

## New species of the Miridae (Heteroptera) from Iran

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**Abstract:** The following new mirid species from Iran are described: Mirinae, Mirini: *Phytocoris* (*Compsocorocoris*) *dashtanus* sp.n., *Phytocoris* (*Eckerleinius*) *kandovanus* sp.n., *Phytocoris* (*Eckerleinius*) *khalkhalicus* sp.n., Phylinae, Hallodapini: *Systellonotus* *jirandehanus* sp.n., and Phylinae, Phylini: *Lepidargyrus* *hafezi* sp.n.

### INTRODUCTION

The present paper is based on the senior author's expeditions to the Gilan, East Azerbaijan and Tehran provinces in Iran from 1994–1996. The work was done in cooperation with the Faculty of Agriculture of the University of Gilan, Rasht, and the Insect Taxonomy Research Department of the Ministry of Agriculture, Tehran. Financial support was provided by the Finnish Society of Sciences and Letters and the Entomological Society of Helsinki, Finland.

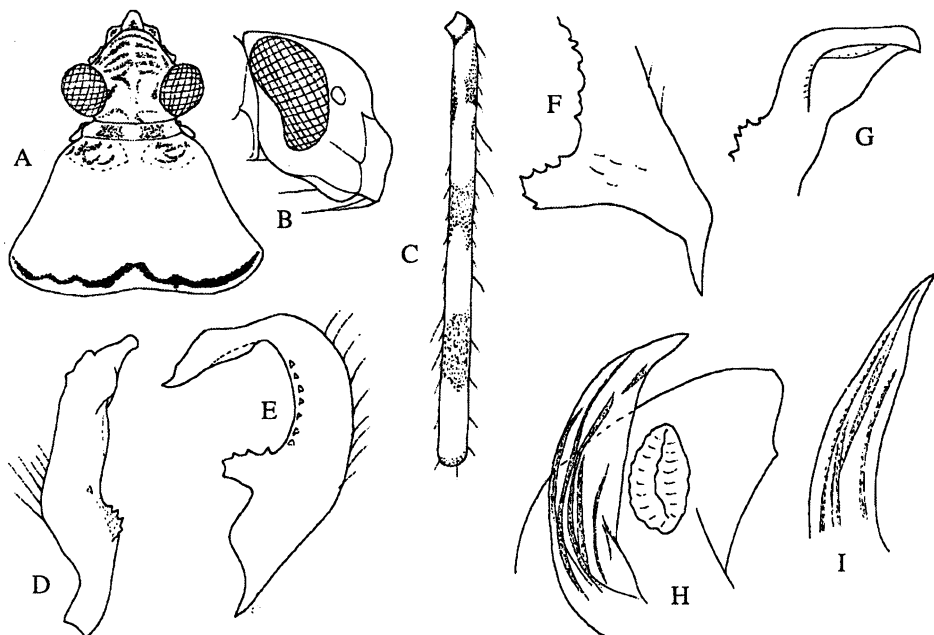
#### New species

Mirinae

Mirini

#### ***Phytocoris* (*Compsocorocoris*) *dashtanus* sp.n. (Fig. 1 A–I)**

**Types:** Iran, Gilan, Darreh Dasht, male holotype, 2 female paratypes, 27.V–20.VI.1995, Linnavuori, in coll.Linnavuori, a paratype in the College of Agriculture, Rasht.



**Fig. 1.** *Phytocoris dashtanus* sp.n.: (A) male head and pronotum; (B) male head in lateral view; (C) middle tibia; (D) right style; (E) left style; (F) sensory lobe of left style in broad aspect; (G) hypophysis of left style in dorsal view; (H) apex of aedeagus (slide mount); (I) spiculum (in glycerine).

**Description:** Length 7.5 mm. Opaque. Grayish ochraceous with abundant dark pattern. Eyes grayish. Tylus, genae and lora largely blackish. Lateral arcs on frons and spots along eyes on vertex blackish. 1st antennal segment pale ochraceous, upper surface with abundant blackish mottling, 2nd segment dark brown with whitish basal ring, other segments dark brown, base of 3rd narrowly whitish. Pronotum: collar ochraceous with two dark spots; disk embrowned, lateral margins and an undulating transverse subbasal band blackish brown, the very basal margin pale. Scutellum with 4 blackish brown basal spots, other parts slightly embrowned. Hemelytra largely dark fuscous with obscure pale irroration, apical margin of corium with pale spot continuing on to cuneus, on corium the spot is delimited on each side by a conspicuous blackish brown area; membrane with abundant blackish brown irroration, veins dark. Under surface: sides of pronotum black, lower margins of propleura, scent gland orifices and coxae whitish. Abdomen with abundant, dark irroration. Femora with abundant, more or less confluent dark brown irroration, bases of hind femora pale. Fore and middle tibiae with dark brown rings, those on middle tibiae narrower than the alternating pale areas; basal part of hind tibiae with two dark rings interrupted by pale irroration, apical part with fine brown mottling. Tarsi brown.

Body elongate. Upper surface with semi-erect black bristles and appressed pale pubescence. Head in lateral view higher than long, frons convex, a distinct notch between it and base of tylus; head in dorsal view 0.62 (♂) or 0.56 (♀) x as long as basal width of pronotum; ocular index 1.28 (♂) or 1.57 (♀). Antennae long and slender, proportions between segments 40:80:45:? (♂), 45:85:47:39 (♂), 1st segment with erect pale bristles, 1.54 (♂) or 1.67 (♀) x as long as diatone, 2nd 3.1 (♂) or 3.15 (♀) x as long as diatone, 1.9 (♂) or 1.8 (♀) x as long as basal width of pronotum. Rostrum extending beyond hind coxae. Pronotum about 1.8 (♂) or 2.0 (♀) x as broad as long in middle, lateral margins slightly insinuated. Hemelytra longer than abdomen. Legs with pale appressed hair covering, tibial spines short and pale.

Male genitalia in Fig. 1 D–I. Right style with small dentate basal lobe. Sensory lobe of left style narrow, dentate. Spiculum of aedeagus gracile, boat-like.

Habitat: On *Crataegus* sp. in a hilly forest.

Differential diagnosis: Belonging to the *Phytocoris moestus* – group, which is recognized by the edentate boat-like aedeagal spiculum. The species of this group are distinguished according to the following key:

- 1 Pale grayish species, hemelytra with minute dark irroration. Spiculum (Fig. 2 E–F) broad. Left style (Fig. 2 B–C) with edentate blunt sensory lobe. Right style as in Fig. 2 A. Afghanistan ..... *P. paghmanus* LINNAVUORI, 1974
- Dark species. Hemelytra largely fuscous. Genitalia different ..... 2
- 2 Eyes in male large, about as broad as synthlipsis. Left style (Fig. 2 G) with very long ligulate sensory lobe. Spiculum as in Fig. 2 H. Middle Asia ... *P. moestus* REUTER, 1903
- Eyes in males smaller. Left style different ..... 3
- 3 Ocular index 1.35–1.44 (♂). Sensory lobe of left style (Fig. 2 J–K) rounded. Right style and spiculum as in Fig. 2 I and L–M. Turkey ..... *P. falcatus* LINNAVUORI, 1984
- Ocular index 1.28 (♂). Left style (Fig. 1 E–F) with narrow prominent sensory lobe ..... *P. dashtanus* sp.n.

***Phytocoris (Eckerleinius) kandovanus* sp.n. (Fig. 3 A–I)**

Types: Iran, Tehran, Kandovan, alt. 2550 m., male holotype, 18 male and female paratypes, 24.VII.1995, Linnavuori. Holotype and paratypes in Plant Pests and Diseases Research Institute, Tehran, paratypes also in coll. Linnavuori.

Description: Length 6.75–7.0 mm (♂), 5.25–5.5 mm (♀). Shiny. Grayish ochraceous. Median stripe on tylus, spots on lora and stripes bordering antennal tubercles blackish; frons with several dark brown lateral arcs and a pale median stripe, extending across pronotum to tip of scutellum; eyes pale brownish gray. 1st antennal segment brown with pale irroration, other segments yellow–brown. Pronotum with the



Fig. 2. *Phytocoris paghmanus* LINNAVUORI: (A) right style; (B-D) left style; (E-F) spiculum. – *P. moestus* Reuter: (G) left style; (H) spiculum. – *P. falcatus* LINNAVUORI: (I) right style; (J-K) left style; (L-M) spiculum. – A-F and I-M after LINNAVUORI 1974 and 1984, G-H after PUTSHKOV & PUTSHKOV 1983.

very lateral and basal margins whitish and narrowly bordered with dark brown, disk yellowish brown with faint pale midline. Scutellum with faint pale median stripe, bordered with fuscous, base dark brown with a few pale spots, apical part with two elongate dark brown dashes. Hemelytra with longitudinal dashes of dark brown irroration, cuneus, excluding dark brown median margin and a longitudinal dash in inner basal angle, pale; membrane with dense dark brown irroration, veins pale. Propleura with two longitudinal blackish stripes; under surface otherwise ornamented with blackish spots and irroration. Femora dark brown with pale irroration, bases of femora pale. Tibiae pale ochraceous, fore tibiae and base and subbasal ring on hind tibiae embrowned. Tarsi pale, more or less embrowned.

Male. Macropterous. Body elongate. Hair covering on upper surface pale. Head about 0.6 x as broad as basal width of pronotum, in lateral view higher than long, frons convex, a distinct notch between it and base of tylus; ocular index 2.0–2.32. Proportions between antennal segments 38:60:35:30, 1st segment 1.5–1.7 x as long as diatone, relatively gracile, provided with semierect pale bristles, 2nd segment 2.3–2.8 x

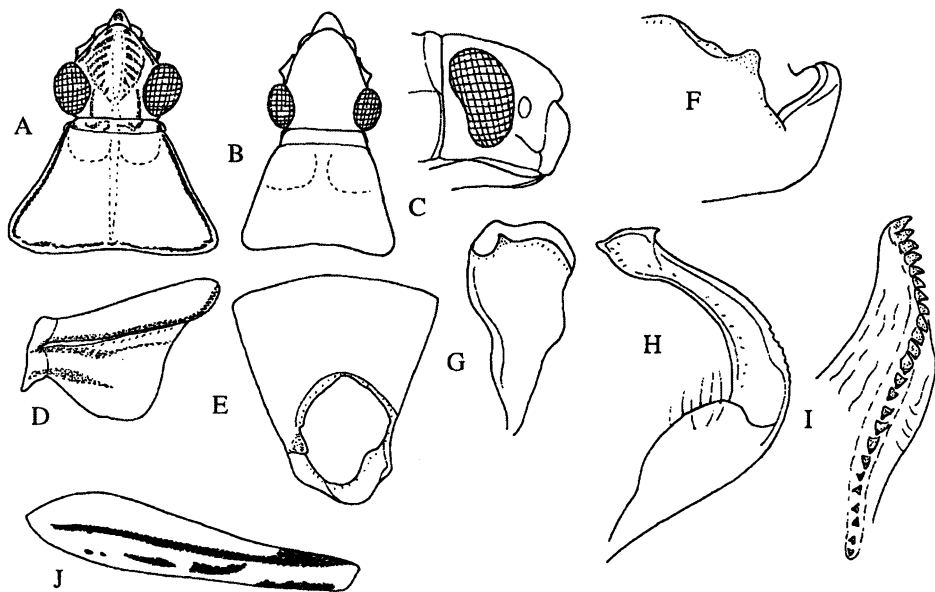


Fig. 3. *Phytocoris kandovanus* sp.n.: (A–B) male and female head and pronotum; (C) male head in lateral view; (D) male pronotum in lateral view; (E–F) pygofer in dorsal and lateral view; (G) right style; (H) left style; (I) spiculum. – *P. lineaticollis* REUTER: (J) hind femur in ventral view.

as long as diatone, 1.40–1.55 x as long as basal width of pronotum. Rostrum extending beyond hind coxae. Pronotum about 1.8 x as broad as long in middle, lateral margins subacute, slightly insinuated, hind margin shallowly insinuated, smooth. Hair covering of legs pale and short, tibial spines pale.

Female. Brachypterous. Body elongately pyriform. Head 0.82–0.86 x as broad as basal width of pronotum; ocular index 2.46–2.75. Proportions between antennal segments 39:60:35:26, 1st segment 1.62–1.65 x as long as diatone, 2nd segment 2.5–2.6 x as long as diatone, 2.14 x as long as basal width of pronotum. Pronotum about 1.65 x as broad as long in middle, lateral margins subacute, moderately diverging caudad, basal margin shallowly insinuated; disk convex, sloping laterad. Hemelytra extending beyond middle of abdomen, about 2.6–2.8 x as long as broad. Other characters as in male.

Male genitalia in Fig. 3 E–I. Pygofer with a blunt tubercle on left side of genital opening. Right style broad. Apex of hypophysis of left style short, triangularly expanded. Spiculum of aedeagus with about 24 teeth.

Habitat: On *Astragalus* sp. in a mountain slope.

Differential diagnosis: Of the *Phytocoris lineaticollis* – group (revision in LINNAVUORI 1972a: 163–164). Belonging to the group of species in which the whitish

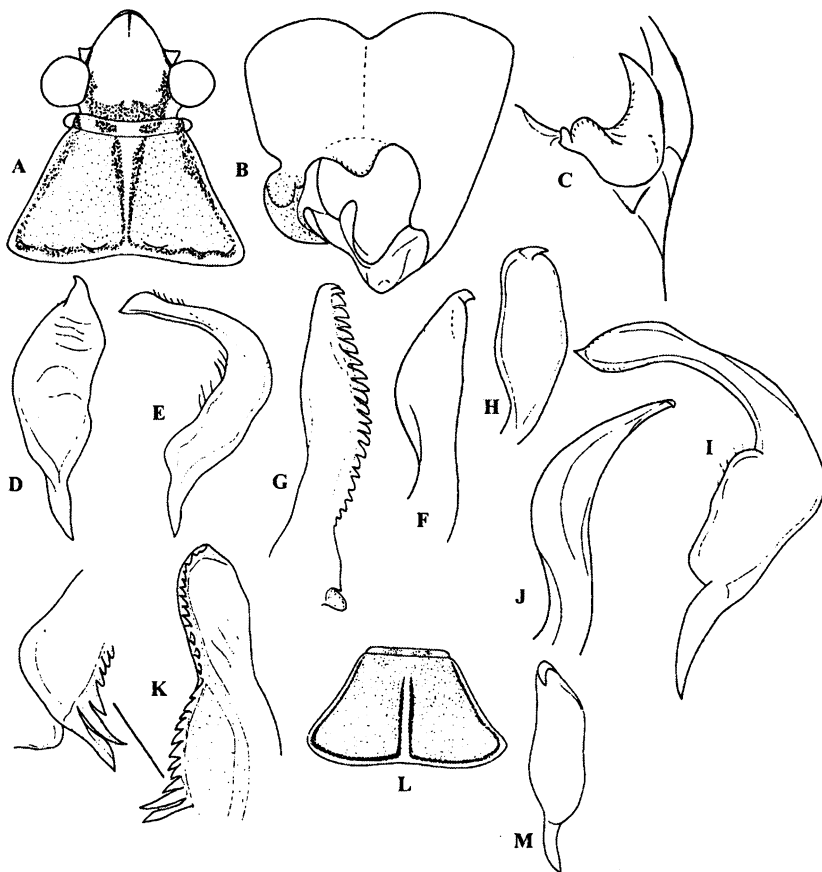
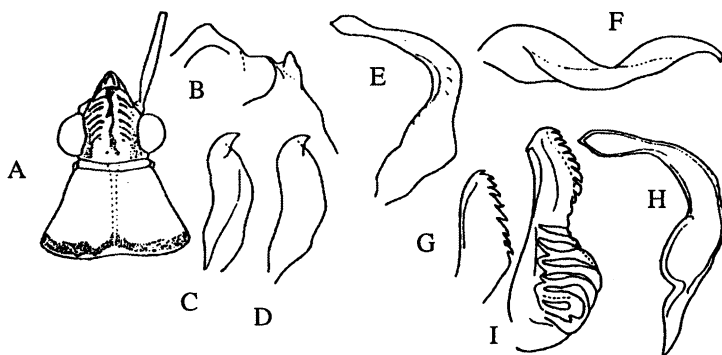


Fig. 4. *Phytocoris lineaticollis* REUTER: (A) male head and pronotum; (B) pygofer in dorsal view; (C) lateral process of pygofer from side; (D) right style; (E) left style; (F) hypophysis of left style in broad aspect; (G) spiculum. – *P. crito* LINNAVUORI : (H) right style; (I) left style; (J) hypophysis of left style in broad aspect; (K) spiculum. – *P. moira* LINNAVUORI : (L) male pronotum; (M) right style. – After LINNAVUORI 1972a.

lateral margins of the pronotum are subacute and bordered by a narrow dark line both above and below (Fig. 3 D). The species of this group are distinguished according to the following key:

- 1 Basal margin of pronotum (Figs 4 A and 5 A) with four tubercles bearing black hairs. Femora (Fig. 3 J) pale, ornamented with longitudinal black bands ..... 2
- Basal margin of pronotum smooth. Femora dark brown with pale mottling ..... 4
- 2 1st antennal segment whitish, with indistinct longitudinal infuscation. Male genitalia as in Fig. 4 H–K. Left side of pygofer without tubercle. Iran .....  
..... *P. crito* LINNAVUORI, 1972



**Fig. 5.** *Phytocoris eileithya* LINNAVUORI: (A) male head and pronotum; (B) pygofer in dorsal view; (C–D) right style; (E) left style; (F) hypophysis of left style in broad aspect; (G) spiculum. – *P. moira* LINNAVUORI: (H) left style; (I) spiculum. – After LINNAVUORI 1971.

- 1st antennal segment predominantly black with whitish spots or lines ..... 3
- 3 2nd antennal segment uniformly blackish brown. Male genitalia in Fig. 4 B–G. Left side of pygofer with large horn-like process. Spiculum of aedeagus gracile, with about 21 teeth, base with a conical tubercle. Iran ..... *P. lineaticollis* REUTER, 1904
- 2nd antennal segment yellow-brown, base blackish with a white ring. Male genitalia in Fig. 5 B–G. Left side of pygofer with short tubercle. Spiculum of aedeagus broad, with about 9 teeth. Armenia, Iran (Gilan) ..... *P. eileithya* LINNAVUORI, 1971
- 4 Large pale species, length (♂) 7.75–8.75 mm. Pronotum (Fig. 4 L) yellow-ochraceous, the whitish lateral and basal margins and percurrent pale midline on disk contrastingly bordered with fuscous. Male genitalia in Fig. 4 M, 5 H–I. Apical part of hypophysis of left style elongately expanded. Spiculum of aedeagus basally enlarged. Turkmenistan, Iran (Khorasan) ..... *P. moira* LINNAVUORI, 1972
- Smaller, length (♂) 6.75–7.0 mm, (♀) 5.25–5.5 mm. Darker. Pronotum yellowish-brown, faint pale midline on disk not bordered with fuscous. Male genitalia in Fig. 3 E–I. Apex of hypophysis of left style triangularly expanded. Spiculum of aedeagus gracile ..... *P. kandovanus* sp.n.

In the other species of the *P. lineaticollis* – group the lateral margins of the pronotum are more or less rounded ventrally and less contrastingly colored.

***Phytocoris (Eckerleinus) khalkhalicus* sp.n. (Fig. 6 A–J)**

Type: Iran, E Azerbaijan, 20–30 km E Khalkhal, male holotype, 21.VII.1996, Linnavuori, in coll. Linnavuori.

Male. Length 6.75 mm. Pale ochraceous with relatively faint dark pattern. V-shaped basal spot on tylus and a stripe on upper margins of lora fuscous; frons with

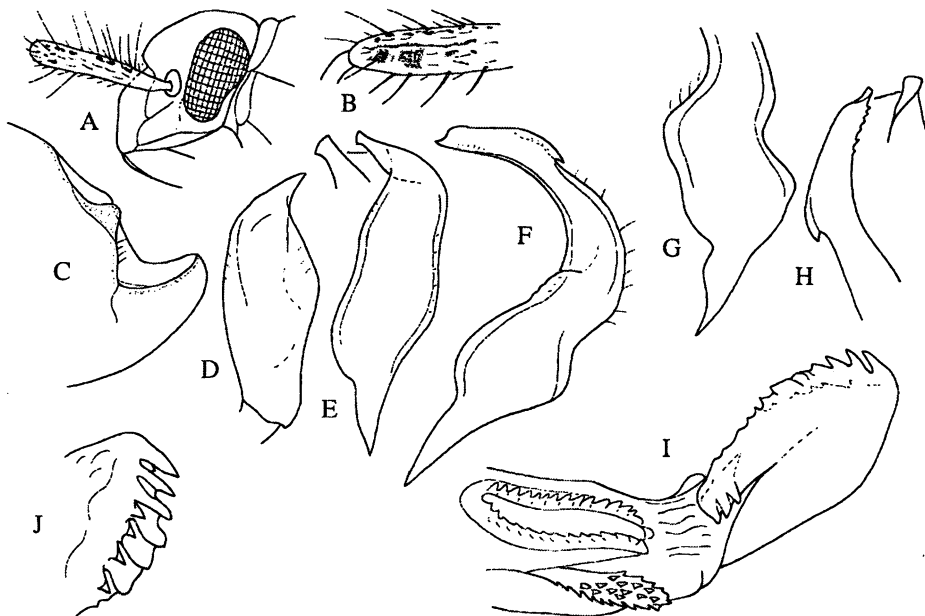


Fig. 6. *Phytocoris khalkhalicus* sp.n.: (A) male head in lateral view; (B) apex of fore femur; (C) pygofer in lateral view; (D-E) right style; (F) left style; (G-H) sensory lobe and hypophysis of left style in broad aspect; (I) apical part of aedeagus; (J) apex of spiculum.

faint brownish lateral arcs, each side of vertex with irregular faint reddish or fuscous markings; eyes gray. 1st antennal segment with abundant dark brown mottling, 2nd segment yellow-brown, base whitish, apex embrowned, other segments dark brown, base of 3rd pale. Pronotum: collar with two faint reddish brown spots, middle of anterior part of disk pale, nearly immaculate, other parts with scanty and faint brown irroration, basal margin bordered with a row of 4 transverse dark brown stripes. Scutellum with faint brown mottling. Hemelytra with dense fuscous irroration along claval suture on clavus and corium, medioapical part of mesocorium, costal margin, and apical part of cuneus; membrane with dense dark irroration, veins pale. Sides of thorax with 3 longitudinal dark fuscous bands. Abdomen largely infusate. Legs pale ochraceous. Fore and middle femora with abundant dark mottling forming a longitudinal irregular stripe on upper surface; hind femur with dense fuscous mottling, basal third immaculate. Apex and two narrow rings on fore tibiae, two narrow rings on middle tibiae and two irregular spots on hind tibiae dark fuscous, pale brown tibial spines arising from small dark dots. Tarsi ochraceous, 2nd tarsomeres and bases of 3rd fuscous.

Macropterous. Body elongate. Upper surface with appressed pale pubescence and longish semierect hairs (length about 0.17–0.18 mm), which on the head and anterior part of the pronotum are pale, on the other parts of the body black. Head 0.63 x as broad as



basal width of pronotum, in lateral view higher than long, frons protruding, a distinct notch between it and base of tylus; eyes small, ocular index 1.64. Proportions between antennal segments 28:51:30:23, 1st segment 1.25 x as long as diatone, relatively incrassate, 8.75 x as long as broad, with long erect pale brown bristles (length of bristles 0.18 mm) and smooth blackish hairs; 2nd segment 2.04 x as long as diatone, 1.28 x as long as basal width of pronotum. Rostrum extending beyond middle of abdomen. Pronotum nearly twice as broad as long in middle, lateral margins shallowly insinuated. Femora with long erect pale bristles (length of bristles on hind femora 0.21–0.23 mm) and appressed pale hairs.

Male genitalia as in Fig. 6 C–I. Left side of pygofer with blunt tubercle. Aedeagus with a relatively short spiculum and a narrow dentate process near the secondary gonopore.

Habitat: On *Astragalus* sp. in a mountain meadow.

Differential diagnosis: The Middle East species of the subgenus *Eckerleinius* WAGNER have been treated in LINNAVUORI 1972a, 1974 and 1984, PUCHKOV 1978 and WAGNER 1968. *P. khalkhalicus* differs from the other species by the conspicuous black hair covering of the upper surface and the structure of the aedeagus. Moreover, the eyes are small, the 1st antennal segment incrassate and provided, like the femora, with long erect pale bristles. The latter character also occurs in the subgenus *Eriamiris* WAGNER, but in all known species of that subgenus the 1st antennal segment is gracile.

Phylinae

Hallodapini

### ***Systellonotus jirandehanus* sp.n. (Fig. 7)**

Types: Iran, Gilan, Sang Rud–Jirandeh, female holotype, 6–8.VII. 1996, female paratype, 31.V.1995, Linnavuori, in coll.Linnavuori.

Description: Female. Length 5.0 mm. Black. Opaque. Eyes grayish. Antennae black, 1st segment dark yellowish brown. Hemelytra with a transverse triangular white spot as indicated in Fig.7. Each side of apical margin of tergite III and caudolateral angles of paratergites III with triangular callose white spot; the very lateral margins of paratergites III–VIII pale. Under surface and legs uniformly black.

Brachypterous. Upper surface with long erect black bristles and short semi-erect black pubescence. Head 1.17 x as broad as basal width of pronotum, in apical view 1.1 x as high as broad, in lateral view 1.15 x as long as high; ocular index 2.4. Proportions between antennal segments 30:100: 85: 68, 1st segment 0.44 x as long as diatone, 2nd 1.47 x as long as diatone, 1.72 x as long as basal width of pronotum. Rostrum extending beyond middle coxae. Pronotum 1.16 x as broad as long in middle, anterior part convex, humeral angles subacute, hind margin shallowly insinuated. Hemelytra

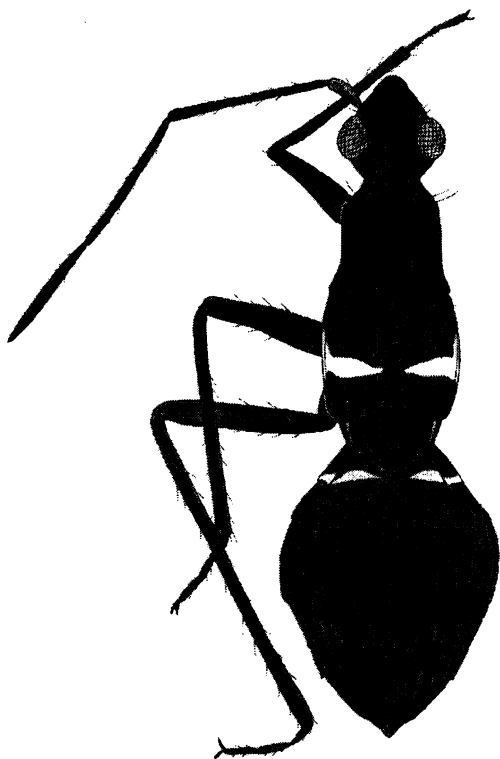


Fig. 7. *Systellonotus jirandehanus* sp.n.

extending to apex of 2nd tergite. Abdomen strongly constricted basally, ovate, 1.25 x as long as its greatest width. Hind tibia 3.8 x as long as basal width of pronotum.

Habitat: In association with *Camponotus* sp. under *Astragalus* and other herbs in a dry gravelly slope of a hill.

Differential diagnosis: Belonging to the group of species characterized by long erect bristles on the dorsal surface of the body (revision in LINNAVUORI 1972b: 40–44 and WAGNER 1973: 326–336). In *S. championi* REUTER, 1903, (Spain), *S. insularis* WAGNER, 1948, (Corsica), *S. triguttatus* (LINNAEUS, 1767) (widespread in Europe), and *S. weberi* WAGNER, 1955, (France), the ground color of the hemelytra is reddish brown, the 1st antennal segment and the basal part of the 2nd are yellowish brown, the base of the 3rd antennal segment is whitish, and the legs are brown. *S. usaifirae* LINNAVUORI, 1972, (Yemen), is larger, length 5.75 mm, the base of the 3rd antennal segment is white, the paratergites are greenish, the erect bristles on the upper surface are pale, and the appressed pubescence is silvery. In *S. discoidalis* HORVÁTH, 1892, (Pontomediterranean), the whole body is shiny.

***Lepidargyrus hafezi* sp.n. (Fig. 8 A–F)**

Types: Iran, Gilan, Sang Rud– Jirandeh, male holotype, 6 male and female paratypes, 25.VI.1996, Linnavuori, in coll. Linnavuori, paratypes also in College of Agriculture, University of Gilan, Rasht.

Description: Length ♂ 3.75–4.5 mm, ♀ 3.75 mm. Shiny. Grayish brown, female sometimes with reddish tinge. Head blackish with basal margin of vertex pale, in ♀ sometimes only tylus and genae black; eyes grayish brown. Antennae black. Scutellum grayish brown with basal angles and apex pale. Hemelytra grayish brown, cuneus usually reddish; membrane with veins dark brown. Under surface blackish. Legs yellow–brown, femora, in females especially, with reddish tinge. Tibial spines and tarsi black.

Body elongate (♂) or ovate (♀), 2.4–2.5 (♂) or 2.2–2.3 (♀) x as long as broad in middle of hemelytra. Upper surface with black semierect bristles and appressed silvery scales. Head (♂ ♀) 0.61–0.65 x as broad as basal width of pronotum; ocular index 1.80–1.92 (♂), 1.9–2.16 (♀). Proportions between antennal segments 14:54:34:23 (♀), 15:55:39:23 (♂), 2nd segment 1.06–1.16 (♂) or 1.02–1.07 (♀) x as long as diatone,

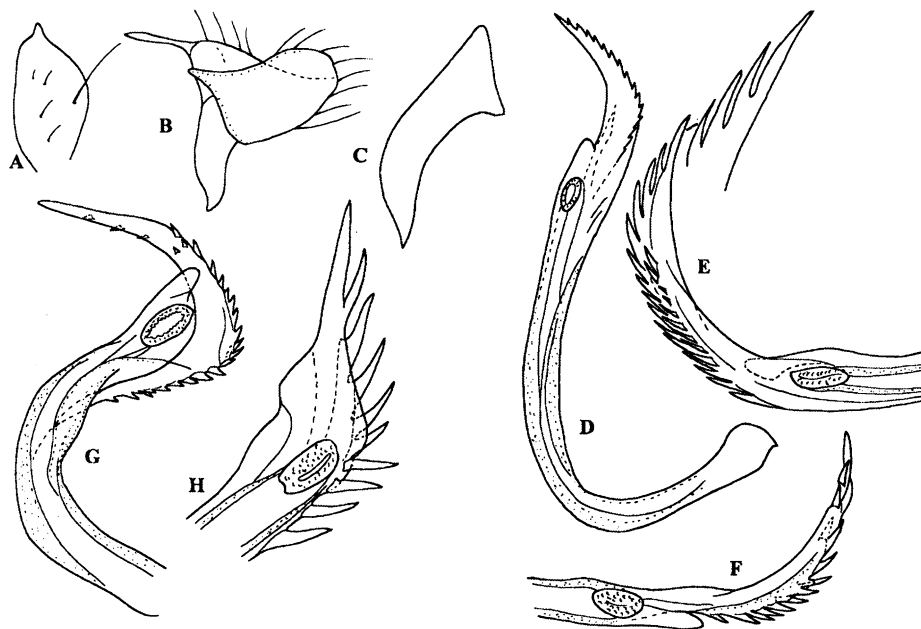


Fig. 8. *Lepidargyrus hafezi* sp.n.: (A) right style; (B) left style; (C) theca; (D) vesica (in glycerine); (E–F) apex of vesica (slide mount). – *L. iranicus* MUMINOV: (G) vesica (in slide mount) (ex from Khalkhal). – *L. seidenstueckeri* (WAGNER) (paratype): (H) apex of vesica.

0.70 (♂) or 0.63–0.70 (♀) x as long as basal width of pronotum. Rostrum extending to middle coxae.

Male genitalia in Fig. 8 A–F. Vesica gracile, apical part in front of the secondary gonopore with numerous long spines.

Habitat: On herbaceous plants in a dry gravelly slope of a hill.

Etymology: The species is dedicated to Mohammed Hafez, a famous Persian poet.

Differential diagnosis: The genus *Lepidargyrus* MUMINOV, 1962, was revised by DRAPOLYUYK 1993 and LINNAVUORI 1994. Most species of the genus are black. The pale species *L. lividus* (REUTER, 1894) (NW Africa), *L. instabilis* (REUTER, 1878) (Middle East), *L. syriacus* (WAGNER, 1956) (Middle East), and *L. iranicus* MUMINOV, 1962 (Azerbaijan, Iran, Turkmenistan) differ from *L. hafezi* in a much robuster vesica. The vesica of *L. iranicus*, which also occurs in the area (many exx from E Azerbaijan, Khalkhal, 30.VII.1996, and Majareh, 21–22.VII.1996, LINNAVUORI), is illustrated in Figs 8 G and 9 B–C. A gracile vesica is only found in two black-colored species, *L. puchkovi* DRAPOLYUYK, 1993 (Azerbaijan, Iran) and *L. seidenstueckeri* (WAGNER, 1956) (Turkey, Syria, Palestine). The vesica of the former species is illustrated in Fig. 9 A, and of the latter in Figs 8 H and 9 D.

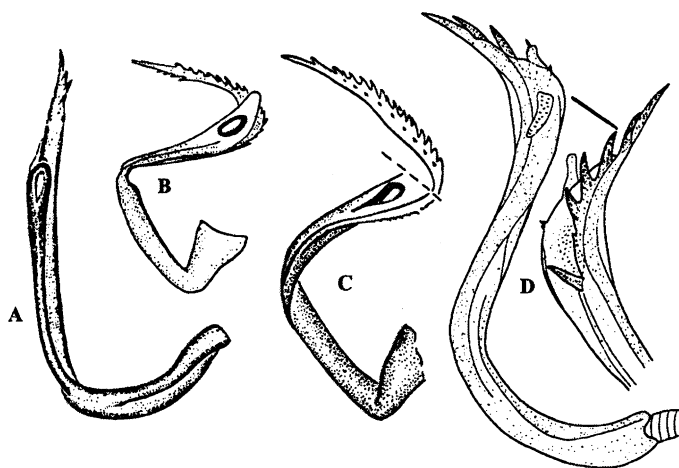


Fig. 9. *Lepidargyrus puchkovi* DRAPOLYUYK: (A) vesica. – *L. iranicus* MUMINOV: (B–C) vesica of two exx. – *L. seidenstueckeri* (WAGNER): (D) vesica. A–C after DRAPOLYUYK 1993, D after LINNAVUORI 1994.

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