealed a new species of which only one male specimen has been collected at the Rhodope Mountains in 1970, although several captures during the last century are documented from that area by the locality labels of specimens of the muscid collection of the IBER and for example by LAVČIEV (2003). As the specimen is distinctly distinguished from similar species by several morphological markings it has been described as *Helina momchili* sp. nov., irrespective of the fact that the description is based on one specimen only.

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