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New data on the subfamily Exoristinae (Diptera, Tachinidae) from northern Iran, with 11 genera and 15 new records of species for the country

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ABSTRACT. The fauna of the subfamily Exoristinae (Diptera, Tachinidae) was studied in northern Iran. A total of 29 species within 26 genera and 6 tribes have been collected and identified. Among them 11 genera and 15 species are newly recorded for Tachinidae fauna of Iran: *Admontia blanda* (Fallén, 1820), *Bessa parallela* (Meigen, 1824), *Blepharipa pratensis* (Meigen, 1824), *Ceracia mucronifera* Rondani, 1865, *Exorista rustica* (Fallén, 1810), *Gonia ornata* Meigen, 1826, *Gonia vacua* Meigen, 1826, *Medina collaris* (Fallén, 1820), *Paratryphera barbatula* (Rondani, 1859), *Neophryxe vallina* (Rondani, 1861), *Ocytata pallipes* (Fallén, 1820), *Pachystylum breinii* Macquart, 1848, *Pales pavida* (Meigen, 1824), *Phorinia aurifrons* Robineau-Desvoidy, 1830, *Platymyia fimbriata* Meigen, 1824. The collected and distribution data, diagnoses, illustrations of the new records, and host information are provided.

Key words: tachinid flies, parasitoid, new records, northern Iran

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INTRODUCTION

Exoristinae is the large and ecologically important subfamily of Tachinidae with more than 3,687 described species in all zoogeographic regions, and about 874 species from the Palaearctic region (O'Hara et al., 2020). All members of this subfamily are parasitoids of Lepidoptera, Coleoptera and other orders in their larvae stage, never however from Heteroptera (Tschorsnig & Richter, 1998; Stireman et al., 2006). Females are oviparous or ovo-larviparous and the eggs are deposited on the host or in its vicinity, rarely directly into the host body. The microtype eggs of the tribe Goniini are deposited on the food plant of the host (Tschorsnig & Richter, 1998). The following combination of morphological characters usually allows the recognition of the included genera: arista usually bare; almost always with three intra-alar setae; prosternum hairy; abdominal tergites covering or almost

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covering the sternites; tergite 6 of males more or less longitudinally divided or reduced completely; latero-ventral area of the distiphallus strongly sclerotized; chorion of the eggs dorsally either thick and hard-shelled or at least with an obviously polygonal structure, ventrally thin-skinned transparent (Tschorsnig & Herting, 1994; Tschorsnig & Richter, 1998). The taxonomy of tachinid flies has been considerably improved during the recent decades in Iran and more than 316 species have been reported from different areas of country (Gheibi et al., 2009, 2010; Gilasian et al., 2013a, 2013b, 2014a, 2014b, 2016, 2017, 2018, 2019, 2021, 2022; Seyyedi-Sahebari et al., 2013, 2014, 2016, 2017, 2018a, 2018b, 2019; Tschorsnig, 2017). In the review of tribe Eryciini in northern Iran, 27 species of subfamily Exoristinae studied, of which seven genera and 14 species recorded for first time from Iran (Seyyedi-Sahebari et al., 2021). The present publication forms part of papers which the authors have already published on Iranian Tachinidae, aims to enrich knowledge of this family's fauna of Iran and add further data on their distributions in northern Iran.

MATERIAL AND METHODS

The specimens were collected from various habitats of East Azerbaijan, West Azerbaijan, Gilan and Mazandaran provinces, such as forests, rangelands, seaside areas and orchards using sweeping net and Malaise traps during 2010–2014. The samples collected with sweep net, pinned immediately after transferring to the laboratory. The specimens collected with Malaise traps, preserved in 75% ethanol. Then were processed through an ethanol dehydration series (85%, 96% and twice in 100%, each for 24 hours) followed by an ethyl acetate bath (two hours), to avoid any deformation and pinned afterwards. The specimens are deposited at the Insect collection of Professor H. Maleki-Milani, Tabriz, Iran (ICHMM) and Insect collection of Tarbiat Modares University (TMUC). The terminology of the morphology followed: Tschorsnig & Richter (1998), Mesnil (1956), Zimin et al. (1989) and Tschorsnig & Herting (1994). The distribution of species follows O'Hara et al. (2020). Photographs were taken using a Nikon SMZ 1000 stereomicroscope equipped with Nikon D5200 digital camera. The tachinid specialists Joachim Ziegler and Theo Zeegers (see chapter Acknowledgement below) confirmed the identifications.

RESULTS

At the present study, 145 individuals of the subfamily Exoristinae were collected and identified; they belong to 26 genera, 29 species and six tribes, of which eleven genera and 15 species are new records to the Iranian tachinid fauna.

Taxonomic hierarchy

Class Insecta Linnaeus, 1758

Order Diptera Linnaeus, 1758

Superfamily Oestroidea Leach, 1815

Family Tachinidae Bigot, 1853

Subfamily Exoristinae Robineau-Desvoidy, 1863

Tribe Acemyini Brauer et Bergenstamm, 1889

Genus *Ceracia* Rondani, 1865

Diagnosis. Eye bare; frons of male wider than 4/5 eye in dorsal view, with proclinate orbital setae; arista thickened at most on basal 2/5; first flagellomere with sharply pointed apex; scutum with 2 pairs of dorsocentral setae; prosternum setose; 2 katepisternal setae present; mid tibia with 2 anterodorsal setae; middorsal depression on abdominal syntergite 1+2 extending back to hind margin of that segment; abdominal tergite 5 without discal setae; abdominal sternites exposed.

Remarks. This genus is newly recorded from Iran.

***Ceracia mucronifera* Rondani, 1865 (Fig. 1A)**

Material examined. 2♂♂, Iran, East Azerbaijan, Arasbaran (Makidi valley), 38°50.42'N, 46°54.74'E, 1496 m, 25.VII.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Diagnosis. Frons with parallel edges, as wide as one eye in dorsal view; 1st and 2nd antennal segment yellow; palpus yellow; thorax black, covered by white-grey pruinescence on the sides, scutum before the suture with four thin dark longitudinal stripes; basicosta yellow; last section of Cu₁ a little shorter than M-Cu; tibia black; abdomen black, evenly covered with rather dense yellowish-grey pruinescence; tergite 3 as long as the 4th, tergite 5 as long as 1/2–3/5 of the 4th.

Distribution. *Afrotropical* - Yemen; *Oriental* - China (East); *Palearctic* - Europe: South Europe (Bulgaria, Croatia, Greece, Italy, Portugal, Spain, Turkey), West Europe (France), Middle East (Israel), North Africa (Canary Islands, Morocco) (O'Hara et al., 2020), Iran (**New record**).

Host range. Orthoptera - Acrididae: *Chorthippus* sp., *Locusta migratoria* (Linnaeus, 1758), *Pyrgomorpha conica* (Olivier, 1791); Pamphagidae: *Acrostira bellamyi* (Uvarov, 1922), *Eremotmethis carinatus* (Fabricius, 1775), *Tmethis pulchripennis* Serville, 1838 (see Tschorsnig, 2017:89).

Tribe Blondeliini Robineau-Desvoidy, 1863**Genus *Admontia* Brauer et Bergenstamm, 1889**

Diagnosis. Parafacial setose on upper half or below; male with proclinate orbital setae; facial ridge setose on distinctly more than lower half; arista thickened for at most 2/3 of its length; prosternum setose; postpronotal setae arranged in a triangle; mid tibia with a single anterodorsal seta; abdominal tergites 3 and 4 each with median discal setae; abdominal tergites with a narrow band of pruinescence on anterior edge.

Remarks. This genus is newly recorded from Iran.

***Admontia blanda* (Fallén, 1820) (Fig. 1B)**

Material examined. 1♂, Iran: East Azerbaijan, Osku (Goonbarf), 46°13.17'N, 37°43'E, 2312 m, 1.V.2012, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Diagnosis. Parafrontalia with white dusting; arista thickened to half of its length; 3rd antennal segment in males about 6 times and in females about 4 times as long as the 2nd; palpus and antennae including arista black; postpronotum with 2 setae; scutum before the suture with 2 wide black longitudinal stripes that are a little wider than the dusted stripe in between.

Distribution. *Oriental* - China (East, West); *Palearctic* - Widely distributed in Europe also from Mongolia, Russia, Transcaucasia, China (Northeast, South-central) (O'Hara et al., 2020), Iran (**New record**).

Host range. Diptera - Tipulidae: *Nephrotoma pratensis* (Linnaeus, 1758) (see Tschorsnig, 2017:58).

Genus *Belida* Robineau-Desvoidy, 1863***Belida angelicae* (Meigen, 1824)**

Material examined. 1♂, Iran, East Azerbaijan, Arasbaran (Aynalu), 38°30.32'N, 46°37.12'E, 1391 m, 21.VI.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Distribution. *Palearctic* - Widdely distributed in Europe, also from Middle East (Israel), Mongolia, Russia, Transcaucasia, Turkey and China (Central) (O'Hara et al., 2022), Iran (Gilasian et al., 2022).

Host range. Hymenoptera - Argidae: *Arge berberidis* Schrank, *A. nigripes* Retzius, *A. sorbi* Schedl & Pschorn-Walcher, 1984 (see Tschorsnig, 2017:48).

Genus *Compsilura* Bouché, 1834

Compsilura concinnata (Meigen, 1824)

Material examined. 1♂ 1♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 4.VI.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 1♂, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 4.VI.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 1♂, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 30.VIII.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 4♂♂ 10♀♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 11.VIII.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 4♂♂ 6♀♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 15.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 2♂♂, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 20.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♂, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 20.X.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 4♂♂ 5♀♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°22'N, 49°57.96'E, 1 m, 20.IX.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 1♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°22'N, 49°57.96'E, 1 m, 11.X.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 2♀♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°22'N, 49°57.96'E, 1 m, 20.X.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 20.VI.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 20.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 2♀♀, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 20.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 20.X.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.57'N, 50°17.40'E, 537 m, 20.IX.2010, Malaise trap, TMUC, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.87'N, 50°20'E, 1787 m, 27.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.87'N, 50°20'E, 1787 m, 15.IX.2010, Malaise trap, ICHMM, leg. M. Khayrmandish; 1♂, Iran, Mazandaran, Joorband, 36°26.28'N, 52°7.22'E, 272 m, 27.X.2011, Malaise trap, TMUC, leg. A. Nadimi; 5♂♂ 1♀, Iran, Mazandaran, Joorband, 36°26.25'N, 52°7.22'E, 275 m, 27.X.2011, Malaise trap, TMUC, leg. A. Nadimi; 1♀, Iran, Mazandaran, Tanghevaz, 36°21.91'N, 52°6.17'E, 692 m, 4.VI.2011, Malaise trap, ICHMM, leg. A. Nadimi; 1♀, Iran, Mazandaran, Tanghevaz, 36°21.91'N, 52°6.17'E, 692 m, 27.X.2011, Malaise trap, ICHMM, leg. A. Nadimi; 7♀♀, Iran, Mazandaran, Tanghevaz, 36°21.92'N, 52°6.17'E, 702 m, 27.X.2011, Malaise trap, ICHMM, leg. A. Nadimi; 1♂, Iran, Mazandaran, Tanghevaz, 36°18.85'N, 52°7.8'E, 703 m, 4.VIII.2011, Malaise trap, ICHMM, leg. A. Nadimi; 1♂, Iran, Mazandaran, Noor, 36°34.88'N, 52°2.76'E, 14 m, 4.X.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Distribution. *Afrotropical* - Widespread throughout western, northeastern, eastern and southern Africa, including Nigeria, South Africa; *Australasian & Oceanian* - Australia, Papua New Guinea; *Nearctic* - Canada, USA; *Oriental* - China (East, West), India (North, Northwest), Indonesia (Jawa), Malaysia, Taiwan; *Palaeartic* - Widely distributed in Europe and Scandinavian countries also from Kazakhstan, Korean Peninsula, Middle East (Israel, Lebanon), North Africa (Algeria, Egypt, Morocco), Russia, Transcaucasia (Armenia, Azerbaijan), Turkey, Central Asia, Japan, Korean Peninsula, China (O'Hara et al., 2020), Iran (Abai & Faseli, 1986; Farahani et al., 2018; Karami et al., 2023).

Host range. Hymenoptera - Cimbicidae: *Cimbex femoratus* (Linnaeus, 1758); Pamphiliidae: *Neurotoma saltuum* (Linnaeus, 1758); Tenthredinidae: *Allantus cinctus* (Linnaeus, 1758), *Amauronematus stenogaster* (Förster, 1854), *Cladius grandis* (Serville, 1823), *C. pallipes* Serville, 1823, *Craesus septentrionalis* (Linnaeus, 1758), *Strongylogaster osmundae* Takeuchi; many genera and species of Lepidoptera (see Tschorsnig, 2017:71–87).

Genus *Istocheta* Rondani, 1859

Istocheta cinerea Macquart, 1851

Material examined. 11♂♂, Iran, Guilan, Roodsar (Ghazichak), 36°45.95'N, 50°19.58'E, 1803 m, 11.IV.2010, Malaise trap, ICHMM, leg. M. Khayrandish; 1♂, Iran, Guilan, Roodsar (Ghazichak), 36°45'52.62"N, 50°20'1.08"E, 1787 m, 11.IV.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♂, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 27.VII.2010, Malaise trap, TMUC, leg. A. Nadimi.

Distribution. *Palaeartic* - Europe: East Europe (Czech Republic, Hungary, Poland, Slovakia), South Europe (Bulgaria, Italy, Serbia, Slovenia, Spain), West Europe (Austria, France, Germany, Switzerland), Middle East (Israel), North Africa (Morocco) (O'Hara et al., 2020), Iran (Gilasian et al., 2022).

Host range. Coleoptera - Scarabaeidae: *Rhizotrogus aestivus* (Olivier, 1789), *R. carduorum* Erichson, 1841 (see Tschorsnig, 2017:56).

Genus *Medina* Robineau-Desvoidy, 1830

Diagnosis. Eye bare; frons narrower than one eye in dorsal view; setae above the vibrissa hanging; palpus black; scutum with 2 pairs of presutural dorsocentral setae; scutellum with 1 pair of lateral setae and apical setae missing; mid tibia with a single anterodorsal setae; last section of Cu₁ as long as 1/2–2/3 of M-Cu; ovipositor of female flattened dorsoventrally; sternite 5 of male usually with a pair of tufts of curved setae, visible in lateral view; abdominal tergites 3 and 4 with discal setae.

Remarks. This genus is newly recorded from Iran.

Medina collaris (Fallén, 1820) (Fig. 1C)

Material examined. 1♀, Iran, Mazandaran, Noor, 36°34.88'N, 52°2.76'E, 14 m, 4.VIII.2011, Malaise trap, TMUC, leg. A. Nadimi; 4♀♀, Iran, East Azerbaijan, Arasbaran (Makidi valley), 38°50.42'N, 46°54.74'E, 1496 m, 25.VII.2014, sweep net, ICHMM leg. F. Seyyedi-Sahebari.

Diagnosis. Arista pubescent and thickened in basal 1/5; fore tibia with one erect setae; scutum before the suture with white coating and five thin dark longitudinal stripes; apical scutellar setae absent; lateral scutellar setae as long and as strong as the basal setae; halteres yellow; abdomen with broad bands of pruinescence along anterior margin of tergites 3–5; sternite 7 at the end with a plate-like sclerite.

Distribution. *Oriental* - China (East); *Palaeartic* - Widely distributed in Europe also from Mongolia, Russia, Transcaucasia, Japan, China (Central, Northeast, South-Central) (O'Hara et al., 2020), Iran (New record).

Host range. Coleoptera - Chrysomelidae: *Galerucella lineola* (Fabricius, 1781), *Lochmaea caprea* (Linnaeus, 1758), *L. suturalis* (Thomson, 1866), *Pyrrhalta viburni* (Paykull, 1799), *Xanthogaleruca luteola* (Müller, 1766) (see Tschorsnig, 2017:53).

Genus *Meigenia* Robineau-Desvoidy, 1830

Meigenia incana (Fallén, 1810)

Material examined. 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 10.IIX.2010, Malaise trap, TMUC, leg. M. Khayrandish.

Distribution. *Oriental* - China (West); *Palaeartic* - Europe: East Europe (Czech Republic, Hungary, Poland, Romania, Slovakia, Ukraine), Scandinavia (Denmark, Sweden), South Europe (Bulgaria, Greece, Italy, Turkey), West Europe (Austria, Germany), Middle East (Israel), Mongolia, Russia, Transcaucasia. (O'Hara et al., 2020), Iran (Gheibi et al., 2009).

Host range. Coleoptera - Chrysomelidae: *Chrysolina varians* (Schaller, 1783) (see Tschorsnig, 2017:49).

Genus *Picconia* Robineau-Desvoidy, 1863

Picconia incurve (Zetterstedt, 1844)

Material examined. 1♀, Iran, Mazandaran, Ghaznasara, 36°16'58.08"N, 52°10'55.62"E, 2013 m, 17.VII.2011, Malaise trap, TMUC, leg. A. Nadimi; 3♀♀, Iran, East Azerbaijan, Horand, 38°54.92'N, 47°16.93'E, 1365 m, 23.VI.2013, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Distribution. *Palearctic* - Widely distributed in Europe also from Central Asia (Turkmenistan), Middle East (Israel), Mongolia, Russia and Transcaucasia (O'Hara et al., 2020), Iran (Gilasian et al., 2022).

Host range. Coleoptera - Chrysomelidae: *Arima marginata* (Fabricius, 1781), *Galeruca pomonae* (Scopoli, 1761), *G. tanaceti* (Linnaeus, 1758) (see Tschorsnig, 2017:60).

Genus *Zaira* Robineau-Desvoidy, 1830

Zaira cinerea (Fallén, 1810)

Material examined. 2♀♀, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 11.VI.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♂, Iran, West Azerbaijan, Uremia (Marmisho), 37°35.04'N, 44°38.13'E, 1353 m, 26.VII.2014, sweep net, ICHMM, leg. S. Khaghaninia.

Distribution. *Palearctic* - Widely distributed in Europe, also from Middle East (Israel; Iran - Gheibi et al., 2009), Mongolia, Russia, Central Asia (Turkmenistan), Transcaucasia, China, Japan, North Korea (O'Hara et al., 2020).

Host range. Coleoptera - Scarabaeidae: *Triodonta raymondi* (Perris, 1869) and many genera and species of Carabidae (see Tschorsnig, 2017:52–53).

Tribe Ethillini Robineau-Desvoidy, 1830

Genus: *Paratryphera* Brauer et Bergenstamm, 1891

Diagnosis. Eye covered with short hairs; height of gena less than 1/6 vertical diameter of eye; upper part of head with a row of black setulae behind the postocular row; gena visible in lateral view; second aristomere 1–3 times as long as its diameter; palpus black or yellow; hind tibia of male with a regular row of anterodorsal setae; lateral scutellar setae absent or hair-like; abdominal tergites with narrow basal bands of pruinescence, divided at the dorsal midline; tergites 3 and 4 without median discal setae.

Remarks. This genus is newly recorded from Iran.

Paratryphera barbatula (Rondani, 1859) (Fig. 1D)

Material examined. 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 10.IX.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Diagnosis. Palpus thin and black; 3rd costal section about 2 times as long as 2nd; section of vein M between M-Cu and the bend, 1.5 times as long as the distance of the bend to the wing edge; fore tibia with two posterior setae; tergites with irregular hairs on the central longitudinal stripe, which interspersed with small discal setae.

Distribution. *Oriental* - China (East, West); *Palearctic* - Widely distributed in Europe and Scandinavian countries also from Middle East (Israel), Mongolia, Russia, Turkey, Central Asia (Turkmenistan), China (Central, Northeast) Transcaucasia. (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Geometridae: *Idaea ochrata* (Scopoli, 1763), *Scopula immutata* (Linnaeus, 1758), *S. marginepunctata* (Goeze, 1781) (see Tschorsnig, 2017:90).

Tribe Exoristini Robineau-Desvoidy, 1863

Genus *Bessa* Robineau-Desvoidy, 1863

Diagnosis. Eyes with only sparse and short hairs, almost bare; the ocellar setae stand at the height of the anterior ocellus or a little in front; upper part of head with a more or less complete row of black setulae behind the postocular row; lower facial margin not visible in lateral view; prosternum bare; bend of M angled, with a short stube; apical scutellar setae missing; middorsal depression on abdominal syntergite 1+2 extending back to hind margin of that segment.

Remarks. This genus is newly recorded from Iran.

Bessa parallela (Meigen, 1824) (Fig. 1E)

Material examined. 1♂, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal) 37°21.17'N, 49°57.93'E, 2 m, 11.VIII.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Diagnosis. Second aristomere 5 times as long as its diameter; scutum black with white coating and 5 longitudinal stripes before the suture; abdominal tergites with broad bands of white pruinescence interrupted with black longitudinal stripe; tergites 3–4 without median discal setae.

Distribution. *Oriental* - China (East, West); *Palearctic* - Widespread throughout Europe and Scandinavian countries also from Mongolia, Russia, Transcaucasia (Armenia), China (Central, Northeast, South-Central), Japan. (O'Hara et al., 2020), Iran (**New record**).

Host range. Coleoptera - Coccinellidae: *Epilachna pustulosa* Kono, 1937; Curculionidae: *Hypera postica* (Gyllenhal, 1813), *Neoglanis salviae* (Schrank, 1789); Hymenoptera: Tenthredinidae: *Craesus japonicus* Takeuchi, 1921, *Nematus turgaiensis* Safjanov, 1977, *Pristiphora ezomatsuvora* Togashi, 1989, *Trichiocampus populi* Okamoto, 1912 and many genera and species of Lepidoptera (see Tschorsnig, 2017:40–46).

Genus *Exorista* Meigen, 1803

Exorista rustica (Fallen, 1810) (Fig. 1F)

Material examined. 1♀, Iran, Mazandaran, Ghaznasara, 36°16.94'N, 52°10.97'E, 2032 m, 30.V.2011, Malaise trap, TMUC, leg. A. Nadimi; 1♂, Iran, East Azerbaijan, Arasbaran (Aynalu), 38°30.32'N, 46°37.12'E, 1391 m, 21.VI.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari; 1♂, Iran, East Azerbaijan, Arasbaran (Makidi valley), 38°50'N, 46°53.73'E, 1687 m, 25.VII.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Diagnosis. Arista thickened on basal 1/3; palpus yellow; 3rd section of costa about 2.5 times as long as 2nd; scutellum black with strong crossed apical setae; tergites 3–5 with broad bands of pruinescence along anterior margin. Males: frons without orbital external setae; abdomen elongate. Female: frons with one pair of orbital external setae; abdomen wide and conical.

Distribution. *Oriental* - China (East, West), Taiwan, Thailand; *Palearctic* - Widespread throughout Europe and Scandinavian countries also from Central Asia, Kazakhstan, Middle East (Israel), Mongolia, Turkey, North Africa (Egypt), Russia, Transcaucasia, China (Central, Northeast, South-central), Korean Peninsula. (O'Hara et al., 2020), Iran (**New record**).

Host range. Hymenoptera - Many species of the family Tenthredinidae (see Tschorsnig, 2017:23).

Genus *Chaetogena* Rondani, 1856

Chaetogena nigrofasciata (Strobl, 1902)

Material examined. 22♂♂ 2♀♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.95'N, 50°19.58'E, 1803 m, 5.VIII.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♂ 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.95'N, 50°19.58'E, 1803 m, 20.VIII.2010, Malaise trap, ICHMM, leg. M. Khayrandish; 2♂♂, Iran, Guilan, Roodsar (Ghazichak), 36°45.87'N, 50°20'E, 1787 m, 11.VIII.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Distribution. *Palearctic* - Europe: South Europe (Yugoslavia, Bulgaria, Turkey), Transcaucasia (Armenia, Azerbaijan, Georgia), Mongolia, Middle East (Israel) (O'Hara et al., 2020), Iran (Herting & Dely-Draskovits, 1993).

Host range. Unknown

Genus *Neophryxe* Townsend, 1916

Diagnosis. Eyes densely hairy; back of head without black setulae behind the postocular row; ocellar setae missing or hair-like, at most 1/2 as long as uppermost reclinate orbital setae; lower facial margin not visible in lateral view; arista thickened at most on basal 3/5 of its length; prosternum bare; bend of M angled, with a short stub; legs black or dark brown; scutellum with 3+4 dorsocentral setae; middorsal depression on abdominal syntergite 1+2 extending back to hind margin of that segment; tergites 3 and 4 with discal setae; cerci in males dorsally with yellow hairs.

Remarks. This genus is newly recorded from Iran.

Neophryxe vallina (Rondani, 1861) (Fig. 1G)

Material examined. 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.95'N, 50°19.58'E, 1803 m, 11.VII.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Diagnosis. Frons about 1/2 as wide as one eye in dorsal view, antenna and palpus black; arista bare and thickened to half of its length, ocellar setae hair-like; scutellum with erect dorsal setae and crossed strong apical setae; abdominal tergites covered with black long setae, tergite 5 with erect strong setae; abdomen with broad bands of pruinescence along anterior margin of tergites 3–5.

Distribution. *Palearctic* - Europe: East Europe (Slovakia), South Europe (Bulgaria, Italy, Spain), West Europe (France, Netherlands, Switzerland), North Africa (Canary Islands) (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Nolidae: *Meganola togatulalis* (Hübner, 1796) (see Tschorsnig, 2017:32).

Genus *Phorinia* Robineau-Desvoidy, 1830

Diagnosis. Eye densely covered with long hairs; back of head usually flat and without black setulae behind the postocular row; anterior reclinate orbital setae usually exceptionally strong; second aristomere 2–5 times as long as its diameter; palpus black; 4th costal section longer than 6th; wing cell r_{4+5} open; bend of M angled, with a short stub; R_{4+5} setose nearly to crossvein R-M; scutum with 4 dorsocentral setae behind the suture; apical scutellar setae erect; middorsal depression on abdominal syntergite 1+2 extending back to hind margin; abdominal tergites 3 and 4 each with median discal setae.

Remarks. This genus is newly recorded from Iran.

Phorinia aurifrons Robineau-Desvoidy, 1830 (Fig. 1H)

Material examined. 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.57'N, 50°13.29'E, 537 m, 11.IV.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.57'N, 50°13.29'E, 537 m, 11.VI.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.57'N, 50°13.29'E, 537 m, 20.VI.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♂, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 10.IX.2010, Malaise trap, ICHMM, leg. M. Khayrandish; 4♂♂, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 20.VI.2010, Malaise trap, ICHMM, leg. M. Khayrandish; 3♂♂, Iran, Mazandaran, Tanghevaz, 36°21.91'N, 52°6.17'E, 692 m, 4.VI.2011, Malaise trap, ICHMM, leg. A. Nadimi; 1♂, Iran, Mazandaran, Noor, 36°34.88'N, 52°2.76'E, 14 m, 27.VII.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Diagnosis. Frons golden yellow; antenna long and flagellum about 5 times as long as pedicel; thorax and abdomen with golden coating; scutum with 4 black longitudinal stripes; abdominal tergites with broad bands of golden pruinescence interrupted with black longitudinal stripe.

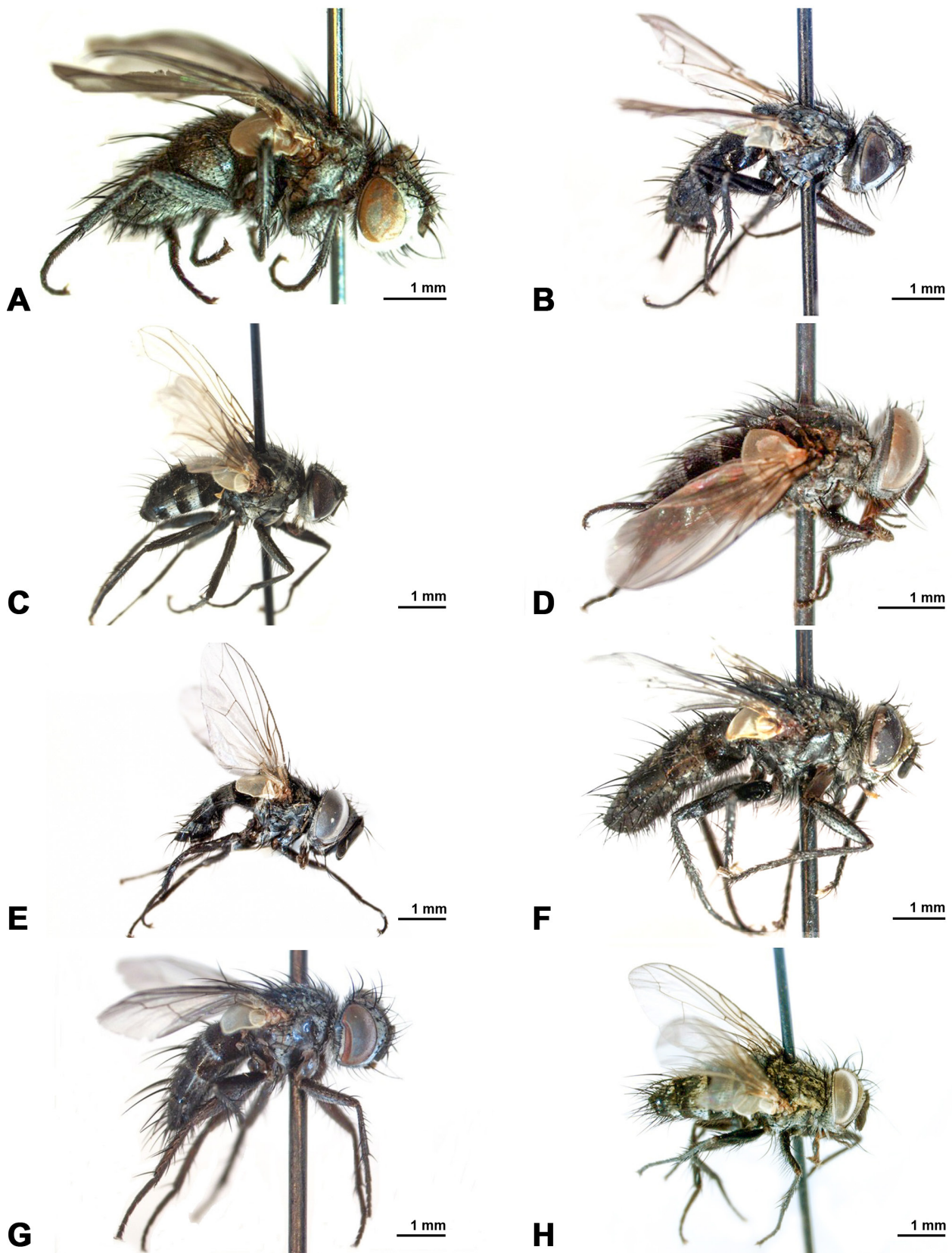


Figure 1. Lateral view of the tachinid flies; **A.** *Ceracia mucronifera* Rondani, 1865, male; **B.** *Admontia blanda* (Fallén, 1820), male; **C.** *Medina collaris* (Fallén, 1820), female; **D.** *Paratryphera barbatula* (Rondani, 1859), female; **E.** *Bessa parallela* (Meigen, 1824), male; **F.** *Exorista rustica* (Fallen, 1810), male; **G.** *Neophryxe vallina* (Rondani, 1861), female; **H.** *Phorinia aurifrons* Robineau-Desvoidy, 1830, female

Distribution. *Palearctic* - Europe: East Europe (Ukraine), Central Europe (Austria, Switzerland, Croatia, Hungary, Romania), South Europe (Bulgaria, Italy, Greece), West Europe (France, Belgium, Germany), Russia, Transcaucasia (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Elachistidae: *Agonopterix ciliella* (Stainton, 1849), *Agonopterix furvella* (Treitschke, 1832), *Depressaria* sp.; Geometridae: *Aethalura punctulata* (Denis & Schiffermüller, 1775), *Cyclophora punctaria* (Linnaeus, 1758); Noctuidae: *Diarsia brunnea* (Denis & Schiffermüller, 1775) (see Tschorsnig, 2017:40).

Tribe Goniini Lioy, 1864

Genus *Brachichaeta* Rondani

Brachichaeta strigata (Meigen, 1824)

Material examined. 1♀, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 11.V.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Distribution. *Palearctic* - Widespread throughout Europe and Scandinavian countries also from Russia (Western Russia), Transcaucasia (Armenia, Azerbaijan, Georgia) (O'Hara et al., 2020), Iran (Gilasian et al., 2022).

Host range. Unknown.

Genus *Blepharipa* Rondani, 1856

Diagnosis. Eyes densely hairy; frons at most as wide as one eye in dorsal view; katapisternum usually with 3 setae; wing cell r_{4+5} open; mid tibia with 2–4 anterodorsal setae; comb-like row of anterodorsal setae on hind tibia usually without longer setae; scutum before suture with 4–5 distinct narrow dark longitudinal stripes; apical scutellar setae horizontal or inclined at most 30° to horizontal; subapical scutellar setae separated from each other by about the same distance as between subapical and basal setae; abdominal tergites 3 and 4 each with median discal setae; tergite 4 of male with a pair of patches of short setae ventrally or laterally.

Remarks. This genus is newly recorded from Iran.

Blepharipa pratensis (Meigen, 1824) (Fig. 2A)

Material examined. 1♀, Iran, Guilan, Roodsar (Ziaz), 36°52.45'N, 50°13.41'E, 490 m, 11.V.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Diagnosis. Arista bare; prementum short, about 2 times as long as its diameter; palpus and 2nd antennal segment yellow; mid tibia with 3 anterodorsal setae; tergite 3 with marginal setae; tergites 3 and 4 completely covered with grey dusting (when viewed obliquely from behind).

Distribution. *Palearctic* - Widely distributed in Europe also from Central Asia (Turkmenistan), Middle East (Israel), Russia, Turkey, Transcaucasia, Japan (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Noctuidae: *Catocala nymphagoga* (Esper, 1787); Papilionidae: *Iphiclides podalirius* (Linnaeus, 1758); Saturniidae: *Saturnia spini* (Denis & Schiffermüller, 1775) and many genera and species of Lasiocampidae, Lymantriidae and Sphingidae (see Tschorsnig, 2017:224–226).

Genus *Eumea* Robineau-Desvoidy, 1863

Eumea mitis (Meigen, 1824)

Material examined. 1♀, Iran, Guilan, Astaneh-Ashrafieh (Eshman-Kamachal), 37°21.17'N, 49°57.93'E, 2 m, 20.VIII.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, West Azerbaijan, Khoy, 38°34.22'N, 44°50.89'E, 1305 m, 10.VI.2014, sweep net, ICHMM, leg. S. Khaghaninia.

Distribution. *Palearctic* - Widely distributed in Europe Scandinavian countries also from Russia, Transcaucasia, China and Japan (O'Hara et al., 2020), Iran (Kamangar et al., 2016).

Host range. Lepidoptera - Crambidae: *Loxostege sticticalis* (Linnaeus, 1761), *Loxostege sticticalis* (Linnaeus, 1761), *Ostrinia scapulalis* (Walker, 1859); Psychidae: *Megalophanes viciella* (Denis & Schiffermüller, 1775); Pyralidae: *Dioryctria abietella* (Denis & Schiffermüller, 1775); Thyatiridae: *Achlya flavicornis* (Linnaeus, 1758); many genera and species of Tortricidae and Noctuidae (see Tschorsnig, 2017:187-188).

Genus *Gonia* Meigen, 1803

Gonia bimaculata Wiedemann, 1819

Material examined. 2♀♀, Iran, East Azerbaijan, Arasbaran (Aynalu), 38°55.72'N, 46°47.58'E, 1358 m, 14.VI.2013, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Distribution. *Afrotropical* - Widespread throughout mainland except for western Africa, including Malawi, South Africa, Uganda, Yemen; *Oriental* - China (East); *Palaeartic* - Europe: Widely distributed in East and South Europe also from Central Asia (Tajikistan, Turkmenistan, Uzbekistan), Middle East (Israel, Saudi Arabia), North Africa (Algeria, Canary Islands, Egypt, Tunisia), Turkey, Transcaucasia, China (Central) (O'Hara et al., 2020), Iran (Gheibi et al., 2010).

Host range. Lepidoptera - Arctiidae: *Hyphantria cunea* (Drury, 1773) and many genera and species of Geometridae (see Tschorsnig, 2017:237-238).

Gonia capitata (De Geer, 1776)

Material examined. 1♂, Iran, Guilan, Roodsar (Ziaz), 36°52.57'N, 50°13.29'E, 537 m, 11.VI.2010, Malaise trap, ICHMM, leg. M. Khayrandish.

Distribution. *Palaeartic* - Widespread throughout Europe and Scandinavian countries also from Mongolia, North Africa (Canary Islands, Egypt), Russia, Transcaucasia and China (O'Hara et al., 2020), Iran (Samet et al., 1977).

Host range. Lepidoptera - Noctuidae: *Agrotis exclamationis* (Linnaeus, 1758), *A. ipsilon* (Hufnagel, 1766), *A. segetum* (Denis & Schiffermüller, 1775), *Ceramica pisi* (Linnaeus, 1758) and *Euxoa temera* (Hübner, 1808) (see Tschorsnig, 2017:238).

Gonia ornata Meigen, 1826 (Fig. 2B)

Material examined. 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.95'N, 50°19.58'E, 1803 m, 4.VI.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, Mazandaran, Tanghevaz, 36°21.91'N, 52°6.17'E, 692 m, 4.V.2011, Malaise trap, ICHMM, leg. A. Nadimi; 1♀, Iran, Mazandaran, Ghaznasara, 36°16.94'N, 52°10.97'E, 2032 m, 4.VI.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Diagnosis. Gena pale yellow, with dense white coating; parafacial at the narrowest point as wide as the face (including facial ridges measured at their widest point); abdomen black, with large lateral reddish-yellow spots and distinct white dusting along anterior margin of tergites 3-4, tergite 5 at the sides to 4/5 of its length with pruinescence; hind tibia with irregular anterodorsal comb and several intermediary setae.

Distribution. *Palaeartic* - Widely distributed in Europe and Scandinavian countries also from Central Asia (Turkmenistan), Middle East (Israel), Mongolia, North Africa (Egypt, Morocco), Russia, Transcaucasia and China (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Geometridae: *Lycia florentina* (Stefanelli, 1882); Lasiocampidae: *Psilogaster algeriensis* (Baker, 1885); Psychidae: *Pachythelia villosella* (Ochsenheimer, 1810) and many genera and species of Noctuidae (see Tschorsnig, 2017:238-239).

Gonia vacua Meigen, 1826 (Fig. 2C)

Material examined. 1♂, Iran, Mazandaran, Tanghevaz, 36°21.92'N, 52°6.17'E, 702 m, 27.V.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Diagnosis. Face in lower part broader than parafacial at the same level; parafacial pale yellow, with silvery white coating; anterior seta of parafacial strong but not longer than remaining hairs; abdomen with a narrow black longitudinal stripe which tapers towards the back and ends in a point on tergite 5; abdominal hairs upright in the area of the black stripe.

Distribution. *Palaeartic* - Europe: East Europe (Czech Republic, Hungary, Poland, Slovakia, Ukraine), South Europe (Croatia, Greece, Italy, Portugal, Serbia, Slovenia, Spain), West Europe (Austria, France, Germany, Switzerland), Russia (Western Russia), Transcaucasia, China (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Noctuidae: *Agrotis ipsilon* (Hufnagel, 1766) (see Tschorsnig, 2017:239).

Genus *Masicera* Maquart, 1834

Masicera sphingivora Robineau-Desvoidy, 1830

Material examined. 1♀, Iran, Mazandaran, Tanghevaz, 36°21.91'N, 52°6.17'E, 692 m, 4.VI.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Distribution. *Palaeartic* - Widely distributed in Europe also from Central Asia, Mongolia, Turkey, Russia, Transcaucasia and Japan (O'Hara et al., 2020), Iran (Karimpour et al., 2006).

Host range. Lepidoptera - Arctiidae: *Coscinia bifasciata* (Rambur, 1832); Geometridae: *Aplocera efformata* (Guenée, 1857), *Biston betularia* (Linnaeus, 1758); many species of Lasiocampidae, Lymantriidae, Noctuidae, Nymphalidae, Sphingidae (see Tschorsnig, 2017:230–234).

Genus *Ocytata* Gistel, 1848

Diagnosis. Arista bare; 1st and 2nd antennal segment vivid yellow; facial ridge in lateral view strongly convex; prementum about 2 times as long as its diameter; prosternum setose; section of M between M-Cu and the bend is longer than the post-angular vein; scutellum, tegula, basicosta and femora red or yellow; middorsal depression on abdominal syntergite 1+2 extending back to hind margin; tergite 4 with a complete row of median discal setae; tergites with densely and evenly pruinescence to the posterior margin.

Remarks. This genus is newly recorded from Iran.

Ocytata pallipes (Fallén, 1820) (Fig. 2D)

Material examined. 1♀, Iran, West Azerbaijan, Khoy, 38°44.32'N, 44°52.99'E, 1405 m, 10.VI.2014, sweep net, ICHMM, leg. S. Khaghaninia.

Diagnosis. First and second segments of antenna reddish-yellow; palpus yellow; tergites with erect marginal and dorsal setae; abdomen black with grey pruinescence.

Distribution. *Palaeartic* - Widespread throughout Europe and Scandinavian countries also from Central Asia (Tajikistan), Middle East (Israel), Turkey, Russia, Transcaucasia (Armenia, Azerbaijan) (O'Hara et al., 2020), Iran (**New record**).

Host range. Dermaptera - Forficulidae: *Chelidura acanthopygia* (Gené, 1832), *Forficula auricularia* Linnaeus, 1758 and *F. tomis* (Kolenati, 1846) (see Tschorsnig, 2017:212).

Genus *Pachystylum* Macquart, 1848

Diagnosis. Eye bare; frons at least 1.8 times as wide as an eye viewed dorsally; ocellar setae erect, latero-clinate; parafacial narrowing downwards, at its narrowest point as wide as $\frac{1}{4}$ – $\frac{1}{3}$ of the 3rd antennal segment; arista bare, thickened nearly to apex; second aristomere 6–8 times as long as its diameter; prosternum setose; setulae on R₄₊₅ extending to crossvein r-m; scutellum with raised, crossed apical and 4 humeral setae; tergites 3 and 4 with or without discal setae.

Remarks. This genus is newly recorded from Iran.

***Pachystylum bremii* Macquart, 1848 (Fig. 2E)**

Material examined. 1♀, Iran, East Azerbaijan, Arasbaran (Aynalu), 38°55.72' N, 46°47.58'E, 1358 m, 25.VI.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Diagnosis. Palpus black; scutum black with whitish-grey dusting and before the suture with 4 and behind the suture 5 black longitudinal stripes; abdomen black with grey dusting along anterior margin of tergites.

Distribution. *Palaeartic* - Europe: East Europe (Estonia, Hungary, Poland), South Europe (Italy, Portugal, Slovenia, Spain), West Europe (Austria, France, Germany, Switzerland), Russia, Transcaucasia, China (Central) (O'Hara et al., 2020). Iran (**New record**).

Host range. Unknown.

Genus *Pales* Robineau-Desvoidy, 1830***Pales pavidata* (Meigen, 1824) (Fig. 2F)**

Material examined. 1♂ 1♀, Iran, Mazandaran, Noor, 36°34.88'N, 52°2.76'E, 14 m, 4.X.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Diagnosis. Eyes densely hairy; frons in males 0.72–0.84 times and in females 0.88–1 times as wide as on eye in dorsal view; lower facial margin not visible in lateral view; parafacial in both sexes 1.08–1.25 times as long as the frons; 3rd antennal segment in males 3.5–4.6 times and in females 2.5–3 times as long as the 2nd; scutellum black, with crossed apical setae; abdominal tergites 3 and 4 each with median discal setae; tergites more with pruinescence, rather shiny. Males: base of surstili narrow (viewed from behind) and cerci bent a little upwards at the end.

Distribution. *Oriental* - China (East, West), Japan; *Palaeartic* - Widespread throughout Europe and Scandinavian countries also from Central Asia (Turkmenistan), China (Central, Northeast, South-central), Middle East (Israel), Mongolia, North Africa (Morocco), Russia, Turkey, Transcaucasia (Armenia) (O'Hara et al., 2020), Iran (**New record**).

Host range. Lepidoptera - Many genera and species of Tortricidae, Noctuidae, Geometridae, Lasiocampidae and Lymantriidae (see Tschorsnig, 2017:198–208).

Genus *Platymyia* Robineau-Desvoidy, 1830

Diagnosis. Eye covered with long hairs; upper part of head with at least one row of black setulae behind the postocular row; facial ridge with setae on lower 1/5 to 1/3; 4th costal section about as long as 6th, but if longer, then scutum with three pairs of postsutural dorsocentral setae; scutum before suture with 4 dark longitudinal stripes; scutellum entirely black in ground color and with crossed apical setae; abdominal tergites 3 and 4 each with 1 pair of median discal setae.

Remarks. This genus is newly recorded from Iran.

***Platymyia fimbriata* Meigen, 1824**

Material examined. 1♀, Iran, Guilan, Roodsar (Orkom), 36°45.73'N, 50°18.19'E, 1201 m, 11.X.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, West Azerbaijan, Uremia (Ghasemlu valley), 37°17.24'N, 45°7.92'E, 1125 m, 26.VII.2014, sweep net, ICHMM, leg. S. Khaghaninia.

Diagnosis. Arista short pubescent; palpus black; scutum with grey coating and four broad dark longitudinal stripes; abdomen black with broad bands of grey pruinescence along anterior margin of tergites.

Distribution. *Oriental* - China (East, West); *Palaeartic* - Widely distributed in Europe Scandinavian countries also from Central Asia, Middle East (Israel), Mongolia, Russia, Turkey, Transcaucasia, China (Central, Northeast, South-central), Korean Peninsula. (O'Hara et al., 2020), Iran (**New record**).

Host range. Unknown.

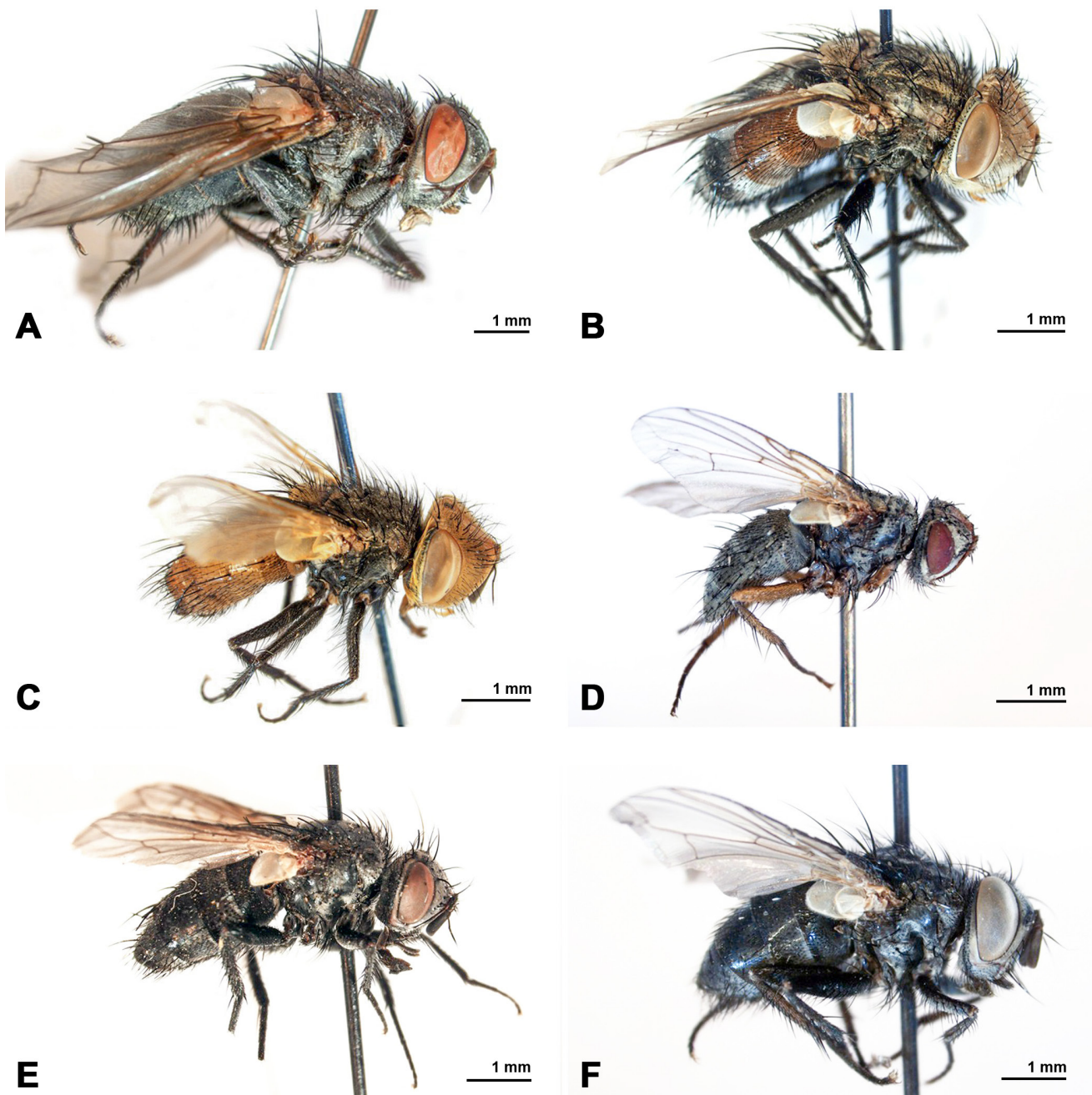


Figure 2. Lateral view of the tachinid flies; **A.** *Blepharipa pratensis* (Meigen, 1824), female; **B.** *Gonia ornata* Meigen, 1826, male; **C.** *Gonia vacua* Meigen, 1826, male; **D.** *Ocytata pallipes* (Fallén, 1820), female; **E.** *Pachystylum breinii* Macquart, 1848, female; **F.** *Pales pavida* (Meigen, 1824), female.

Genus *Spallanzania* Robineau-Desvoidy, 1830

Spallanzania hebes (Fallén, 1820)

Material examined. 1♀, Iran, Guilan, Roodsar (Ghazichak), 36°45.87'N, 50°20'E, 1787 m, 27.IX.2010, Malaise trap, TMUC, leg. M. Khayrandish; 1♀, Iran, Mazandaran, Tanghevaz, 36°21.92'N, 52°6.17'E, 702 m, 18.VII.2011, Malaise trap, ICHMM, leg. A. Nadimi.

Distribution. *Nearctic* - Canada and USA.; *Neotropical* - Middle America (Mexico); *Oriental* - China (East), India (Northwest); *Palaeartic* - Widely distributed in Europe also from Central Asia, Middle East (Israel), Mongolia, Russia, Transcaucasia and China (O'Hara et al., 2020), Iran (Samet et al., 1977).

Host range. Lepidoptera - Arctiidae: *Phragmatobia fuliginosa* (Linnaeus, 1758) and many genera and species of Noctuidae (see Tschorsnig, 2017:241–242).

Tribe Winthemiini Townsend, 1913

Genus *Nemorilla* Rondani, 1856

Nemorilla maculosa (Meigen, 1824)

Material examined. 1♂, Iran, East Azerbaijan, Arasbaran (Chichakli), 38°31.36'N, 46°32.11'E, 1733 m, 30.VIII.2014, sweep net, ICHMM, leg. F. Seyyedi-Sahebari.

Distribution. *Oriental* - China (East), India (Central, Northwest), Myanmar, Taiwan; *Palaeartic* - Widely distributed in Europe and Scandinavian countries also from Middle East (Afghanistan, Israel), Central Asia (Turkmenistan, Uzbekistan), China (Central, Northeast, South-central), Mongolia, North Africa (Canary Islands, Morocco, Tunisia), Turkey, Russia, Transcaucasia (Azerbaijan), Japan, Korean Peninsula (O'Hara et al., 2020), Iran (Samet et al., 1977).

Host range. Lepidoptera - Many genera and species of Tortricidae, Noctuidae, Crambidae, Elachistidae and Gelechiidae (see Tschorsnig, 2017:102–106).

DISCUSSION

The findings through this research as well as our recent study on tribe Eryciini (Seyyedi-Sahebari, et al., 2021) indicate that the fauna of subfamily Exoristinae in northern Iran is relatively similar to the adjacent areas of Transcaucasia and eastern Turkey. According to the most updated checklist of the Tachinidae in the world, the fauna of this subfamily in adjacent areas comprises: 148 species for Transcaucasia countries, 98 species for Turkey, 122 species for Central Asia countries, 111 species for Middle East and 187 species for western Russia (O'Hara et al., 2020).

At the present study, the tribe Goniini comprises 10 genera and 13 species. It was followed by the tribes Blondeliini and Exoristini with 8 and 5 genera, respectively. All the studied genera, with the exception of the genus *Gonia* Meigen, are the monotypic genera and have only one species here. The genus *Gonia* contains 25 species in the Palaeartic region that were known as the important larvae parasitoid of Lepidoptera (O'Hara et al., 2020). Heretofore, the species *Gonia bimaculata* Wiedemann and *Gonia umbripennis* Herting, 1958 were recorded from Dasht-e-Arjan and Kazeroun regions located in Fars province, southwest of Iran (Gheibi et al., 2010) and *Gonia capitata* De Geer from Tehran province, Iran (Samet et al., 1977). Herein we are recording the species *Gonia ornata* Meigen and *Gonia vacua* Meigen from Guilan and Mazandaran provinces, northern Iran. The occurrence of these species was also recorded from Russia and Transcaucasia (Tschorsnig, 2017). The tribe Blondeliini has presented eight genera and eight species in the studied areas, in which *Compsilura* Bouché is a monotypic genus and *Compsilura concinnata* Meigen was the most abundant among all specimens collected by Malaise traps. It is widely distributed in all zoogeographic regions such as Mediterranean, Turkey, Transcaucasia, Central Asia, West Siberia and East Siberia (O'Hara et al., 2020). Various lepidopteran species belonging to families Lymantriidae, Noctuidae, Pieridae, Nymphalidae and Arctiidae, as well as Hymenoptera species of families Cimbicidae, Pamphiliidae and Tenthredinidae were recognized as hosts of this parasitoid (Tschorsnig, 2017). *Compsilura concinnata* was found to be a common species in northern Iran and has been previously recorded as a parasitoid of true armyworm moth, *Mythimna unipuncta* (Haworth, 1809) (Lepidoptera, Noctuidae) in Guilan province, northern Iran (Abbasipour & Taghavi, 2006), box tree moth, *Cydalima perspectalis* (Walker, 1859) (Lepidoptera, Crambidae)

in Golestan province, northeast of Iran (Farahani et al., 2018), fall webworm, *Hyphantria cunea* (Drury, 1773) (Lepidoptera, Erebidae) in Guilan province (Karami et al., 2023) and *Thaumetopoea solitaria* (Freyer, 1838) (Lepidoptera, Notodontidae) in Fars province, southwest of Iran (Dehghani-Zahedani et al., 2006).

The tribe Exoristini contains 5 genera and 5 species in this study, in which *Exorista* Meigen is a large genus with approximately 150 species worldwide. Most species of *Exorista* are distributed in the Old World, except the six species recorded in the Nearctic region (O'Hara et al., 2020). Formerly, 10 species of this genus have been reported from Tehran, Zanjan, West Azarbaijan, Guilan, Mazandaran, Fars, Kerman and Sistan-Baluchestan provinces of Iran (Samet et al., 1977; Herting & Delay-Draskovits, 1993; Fathipour et al., 2010; Dehghani Zahedani, 2006; Gheibi et al., 2010; Karami et al., 2023). *Exorista rustica* Fallen is distributed from Palaearctic and Oriental and is new record for fauna of Iran. It is known as important parasitoid of many genera and species of the family Tenthredinidae (Hymenoptera, Symphyta) (O'Hara et al., 2020). Accordingly, more than 50 species of the family Tenthredinidae were reported from Guilan province in northern Iran (Khayrandish et al., 2017), where *E. rustica* has been distributed. It would be worth investigating the host-parasitoid associations in the future. The tribes Ethillini, Winthemini and Acemyini are the small tribes, each have a monotypic genus in the studied regions.

AUTHOR'S CONTRIBUTION

The authors confirm their contribution in the paper as follows: F. Seyyedi-Sahebari: Compiling the data, mounting, preparation of the photographs, writing the manuscript, and correspondence. S. Khaghaninia: Supervising the work, and revising the manuscript. A. A. Talebi: checking the validity of the recorded data and revising the manuscript. All authors read and approved the final version of the manuscript.

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AVAILABILITY OF DATA AND MATERIAL

Datasets and specimens used to support the findings of this study are available from the authors upon request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

CONSENT FOR PUBLICATION

Not applicable.

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest regarding the publication of this paper.

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اطلاعات جدید در مورد زیرخانواده (Diptera, Tachinidae) Exoristinae در شمال ایران، به همراه گزارش جدید ۱۱ جنس و ۱۵ گونه برای کشور

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چکیده: در این تحقیق فون زیرخانواده (Diptera, Tachinidae) Exoristinae در شمال ایران بررسی شد. در مجموع ۲۹ گونه از ۲۶ جنس و ۶ قبیله جمع‌آوری و شناسایی گردید. از بین آنها ۱۱ جنس و ۱۵ گونه از مگس‌های Tachinidae برای اولین بار از ایران گزارش شد. گزارش‌های جدید عبارتند از: *Admontia blanda* (Fallén, 1820)، *Ceracia mucronifera* Rondani، *Blepharipa pratensis* (Meigen, 1824)، *Bessa parallela* (Meigen, 1824)، *Gonia vacua* Meigen, 1826، *Gonia ornata* Meigen, 1826، *Exorista rustica* (Fallén, 1810)، *Neophryxe vallina* (Rondani)، *Paratryphera barbatula* (Rondani, 1859)، *Medina collaris* (Fallén, 1820)، *Pales pavidata* (Meigen)، *Pachystylum bremii* Macquart, 1848، *Ocytata pallipes* (Fallén, 1820)، *Phorinia aurifrons* Robineau-Desvoidy, 1830 و *Platymyia fimbriata* Meigen, 1824. اطلاعات مربوط به محل‌های جمع‌آوری، انتشار، ویژگی‌های افتراقی، تصاویر گزارش‌های جدید و ارتباط میزبانی ارائه شد.

واژگان کلیدی: مگس‌های تاکینید، پارازیتوئید، گزارش جدید، شمال ایران