

Description of a new species of the genus *Mydaea* Robineau-Desvoidy, 1830 (Diptera, Muscidae) from Sweden

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Mydaea forsslundi sp. n. is described from Sweden and compared to similar species of the genus from the Palaearctic Region. The species is unlike the majority of the darker *Mydaea*-species, conspicuously yellowish coloured and it is one of the smaller species of the genus. Apart from the colour and body size *M. forsslundi* is also distinguished from the most similar species by long prealar seta and arisal hairs which are only about half as long as width of postpedicel. The number of species of *Mydaea* recorded from Europe is raised now to 21 species.

Key words: *Mydaea*, new species, Sweden, comparison.

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Introduction

When working on non-identified specimens of the Muscidae collection of the Swedish Museum of Natural History, Stockholm a conspicuously yellowish coloured male, collected in 1920 in Sweden, was detected. The male specimen is marked by the typical taxonomical characters described e.g. by Hennig (1964) and Gregor *et al.* (2016) for the genus *Mydaea* Robineau-Desvoidy, 1830. It also shows a few small setulae on meron, near to the base of hind coxa, which are typical for some species of this genus. Due to a specific combination of morphological characters the specimen, however, differs from all *Mydaea* species listed at Fauna Europaea (Pont 2013). The same is true when using the key to the *Mydaea* species from China with 30 species, recently published by Xue & Tian (2014). The markings of the specimen did not match with one of the couplets provided in the key. The male specimen obviously represents an unknown species, which is described below as *Mydaea forsslundi* sp. n.

Material and methods

Keys to the Muscidae of the Palaearctic Region (Hennig 1964) and to the Muscidae of Central Europe (Gregor *et al.* 2002, 2016) were used for identification. Standard terminologies as applied in the Manual of Central European Muscidae (Gregor *et al.* 2016) are 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).

Mydaea forsslundi sp. n.

Material examined. Male holotype (Figure 1). The specimen is in general well-preserved, but the scutum has a longitudinal crack, the costal area of distal half of right wing is slightly damaged, the left wing has a small hole close to apex and the tarsomeres of right hind leg are absent. None of these defects has any negative influence on the identification and description of the species.



FIGURE 1. *Mydaea forsslundi* sp. n., male holotype, lateral view (bar = 2 mm).

Four labels are fixed to the staging pin. The locality label (Figure 2) with handwritten information reads “Stgn 10/6 20”. Another small label, handwritten as well, shows the number “16”. The third label (printed) reads: “Coll. Karl-Herman Forsslund (sic) (FRLS), 1900-1973, NHRS Stockholm, Swedish Museum of Natural History” and the fourth label bears a printed registration number “NHRS-BYWS 000002392”. Based alone on the handwritten information it is practically not feasible to define the site of collecting. However, Yngve Brodin, curator at the Swedish Museum of Natural History and also

responsible for the Muscidae collection managed to get help from the colleagues Mattias Forshage and Gunvi Lindberg, who did some research and found out that the specimen had been collected in Sweden at “Ludvika, Brunnsvik, Storgården (WGS 60.2008-15.1242)”. Consequently the number of labels of the holotype has been complimented by a new locality-label which reads now: “Sweden: Ludvika, Brunnsvik, Storgården (WGS 60.2008-15.1242) , 10.06.1920., leg. K.-H. Forsslund”. The holotype of *Mydaea forsslundi* will be deposited in the collection of the Department of Entomology of the Swedish



FIGURE 2. Photograph of the two handwritten labels which were attached to the holotype of *Mydaea forsslundi* sp. n.

Museum of Natural History, Stockholm.

Description. *Head.* Ground-colour predominantly yellowish. Eyes practically bare, only very few, scattered tiny hairs are visible. Shortest distance between eyes about as wide as diameter of anterior ocellus. Fronto-orbital plates touching, almost all over the length of frons, so that only very short triangular sections of frontal vitta below anterior ocellus and at anterior part of frons, respectively remain. Width of fronto-orbital plates at middle of frons about half as broad as diameter of anterior ocellus. Parafacial about half as broad as width of postpedicel. In profile upper mouth margin approximately in line with profrons. Genal depth below lowest eye margin about equal to width of postpedicel. Fronto-orbital plates, parafacials and genae depending on point of view, all silvery white pruinose or yellowish. Basal antennal segments and basal part of postpedicel up to insertion of arista yellowish, apical part of postpedicel brownish and at certain point of view whitish pruinose. Postpedicel about three times as long as broad and also three times as long as pedicel. Arista yellow, about 2.5 times as long as length of postpedicel, the longest hairs about half as long as width of postpedicel. Anterior third of fronto-orbital plate with five inclinate frontal setae and one very short fine hair more posteriorly, posterior part of frons up to ocellar triangle bare. Parafacial bare. Vibrissal setae long, longest surrounding peristomal setae barely half as long as vibrissals. Gena only at lower margin with stronger setae and setulose

hairs, upper surface of gena bare, post-occipital surface covered with short dark setae. Proboscis brown, short with broad labella, mentum shining. Palpus yellow, at some points of view apically brownish, slender, about as long as mentum.

Thorax. Ground-colour depending on source of light yellow to yellowish-red. Scutum shining yellow, at some points of view with a broad but very faint brownish median stripe. When viewed from behind presutural part of scutum with a broad median greyish-white dusted stripe extending from neck to suture. Laterally between presutural dorsocentral and posthumeral setae a triangular-shaped, white dusted patch, starting from neck and tapering to the second pair of presuturals. Postsutural part without clearly defined pattern. At certain point of view pronotal calli and scutellum uniformly translucent whitish yellow, pleura shining yellow, only at certain points of view slightly greyish-white dusted. Mediotergite (metanotum) yellow with some pruinosity. Anterior and posterior spiracle yellow. Scutum covered with short, setulose black hairs. Dorsocentrals 3+4, all long, the anterior presutural seta only about half as long as the posterior ones; acrostichals 0+1; pronotal calli only with 2 setae, about equally long; anterior notopleural seta much longer than posterior one, notopleuron posteriorly haired; prealar seta about as long as anterior notopleural seta; 2 intra-alar setae. Prosternum, proepimeral area, anepimeron and katepimeron bare; meron at basis of hind coxa with some fine setulae. Katepisternum haired, katepisternals 1+2, the lower one distinctly closer to the posterior than to the anterior seta. Anepisternum predominantly haired on the posterior surface, posterior margin with a complete row of about 8 setae unequal in length and strength and with several elongated hairs. Scutellum with black setulose hairs, apical and lateral setae long, basal and subapical setae distinctly shorter, ventral and lateral surfaces bare.

Wing. Membrane hyaline, cross-veins not infuscated. Basicosta and tegula whitish yellow, veins remarkably brightly, almost whitish at base and slightly more yellow apically. Costal spine short, about twice as long as surrounding bristles. Radial node dorsally with about 3 black well-

developed setulae, ventrally with one or two much smaller black setulae. Vein M1 straight, diverging slightly from vein R4+5. Cross-vein r-m basal from the point where vein R1 enters costa; distal cross-vein dm-cu oblique and sinuous. Calypters whitish transparent, lower calypter distinctly longer than upper one. Haltere whitish yellow, only base of stem yellow.

Legs including coxae, trochanters and tarsomeres all yellow, all tibiae light yellow. Pulvilli and claws of about equal size, approximately as long as corresponding tarsomeres 5. Fore femur with a complete row of posterodorsal setae, a row of posteroventrals and between posteroventrals and posterodorsals on the upper dorsal half a row of posterior setae, all setae about as long as depth of femur or slightly longer. Fore tibia without posterior seta. Mid femur with a complete row of anteroventrals, setae of basal half distinctly longer and stronger than those of distal half; few posteroventral hair-like setae at basal third and pre-apically one anterodorsal and three well developed dorsal to posterodorsal setae. Mid tibia with two or three posterior setae, all slightly longer than diameter of tibia. Hind coxa bare on posterior surface. Hind femur with complete rows of anterodorsal, anteroventral and posteroventral setae, anterodorsals over whole length of femur about equally long and strong, anteroventral setae of basal half distinctly shorter than distal ones, posteroventrals of about equal length and not longer than the basal anteroventrals, pre-apical fourth with two posterodorsal to dorsal setae. Hind tibia with two well developed anterodorsal setae distinctly longer than diameter of tibia, and four or five much weaker, almost hair-like anteroventrals at most slightly longer than diameter of tibia.

Abdomen. Ground-colour yellow without distinct dark pattern, at some points of view tergite 5 brownish darkened. When viewed from behind, all tergites almost uniformly with some greyish white dust, distal half of syntergite 1+2 and tergites 3 and 4 with a distinct but not well-defined median stripe, yellowish on syntergite and basal half of tergite 3 and more brownish in distal half of tergite 3 and tergite 4. Only tergites 4 and 5 with complete rows of marginal setae, tergite 4 laterally on dorsal surface with few discal setae and

tergite 5 with a complete row of discals. Sternites 1 to 4 yellow, sternite 5 slightly brownish; sternite 1 bare, sternites 2 to 4 each one apically with few strong setae, distinctly longer than the following sternite, sternite 5 laterally, close to distal margin with 3 strong and long setae and some setulose long hairs.

Male genitalia. Hypopygium not conspicuously protruding. The species is clearly distinguished by morphological characters from similar species of the genus. The identification does not depend on comparison of characters of male terminalia. Therefore, to avoid damage on the only available specimen of this new species, extraction of the genitalia has not been undertaken. *Measurements.* Length of body about 6 mm; length of wing about 5,4 mm.

Female not known.

Etymology. The species is named after K.-H. Forsslund, who collected many insects in Sweden, among others also the male holotype of *M. forsslundi*. The species name *forsslundi* is a male noun in genitive case.

Diagnosis. The conspicuously yellowish coloured body of *Mydaea forsslundi* leads in Hennig's key (1964) to *Mydaea* males of the Palaearctic Region as well as in the key to *Mydaea* species of Central Europe by Gregor *et al.* (2016) to *Mydaea lateritia* (Rondani, 1866) (= *Mydaea riedeli* Stein, 1916), another predominantly yellowish coloured species of the genus. The two species are distinguished as listed below:

M. lateritia is characterized by a brown arista with hairs, about as long as width of postpedicel; brownish dorsal surface of the scutum, distinctly yellowish grey dusted; mediotergite dark brown pruinose; katapisternum and meron at basal half brownish darkened; pronotal calli with 3 setae, the third seta about half as long as the two others; prealar seta absent or at most half as long as posterior notopleural; all tarsi black; veins of wings brownish and calypters yellow. *M. lateritia* is a rather big species, reaching a body length of 10 mm.

M. forsslundi is marked by a yellow arista, the longest arista-hairs about half as long as width of postpedicel; surface of scutum as well as of katapisternum and meron predominantly shining

yellow without dark areas and only weakly dusted at some points of view; mediotergite yellow with some pruinosity; pronotal calli only with two equally long setae; prealar seta significantly longer than the posterior notopleural seta; all tarsi yellow; veins of wing yellow and in particular at basal half conspicuously whitish yellow, calypters purely whitish transparent. Body length of *M. forsslundi* approximately only 6 mm.

Discussion

Twenty species of the genus *Mydaea* were recorded from the European countries by Pont in 1986 in the Catalogue of Palaearctic Diptera, and no more than these twenty species are also listed as known from the European part of the Palaearctic Region in the currently available version of the website of Fauna Europaea (Pont 2013). About two thirds of these species have been described before 1900. Only seven new species have been identified in the last century, with the youngest ones, *Mydaea nitidiventris* and *Mydaea micans*, described by Ringdahl in 1934 and 1936, respectively. Since then no new species of this genus has been reported from Europe. The male of *M. forsslundi* was collected already in 1920, but identification and description of the new species *M. forsslundi* occurs only now, almost one hundred years later. The time of collecting, however, still falls in a period, which was marked by the identification of several new species of *Mydaea*. For example Stein described *M. nubila* (= *M. obscura* (Stein, 1915)) and *M. palpalis* in 1916, Malloch *M. obscurella* in 1921, and Ringdahl *M. setifemur* and *M. sootryeni* in 1924 and 1928, respectively.

It might not be easy to believe that a new species of the genus *Mydaea* collected in Sweden may be still identified these days. In particular when the muscid fauna of the country has been studied more intense than in many other countries. But as already discussed earlier (Zielke 2016), very likely there are still rare muscid species thriving in Europe, which have not been detected and described yet. *M. forsslundi* for example might be such a species with very limited geographical distribution and which is also not common in the

biotopes it inhabits. Consequently it is very rare and the chance that it will be discovered is quite low. This would explain, why such a conspicuous *Mydaea*-species has not been described yet.

With the identification of *M. forsslundi* the number of species of the genus *Mydaea* recorded from the European part of the Palaearctic Region is raised now to 21 species.

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