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On the subgenus *Pseudoleirides* (Coleoptera: Carabidae: *Amara*) from Iran, with descriptions of two new species

Dva nové druhy podrodu *Pseudoleirides* (Coleoptera: Carabidae: *Amara*) z Íránu

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Abstract. Two new *Amara* Bonelli, 1810 of the subgenus *Pseudoleirides* Kryzhanovskij, 1968 are described and compared with closely related species: *Amara* (*P.*) *muilwijki* sp. nov. and *A.* (*P.*) *oshtoranensis* sp. nov. *Amara* (*P.*) *oshtoranensis* sp. nov. is the first *Pseudoleirides* species with three pairs of lateral setae on the pronotum. The new species occur at high altitude (ca. 3000–3600 m a.s.l.) in the Zagros Mountains (Iran). *Amara* (*P.*) *shirazica* Hejkal, 2008 is redescribed, based on the first known male specimen.

INTRODUCTION

Sixteen *Amara* Bonelli, 1810 species of the subgenus *Pseudoleirides* Kryzhanovskij, 1968 are known from Iran. Eleven endemic species occur in the Zagros Mountains: *Amara* (*P.*) *cadoudali* Morvan, 1977, *A.* (*P.*) *escalerai* Hejkal, 2008, *A.* (*P.*) *fuscolucida* Hejkal et Muilwijk, 2019, *A.* (*P.*) *iranica* Kryzhanovskij, 1968, *A.* (*P.*) *khorramabadensis* Hejkal, 2008, *A.* (*P.*) *loeffleri* Jedlička, 1963, *A.* (*P.*) *murastyii* Hejkal et Muilwijk, 2019, *A.* (*P.*) *rutjani* Muilwijk et Hejkal, 2019, *A.* (*P.*) *shirazica* Hejkal, 2008, *A.* (*P.*) *yasujensis* Hejkal, 2008, and *A.* (*P.*) *zagrosensis* (Morvan, 1973) (Jedlička 1963, Kryzhanovskij 1968, Morvan 1973, 1977, Hejkal 2008, Hejkal & Muilwijk 2019). *Amara* (*P.*) *szekessyi* Jedlička, 1953 is a widely distributed species known from northwestern, western and northern Iran including the Zagros Mountains (Jedlička 1953, Hejkal 2008). Four remaining taxa were found as endemics in other areas of Iran: *Amara* (*P.*) *bucharica mazandarana* Hieke, 1976 (the Kuh-e Aladagh Mountains in northeastern Iran), *A.* (*P.*) *chodjaii* Morvan, 1975 (the Kuh-e Sahand Mountains in northwestern Iran), *A.* (*P.*) *hamadanensis* Hejkal, 2008 (the Kuh-e Alvand Mountains in western Iran), and *A.* (*P.*) *kermanensis* Hejkal, 2008 (the Kuh-e Lalehzar Mountains in southeastern Iran) (Morvan 1975, Hieke 1976, Hejkal 2008).

The outstanding Dutch entomologist Jan Muilwijk collected a number of *Pseudoleirides* specimens in the Zagros Mountains in 2019. He recognized that this collection included new species. I unequivocally confirm his opinion after a study of this material. Hence, the main purpose of this study is to describe the new *Pseudoleirides* species and to distinguish them from their close relatives.

MATERIAL AND METHODS

In total, 45 specimens of *Pseudoleirides* were studied. The specimens are deposited in the following collections:
HMIM = Hayk Mirzayans Insect Museum, Tehran, Iran;
MFN = Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung, Berlin, Germany;
NBCL = Naturalis Biodiversity Center, Leiden, Netherlands;

NMPC = Department of Entomology, National Museum, Prague, Czech Republic;
cJH = collection of J. Hejkal, Kraslice, Czech Republic;
cJM = collection of J. Muilwijk, Bilthoven, Netherlands.

Measurements of body parts and body ratios used in the text were taken as follows:
total length = length measured from the anterior margin of labrum to the apex of elytra;
pronotum length = length measured along the middle line;
elytra length = length measured along suture from the basal bead of the elytron to the apex;
length of median lobe = length of the whole median lobe in dorsal view;
length of apical lamella of median lobe = length of the apical lamella measured from the apical edge of the ostium to the tip of the median lobe;
pronotum width = maximum width of the pronotum;
width of pronotum anterior margin = length measured between anterior angles;
width of pronotum posterior margin = length measured between posterior angles;
elytra width = maximum width of elytra;
width of median lobe = maximum width of the whole median lobe in dorsal view;
width of apical lamella of median lobe = maximum width of apical lamella in dorsal view;
ratio of width/length of pronotum = ratio of maximum width of pronotum/length of pronotum measured along middle line;
ratio of length/width of elytra = ratio of length measured along suture from the basal bead of an elytron to the apex of elytra/ maximum width of elytra;
ratio of length of elytra/length of pronotum = length measured along suture from the basal bead of an elytron to the apex of elytra/length of pronotum measured along middle line;
ratio of length/width of apical lamella of median lobe = ratio of length of apical lamella measured from the apical edge of the ostium to the tip of the median lobe/maximum width of apical lamella in dorsal view;
ratio of anterior margin/posterior margin of pronotum = ratio of width of pronotum between anterior angles/width of pronotum between posterior angles.

The following technical equipment was used:
J. Hejkal: Measurements were made with a MBS-10 stereo microscope at magnifications of 8× to 98× with an ocular micrometre.
P. Krásenský: Images of habitus were taken using a Canon EOS 5D mark II in combination with a Canon MP-E65 1-5× macro lens. Images of genitalia were taken with a Canon EOS 5D mark II in combination with a Canon 200 mm f/2.8 L USM and microscope objective Nikon MPlan 10×. Resulting images were focus stacked using Zerene Stacker and then postprocessed in Adobe Photoshop CC 2020.
J. Muilwijk: Genitalia were dissected, cleaned in 10% KOH and fixed in Euparal.

Forward slash in "Type material" and "Type material examined" indicates separate labels.

RESULTS

Amara (*Pseudoleirides*) *muilwijki* sp. nov.

(Figs 1–3)

Type material. Holotype: ♂, labelled: "IR, Fars, Kuh-e Bul, 14,5 km S.E. Eqlid, 8.vi.2019, 3500–3650 m, 30°46′58″N 52°45′27″E, Muilwijk J. / HOLOTYPE, *Amara* (*Pseudoleirides*) *muilwijki* sp. n. J. Hejkal des. 2020" (red printed label), deposited in NMPC. Paratypes: in total 19 ♂♂, 17 ♀♀, labelled: "PARATYPE No 1 to No 36, *Amara* (*Pseudoleirides*) *muilwijki* sp. n. J. Hejkal des. 2020" (red printed labels), with same data as the holotype, deposited in cJH (3 ♂♂, No 1, 2, 19, 3 ♀♀, No 20, 21, 36), cJM (14 ♂♂, No 3 to 16, 12 ♀♀, No 22 to 33), NBCL (1 ♂, No 17, 1 ♀, No 34) and HMIM (1 ♂, No 18, 1 ♀, No 35).

Description. Body large, slightly to strongly convex, dorsal side dark red-brown to dark brown, labrum red-brown, mandibles red-brown to dark brown, antennae and legs red-brown to brown-red, maxillary and labial palpi brown-red, dorsal side shining or with slight lustre







Figs 1–3. *Amara* (*Pseudoleirides*) *muilwijki* sp. nov. 1, 2: holotype, male, body length 13.5 mm; 3: paratype No 20, female. 1: habitus in dorsal view, 2: apical lamella of median lobe in dorsal view, 3: last stylomere in ventral view. Scale: 1 mm for Fig. 2; 0.5 mm for Fig. 3. Photographs by P. Krásenský.
Obr. 1–3. *Amara* (*Pseudoleirides*) *muilwijki* sp. nov. 1, 2: holotypus, samec, délka těla 13,5 mm; 3: paratypus č. 20, samice. 1: vzhled ze hřbetní strany, 2: špice penisu v dorsálním pohledu, 3: poslední článek stylu ve ventrálním pohledu. Měřítko: 1 mm pro obr. 2; 0,5 mm pro obr. 3. Fotografie P. Krásenský.

in males and with slight lustre in females; ventral side red-brown (Fig. 1). Total length 12.1–14.9 mm, males: 12.1–13.5 mm (holotype 13.5 mm, average 12.7 mm, $n = 20$), females: 12.9–14.9 mm (average 13.8 mm, $n = 17$).

Head slightly broadened, densely to sparsely and mostly finely punctate, eyes very slightly to slightly convex. Two supraorbital setae, anterior margin of labrum with six (five in paratypes No 24 and 36) setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short, wide to narrow and shallow or almost absent. Antennae relatively

long, surpassing (in males and some females) or reaching (in some females) hind margin of pronotum. Antennomere 1 narrow.

Pronotum large and relatively long (ratio of width/length = 1.34–1.47, holotype 1.41), strongly convex, widest at middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.83–0.93, holotype 0.90), lateral margins convex before posterior angles. Anterior margin of pronotum shallowly to very shallowly emarginate, anterior angles slightly protruding, rounded. Posterior angles obtuse, with shortly rounded apex. Pronotal base very shallowly emarginate to almost straight. Inner basal impression mostly deep, narrow and long. Outer basal impression shallow (in holotype) to almost absent, short, not separated from lateral margin by a callus. Anterior part of pronotum sparsely and finely to coarsely punctate (in holotype) or without punctures. Lateral margin of pronotum sparsely to very sparsely and coarsely to finely punctate. Pronotal base densely (in holotype) to very sparsely and coarsely punctate. Two pairs of lateral setae, anterolateral pair located slightly to markedly before middle of lateral margin, posterolateral pair near posterior angles.

Elytra elongate (ratio of length/width = 1.52–1.63, holotype 1.52), slightly to strongly convex, declivity of elytra steep before apex in lateral view. Striae distinct, strongly to moderately deepened and widened, very finely punctate. Row of umbilicate setiferous punctures in stria 8 widely interrupted. Stria 7 with two to three distinct setiferous punctures before apex. Parascutellar stria continuous, joining elytral stria 1, in some specimens interrupted at posterior part or not touching stria 1. Parascutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead narrow, slightly sinuate to almost straight. Elytral humeri angulate to shortly rounded (in holotype), obtuse to very obtuse, distinct humeral tooth absent. Microsculpture consisting of isodiametric meshes, coarser in females. Flight wings reduced.

Ventral. Mentum with simple to weakly bifid median tooth. Prosternum smooth medially. Prosternal process shallowly (in holotype) to very shallowly beaded (in some specimens bead absent or interrupted), with 2–5 (4 in holotype) setae anteriorly. Proepisternum smooth. Mesepisternum sparsely to densely and coarsely punctate. Metepisternum smooth or very sparsely to sparsely and coarsely to finely punctate, as wide as long. Sides of abdominal ventrites 1 and 2 sparsely to very sparsely and coarsely to finely punctate, sides of abdominal ventrite 3 sparsely to very sparsely and coarsely punctate, sides of abdominal ventrites 4 to 6 wrinkled or almost smooth, with fine punctures in some specimens. Abdominal ventrites 3 to 5 with one pair of setiferous punctures (abdominal ventrite 4 with three setiferous punctures in paratype No 21). Male with two, female with four (five in paratype No 20) setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Femora of front legs behind anterior margin with 4–8 setiferous punctures ventrally. Femora of middle legs before posterior margin with 3–7 (5–6 in holotype) setiferous punctures ventrally. Femora of hind legs before posterior margin with 3–4 setiferous punctures ventrally. Inner edge of male middle tibiae without teeth. Inner side of male hind tibiae without brush-like setae.

Aedeagus. Median lobe very long and relatively broad in dorsal view (length 3.31–3.58 mm, width 0.73–0.75 mm; holotype 3.50 and 0.75). Apical lamella of median lobe markedly elongate in dorsal view (ratio of length/width = 2.99–3.31, holotype 3.10), markedly (in holotype) to slightly curved to left (Fig. 2). Right paramere without hook, flattened.

Styli large, last stylomere broad and tongue-shaped, with short and fine lateral spurs (Fig. 3).



Fig. 4. Habitat of *Amara* (*Pseudoleirides*) *muilwijki* sp. nov. on the slope of the Kuh-e Bul Mountain. Photographs by S. Rahideh.
Obr. 4. Biotop *Amara* (*Pseudoleirides*) *muilwijki* sp. nov. na svahu hory Kuh-e Bul. Fotografie S. Rahideh.

Differential diagnosis. *Amara* (*P.*) *muilwijki* sp. nov. is a unmistakable species with large and strongly convex pronotum, which is markedly narrowed toward both anterior and posterior angles. Other species of *Pseudoleirides* from northern Fars province, *Amara* (*P.*) *fuscolucida* (southwestern Iran, Fars province near the border with the Kohgiluyeh-va-Boyer Ahmad province, the Zagros mountain range: Hejkal & Muilwijk 2019), differs in having more convex eyes, distinctly shorter pronotum (ratio of width/length = 1.61–1.63; see Hejkal & Muilwijk 2019), shiny elytra in females, and markedly shorter apical lamella of median lobe in dorsal view (ratio of length/width = 2.55; see Hejkal & Muilwijk 2019). *Amara* (*P.*) *muilwijki* sp. nov. is not known to occur sympatrically with any other *Pseudoleirides* species.
Distribution and habitat. *Amara* (*P.*) *muilwijki* sp. nov. was found in the Zagros mountain range in the north of Fars province in southwestern Iran. The new species is so far known only from the type locality. The specimens were collected under stones in humid soil along a snow-field at an altitude of ca. 3550–3600 m a.s.l. (Fig. 4). The snow-field was lying in a shallow valley and ended in a brook (J. Muilwijk, pers. comm.).
Etymology. Dedicated, with great pleasure, to my friend Jan Muilwijk (Bilthoven, Netherlands), the collector of the new species and an excellent Carabidae specialist.

Amara (*Pseudoleirides*) *oshtoranensis* sp. nov.
(Figs 5–6, 9–10)

Type material. Holotype: ♂, labelled: "IR, Lorestan, Mountain 2 km S. Gahar, 4.vi.2019, 3000 m, 33°17′39″N 49°16′18″E, Muilwijk J. / HOLOTYPE, *Amara* (*Pseudoleirides*) *oshtoranensis* sp. n. J. Hejkal des. 2020" (red printed label), deposited in NMPC. Paratypes: in total 3 ♂♂, 2 ♀♀, labelled: "PARATYPE No 1 to No 5, *Amara* (*Pseudoleirides*) *oshtoranensis* sp. n. J. Hejkal des. 2020" (red printed labels), with same data as the holotype, deposited in cJM (1 ♂, No 1), cJH (1 ♂, No 2, 1 ♀, No 4), HMIM (1 ♂, No 3) and NBCL (1 ♀, No 5).
Description. Body large, slightly to strongly convex, dorsal side dark brown, labrum red-brown, mandibles red-brown to dark brown, antennae and legs brown-red to red-brown, maxillary and labial palpi brown-red, dorsal side shining in males and with slight lustre in females; ventral side red-brown (Figs 5–6). Total length 13.2–15.2 mm, males: 13.2–13.5 mm (holotype 13.5 mm, average 13.4 mm, $n = 4$), females: 13.9 and 15.2 mm (average 14.6 mm, $n = 2$).

Head broadened, densely and coarsely punctate, eyes slightly to very slightly convex. Two supraorbital setae, anterior margin of labrum with six (five in paratype No 5) setiferous punctures. Anterior part of clypeus without arcuate callus. Frontal furrows short, wide and shallow. Antennae reaching hind margin of pronotum. Antennomere 1 relatively narrow.

Pronotum relatively narrow (ratio of width/length = 1.41–1.53, holotype 1.51), slightly convex, widest before middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.96–1.04, holotype 1.04), lateral margins slightly to markedly sinuate before posterior angles. Anterior margin of pronotum shallowly to very shallowly emarginate, anterior angles slightly protruding, rounded. Posterior angles short to protruding, acute, with distinct apex. Pronotal base shallowly emarginate. Inner basal impression deep, wide or narrow, long. Outer basal impression shallow (in holotype) to almost absent (deep in paratype No 1), short, not separated from lateral margin by a callus. Anterior part of pronotum densely and coarsely to finely punctate. Disc sparsely to densely and finely punctate. Lateral margin of pronotum sparsely to densely and coarsely to finely punctate. Pronotal base mostly densely and coarsely to finely punctate. Mostly three pairs of lateral setae, two anterolateral pairs located before or at middle of lateral margin, one posterolateral pair near posterior angles (two pairs in paratype No 1, four setae at left side margin in paratype No 4).

Elytra large and elongate (ratio of length/width = 1.48–1.55, holotype 1.48), slightly to strongly convex, declivity of elytra steep before apex in lateral view. Striae distinct, moderately to strongly deepened and widened, finely punctate. Row of umbilicate setiferous punctures in stria 8 continuous (in holotype) or interrupted. Stria 7 with two to three distinct setiferous punctures before apex. Parascutellar stria continuous, not touching or joining elytral stria 1. Parascutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead slightly sinuate to almost straight. Elytral humeri angulate, obtuse to very obtuse, humeral tooth small (in holotype) or weak. Microsculpture consisting of isodiametric meshes, coarser in females. Flight wings reduced.

Ventral. Mentum with bifid (in males) or simple (in females) median tooth. Prosternum sparsely to densely and coarsely punctate medially. Prosternal process shallowly (in holotype) to deeply beaded, some specimens with interrupted bead, with 2–4 (4 in holotype) setae



Figs 5–6. *Amara* (*Pseudoleirides*) *oshtoranensis* sp. nov. Habitus in dorsal view. 5: holotype, body length 13.5 mm; 6: paratype No 4, body legth 13.9 mm. Photographs by P. Krásenský.
Obr. 5–6. *Amara* (*Pseudoleirides*) *oshtoranensis* sp. nov. Vzhled ze hřbetní strany. 5: holotypus, délka těla 13,5 mm; 6: paratypus č. 4, délka těla 13,9 mm. Fotografie P. Krásenský.

anteriorly. Proepisternum sparsely to densely and coarsely to finely punctate. Mesepisternum densely and coarsely punctate. Metepisternum very sparsely to sparsely and coarsely to finely punctate, as wide as long. Sides of abdominal ventrite 1 densely and coarsely to finely punctate, sides of abdominal ventrites 2 and 3 sparsely to densely and finely to coarsely punctate, sides of abdominal ventrites 4 to 6 almost smooth or sparsely and finely punctate. Abdominal ventrites 3 to 5 with one pair of setiferous punctures (3 setiferous punctures in paratype No 5). Males with two, females with four or five (in paratype No 4) setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Femora of front legs behind anterior margin with 4–6 setiferous punctures ventrally. Femora of middle legs before posterior margin with 4–7 (7 in holotype) setiferous punctures ventrally. Femora of hind legs before posterior margin with 4–7 setiferous punctures ventrally. Inner edge of male middle tibiae without teeth. Inner side of male hind tibiae without brush-like setae.

Aedeagus. Median lobe very long and narrow in dorsal view (length 3.65–3.79 mm, width 0.65–0.73 mm; holotype 3.75 and 0.65 mm), almost symmetrical. Apical lamella of median lobe markedly elongate in dorsal view (ratio of length/width = 2.59–2.80, holotype 2.78), very slightly curved to left (in holotype) or almost symmetrical (Fig. 9). Right paramere without hook, flattened.

Styli large, last stylomere tongue-shaped, with short, fine lateral spurs (Fig. 10).

Note. Presence of three pairs of lateral setae on pronotum is a unique character (autapomorphy) in the subgenus *Pseudoleirides*. However, these setae sometimes drop off (e.g. one seta is lost on the left side margin of the pronotum in the holotype of *Amara* (*P.*) *oshtoranensis* sp. nov.). It is not easy to distinguish setiferous punctures after the setae have fallen from bigger simple ones. Lateral setae are most frequently well-preserved in teneral specimens.

Differential diagnosis. *Amara* (*P.*) *oshtoranensis* sp. nov. is most closely related to *A.* (*P.*) *rutjani* (southwestern Iran, the Chaharmahal-va-Bakhtiyari province, the Zagros mountain range, the southern Kuh-e Zard Mountains: Hejkal & Muilwijk 2019), with which it shares a number of characters (habitus, large body, densely and coarsely punctate and broadened head, shape of pronotum). *Amara* (*P.*) *rutjani* differs especially in having setose elytra, pronotum with two pairs of lateral setae, dull elytra in females, and tarsomeres 1-3 of male front tarsi very markedly enlarged. The sympatric *Amara* (*P.*) *szekessyi* is easily recognizable from *A.* (*P.*) *oshtoranensis* sp. nov. by its smaller size (8.3–11.5 mm; see Hejkal 2008), markedly convex eyes, transverse pronotum (ratio of width/length = 1.61–1.74; see Hejkal 2008) with two pairs of lateral setae. Another species of *Pseudoleirides* from Lorestan province, *Amara* (*P.*) *khorramabadensis* (the Zagros mountain range: Hejkal 2008), differs in having more convex eyes, disc of pronotum almost smooth, shorter posterior angles of pronotum, shorter elytra (ratio of length/width = 1.44–1.47; see Hejkal 2008), pronotum with two pairs of lateral setae, aedeagus markedly broadened dorsally toward apex, and apical lamella of median lobe conspicuously elongate in dorsal view (ratio of length/width = 3.42–3.63; see Hejkal 2008).

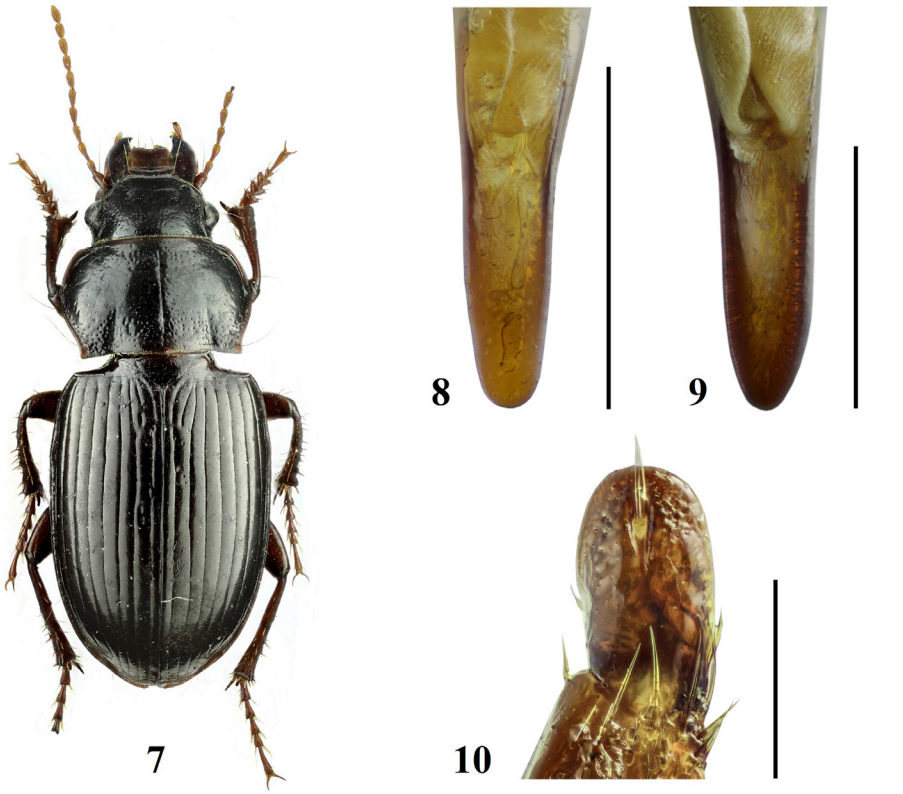
Distribution and habitat. *Amara* (*P.*) *oshtoranensis* sp. nov. was found in the Zagros mountain range in the Lorestan province in western Iran. The new species is known only from the type locality so far. The individuals were collected under stones along snow-fields on a plateau at an altitude of ca. 3000 m a.s.l. (J. Muilwijk, pers. comm.).

Etymology. The specific name is derived from the name of Oshtoran Mountain, which is located about 6 kilometres north-east of the type locality.

Amara (*Pseudoleirides*) *shirazica* Hejkal, 2008
(Figs 7–8)

Amara (*Pseudoleirides*) *shirazica* Hejkal, 2008: 141.

Type material examined. Holotype: ♀, labelled: "IRAN, DACHT. ARGEN, 60 km de SHIRAZ, 100 m [sic], 20.II.1965 / HOLOTYPE, Amara (Pseudoleirides) shirazica sp. n. J. Hejkal des. 2006" (red printed label), collected in Fars province, Zagros mountain range, probably



Figs 7–10. *Amara* (*Pseudoleirides*) spp. 7: habitus in dorsal view; 8, 9: apical lamella of median lobe in dorsal view; 10: last stylomere in ventral view. 7–8: *A. shirazica* Hejkal, 2008, male, body length 10.0 mm, southwestern Iran, 10 km to the east of Kazerun; 9–10: *A. oshtoranensis* sp. nov. (9: holotype, male; 10: paratype No 4, female). Scale: 1 mm for Figs 8 and 9, 0.5 mm for Fig. 10. Photographs by P. Krásenský.
Obr. 7–10. *Amara* (*Pseudoleirides*) spp. 7: vzhled ze hřbetní strany; 8, 9: špice penisu v dorsálním pohledu; 10: poslední článek stylu ve ventrálním pohledu. 7–8: *A. shirazica* Hejkal, 2008, samec, délka těla 10,0 mm, jihozápadní Írán, 10 km východně od Kazerunu; 9–10: *A. oshtoranensis* sp. nov. (9: holotypus, samec; 10: paratypus č. 4, samice). Měřítko: 1 mm pro obr. 8 a 9, 0,5 mm pro obr. 10. Fotografie P. Krásenský.

Dasht-e-Arzhan (= Dachte-Arjan, ca. 45 km west from Shiraz), ca. 29°40′N, 52°00′E, altitude and collector unknown, deposited in MFN.
Additional material examined. 1 ♂, labelled "dat. 23.5.2014, Irán IR, Fars prov., Kazerun 10 km E (Shiraz), N 29°34′27″ E 51°46′44″, lgt. Černý Fr., 1986 m.n.m.", deposited in cJH.
Note. *Amara* (*P.*) *shirazica* was described from a single female specimen (Hejkal 2008). The stated altitude (100 m) for the holotype is undoubtedly an erroneous figure. The coordinates of the only known male indicate a much higher altitude (1986 m a.s.l.).
Redescription. Body middle-sized and strongly convex, dorsal side dark brown, labrum red-brown, mandibles red-brown to dark brown, antennae and legs brown-red to red-brown, max-

illary and labial palpi brown-red, dorsal side markedly shining in male and shining in female; ventral side red-brown to brown (Fig. 7). Total length 10.0–10.8 mm (holotype 10.8 mm).
Head broadened, densely and finely to coarsely punctate, eyes slightly to markedly convex. Two supraorbital setae, anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short and shallow. Antennae surpassing (in male) or not reaching (in female) hind margin of pronotum. Antennomere 1 broad.
Pronotum transverse (ratio of width/length = 1.65–1.66, holotype 1.66), slightly convex, widest at middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.88–0.90, holotype 0.90), lateral margins slightly to markedly sinuate before posterior angles. Anterior margin of pronotum shallowly emarginate, anterior angles slightly protruding, rounded. Posterior angles short to protruding, slightly obtuse (female) to slightly acute (male), with apex shortly rounded. Pronotal base shallowly emarginate. Inner basal impression deep, with narrow longitudinal median groove. Outer basal impression absent. Anterior part of pronotum sparsely and coarsely to finely punctate. Disc almost smooth to very sparsely and finely punctate. Lateral margin of pronotum sparsely and finely to coarsely punctate. Pronotal base sparsely to densely and coarsely to finely punctate. Two pairs of lateral setae, one anterolateral pair located slightly to markedly before middle of lateral margin, one posterolateral pair near posterior angles.
Elytra relatively narrow and elongate (ratio of length/width = 1.52–1.53, holotype 1.52), strongly convex, declivity of elytra steep to gentle before apex in lateral view. Striae distinct, strongly deepened and widened, very finely punctate. Row of umbilicate setiferous punctures in stria 8 interrupted (widely in holotype). Stria 7 with two distinct setiferous punctures before apex. Parascutellar stria continuous, touching elytral stria 1 (in holotype), in male unilaterally interrupted in posterior part and not touching stria 1. Parascutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead narrow and slightly sinuate. Elytral humeri obtuse, rounded (in holotype) or angulate (in male), humeral tooth absent (in holotype) or unilaterally weak (in male). Microsculpture very fine in male and fine in female, consisting of isodiametric meshes. Flight wings reduced.
Ventral. Mentum with simple and rounded median tooth. Prosternum in middle smooth, in male with deep longitudinal fovea. Prosternal process shallowly to very shallowly beaded, male with interrupted bead, with three setae anteriorly. Proepisternum very sparsely and finely punctate. Mesepisternum sparsely to densely and coarsely punctate. Metepisternum very sparsely and coarsely punctate, as wide as long. Sides of abdominal ventrites 1 and 2 very sparsely to sparsely and very finely to finely punctate, sides of abdominal ventrite 3 almost smooth (in female) to sparsely and finely punctate (in male), sides of abdominal ventrites 4 to 6 almost smooth. Abdominal ventrites 3 to 5 with one pair of setiferous punctures (abdominal ventrite 5 with three setiferous punctures in female). Four setiferous punctures at posterior margin of last abdominal ventrite in both sexes.
Legs. Femora of front legs behind anterior margin with 4 setiferous punctures ventrally. Femora of middle legs before posterior margin with 4 setiferous punctures ventrally. Femora of hind legs before posterior margin with 3–4 setiferous punctures ventrally. Inner edge of male middle tibiae without teeth. Inner side of male hind tibiae without brush-like setae.
Aedeagus. Median lobe elongate and narrow in dorsal view (length 2.60 mm, width 0.50 mm). Apical lamella of median lobe markedly elongate in dorsal view (ratio of length/width = 2.78), slightly curved to right (Fig. 8). Right paramere without hook.
Styli long, last stylomere elongate and narrow, with short and fine lateral spurs.

Differential diagnosis. *Amara* (*P.*) *shirazica* is most closely related to *A.* (*P.*) *loeffleri* (southwestern Iran, the Chaharmahal-va-Bakhtiyari province, the Zagros mountain range, the Kuh-e Zard Mountains: Hejkal 2008), with which it shares a number of characters (robust body, distinctly broadened head, transverse pronotum, similarly shaped styli). *Amara* (*P.*) *loeffleri* differs especially in having broader elytra (ratio of length/width = 1.36–1.43; see Hejkal 2008), longer and less convex eyes, larger pronotum that is less narrowed toward posterior angles, dull elytra in females, and shorter apical lamella of median lobe in dorsal view (ratio of length/width = 2.27–2.48; see Hejkal 2008). Another similar species, *Amara* (*P.*) *fuscolucida* (southwestern Iran, Fars province near the border with the Kohgiluyeh-va-Boyer Ahmad province, the Zagros mountain range: Hejkal & Muilwijk 2019), differs in having less convex eyes, lateral margins of pronotum flattened and slightly convex to almost straight before posterior angles, and posterior angles of pronotum shorter and more obtuse. *Amara* (*P.*) *cadoudali* Morvan, 1977 with a similar distribution (the Zagros mountain range, Kazerun, 2300 m a.s.l.; see Morvan 1977) is distinguishable from *A.* (*P.*) *shirazica* by a more sparsely and more finely punctate head, conspicuously prominent eyes, more slightly narrowed pronotum toward posterior angles (ratio of anterior margin/posterior margin = 0.78; see Hejkal 2008), two impressions on each side of pronotal base, male elytra with slight lustre, and non-deepened elytral striae.

Distribution and habitat. *Amara* (*P.*) *shirazica* was found in the Zagros mountain range in the west of the Fars province in southwestern Iran. Only two specimens have been collected so far. The habitat of *A. shirazica* is still unknown. It probably occurs at an altitude between 1000 and 2000 m a.s.l. (surely above 1000 m, F. Černý, pers. comm.).

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SOUHRN

Z Íránu je známo 16 druhů z rodu *Amara* Bonelli, 1810 patřících do podrodu *Pseudoleirides* Kryzhanovskij, 1968. Z těchto druhů je 11 endemických pro pohoří Zagros: *Amara* (*P.*) *cadoudali* Morvan, 1977, *A.* (*P.*) *escalerai* Hejkal, 2008, *A.* (*P.*) *fuscolucida* Hejkal et Muilwijk, 2019, *A.* (*P.*) *iranica* Kryzhanovskij, 1968, *A.* (*P.*) *khorramabadensis* Hejkal, 2008, *A.* (*P.*) *loeffleri* Jedlička, 1963, *A.* (*P.*) *murastyii* Hejkal et Muilwijk, 2019, *A.* (*P.*) *rutjani* Muilwijk et Hejkal, 2019, *A.* (*P.*) *shirazica* Hejkal, 2008, *A.* (*P.*) *yasujensis* Hejkal, 2008, a *A.* (*P.*) *zagrosensis* (Morvan, 1973). Ze severozápadního, západního a severního Íránu včetně pohoří Zagros je znám široce rozšířený druh *A.* (*P.*) *szekessyi* Jedlička, 1953.

V práci jsou popsány dva nové druhy z pohoří Zagros: *Amara* (*P.*) *muilwijki* sp. nov. (provincie Fárs) a *A.* (*P.*) *oshtoranensis* sp. nov. (provincie Lorestán). Jedná se o vysokohorské druhy, které byly nalezeny Janem Muilwijkem v roce 2019 v nadmořských výškách 3000–3600 m.

Amara (*P.*) *oshtoranensis* sp. nov. je prvním známým druhem podrodu *Pseudoleirides* s přítomností tří párů sét na štítu, z toho dva páry jsou umístěné před středem nebo uprostřed jeho postranního okraje a jeden pár je přítomný poblíž zadních rohů štítu. Dosud známé druhy mají dva páry. Tento znak však není konstantní: ze šesti typových jedinců *Amara* (*P.*) *oshtoranensis* sp. nov. má jeden pouze dva páry sét a další jedinec má jednostranně dokonce čtyři séty.

Článek dále obsahuje redeskripci *Amara* (*P.*) *shirazica* Hejkal, 2008, na základě prvního nalezeného samce (druh byl popsán podle jediné samice). Navzdory druhému nálezu zůstávají nejasnosti ohledně nadmořské výšky. Předpokládám, že se tento druh vyskytuje v nadmořských výškách 1000–2000 m.