

Records of Muscidae (Diptera) and a new species from Afghanistan and other Asian countries

EBERHARD ZIELKE

*Institute of Biodiversity and Ecosystem Research, Bulgarian Academy of Sciences, 1 Tsar Osvoboditel Blvd.,
1000 Sofia, Bulgaria; e-mail: eo.zielke@abv.bg*

ZIELKE E. 2020: Records of Muscidae (Diptera) and a new species from Afghanistan and other Asian countries. *Acta Musei Moraviae, Scientiae biologicae* **105(1)**: 103–121. – Muscidae collected in Afghanistan in the 1960s and deposited in the entomological collection of the Moravian Museum in Brno, Czechia, were identified in 2018 and 2019. In addition, a small number of other Muscidae were examined, either found in the Moravian Museum or in the collection of the Institute for Biodiversity and Ecosystem Research, Sofia, Bulgaria, which had been collected in the Azerbaijan, Iran, Iraq, Kyrgyzstan, Mongolia, North Korea, Russia and Uzbekistan. A study of the more than seven hundred specimens revealed 53 species belonging to 19 genera and five subfamilies of the family Muscidae. One of the species collected in Iran is new to the country and six genera and 21 species are new for Afghanistan. In addition, *Dasyphora afghana*, also collected in Afghanistan, is described as new to science. The 50 Muscidae species known to date from Afghanistan are compiled into a table.

Key words. Asian countries, Palaearctic Region, Afghanistan, Muscidae, new records, new *Dasyphora*-species.

Introduction

Little is known of the muscid fauna of Afghanistan. A revision of the Palaearctic Muscidae (HENNIG 1964) contains very few references to Afghan locations, and the Catalogue of the Palaearctic Muscidae (PONT 1986) mentions only 24 species for the country. These species and four others are also mentioned as “from Afghanistan” in an unpublished compilation of Muscidae species, kindly provided by A.C. Pont (pers. comm., 2018). It appears that no further summarizing information on the muscid fauna of this Asian country is available in public sources. Thus, being given access to the Entomological Department of the Moravian Museum in Brno, Czechia to study a collection of unidentified Afghan Muscidae was a unique opportunity to contribute to knowledge of the fauna of this area. The flies were collected in the 1960s and stored in the entomological collection of the Moravian Museum. In addition, a few Muscidae from eight other Asian countries in the Palaearctic Region were found among the non-determined material of the entomological collections of the Moravian Museum and of the Institute for Biodiversity and Ecosystem Research (IBER), Bulgarian Academy of Sciences, Sofia, Bulgaria. These were identified and are also included in the report in hand. In total more than seven hundred flies were examined, belonging to five subfamilies, 19 genera and 53 species, of which 38 species of 18 genera originate from Afghanistan. Six genera and 21 species are new for the country and one species is described as new to science. The number of Muscidae known from Afghanistan is now 50 species. They are listed in Table 1, which is probably the first published compilation of Muscidae recorded from the country.

Material and Methods

Identification of the flies relied largely on the keys to the Muscidae of the Palaearctic Region (HENNIG 1964) and to the Muscidae of central Europe (GREGOR *et al.* 2002, 2016). The comparisons of *Musca sorbens* Wiedemann, 1830 with *Musca biseta* Hough, 1898 provided by PATERSON & NORRIS (1970) and PONT (1991) and the distinction between *Musca autumnalis* De Geer, 1776 and *Musca amita* Hennig, 1964 and *Musca osiris* Wiedemann, 1830 and *M. vitripennis* Meigen, 1826, published recently by PONT (2018), were used to distinguish these species. In addition, the descriptions of some new *Phaonia* species by SOROKINA (2015) were consulted to determine *Phaonia modesta*, Sorokina, 2015. Standard terminologies, as used by GREGOR *et al.* (2002, 2016), serve as primary reference for the descriptions. Body length was measured in millimetres (mm).

External morphological features of the specimens were observed using a Zeiss Stemi SV6 stereomicroscope. The illustrations were created by means of a combination an AxioCam ERc5s camera and a Zeiss Discovery 8 stereomicroscope. For further processing of the images, Helicon Focus 6 and Adobe Photoshop CS2 were employed. The preparation of male terminalia for microscopic examination has been described in a previous publication (ZIELKE 2017).

This contribution follows GREGOR *et al.* (2016) for classification of the Muscidae. The inscriptions on the locality labels are reproduced verbatim, which is why the spelling of sites on the labels may differ slightly from that in current use. Genera of the subfamilies and their species are listed alphabetically, and the sites of collection chronologically. Comments are added where pertinent.

In total 720 Muscidae were examined and 53 species belonging to 19 genera and five subfamilies were identified. They are listed below. The specimens were collected in nine countries: Afghanistan, Azerbaijan, Iran, Iraq, Kyrgyzstan, Mongolia, North Korea, Russia and Uzbekistan. More than 600 samples originate from Afghanistan and were collected by Povolný, Povolný & Tenora and O. Jakeš. The names of these collectors are abbreviated in the compilation below as “P.”, “P. & T.” or “J.” respectively.

The overwhelming majority of the specimens belong to the Moravian Museum, therefore, only the material from the Bulgarian institute IBER contains a hint as to its origin, e.g. “Material examined: (IBER) Iran: ...”

The specimens listed below will be returned to the collections in which they were held.

Results

Description of *Dasyphora afghana* sp. nov.

Type material. Male holotype: summarized inscriptions of labels: “E. Afgh. Prov. Nengrahar, Darunta, 580 m, 13.03.1966, Povolný & Tenora”; 5 ♂ and 1 ♀ paratypes with identical labels as holotype, 4 ♂ and 4 ♀ paratypes from the same site and collectors but collected on 14.03.1966, and 1 ♂ paratype from E. Afgh. Prov. Nengrahar, Abdukil, 15.03.1966, Povolný & Tenora. Of 2 ♂ paratypes from Darunta, collected on 14.03.1966 and the only paratype from Abdukil, the abdomen was dissected and the hypopygium and at least the fifth sternite were extracted and prepared for microscopic examination. (All material held by the Moravian museum, Brno).

Further material examined. 3 ♂ 9 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 15 ♂ 9 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Abdukil, 15.03.1966, P. & T.; 5 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.; 1 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Dari-Nur, 18.–19.03.1967, P. et. coll.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 27.03.1967, P. et. coll. (All material held by the Moravian Museum, Brno).

Description of male (Figs 1a–d, 3–5). Head dark, densely dusted greyish-white depending on angle of light. Eye with long hairs; shortest distance between eyes half that of width of postpedicel (Fig. 1a–b). Fronto-orbital plate at shortest distance between eyes not as broad as diameter of anterior ocellus, almost touching in upper half of frons, separated by a very narrow, linear frontal vitta, slightly more dilated in lower half. Parafacial at level of base of antenna as broad as width of postpedicel and at level of apex of postpedicel almost twice as broad as width of postpedicel (Fig. 1b). Upper margin of mouth approximately in line with profrons in profile. Ocellar tubercle blackish, fronto-orbital plate, parafacial and anterior part of gena blackish or densely greyish-white to silver-white-dusted, depending on perspective. Pedicel blackish, weakly lustrous, postpedicel dark brown and with more or less greyish-brown pollinosity, depending on angle of light. Postpedicel around 3.6 times as long as broad and around 2.4 times as long as pedicel. Arista dark, approx. 1.2 times as long as postpedicel, longest dorsal hairs of arista approx. 2.3 times as long as width of postpedicel. More than 30 pairs of setae or hairs throughout the length of frons; anterior third of fronto-orbital plate with slightly stronger setae than the seta-like hairs of the upper two-thirds. Parafacial naked. Vibrissal setae distinctly stronger than the surrounding peristomal setae. Lateral surface of gena and post-occipital surface dark, slightly greyish pollinose with dark setulose hairs. Proboscis dark brown, prementum brown, somewhat lustrous, but also with some grey dust; length of labella about equal to depth of proboscis; palpus dark, slender and approximately as long as proboscis.

Thorax including pleura predominantly black, somewhat lustrous if viewed from certain perspectives, more blackish or clearly dark bluish depending on quality of light, not densely but distinctly greyish-dusted. A broad, white median longitudinal stripe on the presutural part of the mesonotum, 2.5 times as wide as the adjacent dark stripe on each side (Fig. 1c). When viewed from the rear, the dark stripes extend within the rows of dorsocentral setae, beginning before the first presutural dorsocentral seta up to the scutellar suture, practically not interrupted with the transverse suture. A dark patch between dorsocentrals and presutural seta outside the row of presutural dorsocentrals, starting at about at the level of the postpronotal lobe and reaching almost the transverse suture. Postsuturally, between dorsocentral and intra-alar setae, a weakly-formed dark stripe extending from approximately the level of first postsutural dorsocentral seta almost to fourth seta. All dark stripes with a little greyish dust. Scutellum dorsally and laterally uniformly black, somewhat greyish-dusted. Pleura dark, lustrous, with some greyish-white pollinosity. Anterior spiracle predominantly white with a yellowish tinge, posterior spiracle brownish. Ground hair of scutum almost seta-like, approximately as long as length of postpedicel. Dorsocentral setae 3+4, the most anterior presutural seta shorter than the two posteriors; acrostichals 0+1; three postpronotal setae, the inner seta slightly shorter; notopleuron densely haired, the posterior notopleural seta somewhat shorter than

the anterior seta; pre-alar seta slightly longer than the posterior notopleural seta; two intra-alar setae. Prosternum setulose, anepimeron with hairs, meron with some hairs below posterior spiracle and a few small dark setulae at lower margin directly above hind coxa. Proepimeral area and katepimeron naked. Katepisternum with fine hairs, distinctly longer than the ground hair of most of the other pleura and with 1+3 katepisternal setae, the lower setae much closer to the posterior upper one than to the anterior seta. Anepisternum with long, fine hairs, anterior upper seta close to the anterior notopleural seta, distinct and longer than the surrounding hairs, 6–8 strong setae at posterior margin together with numerous interstitial seta-like hairs, some of them quite long. Scutellum with long, strong apical and lateral setae, preapical setae a little shorter, and basal seta only a third as long as apical seta; upper surface with some additional discal setae and some seta-like hairs distinctly longer than the base hair, lateral surface setulose, ventrally naked.

Wings generally greyish-hyaline, membrane uniformly covered with microtrichia. Tegula blackish, basicosta predominantly dark, veins brown or dark brown. Costal spine usually not differentiated clearly from the neighbouring bristles. Stem vein with three long hairs at the very base ventrally; at the end of the stem vein, at the bifurcation of veins R1 and R2-5, with three distinct hairs ventrally and one hair dorsally. Vein R1 with a few setulae ventrally and dorsally, vein R4+5 with setulae dorsally and ventrally, the ventral row of setulae almost reaching apex of wing, the dorsal row only slightly exceeding cross-vein r-m. Apical third of vein M1 strongly curved toward R4+5; distance between M1 and R4+5 at apical margin of wing shorter than length of cross-vein r-m. Cross-vein r-m distinctly apical of the junction where subcosta enters costa, distal cross-vein dm-cu sinuous and slightly oblique. Calypters whitish, the lower one with white margin and fringe, the upper calypter and margin with a faint yellowish shimmer. Halteres brown, their base brownish.

Legs uniformly dark. Claws distinctly shorter than the corresponding last tarsomere, pulvilli even shorter than claws. Hind coxa bare on posterior surface. Fore-femur with complete rows of long, strong posteroventral and posterodorsal setae, almost all setae longer than depth of femur, surface between the two rows densely covered with seta-like hairs shorter than depth of femur. Fore-tibia without median posterior seta. Anterior and posterior surface of mid-femur covered with hairs, two or three strong setae, approximately half as long as depth of femur, at middle of anterior surface and a row of long posteroventral setae in basal half, apical third with about five strong posterior-to-posterodorsal setae. Mid-tibia with four or five posterior setae of varying length, apical third with one long, strong anterodorsal seta and a slightly longer posteroventral seta inserted at about the same level. Hind femur with a dense row of numerous strong anterodorsal setae about as long as depth of femur and a complete row of anteroventral setae, with the three most apical setae distinctly stronger and the basal hair-like setae distinctly weaker than the setae of the middle part; basal two-thirds of femur with a row of conspicuous posteroventral seta-like hairs, much longer than the other setae, length exceeding depth of femur. Anterodorsal surface of hind tibia with numerous, strongly-developed bristle-like hairs, but at least one longer, stronger anterodorsal and two or three anteroventral setae in the apical half; one long posterodorsal seta at the apical quarter of

the tibia. Hind basitarsus, near base ventrally, with a conspicuous setulose tubercle, tapering at apex (Fig. 3).

Abdomen broad, dark, largely lustrous with a dark-blue shimmer of varying intensity depending on the quality and angle of light; from different points of view either more or less densely dusted. When viewed from the rear, syntergite 1+2 densely whitish-dusted, tergite 3 whitish with a broad, dark, median longitudinal stripe and a paramedian pair of semicircular blackish spots at the anterior margin. Tergite 4 only weakly dusted with a dark, much narrower stripe and faint semicircular blackish spots from some points of view. Only tergite 5 with transverse rows of long discal and marginal setae, the setae almost as long as length of tergite. Ventral part of tergites and sternites dark, greyish-dusted. Sternite 1 densely covered with hairs.

Male genitalia with hypopygium barely pronounced. The hypopygium and at least sternite 5 were extracted from the male paratype (Figs 4, 5a–b). The genitalia are very similar to the schematic drawings of eight *Dasyphora* species, including *D. paraversicolor*, provided by ZIMIN (1951). These, however, reveal only negligible differences that appear insufficient for reliable differentiation of the species.

Measurements. Length of body about 10 mm; length of wing approx. 9 mm.

Description of female (Fig. 6a–b). Females of those *Dasyphora* species, of which the males bear a setulose ventral tubercle at the base of the hind basitarsus, have not been reliably distinguishable to date. All females examined in the current study were associated with males of *D. afghana* sp. nov. at the sites of collection, and since their taxonomic features matched the males closely, they were assigned to this species. Although very similar to the males, the females differ in certain features. The frons much broader (Fig. 6a) and distance between margins of eyes at level of vertex 2.6 times as wide as the width of ocellar triangle; fronto-orbital plate and frontal vitta are at midway, about the same width as the ocellar triangle. Parafacial at midway almost twice the width of postpedicel. Fronto-orbital plate covered with about eight distinct frontal setae and several interstitial hairs, the anterior setae clearly stronger than the upper ones, two very strong proclinate orbital setae below the level of ocellar triangle; one strong, reclinate orbital seta at level of ocellar tubercle.

Thorax with slightly less bluish lustre but with more strongly expressed greyish-white and dark longitudinal stripes (Fig. 6b). Pleura somewhat more greyish-dusted than in males. Prosternum with less hairs.

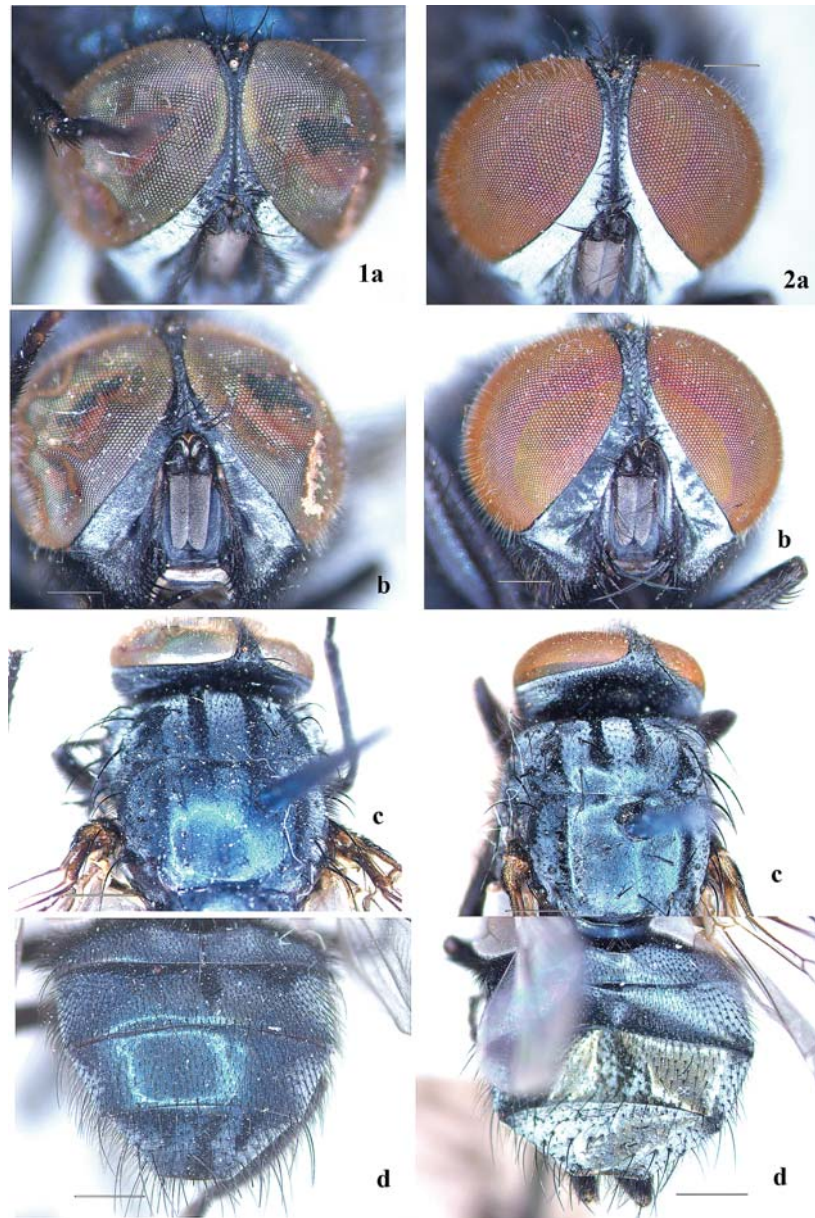
Mid-tibia of a few females with one or more short anterodorsal setae above the typical prominent anterodorsal seta. Hind basitarsus without setulose tubercle.

Abdomen with less intense dark-bluish lustre than in males, but greyish pollinosity more strongly developed.

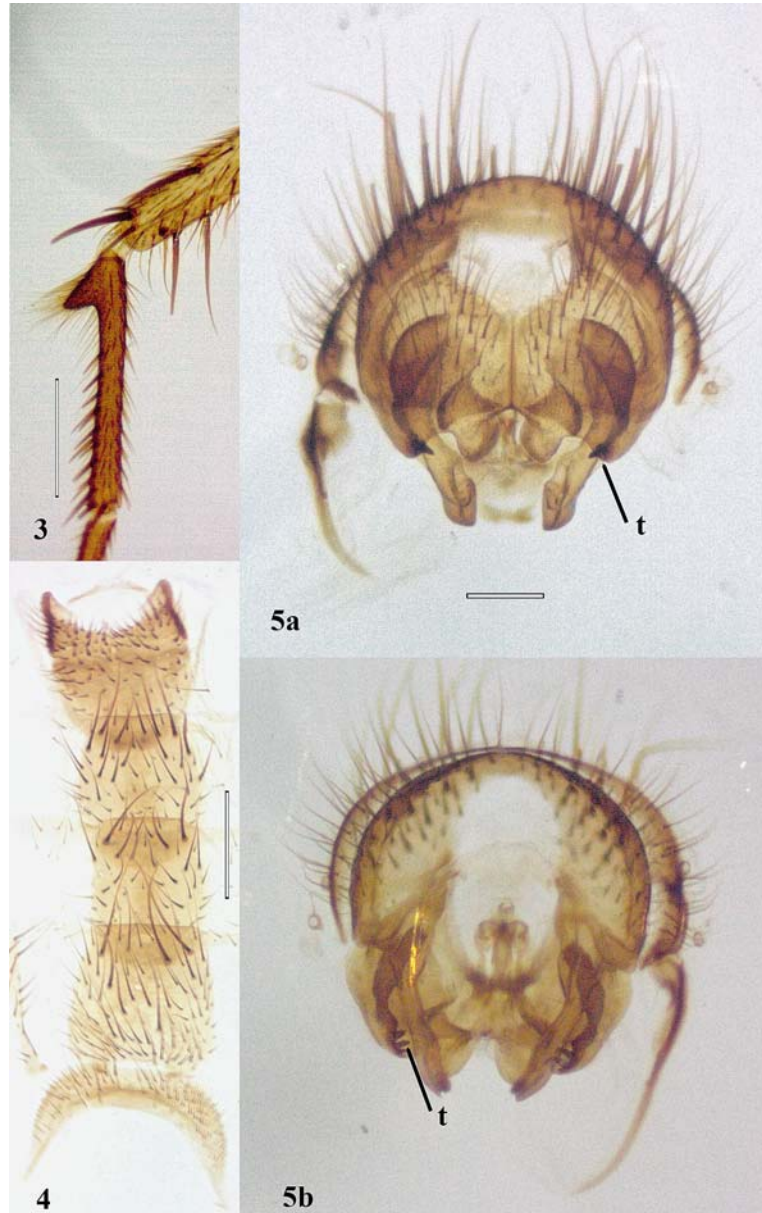
Measurements. Length of body 9–10 mm; length of wing approx. 9 mm.

Etymology. The specific epithet “*afghana*” of the new species is a female adjectival toponym and refers to the country in which it was found.

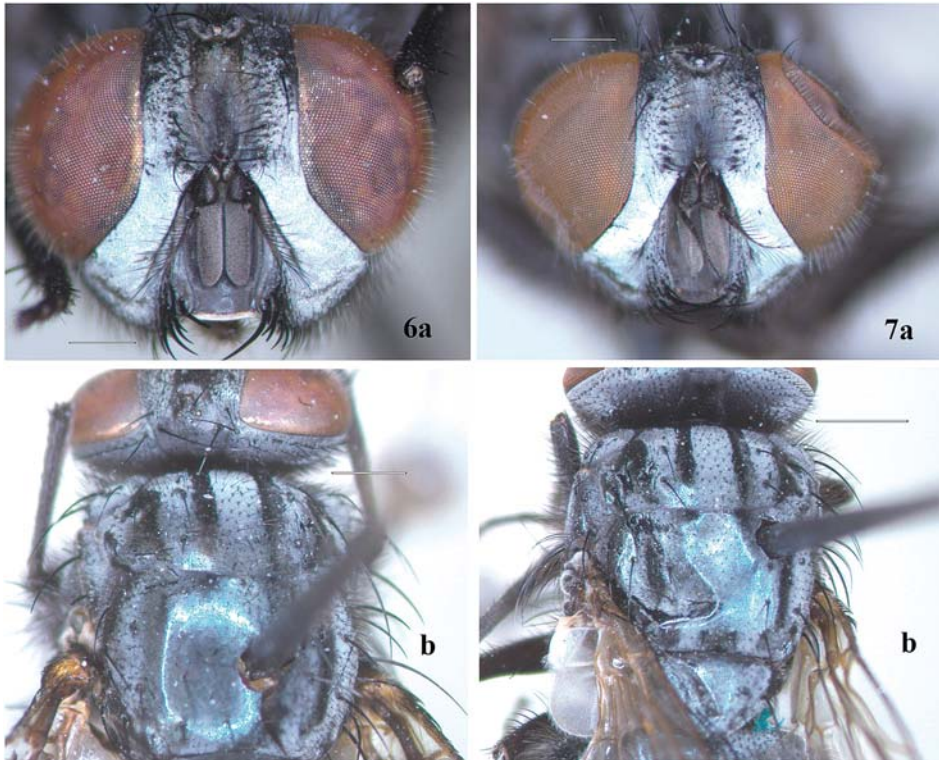
Differential diagnosis. The newly described species of the genus *Dasyphora* Robineau-Desvoidy, 1830 is characterized by a haired prosternum and a setulose tubercle at the base of the ventral surface of the hind basitarsus (Fig. 3). It resembles *Dasyphora*



Figs 1–2. 1, *Dasyphora afghana* sp. nov.; male holotype: **a** – frons and narrowest distance between eye-margins; **b** – face, antennae with long postpedicels, parafacials whitish-dusted or dark depending on angle of light; **c** – presutural mesonotum with white median vitta, much broader than adjacent dark vittae; **d** – abdomen slightly greyish-dusted, predominantly lustrous-bluish depending on quality of light. 2, *Dasyphora paraversicolor* Zimin, 1951 male: **a** – frons and narrowest distance between eye-margins; **b** – face, antenna, predominantly white dusted parafacials; **c** – presutural mesonotum with white median vitta; **d** – abdomen more greyish-white dusted with brass-metallic reflections, which are light greenish in natural light. Bars: a–b = 0.5 mm, c–d = 1.0 mm.



Figs 3–5. *Dasyphora afghana* sp. nov.; male paratype: **3** – hind basitarsus with setulose tubercle at basal ventral surface. **4** – male paratype: sternites including sternite 5. **5a** – posterior and **5b** – frontal view of hypopygium (t = teeth at inner margin of cercal plate). Bars: 3–4 = 0.5 mm, Fig. 5 = 0.2 mm.



Figs 6–7. 6, *Dasyphora afghana* sp. nov.: female paratype. 7, *Dasyphora paraversicolor* Zimin, 1951, female. In both figures **a** – anterior view of head with frons and face, predominantly whitish-dusted; **b** – presutural mesonotum with white median vitta and adjacent dark stripes. Bars: a = 0.5 mm, b = 1.0 mm.

paraversicolor Zimin, 1951 very closely. Therefore, type-specimens of *D. afghana* sp. nov. were compared with male and female specimens of *D. paraversicolor*, determined by Zimin himself or by Hennig, but which are not type-material. The specimens were kindly loaned by the Museum of Natural History, London, in which they are held.

The taxonomic characteristics of *Dasyphora afghana*, such as hairy prosternum, male mid-tibia always (female one usually) without additional anterodorsal setae or prolonged hairs, together with dark- or white-dusted parafacials at least as broad as width of postpedicel, and the median white longitudinal vitta of presutural mesonotum broader than the adjacent dark longitudinal stripes lead in the key to the *Dasyphora* species of the Palearctic Region (HENNIG 1964) to *D. paraversicolor* Zimin, 1951. At first glance, the specimens of *D. afghana*, with a body length of around 10 mm, are clearly bigger than

the two males and two females of *D. paraversicolor*, which measured only around 8 mm. The males of the two species are also clearly distinguished by other differences. The frons of *D. afghana*, for example, is only half as broad as the width of the postpedicel, and the frontal vitta is at most line-shaped; postpedicel (3.6 times as long as wide) is conspicuously long (Fig. 1b), white median vitta of presutural mesonotum 2.5 times as broad as the adjacent dark stripes; veins of wings brown to dark brown and, depending on point of view and quality of light, thorax and abdomen coloured blackish or dark bluish (Figs 1a–d, 2a–d). The frons of *D. paraversicolor*, however, is broader than the width of the postpedicel and has a clear frontal vitta, postpedicel (3.3 times as long as wide) does not appear as strikingly long as that of *D. afghana* (Fig. 2b), the white median vitta of the anterior thorax is only around twice as wide as the adjacent dark stripes, wing-veins are predominantly yellow, at most yellowish-brownish, and the greyish abdomen is characterized by lustrous light-green reflections as already described by ZIMIN (1951) and HENNIG (1964). The comparison of female paratypes of *D. afghana* with two females of *D. paraversicolor* did not reveal any significant differences appropriate to differentiation of the two species (Figs 6a–b, 7a–b).

Records of Muscidae collected

Subfamily Azeliinae

Hydrotaea armipes (Fallén, 1825)

Material examined. Afghanistan: 2 ♂, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.

Hydrotaea capensis (Wiedemann, 1918)

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 8.08.1964, J.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.03.1966, P. & T.; 15 ♂ 9 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 32 ♂ 6 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 8 ♂ 4 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

Hydrotaea dentipes (Fabricius, 1805)

Material examined. Afghanistan: 2 ♂, E. Afgh. Prov. Nengrahar, Darunta, river beach Kabul and desert, 580 m, 27.05.1969, P.

Muscina levida (Harris, 1780)

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 11.–15.06.1964, J. **New for Afghanistan.**

Iran: 1 ♂ 1 ♀, Fars prov., 1 km W Sangar, 29°59'50"N52°08'07"E; 2.093 m, 30.06.2017, M. Obořil.

***Muscina stabulans* (Fallén, 1817)**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Muricaq, 16.06.1964, J.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 2 ♂, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, 23 km SE Jalalabad, 22.03.1966, P. & T.

Iran: 1 ♂, Fars prov., 15 km S Dasht Arjan, 29°34'38"N51°56'54"E, 2.049 m, 02.05.2017, M. Obořil.

Subfamily Muscinae***Musca autumnalis* De Geer, 1776**

Material examined. Afghanistan: 1 ♂ 4 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

Kyrgyzstan: 1 ♂, 12 km W Taskomur, 41°18'412"N72°05'368"E, 959 m, 11.06.2017, M. Obořil; 2 ♂, 3,5 km SE Arslanbob, 41°18'15"N72°57'03"E, 1.589 m, 14.06.2017, M. Obořil.

***Musca domestica* Linnaeus, 1758**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 20.03. – 03.07.1964, J.; 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 25.05. – 10.06.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 10.06.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 20. – 24.06.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 10. – 13.07.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 01. – 25.09.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 16.09. – 16.10.1964, J.; 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 21. – 28.09.1964, J.; 7 ♂ 4 ♀, N. Afgh. Prov. Herat, Bala Murghab, 30.10.1964, J.; 1 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.03.1966, P. & T.; 56 ♂ 13 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 40 ♂ 25 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 10 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Abdukul, 15.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Kama 40 km NE Jalalabad, 24.03.1966, P. & T.; 3 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 11.04.1966, P. & T.; 2 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 13.04.1966, P. & T.; 1 ♂, N. Afgh. Prov. Herat, Deh-i-Babula-i, 08.09. – 16.09.1964, J.; 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 11.04.1967, P. et coll.; 2 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 16.04.1966, P. et coll.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 20.04.1966, P. et coll.

Iran: 1 ♂, Fars prov., 11 km S Jasudzh, 30°32'43"N51°36'17"E, 1.958 m, 28.04.2017, M. Obořil; 1 ♂, Fars prov., 2,5 km SE Kohmer, 30°25'36"N51°53'59"E, 2697 m, 29.4.2017, M. Obořil; 1 ♂, Fars prov., 15 km S Dasht Arjan, 29°34'38"N51°56'54"E, 2.049 m, 02.05.2017, M. Obořil; 1 ♂ 1 ♀, 11 km S Jasudzh, 30°32'43"N51°36'17"E, 1.958 m, 04.05.2017, M. Obořil; 2 ♂, Fars prov., 1 km W Sangar, 29°59'50"N52°08'07"E, 2.093 m, 30.06.2017, M. Obořil.

(IBER): **Mongolia:** 1 ♂, Ulan Bator, 20.–26.08.1964, O. Štěrba; 1 ♂, Darchan, 08.09.1964, leg. not named.

***Musca hervei* Villeneuve, 1922**

Material examined. (IBER) North Korea: 2 ♂, Kaesong, 25.08.1982, P. Beron.

***Musca larvipara* Portschinsky, 1910**

Material examined. Iran: 1 ♂, Golestan prov, 5 km E Khoshyeylag, 36°51'24"N 55°23'36"E, 1.450 m, 07.04.2017, M. Obořil.

***Musca osiris* Wiedemann, 1830**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.02.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, 23 km SE Jalalabad, 22.03.1966, P. & T. **New for Afghanistan.**

***Musca sorbens* Wiedemann, 1830**

Material examined. Afghanistan: 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 8.08.1964, J.; 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 10.02.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 12.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 19.03.1966, P. & T.; 2 ♂, N. Afgh. Prov. Herat, Deh-i-Babula-i, 08. – 16.09.1966, J.
(IBER) **Azerbaijan:** 1 ♀, Lankaran, 1957, leg. not named.

***Musca tempestiva* Fallén, 1817**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 25.05. – 10.06.1964, J.; 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 03. – 06.07.1964, J.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 1 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.

***Musca vitripennis* Meigen, 1826**

Material examined. Afghanistan: 1 ♂, N. Afgh. Prov. Maimann, Rasid, 18.05.1964, J.; 5 ♂, N. Afgh. Prov. Herat, Bala Murghab, 25.05. – 10.06.1964, J.; 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 09.02.1966, P. & T.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Abdukul, 15.03.1966, P. & T.; 2 ♂, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 25.05. – 10.06.1966, J.
(IBER) **Iran:** 1 ♂, Fars prov., Darium, 29°33'14"N52°56'42"E, 1.740 m, 8.–22.04.2016, M. Sadeghi.

***Neomyia cornicina* (Fabricius, 1781)**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 06.07.1964, J.; 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, I.–III. 1965, D. P.; 1 ♂ 5 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Abdukul, 15.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Shigi, 15.03.1966, P. & T.

***Pyrellia vivida* Robineau-Desvoidy, 1830**

Material examined. Afghanistan: 3 ♀, N. Afgh. Prov. Herat, Bala Murghab, 20. – 24.06.1964, J. **New for Afghanistan.**

***Stomoxys calcitrans* (Linnaeus, 1758)**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 17.02.1966, P. & T.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 25.05. – 10.06.1966, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 20. – 24.06.1966, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 10. – 13.07.1966, J.
(IBER) **North Korea:** 1 ♂ 1 ♀, Kaesong, 25.08.1982, P. Beron.

Subfamily Phaoniinae

Atherigona varia (Meigen, 1826)

Material examined. Afghanistan: 1 ♂ 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 11.07.1964, J.; 9 ♂ 9 ♀, N. Afgh. Prov. Herat, Bala Murghab, 8.08.1964, J.; 5 ♂ 3 ♀, N. Afgh. Prov. Herat, Bala Murghab, 28. – 31.08.1964, J.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, I–III. 1965, D. P.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 12.03.1966, P. & T.; 10 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 18 ♂ 8 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♂ 4 ♀, E. Afgh. Prov. Nengrahar, Abdukul, 15.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Shigri, 15.03.1966, P. & T.; 1 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 18.03.1966, P. & T.; 11 ♂ 19 ♀, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.; 4 ♂ 6 ♀, E. Afgh. Prov. Nengrahar, 23 km SE Jalalabad, 22.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 13.04.1966, P. & T.

Iran: 1 ♀, Fars prov., 11 km S Jasudzh, 30°32'43"N 51°36'17"E, 1.958 m, 04.05.2017, M. Obořil.

Iraq: 1 ♂ 1 ♀, Baghdad, Jadiriya hotel Babylon, garden, light trap, 23.04.1988, Olejnicek; 1 ♂, Baghdad, Jadiriya hotel Babylon, garden, light trap, 08.05.1988, Olejnicek.

Uzbekistan: 1 ♀, Taschkent, 03.08.1965, Silhavy.

Helina evecta (Harris, 1780)

Material examined. Iran: 3 ♂ 1 ♀, Golestan prov, 5 km E Khoshyeylag, 36°51'24"N 55°23'36"E, 1.450 m, 07.04.2017, M. Obořil.

Helina laxifrons (Zetterstedt, 1860)

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T. **New for Afghanistan.**

Helina moedlingensis (Schnabl, 1911)

Material examined (IBER): Kyrgyzstan: 1 ♂, Verkanski Ridge, Arslambob, 27.05.1961, Sugonyaev, det. W. Lavtschiev.

Helina parcepilosa (Stein, 1907)

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 25.09. – 27.09.1964, J.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T. **New for Afghanistan.**

Helina quadrum (Fabricius, 1805)

Material examined (IBER): Russia: 1 ♂, Amur Distr., 75 km W Svobodnoye, border between meadow and forest, collected at light, 29.07.1959, Kerzhner, det. W. Lavtschiev.

Helina reversio (Harris, 1870)

Material examined. Iran: 13 ♂ 3 ♀, Fars prov., 11 km S Jasudzh, 30°32'43"N 51°36'17"E, 1.958 m, 28.04.2017, M. Obořil; 1 ♂, Fars prov., 2,5 km SE Kohmer, 30°25'36"N 51°53'59"E, 2.697 m, 29.04.2017, M. Obořil.

Iraq: 1 ♂ 1 ♀, Baghdad, Sadam Dam, edges of stream, 07.04.1988, Olejnicek.

***Helina tanga* Zielke, 2018**

Material examined. Iran: 1 ♂, Azarbayjan-e-Shar Qi pr., 6 km E of Kani Bagh, 2.100 +/- 70 m, 36°44'02,1"N45°30'16,6"E, 9.vi.2017, Dembický, IRN-2017-15-MZM Expedition.

Comment. The specimen examined matches the description of *H. tanga* quite well, of which males were collected in the Iranian province of Fars. The specimen has a posterior seta on each anterior tibia, which corresponds to the observation by ZIELKE (2018) that the species is variable in the absence or presence of a posterior seta on the fore-tibia. In addition, the male differs slightly from the description, as it has a somewhat lustrous reddish-brown pedicel, whereas both type-specimens are characterized by a dark brown pedicel.

***Phaonia basiseta* Malloch, 1920**

Material examined. (IBER) Russia: 1 ♀, Amur Distr., 40 km W Svobodnoye, border between meadow and forest, collected at light; 31.05.1959, Borisova.

***Phaonia chuanxiensis* Feng & Ma, 2002**

Material examined. (IBER) North Korea: 1 ♂, Samijon, Paekdusan, 07.08.1988, Kozánek.

Comment. The female specimen was collected in North Korea in the 1980s, whereas the species *Phaonia chuanxiensis* Feng et Ma was described only in 2002 from China. There is a high probability that this is the first record of the species from North Korea.

***Phaonia grunini* Zinoviev, 1980**

Material examined. (IBER) Russia: 1 ♂, Mondy, Sayans, 51°40'28"N100°59'24"E, 1.400 m, 21.8.1962, Gorodkov. Additional label: Burrow of *Citellus* (ground squirrel).

Comment. *P. grunini* belongs to the *Phaonia tenuiseta* (Pokorny, 1893), species-group, of which some were found in the burrows of the alpine marmot (*Marmota marmota* Linnaeus). PONT & ACKLAND (1995) investigated the association between fly species and marmots' burrows in more detail; they even considered *Phaonia tenuiseta* an obligate commensal in marmot burrows. Little is known about the biology of *P. grunini*. However, the attached information that the fly was found in the burrow of a ground squirrel could be a helpful hint as to where to look for this species.

***Phaonia modesta*, Sorokina, 2015**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 12.03.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T. **New for Afghanistan.**

Comment. The male runs in the keys by HENNIG (1964) and GREGOR *et al.* (2016) to *Phaonia trimaculata* (Bouché, 1834), but examination of the male genitalia, as recommended by SOROKINA (2015), revealed that the specimen belongs to *Phaonia modesta* Sorokina, 2015. To date, the females of both species are not reliably

distinguishable. Since both specimens mentioned above were collected in the same area and at around the same time, there is a high likelihood that the female is also *P. modesta*.

Subfamily Mydaeinae

Gymnodia ascendens (Stein, 1915)

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.

Hebecnema fumosa (Meigen, 1826)

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, I.–III. 1965, D. P.; 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

Mydaea urbana (Meigen, 1826)

Material examined. Kyrgyzstan: 1 ♂, Ala-Too 28 km N Toktogul, 42°06'323"N72°48'394"E, 1.694 m, 10.06.2017, M. Obořil.

Mydaea detrita (Zetterstedt, 1845)

Material examined. Kyrgyzstan: 1 ♂, Ala-Too 28 km N Toktogul, 42°06'323"N72°48'394"E, 1.694 m, 10.06.2017, M. Obořil.

Myospila bimaculata (Macquart, 1834)

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 13.04.1966, P. & T. **New for Afghanistan.**

Myospila longa Wei, 2011

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T. **New for Afghanistan.**

Comment. This species was described only recently (WEI 2011) from south-western China, but the specimen listed above had already been collected in 1966 in Afghanistan.

Myospila meditabunda (Fabricius, 1781)

Material examined. Afghanistan: 4 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, I.–III. 1965, D. P.; 8 ♂ 8 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 06.02.1966, P. & T.; 6 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 09.02.1966, P. & T.; 5 ♂ 4 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 10.02.1966, P. & T.; 5 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 17.02.1966, P. & T.; 3 ♂ 3 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T.; 2 ♂, E. Afgh. Prov. Nengrahar, Jalalabad, 09.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Laghman, 10.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 12.03.1966, P. & T.; 2 ♀, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 2 ♂ 2 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.; 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 18.03.1966, P. & T.; 2 ♂ 1 ♀, E. Afgh. Prov. Nengrahar, Darunta,

Muscidae from Afghanistan and other Asian countries (Diptera)

19.03.1966, P. & T.; 5 ♂ 9 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 13.04.1966, P. & T.; 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 21.10. – 22.10.1966, J.; 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 11.04.1967, P. et coll.; 1 ♂, E. Afgh. Prov. Nengrahar, Samrachel, 01.05.1967, P. et coll.

Subfamily Coenosiinae

***Coenosia atra* Meigen, 1830**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab 28.8.–31.8.1964 J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 28.10.1964, J. **New for Afghanistan.**

***Coenosia attenuata* (Stein, 1903)**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T.

***Coenosia humilis* Meigen, 1826**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Jalalabad, 22.02.1966, P. & T.; 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 19.03.1966, P. & T.

***Coenosia mollicula* (Fallén, 1825)**

Material examined. Mongolia: 1 ♀, Ulan Bator, 20.–26.08.1964, O. Štěrba.

***Coenosia tigrina* (Fabricius, 1775)**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 23.03.–03.07.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 8.08.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 28.10.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 30.10.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab 25.05.–10.06.1966 J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab 20.06.–24.06.1966, J. **New for Afghanistan.**

***Limnophora exuta* (Kowarz, 1893)**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

***Limnophora obsignata* (Rondani, 1866)**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Laghman, 10.03.1966, P. & T. **New for Afghanistan.**

***Limnophora pollinifrons* Stein, 1916**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 13.03.1966, P. & T.; 4 ♂, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

***Limnophora rufimana* (Strobl, 1893)**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.

***Lispe litorea* Fallén, 1825**

Material examined. (IBER) North Korea: 1 ♂, Pyongyang, 15.08.1982, P. Beron.

***Lispe longicollis* Meigen, 1826**

Material examined. Afghanistan: 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 08.08.1964, J. **New for Afghanistan.**

***Lispe pygmaea* Fallén, 1825**

Material examined. Afghanistan: 1 ♂, N. Afgh. Prov. Herat, Bala Murghab, 06.07.1964, J.; 8 ♂ 4 ♀, N. Afgh. Prov. Herat, Bala Murghab, 08.08.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 23.–27.08.1964, J.; 5 ♀, N. Afgh. Prov. Herat, Bala Murghab, 28.–31.08.1964, J.; 2 ♂ 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 25.–27.09.1964, J.; 5 ♂ 6 ♀, N. Afgh. Prov. Herat, Bala Murghab, 21.–22.10.1964, J.; 4 ♀, N. Afgh. Prov. Herat, Bala Murghab, 28.10.1964, J.; 1 ♀, N. Afgh. Prov. Herat, Bala Murghab, 30.10.1964, J. **New for Afghanistan.**

***Lispe sericipalpis* Stein, 1904**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

***Lispe tentaculata* (De Geer, 1776)**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T.

***Lispocephala brachialis* (Rondani, 1877)**

Material examined. Iran: 1 ♂, Fars prov., 11 km S Jasudzh, 30°32'43"N51°36'17"E, 1.958 m, 04.05.2017, M. Obořil. **New for Iran.**

***Lispocephala mikii* (Strobl, 1893)**

Material examined. Afghanistan: 1 ♂, E. Afgh. Prov. Nengrahar, Kama 40 km NE Jalalabad, 24.03.1966, P. & T. **New for Afghanistan.**

***Spilogona contractifrons* (Zetterstedt, 1838)**

Material examined. Afghanistan: 1 ♀, E. Afgh. Prov. Nengrahar, Darunta, 14.03.1966, P. & T. **New for Afghanistan.**

Discussion

Among the material in the collection studied were only a few muscids from Azerbaijan, Iraq, Kyrgyzstan, Mongolia, North Korea, Russia and Uzbekistan. The species and their sites are listed in this publication, but the finds are not classified as “known” or “new for the country”.

Thirty-five of the Muscidae examined were collected in Iran. They belong to nine species of five genera and are also mentioned in a previous compilation of the known species from the country (ZIELKE 2018), apart from *Lispocephala brachialis* Rondani, 1877. The latter species of the subfamily Coenosiinae is new for Iran and raises the number of known Muscidae from the country to 86 species.

A total of 664 identified Muscidae originated from Afghanistan. Most of the flies were collected at three localities in the western province of Herat and at eight sites in the eastern province of Nengrahar. Specimens of synanthropic species were the most prevalent in the collection studied. *Musca domestica* accounted for more than 180 and *Atherigona varia* for about 120 specimens. *Myospila meditabunda* was represented by 78, *Hydrotaea capensis* by 73, *Dasyphora afghana* by 66 and *Lispe pygmaea* by 46 specimens. The remaining 32 species of the examined material were each represented by fewer than 10 specimens. The seasons, years, collectors, and frequency of collecting in the western province of Herat and the eastern province of Nengrahar were different, so comparing the results of the two areas would be less than meaningful. It is noteworthy, however, that no specimen of *Dasyphora* was found among the material collected from the western province of Herat, and *H. capensis* and *M. meditabunda* were each represented by only one specimen, although the three species were quite numerous in the province of Nengrahar. On the other hand, *L. pygmaea* was not detected among the material collected in the province of Nengrahar.

Previous knowledge of the Afghan Muscidae fauna is very sparse. Only 28 species from Afghanistan were previously known (HENNIG 1964, PONT 1986, Pont personal communication 2018). Among the currently-studied material, 38 species from 18 genera originating from the country were found, of which six genera and 21 species are new records for Afghanistan. Another species, *Dasyphora afghana*, is new to science and the genus is also new to the country. A total of 50 species belonging to 20 genera are now reported for Afghanistan and are listed in Table 1.

Table 1. Muscidae species recorded from Afghanistan.

No = running number; Ref. = references of records of species from Afghanistan: 1 = PONT (1986), 2 = additional information provided by Pont (2018, unpublished compilation); 3 = current investigation. The names of genera new for Afghanistan are underlined.

No	Subfamilies and Species	Ref.	No	Subfamilies and Species	Ref.
	Subfamily Azeliinae		26	<u>Phaonia</u> <i>modesta</i> Sorokina, 2015	3
1	<i>Hydrotaea armipes</i> (Fallén, 1825)	1;3		Subfamily Mydaeinae	
2	<i>Hydrotaea capensis</i> (Wiedem., 1818)	3	27	<i>Gymnodia ascendens</i> (Stein, 1915)	1;3
3	<i>Hydrotaea dentipes</i> (Fabricius, 1805)	1;3	28	<u>Hebecnema</u> <i>fumosa</i> (Meigen, 1826)	3
4	<i>Hydrotaea floccosa</i> Marcquart, 1835	1	29	<i>Myospila bimaculata</i> (Macquart, 1834)	3
5	<i>Hydrotaea pandellei</i> Stein, 1899	1	30	<i>Myospila longa</i> Wei, 2011	3
6	<i>Muscina levida</i> (Harris, 1780)	3	31	<i>Myospila mediatubunda</i> (Fabr., 1781)	1;3
7	<i>Muscina stabulans</i> (Fallén, 1817)	1;3	32	Subfamily Coenosiinae	
	Subfamily Muscinae			<i>Coenosia atra</i> Meigen, 1830	3
8	<u>Dasyphora</u> <i>afghana</i> sp. nov.	3	33	<i>Coenosia attenuata</i> Stein, 1903	1;3
9	<i>Musca albina</i> Wiedemann, 1830	1	34	<i>Coenosia humilis</i> Meigen, 1826	1;3
10	<i>Musca autumnalis</i> De Geer	1	35	<i>Coenosia mima</i> Hennig, 1961	2
11	<i>Musca confiscata</i> Speiser, 1924	1	36	<i>Coenosia tigrina</i> (Fabricius, 1775)	3
12	<i>Musca domestica</i> Linnaeus, 1758	1;3	37	<i>Limnophora exuta</i> (Kowarz, 1893)	3
13	<i>Musca larvipara</i> Porchinsky, 1910	1	38	<i>Limnophora obsignata</i> (Rondani, 1866)	3
14	<i>Musca osiris</i> Wiedemann, 1830	3	39	<i>Limnophora pollinifrons</i> Stein, 1916	3
15	<i>Musca sorbens</i> Wiedemann, 1830	1;3	40	<i>Limnophora riparia</i> Fallén, 1824	2
16	<i>Musca tempestiva</i> Fallén, 1817	1;3	41	<i>Limnophora rufimana</i> (Strobl, 1893)	1;3
17	<i>Musca vitripennis</i> Meigen, 1825	1;3	42	<i>Lispe longicollis</i> Meigen, 1826	3
18	<i>Neomyia cornicina</i> (Fabricius, 1781)	1;3	43	<i>Lispe nana</i> Macquart, 1835	1
19	<u>Pyrellia</u> <i>vivida</i> Rob.-Desv., 1830	3	44	<i>Lispe pygmaea</i> Fallén, 1825	3
20	<i>Stomoxys calcitrans</i> (Linnaeus, 1758)	1;3	45	<i>Lispe sericipalpis</i> Stein, 1904	3
	Subfamily Phaoniinae		46	<i>Lispe tentaculata</i> (De Geer, 1776)	2;3
21	<i>Atherigona soccata</i> Rondani, 1871	1	47	<u>Lispocephala</u> <i>mikii</i> (Strobl, 1893)	3
22	<i>Atherigona varia</i> (Meigen, 1824)	1;3	48	<i>Orchisia costata</i> Meigen, 1826	2
23	<i>Helina hissarensis</i> Hennig, 1957	1	49	<i>Schoenomyza litorella</i> (Fallén, 1823)	1
24	<i>Helina laxifrons</i> (Zetterstedt, 1860)	3	50	<u>Spilogona</u> <i>contractifrons</i> (Zetterst., 1838)	3
25	<i>Helina parcepilosa</i> (Stein, 1907)	3			

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