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New species of the genus *Phaonia* R.-D., 1830 (Diptera, Muscidae) from Central Asia

VERA S. SOROKINA
Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Siberian Branch, Frunze Street 11, Novosibirsk 630091, Russia. E-mail: sorokinavs@mail.ru

Abstract

A list of species of *Phaonia* Robineau-Desvoidy, 1830 of Central Asia is given, and four new species of *Phaonia* are described from Tajikistan, Uzbekistan and Turkmenistan (*P. babarabica* **sp. nov.**, *P. juglans* **sp. nov.**, *P. modesta* **sp. nov.** and *P. ninae* **sp. nov.**). The male terminalia of all species and ovipositors of *P. ninae* **sp. nov.** and *P. modesta* **sp. nov.** are figured. Previous literature on the genus *Phaonia* in Central Asia is reviewed.

Key words: Muscidae, *Phaonia*, flies, new species, Tajikistan, Turkmenistan, Uzbekistan.

Introduction

Many years ago, larval and puparial material of Muscidae was collected by N.P. Krivosheina (Moscow) in Central Asia, particularly from Tajikistan and Turkmenistan. The bred imagines from these puparia belong to the genus *Phaonia* Robineau-Desvoidy, 1830 and were kindly entrusted to me for identification recently. According to Hennig's key to Palaearctic *Phaonia* (1963) and Chinese keys to *Phaonia* (Ma *et al.*, 2002), these flies do not belong to any of the known species and do not fully agree with descriptions of similar species.

Phaonia Robineau-Desvoidy, 1830 is one of the largest genera of the Muscidae and contains about 650 species (Pape & Thompson 2010). The species are found in every biogeographic region but the greatest diversity of the genus is in the Palaearctic (302 species) and Oriental (170) regions. Although the genus *Phaonia* is speciose in the Palaearctic, many parts of this region are almost completely unworked. The European fauna (Hennig 1963; Gregor *et al.* 2002) and the Chinese fauna (Ma *et al.*, 2002, Xue *et al.*, 2006, Xue *et al.*, 2009, Xue & Zhang 2013 a, 2013 b) are very well known, and the fauna of Mongolia and the Russian Far East (Zinoviev 1980 a, b, 1981, 1990) is also relatively well known. The *Phaonia* fauna of other areas of the Palaearctic is very under-investigated, and this applies particularly to areas such as Russian Siberia, West Asia and Central Asia.

Central Asia is the core region of the Asian continent and stretches from the Caspian Sea in the west to China in the east and from Afghanistan in the south to Russia in the north. In modern contexts, all definitions of Central Asia include these five republics of the former Soviet Union: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan (http://en.wikipedia.org/wiki/Central_Asia). Central Asia is an extremely large region of varied geography, including high passes and mountains (Tian Shan, Kopet Dag, Pamir, Dzungarian Alatau, Saur, Tarbagatai), vast deserts (Kara Kum, Kyzyl Kum, Taklamakan), and, in particular, treeless, grassy steppes. Such a variety of ground features has given rise to a unique fauna of *Phaonia* in this region, with many endemic species. However, information about this fauna is restricted to Hennig's monographs (1963) and the papers of Zinoviev (1983), Sychevskaya (1966, 1970, 1972) and Malyanov (1993). The muscid material collected by the staff of the Zoological Museum (St Petersburg) in Central Asia and Mongolia during the Soviet period was the basis for these papers. Zinoviev (1983) studied the greater part of this material, including the material processed by Hennig, and recorded 25 species of *Phaonia* for Central Asia. Later Malyanov described two species, one from Kyrgyzstan (*Phaonia kirghizorum* Malyanov, 1993) and one from Kazakhstan (*Phaonia zinovjevi* Malyanov, 1993). About 50 percent of these species have not been found outside Central Asia.

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The present paper records 31 species of *Phaonia* as known from Central Asia, including four new species described here from Tajikistan, Uzbekistan and Turkmenistan.

Materials and methods

The *Phaonia* material used in this study is deposited in the Zoological Museum of the Moscow State University, Moscow, Russia (ZMUM), the Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia (ZIN) and the Institute of Systematics and Ecology of Animals, Russian Academy of Sciences, Siberian Branch, Novosibirsk, Russia (SZMN).

Morphological terms follow McAlpine (1981), with the exception of "postpedicel" for the "first flagellomere" of McAlpine.

Specimens were examined using an Altami PSO745-T microscope for external morphological features. For the dissection of the male and female terminalia, the end of the abdomen or the whole of the abdomen was removed and boiled in 10 % KOH solution for 15–20 seconds. After dissection and study, the abdomen and terminalia were washed and then stored in microvials of glycerine pinned directly underneath the specimens. Illustrations were made in ink and with the camera Canon EOS 600D and processed using Adobe Photoshop CS.

Body length was measured in millimetres (mm) from the anterior margin of the head without antenna to the apex of the abdomen.

Results

The list of *Phaonia* species is based on literature data and on material studied and newly identified in SZNM, ZIN and ZMUM. *Phaonia* material from Central Asia in ZIN was described and recorded by A. Zinoviev (1983). 31 *Phaonia* species are now known from Central Asia, including four new species described here. However, the number of species in this region must be considerably more because the genus *Phaonia* is one of the largest genera of Muscidae and has a very wide distribution.

***1. Phaonia alatavica* Zinoviev, 1983**
Zinoviev, 1983: 183. Kazakhstan.

***2. Phaonia algida* Zinoviev, 1983**
Zinoviev, 1983: 187. Kazakhstan.

***3. Phaonia angelicae* (Scopoli, 1763)**
Zinoviev, 1980b: 913 (as *Phaonia basalis fuscitibia* Shinonaga & Kano, 1971). Kazakhstan.
Pont, 1986: 117. Kazakhstan.

***4. Phaonia arida* Zinoviev, 1983**
Zinoviev, 1983: 186. Tajikistan, Kazakhstan.

***5. Phaonia asiatica* Hennig, 1963**
Hennig, 1963a: 801. Tajikistan.
Hennig, 1964a: 2. Tajikistan.
Hennig, 1964b: 1081. Tajikistan.
Sychevskaya, 1966: 392. Tajikistan.
Zinoviev, 1983: 186. Tajikistan.
Pont, 1986: 118. Tajikistan.

***6. Phaonia babarabica* sp. nov.**
Figs 1, 2 A, B

Diagnosis. The species is similar to *Phaonia boleticola* (Rondani, 1866) with long plumose arista, reduced prealar seta, 3 dorsocentral setae, absence of long strong frontal setae in upper half, yellow legs, bare meron, katepimeron and notopleuron. The new species can be distinguished as follows: eye virtually bare (hairs very short), fronto-orbital plates of male separated by a broad frontal vitta, which is as wide as diameter of postpedicel, antenna and palpus brownish, prealar seta short, half as long as posterior notopleural seta, scutellum dull yellow apically, abdomen greyish-white dusted, all tarsomeres brown, except yellow 5 tarsomere.

Etymology. The species name is based on the type-locality, Babarab village (Babaarap or Babarap in Turkmen) in Turkmenistan.

Type material examined: Holotype male, No. 102, Turkmenistan, Babarab [28 km NW Ashgabat, 38º05'N 58º06ºE], in *Salix* sp., 27.iv.1982, N. Krivosheina. Paratype female, No. 112, Turkmenistan, Babarab, in *Ulmus* sp., 29.iv.1982, N. Krivosheina [ZMUM].

Description. Male. ***Head***: Ground-colour black. Eye virtually bare (hairs very short). Fronto-orbital plates separated by a frontal vitta which is about as wide as diameter of postpedicel (Fig. 1B). Face, fronto-orbital plates, frontal vitta densely silvery pruinose, shining. Occiput light grey. Fronto-orbital plates with 5 pairs of strong frontal setae only in lower half, upper half bare, only with one pair of very short hairs (Fig. 1A). Distance between eyes 3 times width of postpedicel. In lateral view, facial edge not projecting forward beyond the level of profrons. Antenna brownish; scape and pedicel brownish-yellow, postpedicel black except reddish base; arista long plumose, longest aristal hairs a little longer than diameter of postpedicel. Postpedicel ca 3 times as long as wide. Parafacial at level of insertion of arista 1.5 times as wide as postpedicel, little narrowing below. Genal depth 2 times width of postpedicel. Palpus brownish, darker at the tip.

Thorax: Ground-colour black with thick greyish-white dust. Scutum with 4 distinct dark longitudinal vittae, seen from behind (Fig. 1C). Prosternum bare. Prealar seta short, half as long as posterior notopleural seta. Dorsocentrals 2+3. Presutural acrostichals strong, 3 pairs, half as long as first pair of dorsocentrals (Fig. 1A). Meron and katepimeron bare. Notopleuron without setulae. Katepisternal setae 1+2. Scutellum dull yellow apically, entirely bare on underside.

Wing: Clear except for some clouding over crossveins r-m and dm-cu, white at base. Cross-vein dm-cu upright, almost forming a right-angle with vein M but sinuous, S-shaped. Basicosta yellowish, tegula black. Without costal spine. Radial node on lower side bare. Calypters white. Haltere yellow.

Legs: Yellow, except fore femur dark in basal 3/4. Coxae grey. All tarsomeres brown, except yellow tarsomere 5. Fore tibia without posterior seta. Mid tibia with only 2 posterior setae. Hind femur without elongated posteroventrals but with 3 short setulae in middle on posteroventral surface. Hind tibia without apical posteroventrals, with 1–2 anterodorsals, 1–2 anteroventral seta and 1 posterodorsal seta.

Abdomen: Oval, elongate; greyish-white dusted, with a dark median line which is reduced on tergite 5 (Fig. 1C). Sternite 5 as in figure 1D.

Terminalia: Epandrium about as wide as high; surstylus short and broad, bent medially with apex rectilinear in lateral view (Fig. 2A); cercal plate about as high as wide, with outer ventral projection narrowed in apex, no longer than broad and blunt inner projection (Fig. 2B).

Measurements: Length of body, 7.2 mm. Length of wing, 6.8 mm.

Female differs from the male as follows:

Head: Dichoptic. Frons at middle 0.26 of head-width at this point, and at this point each fronto-orbital plate 0.28 of frontal vitta. Fronto-orbital plate with 2 pairs of orbital setae and in addition to strong frontal setae with a row of short setulae reaching from orbital setae to aristal base. Frons with very short thin interfrontals. Face, fronto-orbital plates and frontal vitta densely greyish-yellow pruinose with a shifting silvery and grey dusted pattern. Palpus a little dilated, black in apical 2/3 and red at base (Fig. 1E).

Thorax: Prealar seta a little shorter than posterior notopleural seta.

Legs: In general colour as in male. One hind leg and hind tibia absent.

Ovipositor**:** Not dissected.

Measurements: Length of body, 6.2 mm. Length of wing, 5.8 mm.

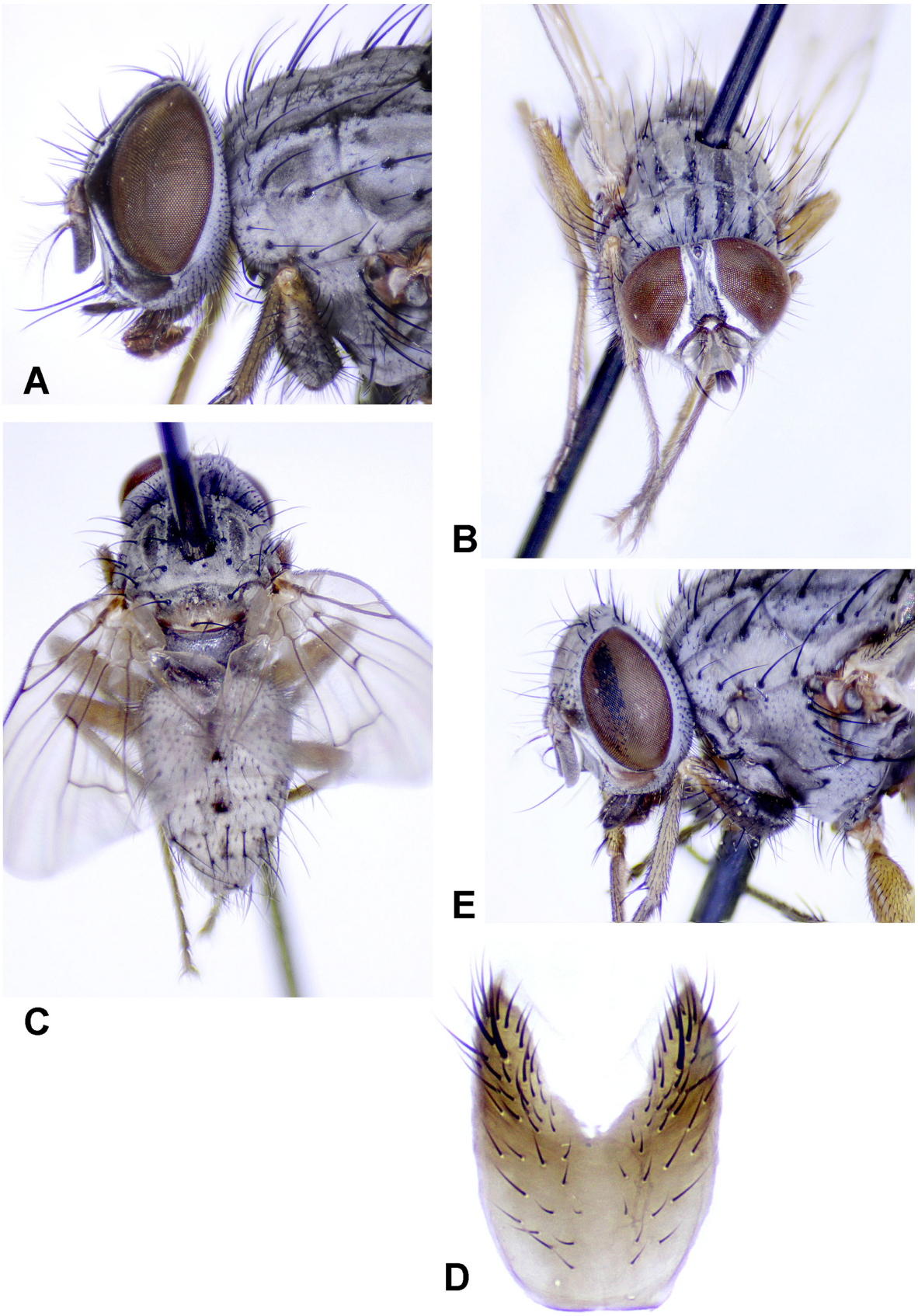

FIGURE 1. *Phaonia babarabica* **sp. nov.**: **A,** Male head, lateral view. **B,** Male head and scutum, anterior view. **C,** Male abdomen and scutellum, dorsal view. **D,** Male sternite 5. **E,** Female head, lateral view.

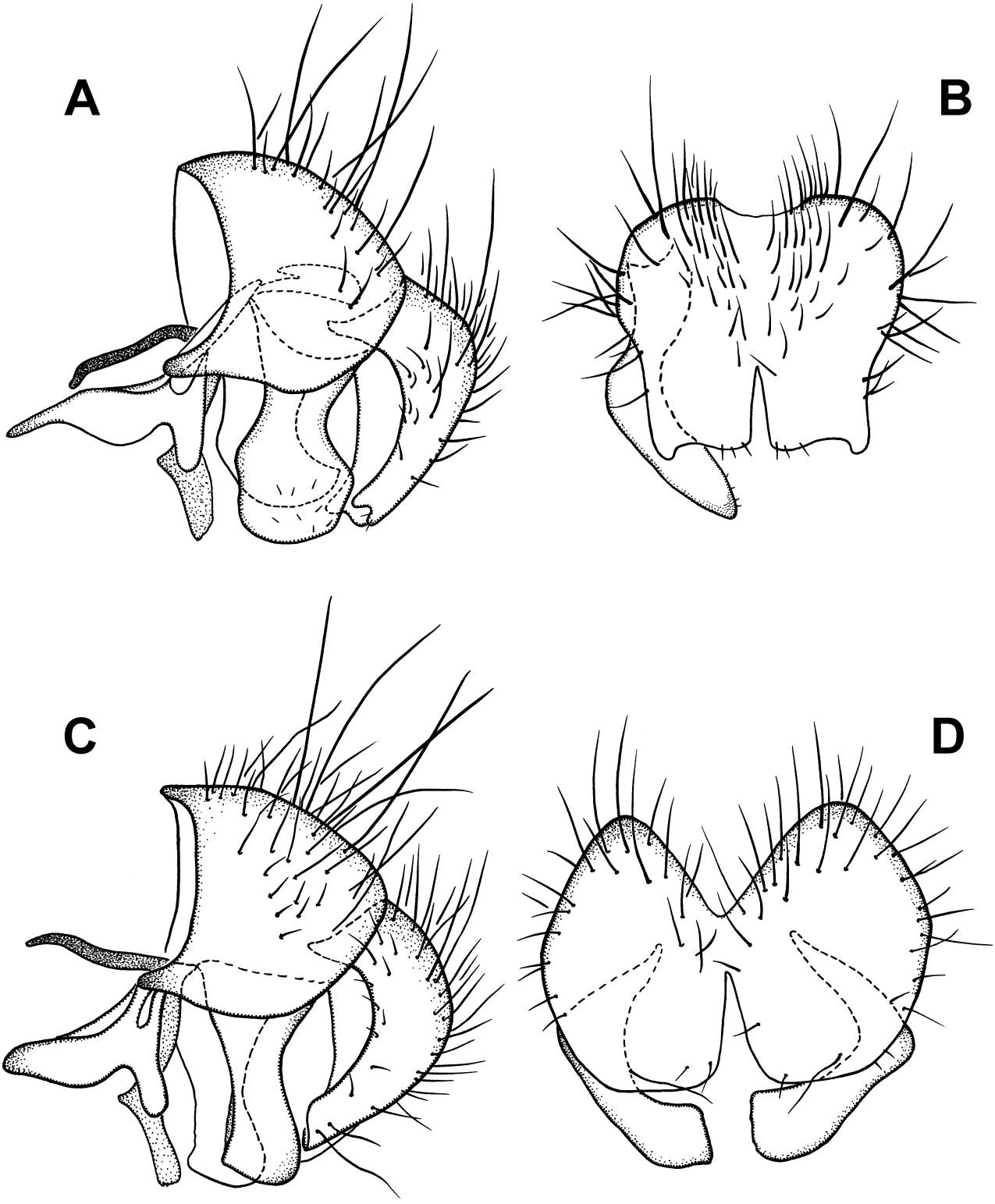

FIGURE 2. *Phaonia* spp., male terminalia: **A, B:** *Phaonia babarabica* **sp. nov.** (holotype); **C, D:** *Phaonia juglans* **sp. nov.** (holotype). **A, C,** Terminalia, lateral view. **B, D,** Cercal plate, posterior view.

***7. Phaonia boleticola* (Rondani, 1866)**
Zinoviev, 1983: 184. Tajikistan, Kazakhstan.

***8. Phaonia decussata* (Stein, 1907)**
Hennig, 1963a: 816. Tajikistan.
Zinoviev, 1983: 181. Tajikistan, Kyrgyzstan.
Pont, 1986: 120. Tajikistan.

***9. Phaonia errans* (Meigen, 1826)**
Hennig, 1963b: 822. Tajikistan.
Zinoviev, 1983: 188. Tajikistan, Kazakhstan.
Pont, 1986: 120. Tajikistan.

***10. Phaonia exoleta* (Meigen, 1826)**
Hennig, 1963b: 823. Tajikistan.
Zinoviev, 1983: 185. Tajikistan.
Pont, 1986: 121. Tajikistan.

***11. Phaonia fuscata* (Fallén, 1825)**
Hennig, 1963b: 827. Tajikistan.
Zinoviev, 1983: 187. Tajikistan.
Pont, 1986: 121. Tajikistan.

***12. Phaonia juglans* sp. nov.**
Figs 2C, D, 3

Diagnosis. The species is similar to *Phaonia cincta* (Zetterstedt, 1846) with long plumose arista, 4 dorsocentral setae, colour of body, short prealar seta, distinct acrostichal setae. The new species can be distinguished as follows: eye sparsely short haired, palpus dull yellow, antenna brownish-dark, legs brownish-yellow.

Etymology. The species name is based on the Latin name of the genus of tree in the hollow of which the larva of this species was found, *Juglans* sp.

Type material examined: Holotype male, No. 237, Turkmenistan, Ipay-Kala [Kopet Dag Range], in hollow of nut tree, collected 6.vi.1971, emergence 18.vi.1971, N. Krivosheina [ZMUM].

Description. Male. ***Head***: Ground-colour black. Eye sparsely short haired. Fronto-orbital plates separated by a narrow frontal vitta which is 1.5 times as wide as diameter of anterior ocellus (Fig. 3B). Face, fronto-orbital plates, frontal vitta densely silvery pruinose, shining. Occiput light grey. Fronto-orbital plates with 6 pair of strong long frontal setae in lower half and 2 pairs of very short hairs in upper half (Fig. 3A). Distance between eyes about equal to width of postpedicel. In lateral view, facial edge not projecting forward beyond the level of profrons. Antenna dark brownish; scape and pedicel brownish-yellow, postpedicel black except reddish base; arista long plumose, longest aristal hairs as long as diameter of postpedicel. Postpedicel ca 2.5 times as long as wide. Parafacial at level of insertion of arista narrower then width of postpedicel. Gena broad, depth below lowest eye-margin equal to 2 times as diameter of postpedicel. Palpus dull yellow.

Thorax: Ground-colour black with thick greyish-white dust. Scutum with 4 distinct dark longitudinal vittae, seen from behind. Prosternum bare. Prealar seta short, half as long as posterior notopleural seta. Dorsocentrals 2+4. Presutural acrostichals strong, 2 or 3 pairs (assymetrical specimen), half as long as first pair of dorsocentrals (Fig. 3A). Meron and katepimeron bare. Notopleuron bare. Katepisternal setae 1+2. Scutellum grey dust, with undusted median line, without yellow marks, entirely bare on underside.

Wing: Clear except for some light clouding over crossveins r-m and dm-cu, white at base. Cross-vein dm-cu upright, almost forming a right-angle with vein M but sinuous. Basicosta and tegula grey. Without costal spine. Radial node on lower side bare. Calypters white. Haltere yellow.

Legs: Coxae grey dusted. Fore femur brown, mid and hind femora yellow with brown dorsal stripe, all tibiae yellow, fore tarsomeres yellow, mid and hind tarsomeres brown. Fore tibia with one posterior seta. Mid tibia with only 2 posterior setae. Hind femur without elongated posteroventrals but with a row of short setulae on posteroventral surface. Hind tibia without apical posteroventrals, with 2 anterodorsals, 3 anteroventrals and 1 posterodorsal seta.

Abdomen: Oval, elongate; dull yellow, with a dark median line. Tergites 4 and 5 grey dusted, tergites 3 and 4 with dark lateral marks at lower angles of tergites (Fig. 3C). Sternite 5 as in figure 3D.

Terminalia: Epandrium about as wide as high; surstylus elongate, longer than cerci in lateral view and bent medially with apex rounded (Fig. 2C); cercal plate wider than high, without outer and inner ventral projections, with apex rectilinear in posterior view (Fig. 2D).

Measurements: Length of body, 5.7 mm. Length of wing, 5.3 mm.

Female: unknown.

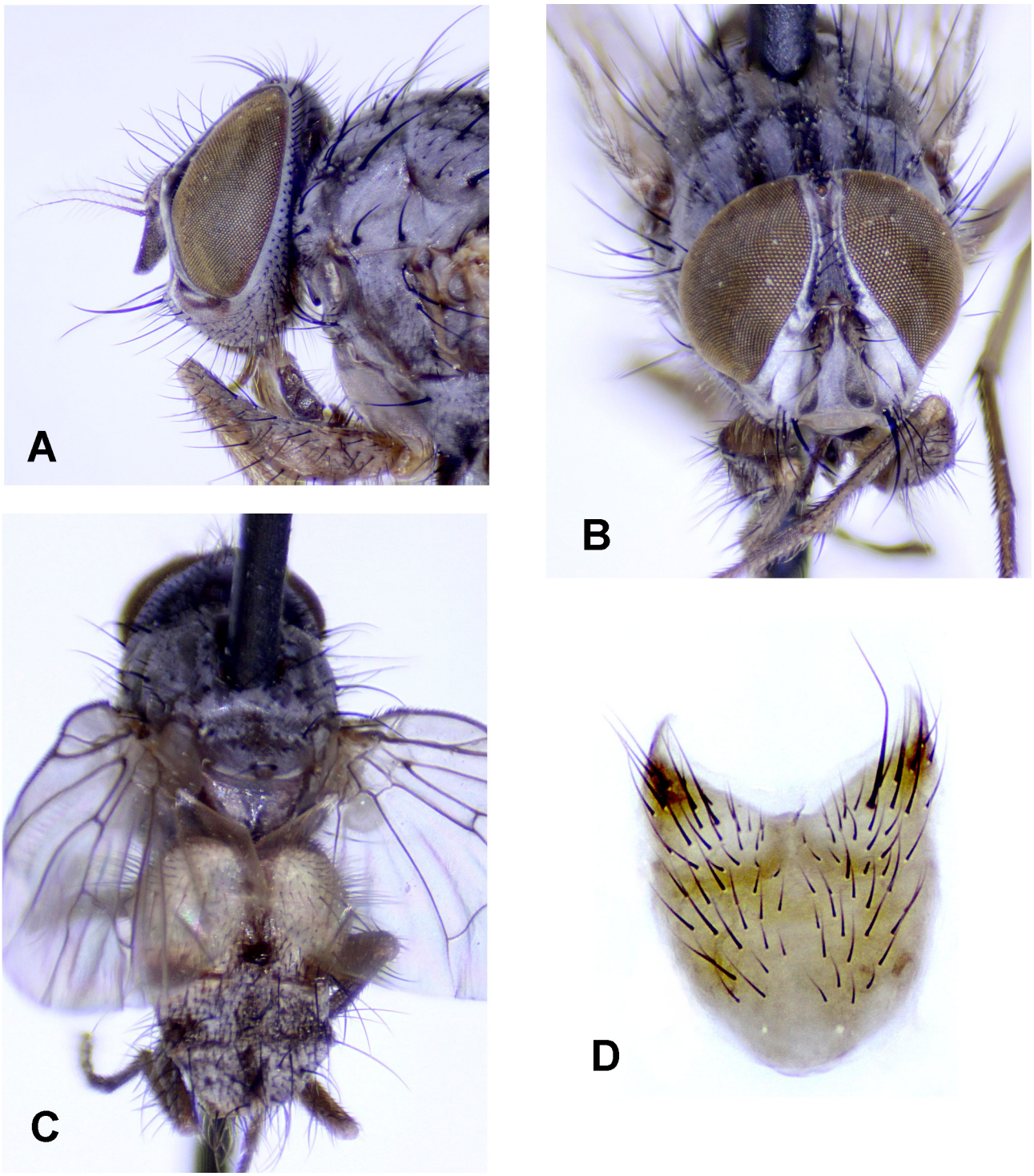

FIGURE 3. *Phaonia juglans* **sp. nov.**, male (holotype): **A,** Head, lateral view. **B,** Head and scutum, anterior view. **C,** Abdomen and scutellum, dorsal view. **D,** Sternite 5.

***13. Phaonia kirghizorum* Malyanov, 1993**
Malyanov, 1993: 421. Kyrgyzstan.

***14. Phaonia marakandensis* Hennig, 1963**
Hennig, 1963b: 843. Uzbekistan.
Zinoviev, 1983: 188. Uzbekistan.
Pont, 1986: 125. Uzbekistan.

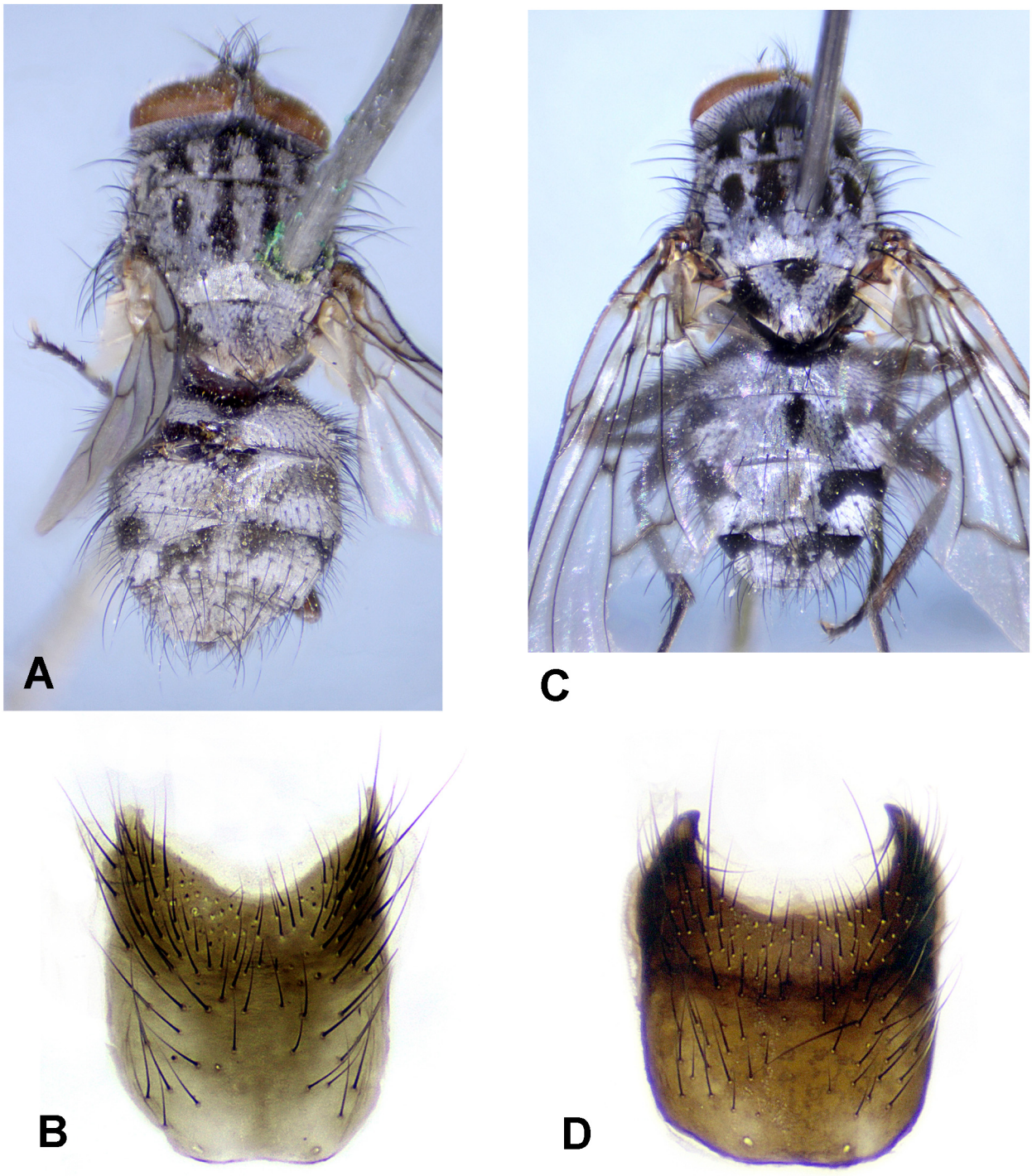

FIGURE 4. *Phaonia* spp., males: **A, B:** *Phaonia modesta* **sp. nov.** (paratype); **C, D:** *Phaonia trimaculata*. **A, C,** Habitus, dorsal view. **B, D,** Sternite 5.

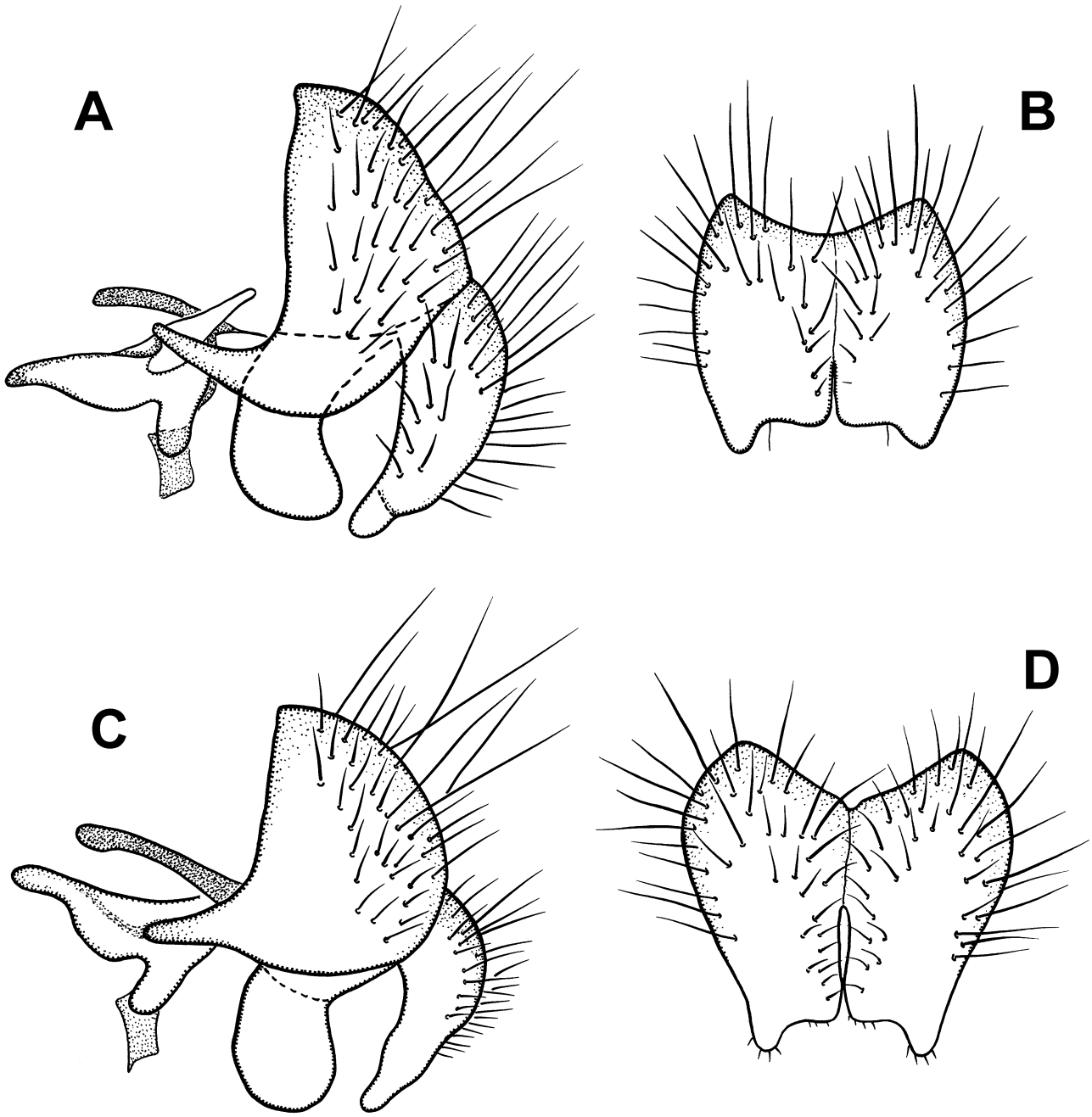

FIGURE 5 *Phaonia* spp., male terminalia: **A, B:** *Phaonia modesta* **sp. nov.** (paratype); **C, D:** *Phaonia trimaculata*. **A, C,** Terminalia, lateral view. **B, D,** Cercal plate, posterior view.

15. Phaonia modesta sp. nov.

Figs 4A, B, 5A, B, 6

Remarks. All the specimens of *Phaonia modesta* **sp. nov.** were found in the Zoological Institute, Russian Academy of Sciences, and the Zoological Museum of the Moscow State University, under the determination labels "*Phaonia trimaculata*" (det. Sychevskaya), "*Phaonia* sp. near *trimaculata*" (det. Pont, 1966 and 1969) and "*Phaonia* af. *trimaculata*" (det. Zinoviev, 1984). In Hennig's key to Palaearctic *Phaonia* (1963a) these flies run to *Phaonia trimaculata* (Bouché, 1834) and agree with the description of this species except for the colour of the body

and the fore tibia. All specimens of this species were collected in Central Asia and most of them were bred from larvae or puparia. Zinoviev (1983: 186) studied these specimens and recorded *Phaonia trimaculata* (Bouché, 1834) from Middle Asia but with the remark that the "species needs additional studying".

To establish the status of these specimens, their male terminalia were dissected and compared to the male terminalia of European *Phaonia trimaculata* (Bouché, 1834). The terminalia of European specimens and the terminalia of Asian specimens are very different (Fig. 5A–D), and this forms the basis for the description of this new species from Central Asia. *Phaonia trimaculata* (Bouché, 1834) has a solely West Palaearctic distribution (Europe and North Africa).

Diagnosis. The new species is very similar to *Phaonia trimaculata* (Bouché, 1834) and can be distinguished as follows: arista long plumose, scutellum yellowish at tip, two pairs of elongated presutural acrostichals, notopleuron haired, male eyes densely long haired, fronto-orbital plates touching or narrowly separated, antenna and palpus black.

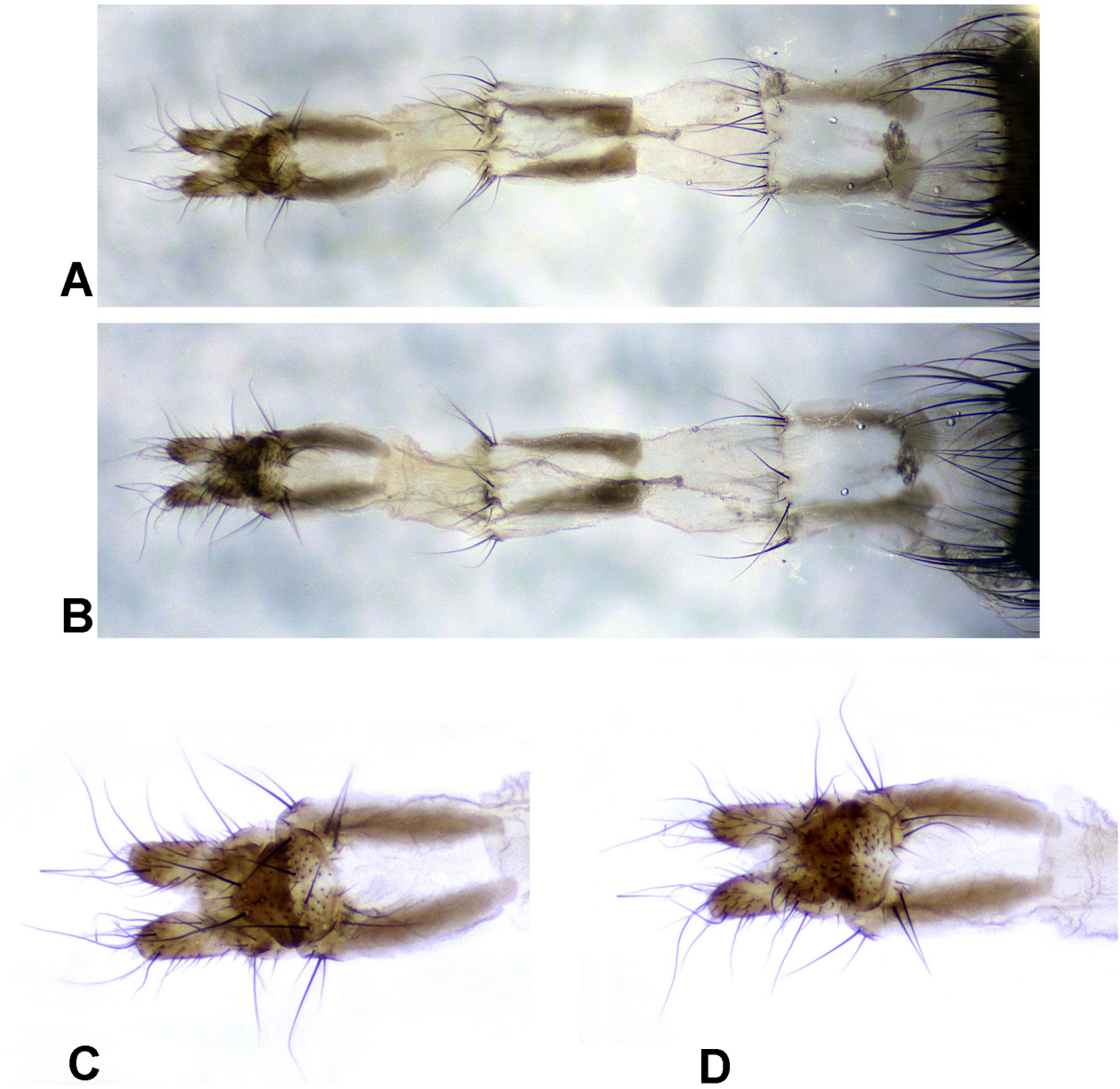

FIGURE 6. *Phaonia modesta* **sp. nov.**, female ovipositor (paratype): **A, C,** Dorsal view. **B, D,** Ventral view.

Etymology. The species name is based on the Latin adjective "modestus" what means "unpretentious".

Type material examined: Holotype male, Uzbekistan, Samarkand, emergence from faeces 8.v.1949, V. Sychevskaya [ZIN]. Paratypes: 1 male, same data as holotype; Uzbekistan, Samarkand: 4 males, emergence from faeces 15.iv.1949, V. Sychevskaya, 1 male and 2 females, emergence from dump 26.iv.1949, V. Sychevskaya, 2 males and 3 females, emergence from faeces 31.iii.1949, V. Sychevskaya; 1 male, Uzbekistan, Shakhimardan [39º58'N 71°47'E], 29.viii.1955, V. Sychevskaya; 1 male, Uzbekistan, Ferghana [40º23'N 71°47'E], 8.v.1953, V. Sychevskaya; 1 male, Uzbekistan, Termez [37°13'N 67°16'E], 24.ii.1958, V. Sychevskaya; 1 female, Uzbekistan, Baysun [38°12'N 67°11'E], 9.vi.1957, V. Sychevskaya [ZIN]; 1 female, Turkmenistan, Kara-Kala, bank of Sumbar River [Makhtumkuli, 38º26'N 56°17'E], 1933, Ushinsky [ZIN]; 1 male, No. A, Turkmenistan, Geok Tepe [Gokdepe, 38º09'N 57°57'E], Chyuli [gorge in Kopet Dag Range], collected 13.vi.1984, emergence from fungus 10.vi.1984, N. Krivosheina [ZMUM]; 1 male, Tajikistan, Varzob [25 km N Dushanbe, ~ 38º46'N 68º49'E], 14.v.1939, A. Romanov [ZMUM].

Description. The description of this new species was prepared in comparison with *P. trimaculata*; for a full description of both sexes of *P. trimaculata* please refer to Hennig (1963c: 884).

In both male and female of the new species, the chaetotaxy and colour do not differ from *Phaonia trimaculata* except in minor characters: the body of the new species with more dense pale dust and lines and spots on scutum, scutellum and abdomen which are not as distinct as in *Phaonia trimaculata* (Figs. 4A, C); crossveins not infuscated; legs yellow-brown, femora more or less dark brown, sometimes black, tibiae yellow or brown, fore tibia without posterior seta, hind tibia with 3–4 anteroventrals; sternite 5 and male terminalia of *Phaonia modesta* **sp. nov.** (Fig. 4B and 5A, B) very different from *Phaonia trimaculata* (Figs. 4D, 5C, D) (see below).

Male terminalia: Epandrium of *P. modesta* **sp. nov.** 2 times higher than wide; surstylus short, shorter than cerci in lateral view, bent medially with apex rounded (Fig. 5A); cercal plate about as high as wide, square-shaped, with outer ventral projection narrowed in apex, longer than broad and blunt inner projection (Fig. 5B). While *P. trimaculata* has epandrium as high as wide, surstylus slightly longer than cerci, cercal plate trapezoid (Fig. 5C, D).

Ovipositor: elongate with narrow lateral tergal plates (Figs 6A–D).

Measurements: Length of body, 6.0–7.5 mm. Length of wing, 6.5–7.5 mm.

16. Phaonia nigrirostrata Zinoviev, 1983

Hennig, 1963b: 833 (as *Phaonia hirtirostris* Stein, 1907). Uzbekistan.
Sychevskaya & Vtorov, 1969: 823 (as *Phaonia hirtirostris* Stein, 1907). Kyrgyzstan.
Zinoviev, 1983: 190. Kyrgyzstan.
Sychevskaya, 1970: 827 (as *Phaonia hirtirostris* Stein, 1907). Middle Asia.
Material examined: KAZAKHSTAN, 7 males and 6 females, Dzungarian Alatau Mts, 1955–2500 m, middle stream of Sarkand River, 45.17ºN 80.1ºE, 2–4.vi.2007, A. Barkalov & V. Zinchenko [SZMN].

17. Phaonia ninae sp. nov.

Figs 7, 8, 9

Diagnosis. The species is similar to *Phaonia rufipalpis* (Macquart, 1835) with yellow palpus and antenna, long plumose arista, yellow postpronotal callus and reduced prealar seta. The new species can be distinguished as follows: eye bare, 3 dorsocentral setae, fronto-orbital plates of male separated by a frontal vitta, thorax with thick greyish-white dust, scutum of male without distinct longitudinal vittae, fore femur dark, tarsomeres brownish-yellow, tarsomere 5 of all legs yellow, mid tibia with 2 posterior setae, abdomen dull yellow, with a dark median line and grey dust on tergites 4 and 5.

Etymology. The species name is a patronym in honour of the dipterist Nina P. Krivosheina (Moscow), who collected the type series.

Type material examined: Holotype male, No. 17, Tajikistan, Tigrovaya Balka State Nature Reserve [37°15'N 68º28'E], ?larva in an in leakage of *Populus* sp., collected 11.v.1987, emergence 1.vi.1987, N. Krivosheina [ZMUM]. Paratypes 7 females: same locality as holotype, No. 13, 27.iii.1986 [emergence 16.iv.1986], No. 21, 28.iii.1986 [emergence 16.iv.1986], No. 49, 4.iv.1986 [emergence 28.iv.1986], No. 50, 5.iv.1986 [emergence 20.iv.1986], No. 20, 12.v.1987 [emergence 15.v.1987], N. Krivosheina; No. 3, 6.iv.1987 [emergence 4.v.1987], A. Zaytsev; No. 81, 6.v.1978, Abdurakhmanov. 1 male, No. 7, 13, Tajikistan, "Tatra Mts Range" [undecoded locality], *Populus* sp., ? vii.1979, Abdurakhmanov [ZMUM].

Description. Male. ***Head***: Ground-colour black. Eye bare. Fronto-orbital plates separated by a frontal vitta which is about as wide as width of postpedicel (Fig. 7B). Face, fronto-orbital plates and frontal vitta densely silvery pruinose, shining, face yellowish below. Occiput light grey. Fronto-orbital plates with 2 pairs of strong and 1 pair of short frontal setae only in lower half, upper half bare, without any setae (Fig. 7A). Distance between eyes equal to 2.2 times width of postpedicel. In lateral view, facial edge not projecting forward beyond the level of profrons. Antenna yellow; arista long plumose, longest aristal hairs longer then diameter of postpedicel. Postpedicel ca 3 times as long as wide. Parafacial at level of insertion of arista 1.3 times as wide as postpedicel, narrowing below. Genal depth below lowest eye-margin as broad as 1.5 times diameter of postpedicel. Palpus yellow.

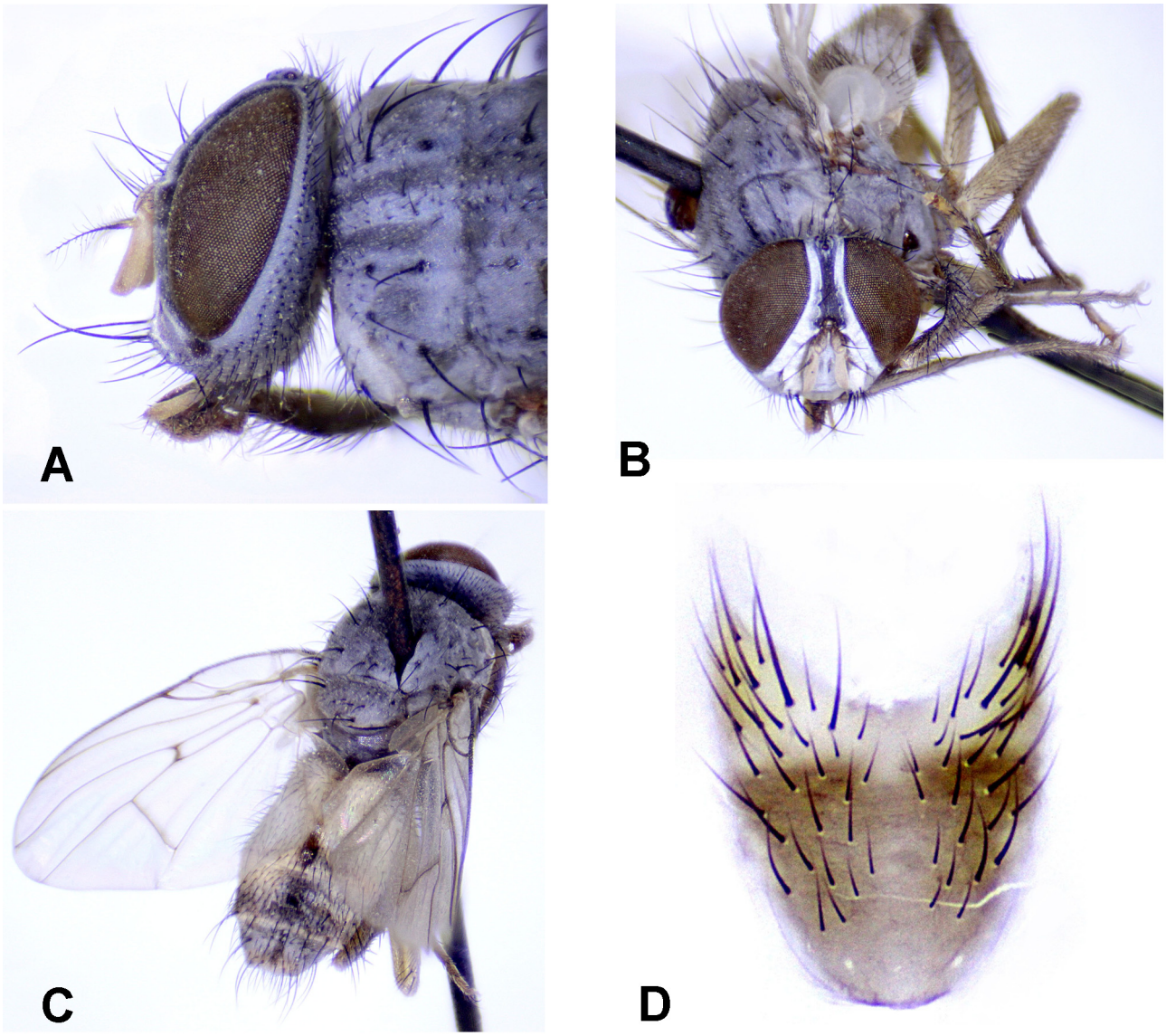

FIGURE 7. *Phaonia ninae* **sp. nov.**, male (paratype): **A,** Head, lateral view. **B,** Head and scutum, anterior view. **C,** Abdomen and scutellum, dorsal view. **D,** Sternite 5.

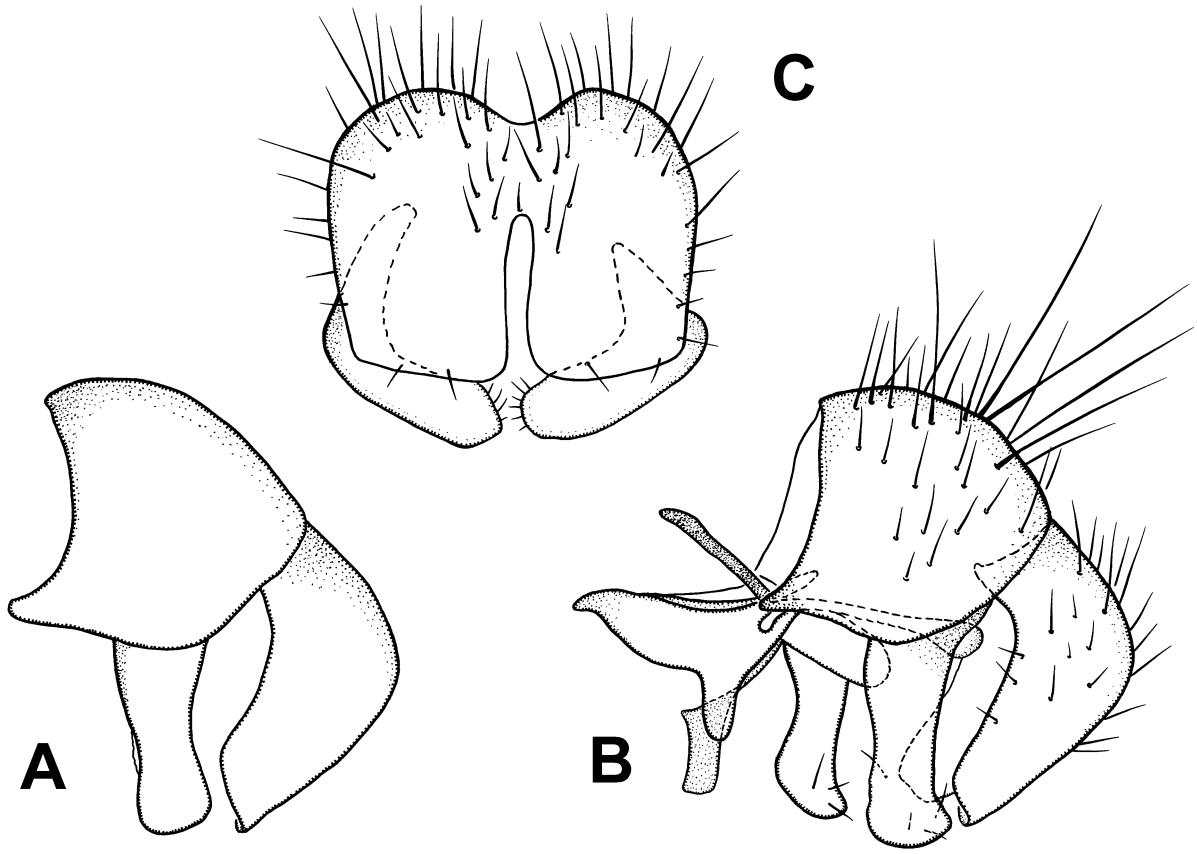

FIGURE 8. *Phaonia ninae* **sp. nov.** (paratype), male terminalia: **A, B,** Terminalia, lateral view (**B** shows variation of the shape of the surstyli). **C,** Cercal plate, posterior view.

Thorax: Ground-colour black with dense greyish-white dust. Scutum without distinct longitudinal vittae. Prosternum bare. Prealar seta inconspicuous, much shorter then posterior notopleural or absent. Dorsocentrals 2+3. Presutural acrostichals very short, much shorter than dorsocentrals but distinct, longer than the ground-setulae (Fig. 7A). Meron and katepimeron bare. Notopleuron without setulae. Postpronotal callus dull yellow (Fig. 7A). Katepisternal setae 1+2. Scutellum black, grey dusted, sometimes with a small dull yellow spot at apex around apical setae, entirely bare on underside.

Wing: Clear except for some clouding over crossveins r-m and dm-cu, white at base. Cross-vein dm-cu upright, almost straight, forming a right-angle with vein M. Basicosta and tegula yellowish-grey. Without costal spine. Radial node on lower side bare. Calypters white. Haltere yellow.

Legs: Yellow, except dark fore femur or all femora brownish-yellow (holotype). Coxae yellow. Tarsomeres brownish-yellow, tarsomere 5 of all legs yellow. Fore tibia with 0–1 posterior seta (holotype without ones). Mid tibia with only 2 posterior setae. Hind femur without elongated posteroventrals but with a row of short setae on posteroventral surface in basal half. Hind tibia without apical posteroventrals, with 2 anterodorsals, 1 anteroventral and 1 posterodorsal seta.

Abdomen: Oval, elongate; dull yellow, with a dark median line. Tergites 4 and 5 grey dusted (Fig. 7C). Sternite 5 as in figure 7D.

Terminalia: Epandrium as wide as high; surstylus elongate, as long or longer than cerci in lateral view, bent medially with apex rounded (Figs 8A, B); cercal plate about as high as wide, square-shaped, without outer and inner ventral projections, with apex rectilinear in posterior view (Fig. 8C).

Measurements: Length of body, 4.2–5.3 mm. Length of wing, 4.2–5.3 mm.

Female differs from the male as follows:

Head: Dichoptic. Frons at middle 0.33 of head-width at this point, and at this point each fronto-orbital plate 0.35–0.4 of frontal vitta (Fig. 9B). Fronto-orbital plate with 2–3 pairs of frontal setae and 2 orbital setae (Fig. 9A).

Frons without cruciate interfrontals. Postpedicel black except yellow base, scape and pedicel brownish-yellow. Scutum with 2 dark indistinct longitudinal vittae, seen from behind. Dull yellow spot at apex of scutellum sometimes elongated along lower margin.

Abdomen: Densely grey dusted with a black median line, base of abdomen and lower margins of tergites yellowish.

Ovipositor: short with broad lateral tergal plates (Figs 9C, D).

Measurements: Length of body, 4.2–6.2 mm. Length of wing, 3.8–4.3 mm.

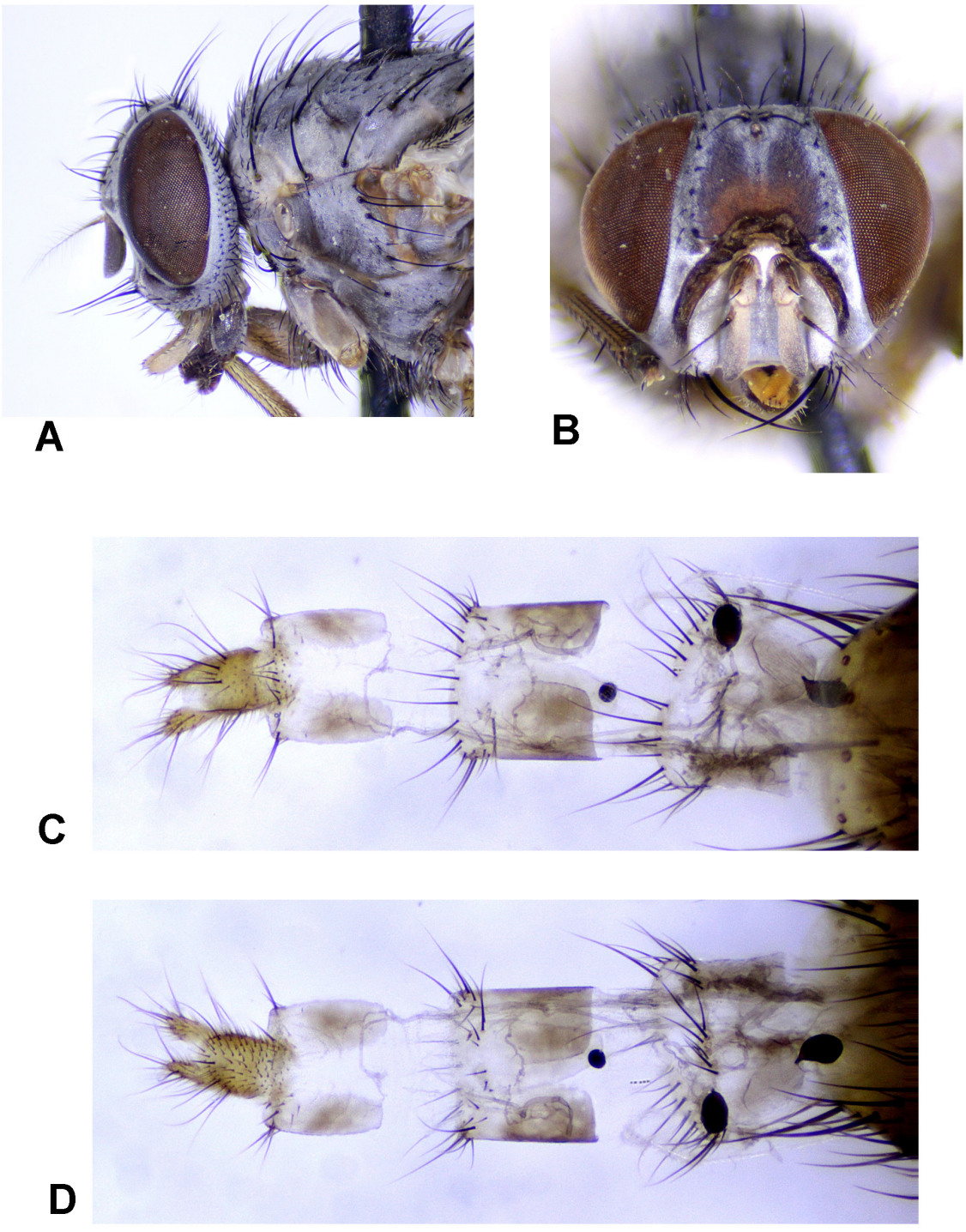

FIGURE 9. *Phaonia ninae* **sp. nov.** (paratype), female: **A,** Head, lateral view. **B,** Head, anterior view. **C,** Ovipositor, dorsal view. **D,** Ovipositor, ventral view.

***18. Phaonia notofusca* Zinoviev, 1983**
Zinoviev, 1983: 184. Kyrgyzstan.

***19. Phaonia obsoleta* Hennig, 1963**
Hennig, 1963b: 849. Tajikistan
Zinoviev, 1983: 185. Tajikistan.
Pont, 1986: 126. Tajikistan.

***20. Phaonia paradecussata* Hennig, 1963**
Hennig, 1963b: 853. Tajikistan.
Zinoviev, 1983: 182. Tajikistan.
Pont, 1986: 127. Tajikistan.

***21. Phaonia pseuderrans* Hennig, 1963**
Hennig, 1963: 860. Uzbekistan.
Sychevskaya, 1972: 543. Uzbekistan.
Zinoviev, 1983: 188. Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan.
Pont, 1986: 128. Uzbekistan, Kyrgyzstan.

***22. Phaonia serva* (Meigen, 1826)**
Zinoviev, 1983: 189. Kazakhstan, Kyrgyzstan.
Pont, 1986: 129. Tajikistan.
Material examined: KAZAKHSTAN, 4 males, Dzungarian Alatau Mts, 1955 m, middle stream of Sarkand River, 45.17ºN 80.1ºE, 3–4.vi.2007, A. Barkalov [SZMN].

***23. Phaonia splendida* Hennig, 1963**
Hennig, 1963c: 872. Tajikistan.
Hennig, 1964a: 2. Tajikistan.
Hennig, 1964: 1081. Tajikistan.
Sychevskaya, 1966: 392. Tajikistan.
Zinoviev, 1983: 185. Kyrgyzstan, Tajikistan.
Pont, 1986: 130. Tajikistan.

***24. Phaonia stackelbergi* Hennig, 1963**
Hennig, 1963c: 873. Tajikistan.
Zinoviev, 1983: 184. Tajikistan.
Pont, 1986: 130. Tajikistan.

***25. Phaonia subcandicans* Zinoviev, 1983**
Zinoviev, 1983: 188. Kyrgyzstan.

***26. Phaonia subdecussata* Hennig, 1963**
Hennig, 1963c: 875. Tajikistan.
Hennig, 1964a: 2. Tajikistan.
Sychevskaya, 1966: 392. Tajikistan. 1970: 827. Middle Asia.
Sychevskaya & Vtorov, 1969: 824. Kyrgyzstan.
Zinoviev, 1983: 178. Tajikistan.
Pont, 1986: 130. Kyrgyzstan, Tajikistan.

***27. Phaonia sytschevskajae* Hennig, 1963**
Hennig, 1963c: 877. Tajikistan.
Sychevskaya, 1963: 182. Tajikistan.

Sychevskaya, 1965: 45. Kyrgyzstan.
Sychevskaya & Vtorov, 1969: 824. Kyrgyzstan.
Sychevskaya, 1970: 827. Middle Asia.
Zinoviev, 1983: 188. Kyrgyzstan, Tajikistan, Kazakhstan.
Pont, 1986: 131. Kyrgyzstan, Tajikistan, Kazakhstan.

***28. Phaonia tianshanica* Zinoviev, 1983**
Hennig, 1964a: 2 (as *Phaonia hybrida* Schnabl, 1888). Tajikistan.
Hennig, 1964b: 1081 (as *Phaonia hybrida* Schnabl, 1888). Tajikistan.
Sychevskaya, 1966: 392 (as *Phaonia hybrida* Schnabl, 1888). Tajikistan.
Sychevskaya & Vtorov, 1969: 823 (as *Phaonia hybrida* Schnabl, 1888). Kyrgyzstan.
Sychevskaya, 1970: 827 (as *Phaonia hybrida* Schnabl, 1888). Middle Asia.
Zinoviev, 1983: 190. Kazakhstan, Kyrgyzstan, Tajikistan.

***29. Phaonia tuguriorum* (Scopoli, 1763)**
Zinoviev, 1983: 188 (as *Phaonia signata* (Meigen, 1826)). Uzbekistan, Kyrgyzstan.
Pont, 1986: 132. Uzbekistan.

***30. Phaonia valida* (Harris, 1780)**
Hennig, 1963c: 890 (as *Phaonia viarum* Robineau-Desvoidy, 1830). Uzbekistan.
Zinoviev, 1983: 188 (as *Phaonia viarum* Robineau-Desvoidy, 1830). Uzbekistan, Tajikistan.
Pont, 1986: 133. Uzbekistan.

***31. Phaonia zinovjevi* Malyanov, 1993**
Malyanov, 1993: 419. Kazakhstan.

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References

Gregor, F., Rozkošný, R., Barták, M. & Vaňhara, J. (2002) The Muscidae (Diptera) of Central Europe. *Folia Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis, Biologia*, 107, 1–280.
Hennig, W. (1963a) Muscidae. [Part, Lieferung 233.] *In*: Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region. 63b*. Schweizerbart, Stuttgart, pp. 769–816.
Hennig, W. (1963b) Muscidae. [Part, Lieferung 234.] *In*: Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region. 63b*. Schweizerbart, Stuttgart, pp. 817–864.
Hennig, W. (1963c) Muscidae. [Part, Lieferung 241.] *In*: Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region. 63b*. Schweizerbart, Stuttgart, pp. 865–912.
Hennig, W. (1964a) Muscidae aus dem Pamir. *Stuttgarter Beiträge zur Naturkunde*, 131, 1–6.
Hennig, W. (1964b) Muscidae. [Part, Lieferung 248.] *In*: Lindner, E. (Ed.), *Die Fliegen der palaearktischen Region. 63b*. Schweizerbart, Stuttgart, pp. 961–1008.
Ma, Z.Y., Xue, W.Q. & Feng, Y. (2002) *Fauna Sinica. Vol. 26. Insecta Diptera Muscidae (II) Phaoniinae (I)*. Science Press, Beijing, 421 pp.
Malyanov, M.V. (1993) Two new species of flies of the genus *Phaonia* R.-D. (Diptera, Muscidae) from North Tien Shan. *Entomologicheskoe Obozrenie*, 72 (2), 419–421. [in Russian, with English summary]
Pape, T. & Thompson, F.C. (Eds.) (2010) *Systema Dipterorum. Version 1.5*. Available from: http://www.diptera.org (accessed 13 June 2013)
Pont, A.C. (1986) Family Muscidae. *In*: Soós, Á & Papp, L. (Eds.), *Catalogue of Palaearctic Diptera. Vol. 11. Scathophagidae – Hypodermatidae*. Akadémiai Kiadó, Budapest, pp. 57–215.

Sychevskaya, V.I. (1963) Synanthropic flies of Karetigin, the Alay and the Pamirs. *Tezisy Dokladov 5 s'ezda Sovetskogo Vsesoyuznogo Entomologicheskogo Obshestva,* 1963, 182–184. [Tashkent, in Russian]

Sychevskaya, V.I. (1965) On the fauna of synanthropic flies of Tien-Shan and Altai. *In*: Protsenko, A.I. (Ed.), *Entomological Investigations in Kirghiziya*. Akademia Nauk Kirgiz, SSR, Firunze, pp. 43–49. [in Russian]

Sychevskaya, V.I. (1966) On synanthropic flies of the Pamir. *Zoologicheskii Zhurnal*, 45 (3), 390–399. [in Russian, with English summary]

Sychevskaya, V.I. (1970) Zonal distribution of coprophilous and schizophilous flies (Diptera) in Middle Asia. *Entomologicheskoe Obozrenie*, 49 (4), 819–831. [in Russian, with English summary]

Sychevskaya, V.I. (1972) Synanthropic flies (Diptera) from the lower Amu-Darya. *Entomologicheskoe Obozrenie*, 51 (3), 534–553. [in Russian, with English summary]

Sychevskaya, V.I. & Vtorov, P.P (1969) Synanthropic flies (Diptera) from mountain Kirghizia. *Entomologicheskoe Obozrenie*, 48 (4), 816–830. [in Russian, with English summary]

Xue, W.Q., Wang, M.F. & Du, J. (2006) Study of two species groups of *Phaonia* Robineau-Desvoidy (Diptera: Muscidae) from China, with the description of three new species. *Zootaxa*, 1350, 1–19.

Xue, W.Q., Zhao, D.D. & Wang, M.F. (2009) *Phaonia oxystoma*-group (Diptera, Muscidae): diagnosis, key to identification, description of two new species and synonymic notes. *Acta Zoologica Academiae Scientiarum Hungaricae*, 55 (1), 1–10.

Xue, W.Q. & Zhang, Y. (2013a) The *Phaonia pallida* group (Muscidae: Diptera) from Palaearctic and Oriental regions with description of two new species. *Oriental Insects*, 47 (2–3), 125–134. http://dx.doi.org/10.1080/00305316.2013.807561

Xue, W.Q. & Zhang, X. (2013b) A study of the *Phaonia angelicae* group (Diptera: Muscidae), with descriptions of six new species from China. *Journal of Insect Science*, 13 (129), 1–16. http://dx.doi.org/10.1080/00305316.2013.807561

Zinoviev, A.G. (1980a) On the fauna of Phaonini (Diptera, Muscidae) of Mongolia. I. *In*: *Nasekomye Mongolii. Vol. 7.* Leningrad, Nauka, pp. 437–444. [in Russian]

Zinoviev, A.G. (1980b) Phaoniinae (Diptera: Muscidae) of the Far East. *Entomologicheskoe Obozrenie*, 59 (4), 904–913. [in Russian, with English summary]

Zinoviev, A.G. (1981) Two new species of the genus *Phaonia* (Diptera, Muscidae) from the Soviet Far East. *Zoologicheskii Zhurnal*, 60, 623–625. [in Russian, with English summary]

Zinoviev, A.G. (1983) Flies of the genus *Phaonia* R.-D. (Diptera, Muscidae) from the Middle Asia. *Entomologicheskoe Obozrenie*, 62 (1), 178–192 [in Russian, with English summary]

Zinoviev, A.G. (1990) On the fauna of Phaoniini (Diptera, Muscidae) of Mongolia. II. Genera *Lophosceles* Ringdahl and *Phaonia* Robineau-Desvoidy. *In*: *Nasekomye Mongolii*. *Vol. 11*. Leningrad, Nauka, pp. 471–514. [in Russian]