

Article

A contribution to the rove beetles (Coleoptera: Staphylinidae, Paederinae) in north of Iran

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Abstract

In this paper, 19 species of rove beetles (Coleoptera: Staphylinidae), belonging to the subfamily Paederinae Fleming 1821, were collected from Mazandaran province, north of Iran, during 2015-2016. Two species, *Rugilus angustatus* Geoffroy 1758 and *Astenus lyonessius* (Joy 1908) are reported for the first time from Iran.

Keywords rove beetles; Staphylinidae; Paederinae; Iran; Mazandaran.

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1 Introduction

Rove beetles (Coleoptera: Staphylinidae) are the largest family of beetles, with more than 58300 described species worldwide, classified in 33 subfamilies (Janak and Bordoni, 2012). Despite tremendous variations in habits and size, the vast majority of rove beetles can be distinguished from other beetles by short truncate elytra, which expose more than half of their long abdomen (Newton et al., 2000). Various developmental stages of rove beetles are found in a wide variety of terrestrial and semi-aquatic habitats, including leaf litters, dungs, forests, decaying animals, under stones or barks, on flowers, under seaweed, in fungi, and in the nests of birds, mammals, and social insects (Anlas, 2009).

According to the Palearctic catalogue (Lobl and Smetana, 2004) and recent contributions to this family, rove beetles are represented in Iran by 677 valid (sub-) species (Anlas and Newton, 2010; Assing, 2011). This species number is much less than those recorded from many smaller countries in the Palearctic region, such as Turkey (with 1600 species) (Anlas, 2009), Czech Republic (with 1403 species) (Bohac et al., 2007), and Romania (with 1200 species) (Stan, 2004).

The subfamily Paederinae Fleming 1821, with more than 137 identified species (Anlas and Newton, 2010), is considered as the second largest subfamily of rove beetles in Iran. The present paper reports 18 species of Paederinae distributed in Iran. These species are based on materials collected from Mazandaran province (north of Iran) during 2015–2016.

2 Materials and Methods

The materials referred to in this study were collected using hand and pitfall traps from different geographical regions located at Mazandaran province, north of Iran, during May 2015 to July 2016. Adult beetles were preserved in jars containing 75% ethanol in the field and pinned before drying. The faunistic list contained localities, altitude, GPS coordinates, collecting date, number, and sex of each specimen examined. Morphological studies were carried out using a Stereomicroscope (Olympus SZ40, Japan).

3 Results

In this study, 19 species of the Paederinae were identified from Mazandaran province, two of which are reported for the first time from Iran. They include:

Subtribe *Astenina* Hatch 1957

Genus *Astenus* Dejean 1833

Astenus lyonessius (Joy, 1908) (Fig. 1, a-b)

Examined materials: **Noshahr** (36°32'39.91" N, 51°35'56.23" E, elev: 748 meters ASL), 5 ♂, 3 ♀, Decaying materials, leg: M. Mohammadi Dehcheshmeh, 16.06.2015.

Distribution: Widespread in Palearctic region including Iran (present paper).

Astenus procerus (Gravenhorst, 1806)

Examined materials: **Noshahr** (36°34'33.51" N, 51°35'18.18" E, elev: 867 meters ASL), 2 ♀, leaf litter in riparian edge, leg: M. Mohammadi Dehcheshmeh, 26.06.2016. **Marzanabad** (36°26'29.84" N 51°15'32.46" E, elev: 35.03 meters ASL), 2 ♂, 4 ♀, forest leaf litters, leg: M. Mohammadi Dehcheshmeh, 13.05.2016.

Distribution: Widespread in Palearctic region.

Subtribe *Cryptobiina* Casey 1905

Genus *Homaeotarsus* Hochhuth 1851

Homaeotarsus chaudiirii Hochhuth 1851

Examined materials: **Noshahr** (36°38'05.96" N, 51°30'24.76" E, elev: 1 meters ASL), 2 ♂, 1 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 16.04.2016. **Chalous** (36°39'45.11" N, 51°24'28.23" E, elev: 2 meters ASL), 1 ♂, 3 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 16.04.2016, **Ramsar** (36°53'31.50" N, 50°40'25.22" E, elev: 1 meters ASL), 1 ♂, 3 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 8.04.2016

Distribution: Widespread in West Palearctic including Cyprus, Greece, Iran, Israil, Bulgaria, Syria, and Turkey.

Homaeotarsus iranoturcestanicus (Scheerpeltz, 1956)

Examined materials: **Ramsar** (36°53'51.09" N, 50°40'50.55" E, elev: 1 meters BSL), 3 ♀, Rice field, leg: M. Mohammadi Dehcheshmeh, 8.04.2016. **Tonekabon** (36°48'17.29" N, 50°53'32.25" E, elev: 3 meters BSL), 2 ♀, Rice field, leg: M. Mohammadi Dehcheshmeh, 16.06.2015.

Distribution: Widespread in West Palearctic region including Afghanistan, Iran, Russia, Tajikistan, and Uzbekistan.

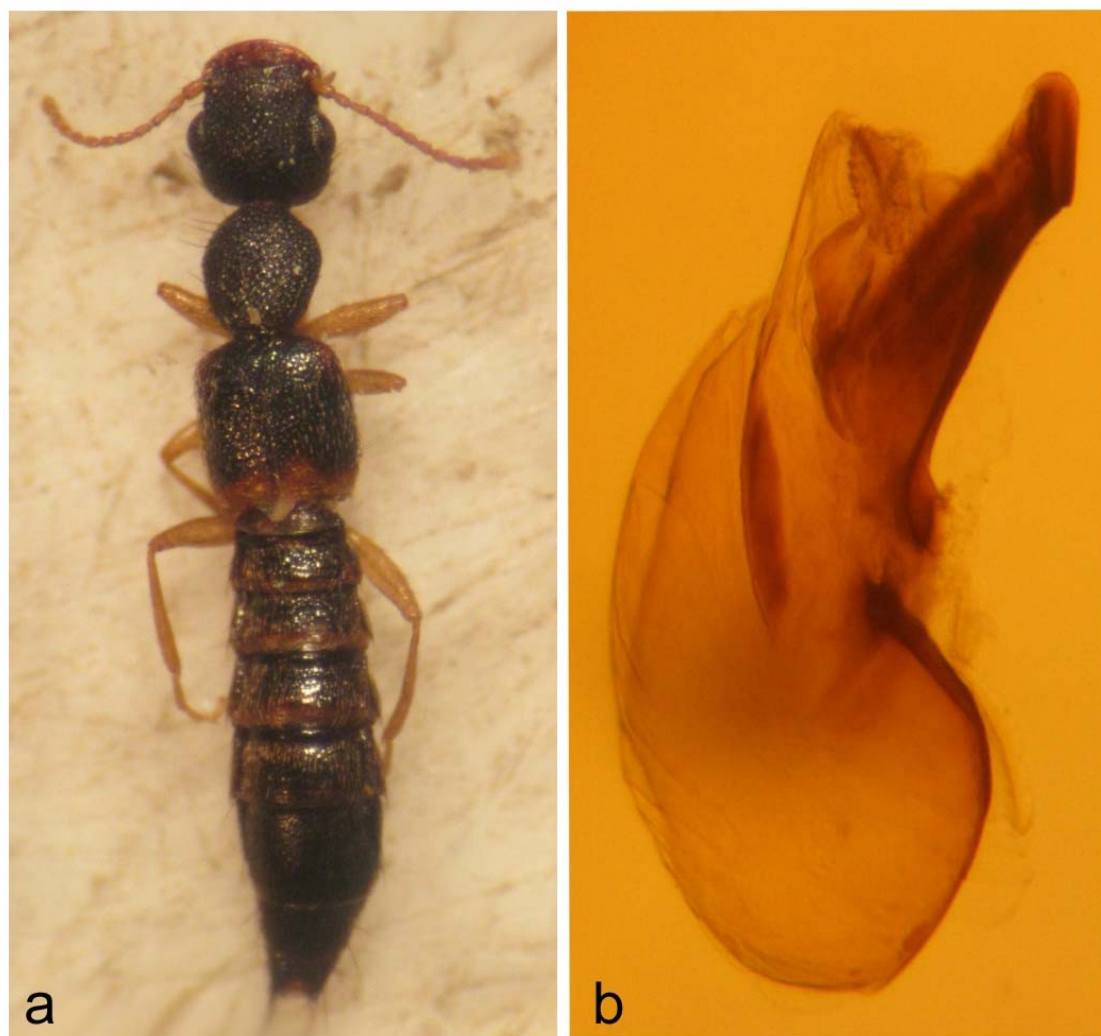


Fig. 1 *Astenus lyonessius*. a: dorsal view of adult female; b: lateral view of aedeagus.

Genus *Ochthephilum* Stephens 1829

***Ochthephilum turkestanicum* Korge 1968**

Examined materials: **Tonekabon** (36°48'16.22" N, 50°52'51.72" E, elev: 2 meters BSL), 4 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.06.2016.

Distribution: Widespread in Palearctic region including, Azerbaijan, Cyprus, Greece, Iran, Italy, Russia, Tajikistan, Turkey, and Uzbekistan.

Subtribe Dolicaonina Casey 1905

Genus *Leptobium* Casey 1905

***Leptobium convexicolle* Assing 2009**

Examined materials: **Noshahr** (36°35'59.02" N, 51°34'11.87" E, elev: 415 meters ASL), 4 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 18.06.2015.

Distribution: This species is distributed only in Iran (Assing, 2009a).

Subtribe Lathrobiina Laporte 1835

Genus *Lathrobium* Gravenhorst 1802***Lathrobium capsicum* Koch 1938**

Examined materials: **Amol** (36°23'42.62" N, 52°22'09.06" E, elev: 330 meters ASL), 1 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 18.06.2016. **Tonekabon** (36°45'15.94" N, 50°49'02.68" E, elev: 249 meters ASL), 2 ♂, 1 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.06.2016. **Ramsar** (36°53'53.57" N, 50°39'02.52" E, elev: 142 meters ASL), 2 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.06.2016

Distribution: This species is distributed only in Azerbaijan and Iran (Assing, 2009b).

Genus *Tetartopeus* Czwalina 1888***Tetartopeus stylifer* Reitter 1909**

Examined materials: **Amol** (36°23'29.77" N, 52°23'21.22" E, elev: 278 meters ASL), 3 ♂, 2 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 18.06.2016. **Chalous** (36°38'26.48" N, 51°25'48.45" E, elev: 65 meters ASL), 5 ♂, 1 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.06.2016. **Noshahr** (36°34'55.41" N, 51°33'44.82" E, elev: 720 meters ASL), 5 ♂, 4 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.06.2016. **Nour** (36°31'11.73" N, 51°59'28.30" E, elev: 2 meters ASL), 1 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 12.04.2016. **Ramsar** (36°54'06.93" N, 50°39'14.21" E, elev: 60 meters ASL), 4 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 8.08.2015. **Tonekabon** (36°45'12.85" N, 50°49'28.82" E, elev: 176 meters ASL), 5 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 22.07.2015.

Distribution: This species is widespread in West Palearctic region including Iran, Iraq, Syria and Ukraine.

Subtribe *Medonina* Casey 1905**Genus *Medon* Stephens 1833*****Medon sparsiventris* Eppelsheim 1889**

Examined materials: **Chalous** (36°47'44.59" N, 51°24'34.10" E, elev: 124 meters ASL), 4 ♂, 4 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 12.04.2016. **Noshahr** (36°34'03.79" N, 51°36'11.13" E, elev: 1117 meters ASL), 11 ♂, 8 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 28.05.2016. **Marzanabad** (36°26'12.59" N, 51°15'00.11" E, elev: 780 meters ASL), 5 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 12.04.2016. **Nour** (36°31'11.79" N, 51°59'28.34" E, elev: 2 meters ASL), 3 ♂, 4 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 12.04.2016. **Kelarabad** (36°39'44.80" N, 51°14'30.74" E, elev: 111 meters ASL), 1 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 22.04.2016.

Distribution: This species is widespread in Azerbaijan and Iran where it is well adapted for living in forest decaying materials (Assing, 2004).

***Medon fuscus* (Mannerheim 1830)**

Examined materials: **Ramsar** (36°53'16.58" N, 50°40'11.77" E, elev: 202 meters ASL), 1 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 22.04.2016. **Tonekabon** (36°45'16.34" N, 50°49'13.63" E, elev: 242 meters ASL), 4 ♂, 1 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 16.06.2016.

Distribution: This species is widespread in Palearctic region.

Genus *Sunius* Stephens 1829***Sunius fulgocephalus* Coiffait 1970**

Examined materials: **Noshahr** (36°34'20.32" N, 51°36'12.79" E, elev: 1087 meters ASL), 1 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 28.06.2016.

Distribution: This species is widespread in West Palearctic region including Armenia, Azerbaijan, Georgia,

and Iran.

Subtribe Scopaeina Mulsant & rey 1878

Genus *Scopaeus* Erichson 1839

***Scopaeus chalcodactylus* Kolenati 1846**

Examined materials: **Noshahr** (36°31'37.83" N, 51°38'51.52" E, elev: 995 meters ASL), 2 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 16.06.2016.

Distribution: This species is widespread in West Palearctic region including Armenia, Azerbaijan, Georgia, Iran, and Ukraine.

***Scopaeus azerbaijanus* Gusarov 1994**

Examined materials: **Amol** (36°23'40.49" N, 52°23'34.71" E, elev: 221 meters ASL), 4 ♂, 2 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 16.06.2016. **Chalous** (36°37'50.09" N, 51°24'03.74" E, elev: 140 meters ASL), 3 ♂, 5 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 28.04.2016. **Noshahr** (36°31'33.16" N, 51°39'14.51" E, elev: 1058 meters ASL), 5 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 28.06.2016.

Distribution: This species is distributed only in Azerbaijan and Iran (Frisch et al., 2002).

***Scopaeus mutatus* Gemminger & Harold 1868**

Examined materials: **Noshahr** (36°32'08.17" N, 51°37'46.91" E, elev: 845 meters ASL), 3 ♂, 4 ♀, Riparian edges, leg: M. Mohammadi Dehcheshmeh, 28.06.2016.

Distribution: This species is widespread in West Palearctic region including Azerbaijan, Armenia, Iran, and Georgia. Apparently, the distribution of this species is confined to the vicinity of the Caspian sea (Frisch, 2009).

Subtribe Stilicina Casey 1905

Genus *Rugilus* Leach 1819

***Rugilus angustatus* Geoffroy 1758**

Examined materials: **Noshahr** (36°34'12.08" N, 51°35'06.27" E, elev: 864 meters ASL), 2 ♀, leaf litter and decaying logs, leg: M. Mohammadi Dehcheshmeh, 16.05.2016.

Distribution: This species is widespread in West Palearctic region, but also is adventive to North America and western Siberia.

***Rugilus orbiculatus* Paykull 1789**

Examined materials: **Chalous** (36°38'13.68" N, 51°24'58.39" E, elev: 135 meters ASL), 2 ♂, 3 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 16.05.2016. **Noshahr** (36°34'31.59" N, 51°36'35.71" E, elev: 1195 meters ASL), 3 ♂, 1 ♀, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 28.06.2016.

Distribution: This species is widespread in Palearctic region, but also adventive to Australia.

***Rugilus penicillatus* Assing 2011**

Examined materials: **Noshahr** (36°34'21.42" N, 51°36'24.58" E, elev: 1127 meters ASL), 3 ♂, Leaf litter, leg: M. Mohammadi Dehcheshmeh, 22.08.2015.

Distribution: This species has been described by Assing (2011) as a new species. The distribution of this species is confined to Iran.

Subtribe Paederina Fleming 1821**Genus Paedrus Fabricius 1775*****Paederus riparius* Linnaeus 1758**

Examined materials: **Noshahr** (36°38'11.01" N, 51°30'17.20" E, elev: <1 meters ASL), 3 ♂, Rice fields, leg: M. Mohammadi Dehcheshmeh, 28.06.2016.

Distribution: This species is widespread in West Palearctic region including north Africa, throughout Europe and the Middle East.

***Paederus fuscipes* Curtis 1826**

Examined materials: **Amol** (36°28'15.34" N, 52°25'58.42" E, elev: 65 meters ASL), 25 ♂, 30 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 28.06.2016. **Babol** (36°36'10.34" N, 52°40'59.30" E, elev: 1 meters BSL), 30 ♂, 40 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 18.06.2016. **Chalous** (36°38'23.75" N, 51°26'49.73" E, elev: 2 meters ASL), 40 ♂, 40 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 18.06.2016. **Noshahr** (36°38'09.50" N, 51°30'24.71" E, elev: <1 meters ASL), 11 ♂, 25 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 16.08.2015. **Marzanabad** (36°26'45.22" N, 51°16'25.72" E, elev: 782 meters ASL), 10 ♂, 18 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 16.04.2015. **Nour** (36°44'23.29" N, 52°01'58.84" E, elev: 2 meters BSL), 10 ♂, 17 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 16.06.2016. **Ramsar** (36°55'36.40" N, 50°39'12.34" E, elev: 0 meters ASL), 30 ♂, 25 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 28.04.2015. **Tonekabon** (36°45'41.97" N, 50°50'16.41" E, elev: 111 meters ASL), 30 ♂, 40 ♀, Rice fields, leg: M. Mohammadi Dehcheshmeh, 12.07.2015.

Distribution: This species is cosmopolitan with variable distribution in different continents. Apparently, it is the dominant species of *Paederus* in Iran with wide distribution in north, central and south parts of the country.

4 Discussion

In this study, a total of 19 species, belonging to different subtribes of Paederinae, were collected and identified from Mazandaran Province, North of Iran. Two species, *Astenus lyonessius* and *Rugilus angustatus* are reported for the first time from Iran. A simple comparison of the species number already reported from Iran (Anlas and Newton, 2010) with those recorded for adjacent countries such as Turkey (with 1600 species, Anlas, 2010), Czech Republic (with 1403 species, Bohac et al., 2007), and Romania (with 1200 species, Stan, 2004) reveals that the fauna of rove beetles in Iran is relatively poorly understood and that an estimated two third of species remains to be described in future studies. Thereby, continued studies on Iranian fauna of rove beetles are necessitated.

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