Published December 30, 2008

Klapalekiana, **44**: 129-164, 2008
ISSN 1210-6100

Six new species of the subgenus *Pseudoleirides* (Coleoptera: Carabidae: *Amara*) from Iran

Šest nových druhů podrodu *Pseudoleirides* (Coleoptera: Carabidae: *Amara*) z Íránu

Jiří HEJKAL

Wolkerova 711/48, CZ-358 01 Kraslice, Czech Republic; e-mail: amara@volny.cz

Taxonomy, Coleoptera, Carabidae, Zabrini, *Amara*, new species, key, Palaearctic region

Abstract. The following six new species of the subgenus *Pseudoleirides* Kryzhanovskij, 1968 of the genus *Amara* Bonelli, 1810 from Iran are described, illustrated and compared with closely related species: *A.* (*P.*) *escalerai* sp. n., *A.* (*P.*) *hamadanensis* sp. n., *A.* (*P.*) *kermanensis* sp. n., *A.* (*P.*) *khorramabadensis* sp. n., *A.* (*P.*) *shirazica* sp. n., and *A.* (*P.*) *yasujensis* sp. n. The new species live in the mountains at 2000-4000 m a.s.l. (alpine occurrence is only supposed in *A. shirazica* sp. n.). The type series of the new species are small, only 1-5 specimens each. The specific name of *A.* (*P.*) *loeffleri* Jedlička, 1963 is restored from the subspecific to full species rank (status restitutus). All known Iranian species of the subgenus *Pseudoleirides* are reviewed and keyed.

INTRODUCTION

Fifteen taxa (species or subspecies) of the subgenus *Pseudoleirides* Kryzhanovskij, 1968 of the genus *Amara* Bonelli, 1810 are known from southwestern, southern and central Asia (Hieke 2007): *A. bucharica bucharica* Tschitschérine, 1898 (type locality in Turkmenistan), *A. bucharica kopetdaghi* Kryzhanovskij, 1968 (Turkmenistan), *A. bucharica mazandarana* Hieke, 1976 (Iran), *A. cadoudali* Morvan, 1977 (Iran), *A. chodjaii* Morvan, 1975 (Iran), *A. hermoniensis* Hieke, 1997 (Israel), *A. iranica* Kryzhanovskij, 1968 (Iran), *A. jordanica* Hieke, 2002 (Jordan), *A. lopatini* Kryzhanovskij, 1968 (Tajikistan), *A. mukusensis* Hieke, 1997 (Turkey), *A. pakistana* Jedlička, 1963 (Pakistan), *A. szekessyi loeffleri* Jedlička, 1963 (Iran), *A. szekessyi szekessyi* Jedlička, 1953 (Iran), *A. turcica* Hieke, 1976 (Turkey), and *A. zagrosensis* (Morvan, 1973) (Iran).

That is, seven taxa of the subgenus have been described from Iran so far. With the exception of the widely distributed *A. szekessyi*, all of them most likely inhabit small areas, probably only one mountain range each. Additional six new species of the subgenus *Pseudoleirides* are described below from Iran, along with comments on the previously described seven species. Moreover, the occurence of *A. bucharica kopetdaghi* known from the Kopet Dag Mountains in southern Turkmenistan and *A. mukusensis* known from southeastern Turkey is possible in Iran, raising the number of *Pseudoleirides* known to occur in Iran to 13-15.

MATERIAL AND METHODS

In total**,** 99 specimens of Iranian *Pseudoleirides* were studied. The specimens are deposited in the following collections: HEI – coll. W. Heinz, Schwanfeld, Germany; HEJ – coll. J. Hejkal, Kraslice, Czech Republic; HNHMB – Hungarian Natural History Museum, Budapest, Hungary (Gy. Szél); HOV – coll. O. Hovorka, Dobříš, Czech

Republic; KLI – coll. L. Klíma, Ostrava, Czech Republic; MNHUB – Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (M. Uhlig); MOR – coll. P. Morvan (gant dremm mab Morvan), Karentoir, France; NMP – National Museum, Prague, Czech Republic (J. Hájek); WRA – coll. D. W. Wrase, Berlin, Germany; ZIE – coll. V. Zieris, Pardubice, Czech Republic; ZIP – Zoological Institute, St. Petersburg, Russia (B. M. Kataev).

Measurements were made with a MBS-10 stereo microscope at magnifications of 8x to 56x. Measurements of body parts and body ratios used in the text were taken as follows: total length = length measured from anterior margin of labrum to elytral apices; length of median lobe (penis) = length of median lobe in dorsal view; width of median lobe (penis) = maximal width of median lobe in dorsal view; ratio of width/length of pronotum = ratio of maximal width of pronotum/length of pronotum measured along mid-line; ratio of anterior margin/posterior margin of pronotum = ratio of width of pronotum between anterior angles/width of pronotum between posterior angles; ratio of length/width of elytra = ratio of length of longer elytron measured from basal border to apex/maximal width of both elytra combined; ratio of length/width of apex of median lobe (apex of penis) = ratio of length of apex measured from apical border of internal sac to tip of median lobe/maximal width of apex in dorsal view.

TAXONOMIC PART

This part includes the diagnoses of all Iranian *Pseudoleirides* species, individual species treatments, and a key to species. For each species I list the type specimens that I have examined along with a redescription, differential diagnosis, and distribution of species. Description and name derivation are given for all new species.

Species of *Pseudoleirides* Kryzhanovskij, 1968 described from Iran
(Figs 1-35, 37-57)

subg. *Pseudoleirides* Kryzhanovskij, 1968: 169 (type species: *Amara kopetdaghi* Kryzhanovskij, 1968: 169, Turkmenistan, primary designation)

Diagnosis (Iranian species). Wingless ground beetles habitually similar to the genera *Zabrus* Clairville, 1806 and *Molops* Bonelli, 1810. Body moderate to conspicuously large (total length 8.3-15.1 mm), mostly large, slightly to very strongly convex, mostly strongly convex. Dorsal side red-brown (in teneral specimens) to black, mostly dark brown or black-brown, without metallic lustre. Antennae, maxillary palpi, labial palpi and legs pale red-brown to brown. The species of *Pseudoleirides* are distinguished from other *Amara* by the combination of the following characters: head punctate, body mostly robust and large, dorsal side dark, prosternal process with 2-4 setae anteriorly, and mesofemora with 3-7 setiferous punctures ventrally before posterior margin.

Description (Iranian species). Head slightly to conspicuously thickened, very sparsely and very finely to densely and coarsely punctate (almost smooth in one specimen of *A. bucharica mazandarana*). Eyes very variable, small to large and very 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, almost absent to deep. Antennae mostly reaching base of pronotum when reclined. Antennomere 1 broad to very broad. Mentum mostly with simple and sometimes with bifid median tooth.

Pronotum very variable, narrow to transverse (ratio of width/length = 1.47-1.74), widest before or at middle, markedly narrowed toward anterior and/or posterior angles, lateral margins markedly convex to distinctly sinuate before posterior angles. Anterior margin of pronotum slightly sinuate to straight, anterior angles not or slightly (exceptionally distinctly

in *A. zagrosensis*) protruding, rounded. Posterior angles short to very short, obtuse to acute, with apex shortly rounded to markedly sharp. Pronotal base sinuate to almost straight toward posterior angles. Inner basal impression distinct, shallow to deep, varying in length and width. Outer basal impression absent or present, mostly shallow and short, in some species separated from lateral margin by indistinct or distinct callus. Anterior part of pronotum usually punctate, sparsely to densely and finely to coarsely. Lateral margin of pronotum mostly punctate, very sparsely to sparsely and finely to coarsely, in some species narrowly or widely flattened. Pronotal base punctate, sparsely to densely and finely to coarsely. Two pairs of lateral setae present on pronotum, one pair located slightly to markedly before middle of lateral margin, one pair near posterior angles.

Elytra variable, short to elongate and broad to narrow (ratio of length/width = 1.36-1.54), in some species large, declivity of elytra before apex mostly steep (lateral view). Striae distinct, shallow to strongly deepened, usually finely or very finely punctate. Row of setiferous punctures in stria 8 mostly interrupted, sometimes continuous (e.g. *A. bucharica mazandarana*). Stria 7 with two to three distinct setiferous punctures before apex. Scutellar stria interrupted or continuous. Scutellar setiferous puncture absent. Base of elytra mostly slightly sinuate. Basal bead mostly slightly sinuate, narrow to broad. Elytral humeri well-developed, very variable in shape, angulate to shortly rounded, obtuse to very obtuse, humeral tooth small or absent. Elytra with microsculpture of regular meshes, coarser in females.

Ventral part of thorax and abdomen. Prosternum of male in middle mostly punctate or smooth, without or with shallow, mostly longitudinal fovea. Prosternal process very shallowly to deeply beaded (in some species bead absent or interrupted), with 2-4 setae anteriorly. Episternum of prothorax smooth or very sparsely and very finely to sparsely and coarsely punctate. Episternum of mesothorax sparsely to densely and finely to very coarsely punctate. Episternum of metathorax very sparsely to densely and finely to coarsely punctate (almost smooth in *A. bucharica mazandarana*), as wide as long. Sides of abdominal ventrites 1 and 2 smooth or very sparsely to densely and very finely to coarsely punctate, sides of abdominal ventrite 3 smooth or very sparsely to densely and finely to coarsely punctate, sides of abdominal ventrites 4 to 6 smooth (usually) or sparsely and finely punctate. Abdominal ventrites 3 to 5 usually with one pair of setiferous punctures (exceptionally with three setiferous punctures or absent). Males with two (exceptionally three or four), females with four (exceptionally five or six) setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Ventral side of fore femora with 3-7 setiferous punctures behind anterior margin. Ventral side of middle femora with 3-7 (mostly 4-6) setiferous punctures before posterior margin. Ventral side of hind femora with 2-5 setiferous punctures before posterior margin. Inner edge of male middle tibiae without teeth, at most with distinct tubercles. Inner side of male hind tibiae without brush-like setae.

Aedeagus heavily sclerotized, red-brown. Median lobe mostly long and narrow above, in two species (*A. bucharica mazandarana* and *A. iranica*) relatively short. Apex of median lobe mostly elongate above (ratio of length/width = 2.25-3.63), in two species (*A. bucharica mazandarana* and *A. iranica*) relatively short and broad (ratio of length/width = 1.08-1.31). Left paramere broad. Right paramere long and thin, without hook, in some species with thickened apex.

Styli heavily sclerotized, red-brown, mostly large, in some species long (e.g. *A. loeffleri*) or small (*A. bucharica mazandarana*). Last stylomere variable, mostly tongue-shaped. Lateral spurs fine (broad only in *A. bucharica mazandarana* and *A. iranica*), short to long.

Amara (*Pseudoleirides*) *escalerai* sp. n.

(Figs 1-6)

Type material. Holotype: ♂, labelled "Persia, Kouh Sefid, Haut Karoum, VII-1899, Escalera", about 31°50' N, 50°12' E, collected on the border between Khuzestan and Chaharmahal-va-Bakhtiyari provinces, Zagros mountain range, Kuh-e Sefid Mountains, upper Karun river (Bazoft river) drainage basin, probably 3000-3500 m a.s.l. (Fig. 58 and Rechinger 1990: 363-366, 373), coll. MNHUB. Paratypes: Nos 1-3, 3 ♀♀, same data as for the holotype, coll. MNHUB (2 ♀♀, Nos 1-2) and coll. HEJ (1 ♀, No 3).

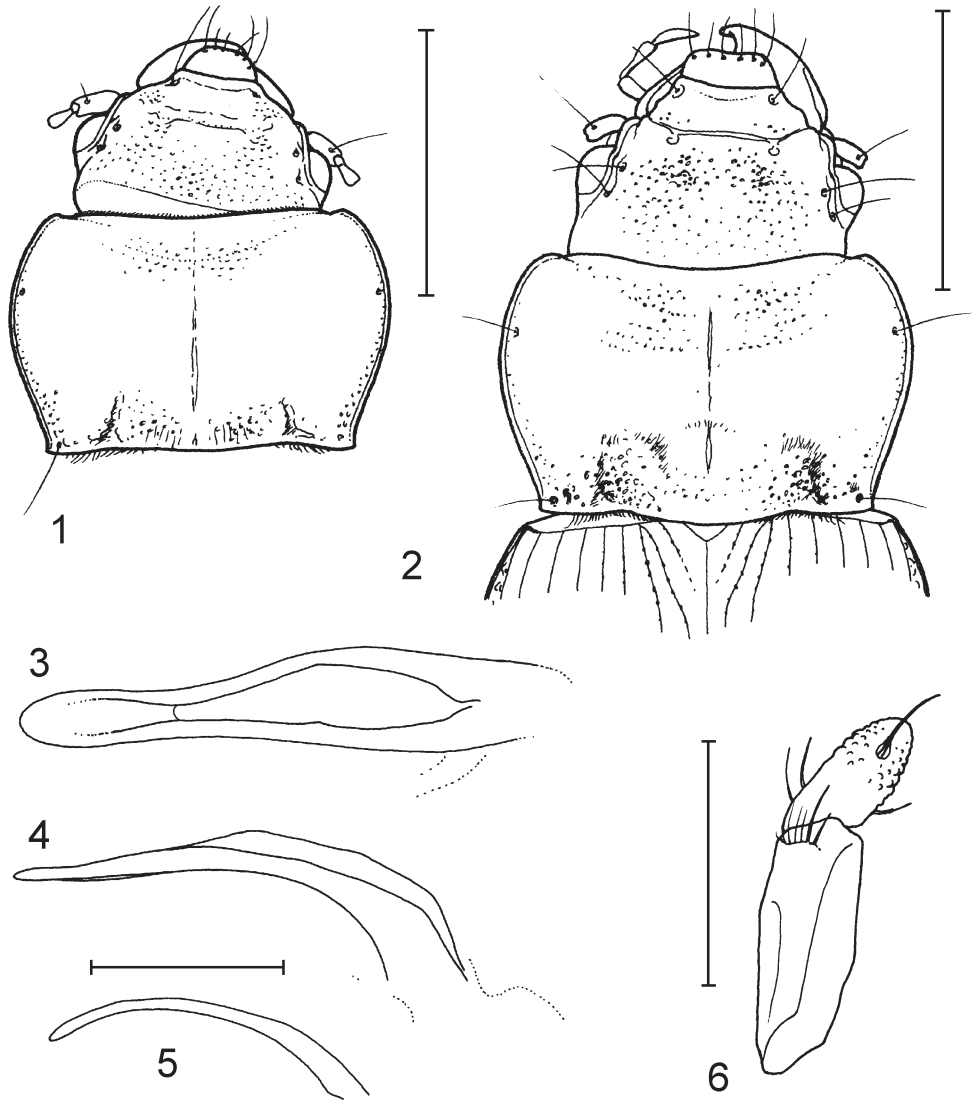
Description. Wingless species related or similar to *A. khorramabadensis* sp. n. and *A. kermanensis* sp. n. (see below) with large, robust and broad body. Total length 11.0-12.3 mm (holotype 11.0 mm, average 11.7 mm, $n = 4$). Dorsal side dark brown (labrum, lateral margins and base of pronotum paler, red-brown), shiny with elytra more shiny than head and pronotum in male and with slight lustre to dull in females. Ventral side brown to dark brown. Antennae and legs red-brown. Maxillary and labial palpi pale red-brown.

Head thickened, densely and finely to coarsely punctate with slightly convex eyes. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short, wide and shallow (as in the holotype) to deep. Antennae reaching base of pronotum when reclined. Antennomere 1 very broad. Mentum with simple (i.e. not bifid), rounded and relatively long median tooth.

Pronotum transverse (ratio of width/length = 1.59-1.67, holotype 1.60), strongly convex, widest before middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.90-0.94, holotype 0.91), lateral margins slightly convex before posterior angles (Figs 1 and 2). Anterior margin of pronotum very shallowly emarginate, anterior angles not or slightly protruding, rounded. Posterior angles short to very short, slightly to markedly obtuse, sharp. Pronotal base slightly sinuate, almost straight up to posterior angles. Inner basal impression deep and relatively wide. Outer basal impression short, shallow and relatively wide, not separated from lateral margin by a callus. Anterior part of pronotum mostly densely and finely to coarsely punctate. Lateral margin of pronotum very narrowly flattened, mostly sparsely and finely to coarsely punctate. Pronotal base sparsely and coarsely punctate (in the holotype only between inner impressions).

Elytra large and broad (ratio of length/width = 1.39-1.46, holotype 1.39), strongly convex, declivity of elytra before apex steep in lateral view. Striae strongly deepened and widened, finely punctate. Stria 7 with two to three distinct setiferous punctures before apex. Scutellar stria continuous, joining elytral stria 1 (stria 1 interrupted). Scutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead narrow and slightly sinuate (Fig. 2). Elytral humeri obtuse, rounded, humeral tooth absent. Microsculpture consisting of regular meshes, coarser in females.

Ventral part of thorax and abdomen. Prosternum of male in middle very sparsely and finely punctate, without fovea. Prosternal process shallowly beaded, with two setae anteriorly. Episternum of prothorax smooth (holotype) or very sparsely and coarsely punctate. Episternum of mesothorax densely to sparsely (holotype) and coarsely to very coarsely (holotype) punctate. Episternum of metathorax sparsely (holotype) to densely and coarsely to finely (holotype) punctate, as wide as long. Sides of abdominal ventrite 1 sparsely (holotype) to very sparsely and coarsely punctate, sides of abdominal ventrite 2 sparsely to densely (holotype) and coar-



Figs 1-6. *Amara escalerai* sp. n. 1, 3-5: holotype, male; 2, 6: paratype No 3, female. 1: head and prothorax, dorsal view; 2: head, prothorax and base of elytra, dorsal view; 3: median lobe of aedeagus, dorso-apical view; 4: median lobe of aedeagus, lateral view; 5: right paramere; 6: stylus, ventral view. Scale: 3 mm for Figs 1 and 2; 1 mm for Figs 3-6.

Obr. 1-6. *Amara escalerai* sp. n. 1, 3-5: holotypus, samec; 2, 6: paratypus č. 3, samice. 1: hlava a předohruď, dorsální pohled; 2: hlava, předohruď a báze krovek, dorsální pohled; 3: penis, dorsoapikální pohled; 4: penis, boční pohled; 5: pravá paramera; 6: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 1 a 2; 1 mm pro obr. 3-6.

sely (holotype) to finely punctate, sides of abdominal ventrite 3 very sparsely (holotype) to densely and finely (holotype) to coarsely punctate, sides of abdominal ventrites 4 to 6 smooth to almost smooth. Abdominal ventrite 3 with one pair of setiferous punctures, abdominal ventrite 4 with two to three (in paratype No 1) setiferous punctures, abdominal ventrite 5 with one pair of setiferous punctures (absent in holotype). Male with two, females with four setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Femora of middle legs before posterior margin with four (mostly) to six setiferous punctures ventrally. Inner edge of male middle tibiae without teeth (only with one distinct tubercle). Inner side of male hind tibiae without brush-like setae.

Aedeagus. Median lobe very long and narrow above (length 3.08 mm, width 0.55 mm), slightly broadened toward apex dorsally (Fig. 3). Apex of median lobe markedly elongate above (ratio of length/width = 3.04), almost symmetric. Right paramere without hook (Fig. 5).

Styli large, last stylomere tongue-shaped, with long and fine lateral spurs (Fig. 6).

Differential diagnosis. *Amara escalerai* sp. n. belongs to the group of three species with a large and robust body, distinctly thickened and usually densely and coarsely punctate head, relatively small eyes, pronotum markedly narrowed toward posterior angles, lateral margins of pronotum convex before posterior angles, and large and broad elytra. This group of species includes *A. escalerai* sp. n., *A. kermanensis* sp. n., and *A. khorramabadensis* sp. n. Other common characters of these three species are as follows: eyes slightly convex, elytra strongly to very strongly convex and distinctly widened posteriorly, styli large, last stylomere tongue-shaped, and median lobe of aedeagus very long and narrow above, broadened dorsally toward apex (male unknown in *A. kermanensis* sp. n.). *Amara escalerai* sp. n. is distinguishable from the closely related *A. khorramabadensis* sp. n. by a narrower basal bead of elytra, obtuse posterior corners of pronotum, wider impressions on pronotal base, and different shape of aedeagus. *Amara kermanensis* sp. n. differs from *A. escalerai* sp. n. in having a narrower pronotum, pronotal base oblique to posterior angles, present humeral tooth, and more shiny dorsal side in female.

Distribution and habitat. *Amara escalerai* sp. n. was found in southwestern Iran at an altitude of ca. 3000-3500 m a.s.l. at the border between Khuzestan and Chaharmahal-va-Bakhtiyari provinces in the Kuh-e Sefid Mountains, which belong to the Zagros mountain range (Fig. 58). The two closely related and similar species inhabit more northern (western Iran, Lorestan province; *A. khorramabadensis* sp. n.) or remote areas (southeastern Iran, Kerman province; *A. kermanensis* sp. n.). The habitat of *A. escalerai* sp. n. is unknown.

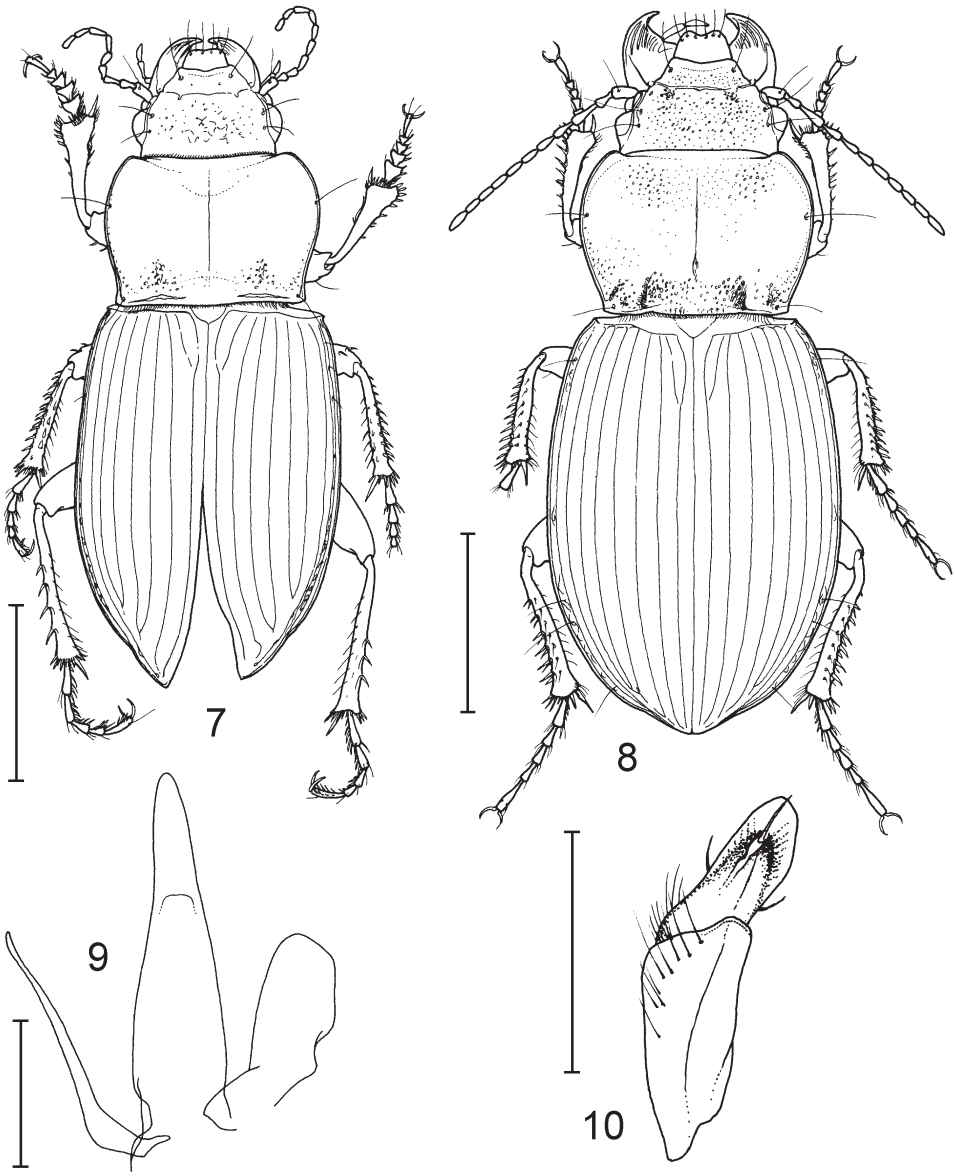
Name derivation. Dedicated to the memory of the outstanding Spanish entomologist Manuel Martínez de la Escalera, the collector of the new species.

Amara (*Pseudoleirides*) *hamadanensis* sp. n.

(Figs 7, 9)

Type material. Holotype: ♂, probably teneral specimen with incomplete, damaged antennae and warped posterior part of elytra, labelled "IRAN, HAMEDÂN, sur Hamedân, 34°44'N/48°47'E, 2600 m, 16.6.75, A. SENGLET", collected in Hamadan province, Kuh-e Alvand Mountains (Fig. 58), coll. MNHUB.

Description (male). Wingless species with relatively middle-sized and narrow body (Fig. 7). Total length 10.6 mm. Dorsal side brown (head and pronotum) and brown to red-brown (elytra). Labrum, clypeus and margins of pronotum red-brown (probably teneral specimen, see



Figs 7-10. *Amara* spp. 7, 8: habitus, dorsal view; 9: aedeagus (dorso-apical view, outline); 10: stylus, ventral view. 7, 9: *A. hamadanensis* sp. n., holotype; 8, 10: *A. kermanensis* sp. n., holotype. Scale: 3 mm for Figs 7 and 8; 1 mm for Figs 9 and 10.

Obr. 7-10. *Amara* spp. 7, 8: habitus, dorsální pohled; 9: aedeagus (dorsoapikální pohled, obrys); 10: stylus, ventrální pohled. 7, 9: *A. hamadanensis* sp. n., holotypus; 8, 10: *A. kermanensis* sp. n., holotypus. Měřítko: 3 mm pro obr. 7 a 8; 1 mm pro obr. 9 a 10.

above). Dorsal side dull. Ventral side red-brown. Mandibles (except brown apex), antennae, maxillary palpi, labial palpi and legs red-brown.

Head slightly thickened, sparsely and finely punctate with slightly to very slightly convex eyes. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with distinct, arcuate callus. Frontal furrows short and shallow. Antennomere 1 broad. Mentum with simple (i.e. not bifid), rounded and long median tooth.

Pronotum long and narrow (ratio of width/length = 1.47), cordate, widest before middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.81), lateral margins distinctly sinuate before posterior angles. Anterior margin of pronotum very shallowly emarginate, anterior angles slightly protruding, rounded. Posterior angles short, slightly obtuse, sharp. Pronotal base slightly sinuate to almost straight, oblique to posterior angles. Inner basal impression narrow, deep and short. Outer basal impression absent. Anterior part of pronotum sparsely and very finely punctate. Lateral margin of pronotum sparsely and finely to coarsely punctate. Pronotal base sparsely to densely (around inner impression) and finely to coarsely punctate.

Elytra relatively broad as compared to pronotum, declivity of elytra before apex gentle in lateral view (posterior part of elytra warped, see above). Striae distinct, shallow, slightly deepened and widened apicad, very finely punctate in anterior half, finely to coarsely punctate in posterior half. Row of setiferous punctures in stria 8 widely interrupted. Stria 7 with two distinct setiferous punctures before apex. Scutellar stria interrupted (left elytron) or continuous (right elytron), not touching stria 1. Scutellar setiferous puncture absent. Base of elytra slightly arcuate, basal bead slightly sinuate. Elytral humeri with distinct, small humeral tooth. Microsculpture consisting of regular meshes.

Ventral part of thorax and abdomen (male). Prosternum in middle smooth, with shallow longitudinal fovea. Prosternal process shallowly beaded, with two setae anteriorly. Episternum of prothorax sparsely and coarsely punctate. Episternum of mesothorax sparsely and finely to coarsely punctate. Episternum of metathorax sparsely and finely to coarsely punctate (shape not examined). Sides of abdominal ventrites 1 to 5 wrinkled and impunctate, sides of abdominal ventrite 6 sparsely and finely punctate. Abdominal ventrites 3 to 5 with one pair of setiferous punctures. Posterior margin of last abdominal ventrite with two setiferous punctures.

Legs (male). Middle femora before posterior margin with four (left femur) to five (right femur) setiferous punctures ventrally. Inner edge of middle tibiae without teeth, only with distinct tubercles. Inner side of hind tibiae without brush-like setae.

Aedeagus. Median lobe large, very long and relatively broad above (length 3.09 mm, width 0.66 mm), almost symmetric (Fig. 9). Apex of median lobe markedly elongate and broad above (ratio of length/width = 2.47), very slightly curved to right. Right paramere with a double curve before apex, without hook (Fig. 9).

Female unknown.

Differential diagnosis. *Amara hamadanensis* sp. n. is a distinct species with a unique shape of the pronotum. The sympatric *A. szekessyi* differs especially in having a shorter and broader pronotum, distinctly thickened head, and markedly convex eyes.

Distribution and habitat. *Amara hamadanensis* sp. n. was found at an altitude of ca. 2600 m a.s.l. in the Kuh-e Alvand Mountains in the Hamadan province in western Iran (Fig. 58). The habitat of *A. hamadanensis* sp. n. is unknown.

Name derivation. The specific name is derived from the name of the Hamadan province.

Amara (*Pseudoleirides*) *kermanensis* sp. n.

(Figs 8, 10)

Type material. Holotype: ♀, teneral specimen, labelled "C Iran, Kuh-e Lalehzar, N slope, 3200-3800 m, 24.-30.5.1977" and "Loc. no 348, Exped. Nat. Mus. Praha", collected in Kerman province, Kuhha-ye Qohrud mountain range, Kuh-e Lalehzar Mountains, valley of a montane river with large "lawns", 29°25' N, 56°50' E (Hoberlandt 1983 and Fig. 58), coll. NMP.

Description (female). Wingless species similar to *A. escalerai* sp. n. (see above) and *A. khorramabadensis* sp. n. (see below) with large and robust body (Fig. 8). Total length 11.7 mm. Dorsal side red-brown, apex of mandibles brown (teneral specimen, see above). Dorsal side shiny. Ventral side pale red-brown to red-brown. Antennae and legs pale red-brown to red-brown. Maxillary and labial palpi pale red-brown.

Head thickened, densely and coarsely punctate with slightly convex eyes. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short, wide and shallow. Antennae reaching base of pronotum when reclined. Antennomere 1 broad. Mentum with simple (i.e. not bifid), rounded and moderately elongate median tooth.

Pronotum relatively large, rather transverse (ratio of width/length = 1.52), strongly convex, widest before middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.92), lateral margins slightly convex before posterior angles. Anterior margin of pronotum almost straight, anterior angles slightly protruding, rounded. Posterior angles very short, markedly obtuse, with shortly rounded apex. Pronotal base slightly sinuate to almost straight, oblique to posterior angles. Inner basal impression wide, deep and relatively long. Outer basal impression shallow and very short, not separated from lateral margin by a callus. Anterior part of pronotum densely and coarsely punctate. Lateral margin of pronotum narrowly flattened, sparsely and finely to coarsely punctate. Pronotal base densely and coarsely punctate.

Elytra large and broad (ratio of length/width = 1.43), strongly convex, declivity of elytra before apex steep in lateral view. Striae distinct, moderately to strongly deepened and widened, very finely punctate. Row of setiferous punctures in stria 8 considerably interrupted. Stria 7 with three distinct setiferous punctures before apex. Scutellar stria continuous or interrupted, not touching stria 1. Scutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead narrow and slightly sinuate. Elytral humeri with weak humeral tooth. Microsculpture consisting of regular meshes.

Ventral part of thorax and abdomen (female). Prosternum smooth. Prosternal process very shallowly beaded, with two setae anteriorly. Episternum of prothorax very sparsely and very finely punctate (smooth in posterior half). Episternum of mesothorax densely and coarsely punctate. Episternum of metathorax sparsely and finely punctate, as wide as long. Sides of abdominal ventrites 1 and 2 very sparsely and finely punctate, sides of abdominal ventrites 3 to 6 smooth. Abdominal ventrites 3 to 5 with one pair of setiferous punctures. Posterior margin of last abdominal ventrite with six setiferous punctures.

Legs. Ventral side of middle femora with six setiferous punctures before posterior margin.

Male unknown.

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

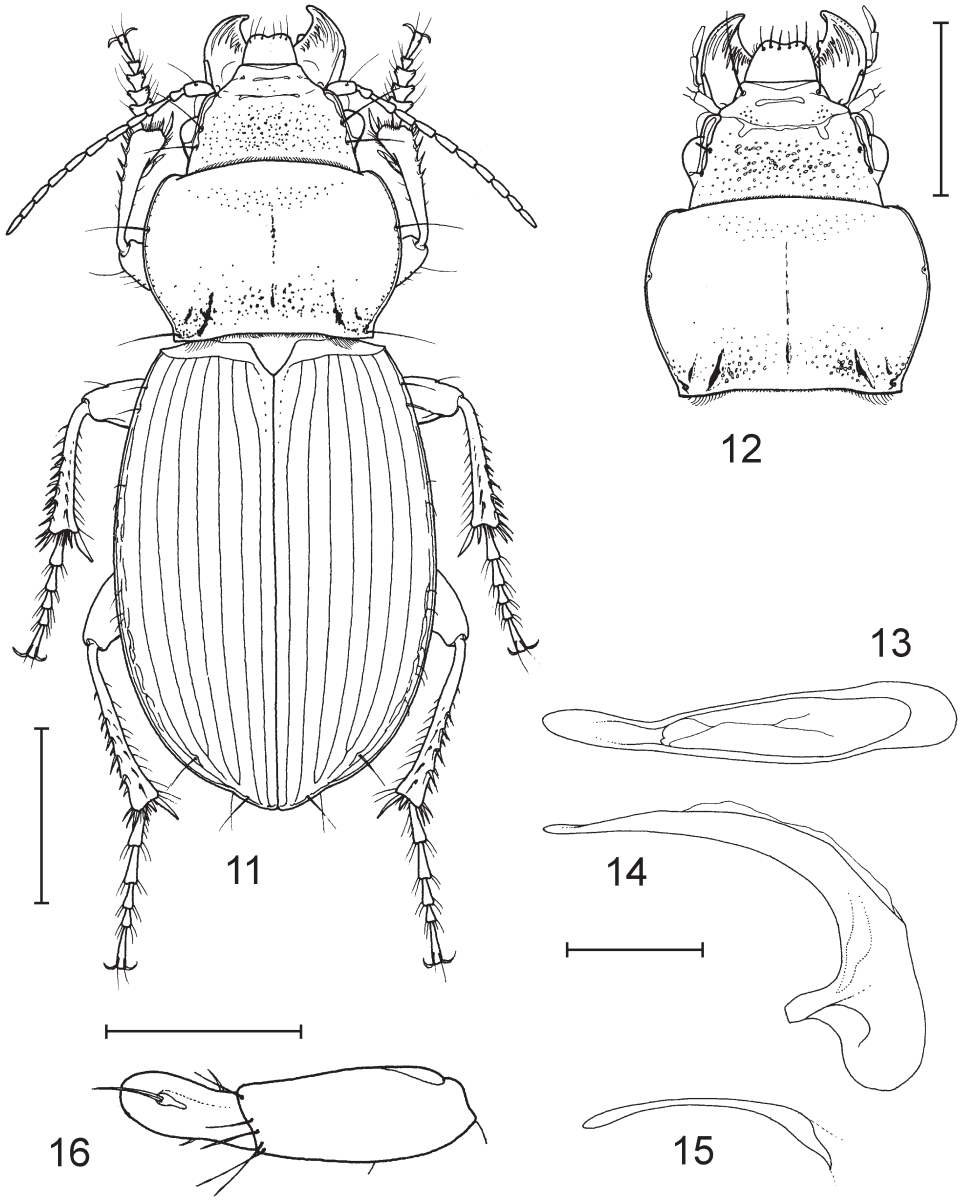
Differential diagnosis. *Amara kermanensis* sp. n. belongs to a group of closely related species that includes *A. escalerai* sp. n., *A. kermanensis* sp. n., and *A. khorramabadensis* sp. n. (see *A. escalerai* sp. n. for the common characters). *Amara kermanensis* sp. n. is distinguishable from the otherwise similar *A. khorramabadensis* sp. n. by a narrower basal bead of elytra, shorter and obtuse posterior corners of pronotum (pronotal base is oblique to posterior angles), flattened lateral margin of pronotum, and a wider inner impression on pronotal base. *Amara escalerai* sp. n. differs in having a broader pronotum, pronotal base almost straight to posterior angles, absent humeral tooth, and less shiny dorsal side in females.
Distribution and habitat. *Amara kermanensis* sp. n. was found in the Kuh-e Lalehzar Mountains which belong to the Kuhha-ye Qohrud mountain range in the Kerman province in southeastern Iran (Fig. 58). The other two similar species inhabit remote areas in the Zagros mountain range in western (*A. khorramabadensis* sp. n.) and southwestern Iran (*A. escalerai* sp. n.). The holotype was collected in the valley of a montane river with large "lawns" at an altitude of 3200-3800 m a.s.l. (see Hoberlandt 1983: p. 17).
Name derivation. The specific name is derived from the name of the Kerman province.

Amara (*Pseudoleirides*) *khorramabadensis* sp. n.
(Figs 11-16)

Type material. Holotype: ♂, labelled "W IRAN, prov. Lorestan, pass 52 km E Horramabad, 18.IV.2002, lgt. S. Kadlec", collected in Zagros mountain range, mountain steppe, ca. 2000 m a.s.l. (Fig. 58 and S. Kadlec, pers. comm.), ca. 33°33' N, 48°49' E, coll. HEJ. Paratypes: Nos 1-2, 1 ♂, 1 ♀, same data as for the holotype, coll. ZIE (1 ♂, No 1) and coll. NMP (1 ♀, No 2).
Description. Wingless species related or similar to *A. escalerai* sp. n. and *A. kermanensis* sp. n. (see above) with large and robust body (Fig. 11). Total length 12.0-13.4 mm (holotype 12.0 mm, average 12.9 mm, $n = 3$). Dorsal side black-brown to black except red-brown to dark brown labrum and dark brown to black lateral margins of pronotum, shiny in males with elytra more shiny than head and pronotum and with slight lustre in female. Ventral side red-brown to brown (males) or dark brown (female). Mandibles dark brown. Antennae and legs red-brown to brown. Maxillary and labial palpi red-brown.

Head thickened, densely and finely to mostly coarsely punctate with slightly convex eyes. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows almost absent (in holotype) to short, wide and shallow. Antennae reaching base of pronotum when reclined. Antennomere 1 broad. Mentum with rectangular, short and broad median tooth, bifid with rounded apexes in males and simple in female.

Pronotum relatively large, rather transverse (ratio of width/length = 1.49-1.55, holotype 1.49), strongly convex, widest before or at middle (in holotype), markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.92-0.97, holotype 0.97), lateral margins slightly convex before posterior angles (Figs 11 and 12). Anterior margin of pronotum almost straight, anterior angles not or slightly protruding, rounded. Posterior corners short, right-angled, with distinct apex. Pronotal base shallowly emarginate, almost straight to posterior angles. Inner basal impression narrow, deep and long. Outer basal impression narrow, shallow and short, not separated from lateral margin by a callus. Anterior part of pronotum rather densely and finely to coarsely punctate. Lateral margin of pronotum



Figs 11-16. *Amara khorramabadensis* sp. n. 11, 13-15: holotype, male; 12, 16: paratype No 2, female. 11: habitus, dorsal view; 12: head and prothorax, dorsal view; 13: median lobe of aedeagus, dorso-apical view; 14: median lobe of aedeagus, lateral view; 15: right paramere; 16: stylus, ventral view. Scale: 3 mm for Figs 11 and 12; 1 mm for Figs 13-16.
Obr. 11-16. *Amara khorramabadensis* sp. n. 11, 13-15: holotypus, samec; 12, 16: paratypus č. 2, samice. 11: habitus, dorsální pohled; 12: hlava a předohruď, dorsální pohled; 13: penis, dorsoapikální pohled; 14: penis, boční pohled; 15: pravá paramera; 16: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 11 a 12; 1 mm pro obr. 13-16.

sparsely to very sparsely and finely to coarsely punctate. Pronotal base densely to sparsely and coarsely punctate.

Elytra large and broad (ratio of length/width = 1.44-1.47, holotype 1.45), strongly to very strongly convex, declivity of elytra before apex steep to almost vertical in lateral view. Striae distinct, moderately (in holotype) to strongly deepened and widened, finely punctate. Row of setiferous punctures in stria 8 widely to considerably interrupted. Stria 7 with two to three distinct setiferous punctures before apex. Scutellar stria continuous or interrupted at posterior part, joining elytral stria 1, the latter interrupted. Scutellar setiferous puncture absent. Base of elytra slightly sinuate, basal bead relatively broad and slightly sinuate (Fig. 11). Elytral humeri with weak humeral tooth. Microsculpture consisting of regular meshes, coarser in female.

Ventral part of thorax and abdomen. Prosternum of male in middle very sparsely and finely punctate, with shallow fovea. Prosternal process shallowly to deeply beaded, with 2-4 setae anteriorly (holotype with three setae, two on the right side). Episternum of prothorax smooth. Episternum of mesothorax sparsely (in holotype) to densely and coarsely punctate. Episternum of metathorax very sparsely and coarsely to finely (in holotype) punctate, as wide as long. Sides of abdominal ventrites 1 and 2 sparsely (in holotype) to densely and coarsely to finely (in holotype) punctate, sides of abdominal ventrite 3 smooth or sparsely and finely punctate (in paratype No 1), sides of abdominal ventrites 4 to 6 smooth. Abdominal ventrites 3 to 5 with one pair of setiferous punctures. Males with two, female with four setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Middle femora 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 above (length 3.68-3.84 mm, width 0.63-0.65 mm; holotype 3.68 and 0.65 mm), markedly broadened dorsally toward apex (Fig. 13). Apex of median lobe conspicuously elongate above (ratio of length/width = 3.42-3.63; holotype 3.42), markedly curved to left. Right paramere without hook (Fig. 15).

Styli large, last stylomere tongue-shaped, with long and fine lateral spurs (Fig. 16).

Differential diagnosis. *Amara khorramabadensis* sp. n. belongs to the group of the following three species: *A. escalerai* sp. n., *A. kermanensis* sp. n., and *A. khorramabadensis* sp. n. (see Differential diagnosis of *A. escalerai* sp. n. for their common characters). It is distinguishable from the other two related species by a broader basal bead of elytra, right-angled posterior corners of the pronotum, non-flattened lateral margin of the pronotum, and narrower inner impression on the pronotal base. The closely related *A. escalerai* sp. n. differs also in having a different shape of the aedeagus (the male is unknown in *A. kermanensis* sp. n.). The sympatric *A. szekessyi* differs especially in having a shorter pronotum, which is less narrowed toward posterior angles, markedly convex eyes, very different shape of the aedeagus, and smaller size (body length 8.3-11.5 mm).

Distribution and habitat. *Amara khorramabadensis* sp. n. was found in the Zagros mountain range in the Lorestan province in western Iran (Fig. 58). Two closely related or similar species inhabit a more southern (border between the Khuzestan and Chaharmahal-va-Bakhtiyari provinces in southwestern Iran; *A. escalerai* sp. n.) or remote areas (Kerman province, southeastern Iran; *A. kermanensis* sp. n.). The individuals were collected in a mountain steppe at an altitude of ca. 2000 m a.s.l. (S. Kadlec, pers. comm.).

Name derivation. The specific name is derived from the name of the city of Khorramabad, which is only 52 kilometres away from the type locality.

Amara (*Pseudoleirides*) *shirazica* sp. n.
(Figs 17, 18)

Type material. Holotype: ♀, specimen without left mandible, labelled "IRAN, DACHT. ARGEN, 60 km de SHIRAZ, 100 m, 20.II.1965", collected in Fars province, Zagros mountain range, probably Dasht-e-Arzhan (= Dachte-Arjan, ca. 45 km west of Shiraz), ca. 29°40' N, 52°00' E (Fig. 58), altitude and collector unknown, "100 m" – sic!, coll. MNHUB.

Description (female). Wingless species related to *A. loeffleri*, with relatively middle-sized, robust and elongate body (Fig. 17). Total length 10.8 mm. Dorsal side dark brown, shiny. Ventral side brown. Antennae and legs red-brown. Maxillary and labial palpi pale red-brown.

Head thickened, densely and finely to coarsely punctate with short and slightly to markedly convex eyes. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows short and shallow. Antennae short, not reaching base of pronotum when reclined. Antennomere 1 very broad. Mentum with simple (i.e. not bifid) and rounded median tooth.

Pronotum transverse (ratio of width/length = 1.66), widest at middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.90), lateral margins slightly sinuate before posterior angles. Anterior margin of pronotum slightly sinuate, anterior angles slightly protruding, rounded. Posterior angles short, slightly obtuse, with apex shortly rounded. Pronotal base slightly sinuate toward posterior angles. Inner basal impression deep, with narrow longitudinal median groove. Outer basal impression absent. Anterior part of pronotum sparsely and finely to coarsely punctate. Lateral margin of pronotum sparsely and finely to coarsely punctate. Pronotal base sparsely and finely to coarsely punctate, middle part very sparsely and finely so.

Elytra relatively narrow and elongate (ratio of length/width = 1.52), declivity of elytra steep before apex in lateral view. Striae strongly deepened, very finely punctate. Row of setiferous punctures in stria 8 widely interrupted. Stria 7 with two distinct setiferous punctures before apex. Scutellar stria continuous, touching stria 1. Scutellar setiferous puncture absent. Base of elytra and basal bead not examined. Elytral humeri obtuse, rounded, humeral tooth absent. Microsculpture consisting of regular meshes.

Ventral part of thorax and abdomen (female). Prosternum smooth. Prosternal process shallowly beaded, with three setae anteriorly (two on the right side). Episternum of prothorax very sparsely and finely punctate. Episternum of mesothorax sparsely and coarsely punctate. Episternum of metathorax not examined. Sides of abdominal ventrites 1 and 2 very sparsely and very finely punctate, sides of abdominal ventrites 3 to 6 almost smooth. Abdominal ventrites 3 and 4 with one pair of setiferous punctures, abdominal ventrite 5 with three setiferous punctures (two on the left side). Posterior margin of last abdominal ventrite with four setiferous punctures.

Legs. Ventral side of middle femora before posterior margin with four setiferous punctures.

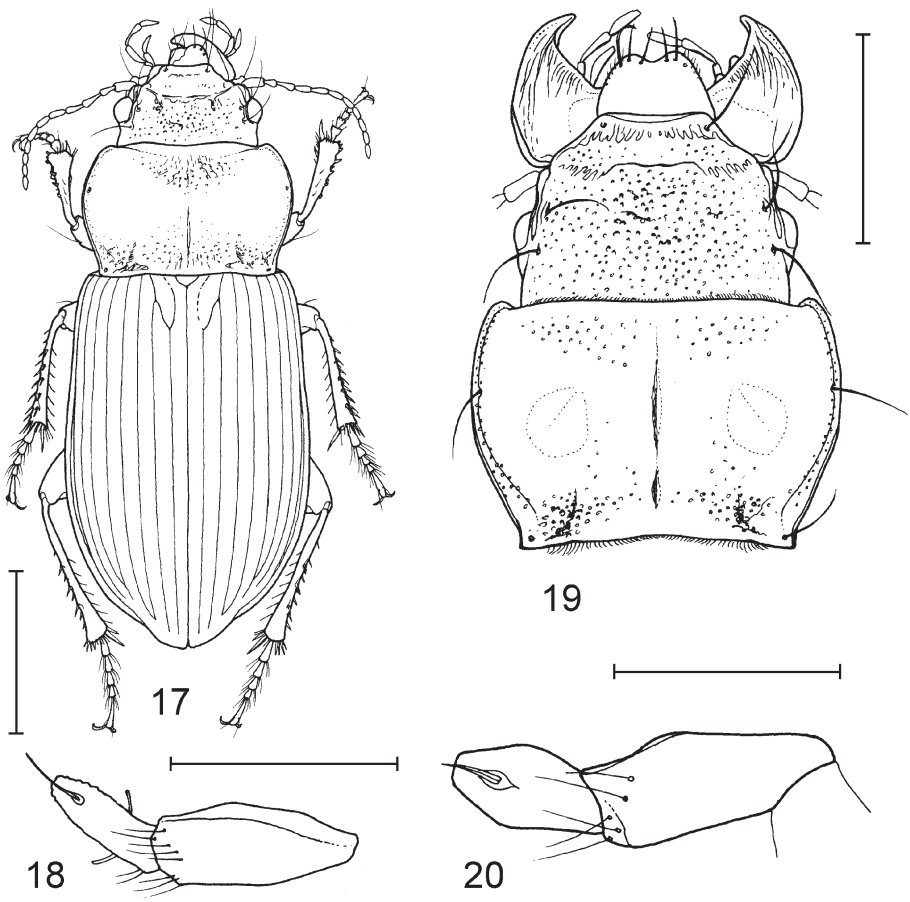
Male unknown.

Styli long, last stylomere elongate and narrow, with relatively short and fine lateral spurs (Fig. 18).

Differential diagnosis. *Amara shirazica* sp. n. is most closely related to *A. loeffleri*, with which it shares a number of characters (robust body, distinctly thickened head, transverse pronotum, absent humeral tooth, similarly shaped styli). *Amara loeffleri* differs especially in having broader elytra, longer and less convex eyes, larger pronotum that is less narrowed toward posterior angles, and dull elytra in females. *Amara cadoudali* with a similar distribution

is distinguishable from *A. shirazica* sp. n. by a more sparsely and more finely punctate head, conspicuously prominent eyes, more slightly narrowed pronotum toward posterior angles, two impressions on each side of pronotal base, and non-deepened elytral striae.

Distribution and habitat. *Amara shirazica* sp. n. was collected in the southern Zagros mountain range in the Fars province in southern Iran (Fig. 58). The closely related *A. loeffleri* inhabits a more northern area in the Kuh-e Zard Mountains in the Chaharmahal-va-Bakhtiyari province in southwestern Iran. The habitat of *A. shirazica* sp.n. is unknown. However, it probably inhabits the alpine zone given the known habitats of the other closely related species and the shape of the body (e.g. short eyes).



Figs 17-20. *Amara* spp. 17: habitus, dorsal view; 18, 20: stylus, ventral view; 19: head and prothorax, dorsal view. 17, 18: *A. shirazica* sp. n., holotype; 19, 20: *A. zagrosensis* (Morvan), paratype. Scale: 3 mm for Figs 17 and 19; 1 mm for Figs 18 and 20.

Obr. 17-20. *Amara* spp. 17: habitus, dorsální pohled; 18, 20: stylus, ventrální pohled; 19: hlava a předohruď, dorsální pohled. 17, 18: *A. shirazica* sp. n., holotypus; 19, 20: *A. zagrosensis* (Morvan), paratypus. Měřítko: 3 mm pro obr. 17 a 19; 1 mm pro obr. 18 a 20.

Name derivation. The new species is named after the city of Shiraz, which is only 45 kilometres away from the type locality.

Amara (*Pseudoleirides*) *yasujensis* sp. n.

(Figs 21-24)

Type material. Holotype: ♂, labelled "S Iran, Kúhé Dena, 3000-4000 m, 14.6.1973" and "Loc. no. 242, Exp. Nat. Mus. Praha", collected on the border between Kohgiluyeh-va-Boyer Ahmad and Esfahan provinces, Zagros mountain range, Kuh-e Dinar Mountains, high mountain meadows and top rocky area with large snow-fields, 30°50' N, 51°35' E (Hoberlandt 1981 and Fig. 58), coll. NMP. Paratypes: Nos 1-4, 1 ♂, 3 ♀♀, same data as for the holotype, coll. HEJ (1 ♂, No 1) and coll. NMP (3 ♀♀, Nos 2-4).

Description. Wingless species related to *A. zagrosensis* with large and narrow body (Fig. 21). Total length 10.7-12.7 mm (holotype 11.6 mm, average 11.8 mm, $n = 5$). Dorsal side dark brown to black-brown (in holotype). Labrum red-brown to dark brown. Margins of pronotum, lateral margins and basal bead of elytra red-brown to dark brown. Dorsal side shiny in males and with slight lustre to almost dull with elytra less shiny than head and pronotum in females. Ventral side red-brown to dark brown. Mandibles red-brown to dark brown. Antennae and legs red-brown to brown. Maxillary and labial palpi red-brown.

Head slightly thickened, densely and finely to mostly coarsely punctate, eyes small and slightly to very slightly convex. Anterior margin of labrum with six setiferous punctures. Anterior part of clypeus with arcuate callus. Frontal furrows mostly short, wide and shallow. Antennae almost reaching to reaching (in holotype) base of pronotum when reclined. Antennomere 1 broad. Mentum with simple (i.e. not bifid), rounded and moderately elongate median tooth.

Pronotum small, narrow and short, rather transverse (ratio of width/length = 1.54-1.61, holotype 1.61), slightly convex, widest before middle, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.90-0.99, holotype 0.90), lateral margins markedly convex before posterior angles. Anterior margin of pronotum very shallowly emarginate, anterior angles not or slightly protruding, rounded. Posterior corners short, slightly obtuse to right-angled, with apex distinct. Pronotal base shallowly emarginate, almost straight to posterior angles. Inner basal impression mostly narrow and deep, varying in length. Outer basal impression shallow and short, not separated from lateral margin by a callus. Anterior part of pronotum densely and mostly coarsely punctate. Lateral margin of pronotum narrowly flattened, sparsely to very sparsely and finely to coarsely punctate. Pronotal base densely to sparsely (in paratype No 1) and coarsely punctate.

Elytra narrow and almost parallel-sided (ratio of length/width = 1.47-1.54, holotype 1.51), slightly convex, declivity of elytra steep before apex in lateral view. Striae distinct, moderately deepened and widened, finely to very finely punctate. Row of setiferous punctures in stria 8 mostly interrupted. Stria 7 with two distinct setiferous punctures before apex. Scutellar stria continuous, touching stria 1. Scutellar setiferous puncture absent. Base of elytra slightly sinuate to almost straight, basal bead slightly sinuate. Elytral humeri very variable in shape, mostly angulate, obtuse, humeral tooth absent, with weak humeral tooth in holotype and rounded in paratype No 1. Microsculpture consisting of regular meshes, coarser in females.

Ventral part of thorax and abdomen. Prosternum of male in middle densely (in holotype) to sparsely and coarsely (in holotype) to finely punctate, with shallow longitudinal fovea (in holotype) or transverse impression (in paratype No 1). Prosternal process very shallowly to

shallowly beaded, bead mostly interrupted, with two (three in paratype No 2) setae anteriorly. Episternum of prothorax sparsely and coarsely punctate, posterior part smooth. Episternum of mesothorax densely and coarsely punctate. Episternum of metathorax sparsely and coarsely punctate, as wide as long. Sides of abdominal ventrite 1 sparsely and finely (in holotype) to coarsely punctate, sides of abdominal ventrite 2 sparsely (in holotype) to densely and finely (in holotype) to coarsely punctate, sides of abdominal ventrite 3 sparsely and finely punctate, sides of abdominal ventrites 4 to 6 smooth. Abdominal ventrite 3 with two (three in paratype No 1) setiferous punctures, abdominal ventrite 4 with two (three in paratype No 4) setiferous punctures, abdominal ventrite 5 with one pair of setiferous punctures. Males with two, female with four setiferous punctures at posterior margin of last abdominal ventrite.

Legs. Ventral surface of middle femora with 3-5 setiferous punctures before posterior margin. Inner edge of male middle tibiae without teeth. Inner side of male hind tibiae without brush-like setae.

Aedeagus. Median lobe very long and very narrow above (length 3.00-3.14 mm, width 0.50 mm; holotype 3.14 and 0.50 mm), slightly broadened toward apex dorsally (Fig. 22). Apex of median lobe markedly elongate above (ratio of length/width = 2.58-3.16; holotype 2.58), almost symmetric (in holotype) or very slightly curved to left (in paratype No 1). Right paramere without hook (Figs 22 and 23).

Styli large, last stylomere tongue-shaped, with relatively short and fine lateral spurs (Fig. 24).

Differential diagnosis. *Amara yasujensis* sp. n. is most closely related to *A. zagrosensis*, with which it shares a number of characters (habitus, almost parallel-sided elytra, densely and mostly coarsely punctate head, small and slightly to very slightly convex eyes, and narrowly flattened lateral margin of pronotum). *Amara zagrosensis* differs in having a larger head, less narrowed pronotum toward anterior angles, distinctly protruding anterior angles of pronotum, acute posterior angles of pronotum, and larger size (15.1 mm).

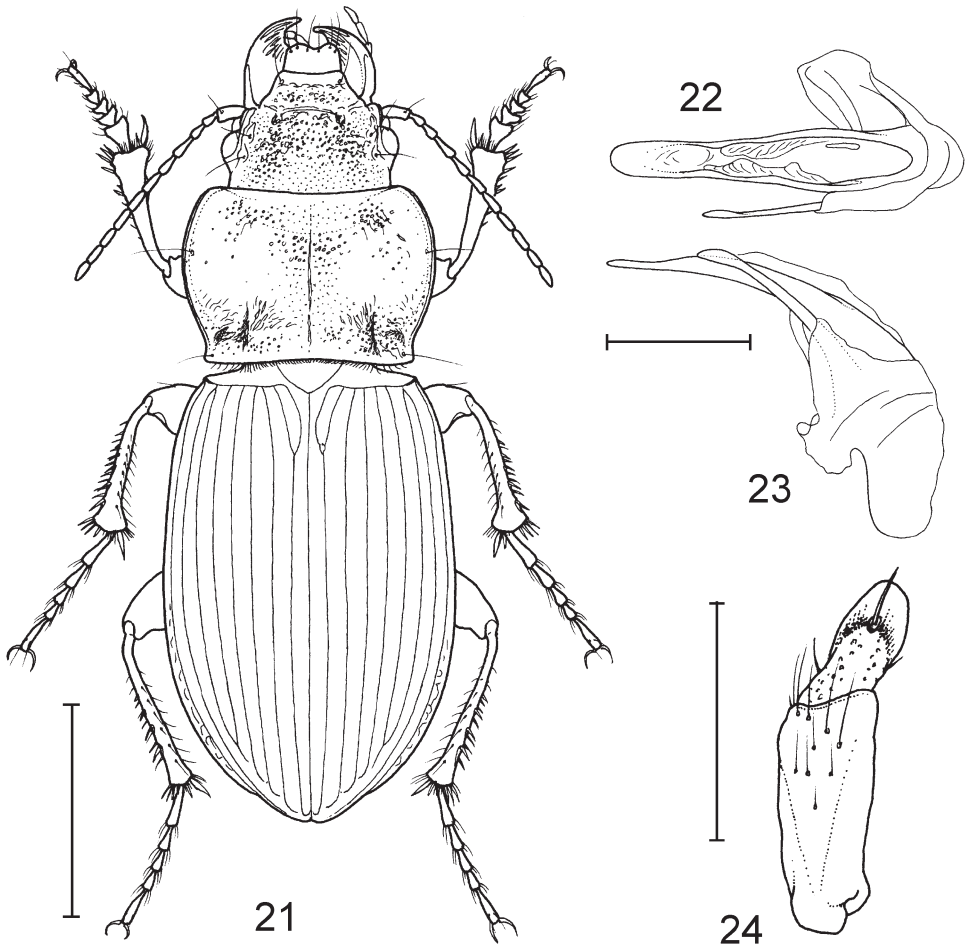
Distribution and habitat. *Amara yasujensis* sp. n. was found in the Kuh-e Dinar Mountains, which belong to the Zagros mountain range, at the border between the Kohgiluyeh-va-Boyer Ahmad and Esfahan provinces in southern Iran (Fig. 58). Five individuals were collected in high mountain meadows and a rocky area at a hilltop with large snow-fields at an altitude of ca. 3000-4000 m a.s.l. (see Hoberlandt 1981: p. 29). The similar *A. zagrosensis* inhabits a more northern area (Kuh-e Zard Mountains, Chaharmahal-va-Bakhtiyari province, southwestern Iran).

Name derivation. The specific name is derived from the name of the city of Yasuj, which is only 18 kilometres away from the type locality.

Amara (*Pseudoleirides*) *bucharica mazandarana* Hieke, 1976
(Figs 25-29)

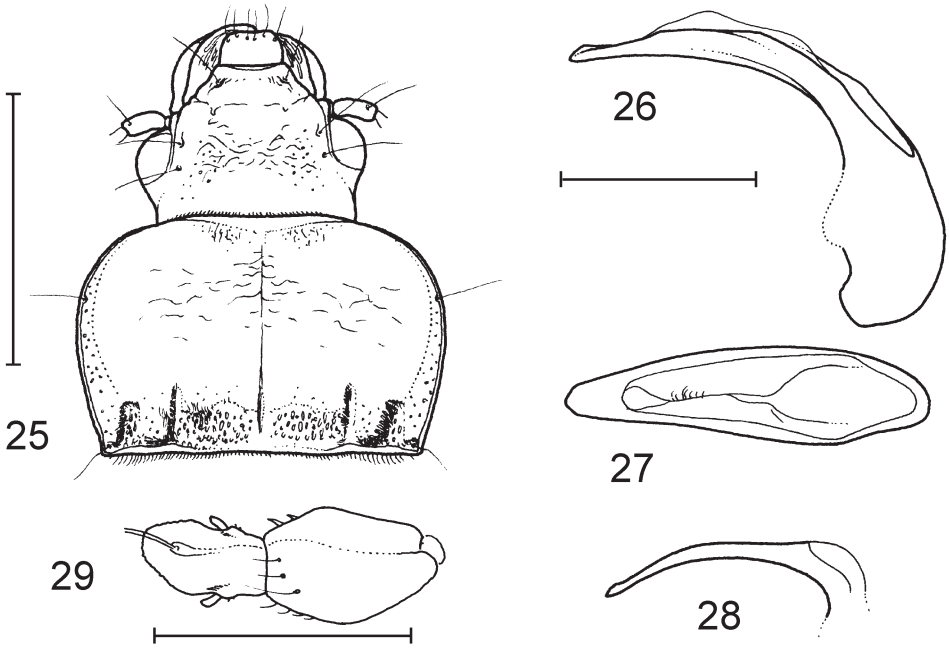
Amara (*Pseudoleirides*) *bucharica mazandarana* Hieke, 1976: 349.
Amara (*Pseudoleirides*) *mazandarana*: Hieke 1981: 86 (in press since 1975).
Amara (*Pseudoleirides*) *bucharica mazandarana*: Hieke 1995: 36.

Type material examined. Holotype: ♂, labelled "N Iran, Wldlf. Park, Robat-e Quareh Bil, 1000 m, 30.7.1970", "Loc. no. 78, Exp. Nat. Mus. Praha", "Mus. Nat. Pragae, Inv. 26 538", "Holotypus" and "HT, Amara (Pseudoleirides) mazandarana sp. n., det. F. Hieke 1972", col-



Figs 21-24. *Amara yasujensis* sp. n. 21-23: holotype, male; 24: paratype No 2, female. 21: habitus, dorsal view; 22: aedeagus: median lobe and parameres, dorso-apical view; 23: aedeagus: median lobe and right paramere, lateral view; 24: stylus, ventral view. Scale: 3 mm for Fig. 21, 1 mm for Figs 22-24.
Obr. 21-24. *Amara yasujensis* sp. n. 21-23: holotypus, samec; 24: paratypus č. 2, samice. 21: habitus, dorsální pohled; 22: aedeagus: penis a paramery, dorsoapikální pohled; 23: aedeagus: penis a pravá paramera, boční pohled; 24: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 21, 1 mm pro obr. 22-24.

lected in Mazandaran province, east part of Shah Mohammad Reza Wildlife Park, 37°19' N, 56°26' E (Hoberlandt 1974), coll. NMP. Paratypes (without numbers): 5♀♀, labelled "Paratypus" and "AT, Amara (Pseudoleirides) mazandarana sp. n., det. F. Hieke 1972" (1♀, inventory number: 26 539) or "PT, Amara (Pseudoleirides) mazandarana sp. n., det. F. Hieke 1972" (4♀♀, inventory numbers: 26 540-26 543), same data as for the holotype, coll. NMP.
Note. According to the original description, the type series contains eight specimens (male holotype and one male and six female paratypes) of the same origin, housed in NMP (Hieke 1981).



Figs 25-29. *Amara bucharica mazandarana* Hieke. 25-28: holotype, male; 29: paratype, female, "Inv. 26 539". 25: head and prothorax, dorsal view; 26: median lobe of aedeagus, lateral view; 27: median lobe of aedeagus, dorso-apical view; 28: right paramere; 29: stylus, ventral view. Scale: 3 mm for Fig. 25, 1 mm for Figs 26-29.
Obr. 25-29. *Amara bucharica mazandarana* Hieke. 25-28: holotypus, samec; 29: paratypus, samice, „Inv. 26 539". 25: hlava a předohruď, dorsální pohled; 26: penis, boční pohled; 27: penis, dorsoapikální pohled; 28: pravá paramera; 29: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 25, 1 mm pro obr. 26-29.

Redescription. Subspecies with broad and very strongly convex body. Total length 9.2-11.4 mm (holotype 11.0 mm, average 10.5 mm, $n = 6$). Dorsal side black-brown. Legs dark brown to red-brown, antennae, maxillary and labial palpi red-brown to pale red-brown. Head slightly thickened, almost smooth to very sparsely (in holotype) and very finely to finely (in holotype) punctate with large and slightly to markedly (in holotype) convex eyes. Pronotum large (ratio of width/length = 1.47-1.51, holotype 1.50), widest at middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.70-0.77, holotype 0.70), lateral margins slightly convex before posterior angles (Fig. 25). Anterior margin of pronotum slightly sinuate to straight, anterior angles not protruding, rounded. Posterior angles obtuse (slightly obtuse in holotype), with apex distinct or shortly rounded. Pronotal base slightly sinuate to almost straight toward posterior angles. Inner basal impression mostly narrow, deep and long. Outer basal impression mostly shallow and short. Anterior part of pronotum almost smooth to very sparsely and finely (in holotype) punctate. Pronotum with widely flattened lateral margins in posterior half. Lateral margin of pronotum sparsely to very sparsely and finely punctate. Pronotal base sparsely to densely and finely to coarsely punctate. Elytra short (ratio of length/width = 1.41-1.46, holotype 1.43), shiny (male, some females) or dull

(some females). Striae shallow to moderately deepened. Elytral humeri with small humeral tooth. Male with three (or two, see Hieke 1981), female with four setiferous punctures at posterior margin of last abdominal ventrite. Median lobe of aedeagus relatively short (length 2.40 mm, width 0.53 mm) (Figs 26 and 27). Apex of median lobe relatively short and broad above (ratio of length/width = 1.31), almost symmetric (Fig. 27). Styli small, last stylomere tongue-shaped, with short and broad lateral spurs (Fig. 29).

Differential diagnosis. *Amara bucharica mazandarana* is a remarkable subspecies with a very strongly convex body, large eyes, and short elytra.

Distribution and habitat. This subspecies represents the subgenus *Pseudoleirides* in northeastern Iran. It is known from the northwestern part of the Khorasan province (Fig. 58). Eight individuals were collected in the valley on the Minudasht-Bojnurd road at an altitude of ca. 1000 m a.s.l. in the western part of the Kuh-e Aladagh Mountains (see Hoberlandt 1974: p. 17). Other subspecies of *A. bucharica* inhabit the Kopet Dag Mountains in southern Turkmenistan (*A. bucharica kopetdaghi*) and the steppe and desert areas between the Caspian Sea and the western spurs of the Tian Shan Mountains in Kazakhstan and Turkmenistan (*A. bucharica bucharica*) (Hieke 1976, 2007).

Amara (*Pseudoleirides*) *cadoudali* Morvan, 1977

(Figs 30-33)

Amara (*Cribramara*) *cadoudali* Morvan, 1977: 25.
Amara (*Pseudoleirides*) *cadoudali*: Hieke 1995: 36 (new subgeneric placement).

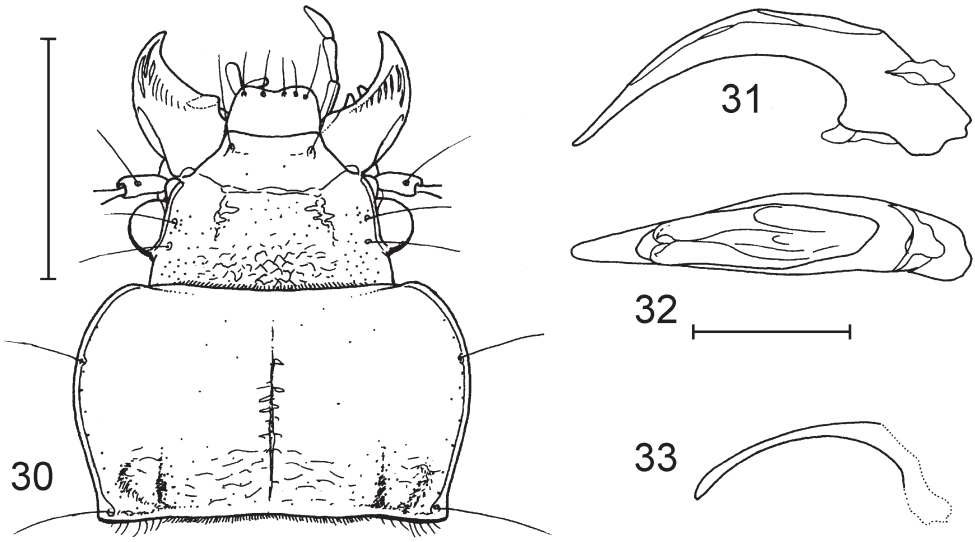
Type material examined. Holotype: ♂, labelled "IRAN, Zagros, Kazerun, 2300 m, VI.1970, MORVAN P." and "HOLOTYPE", the Zagros mountain range (Morvan 1977), coll. MOR.

Note. According to the original description, *A. cadoudali* was described from a single male specimen (Morvan 1977).

Redescription. Species related to *A. szekessyi*, with relatively broad and short body. Total length 9.9 mm. Dorsal side with black-brown head and pronotum and chestnut-brown elytra. Labrum, mandibles, antennae, maxillary palpi, labial palpi, legs and lateral margins of pronotum and elytra brown-red to red-brown. Head thickened, sparsely and rather finely punctate with conspicuously prominent, markedly convex eyes. Pronotum short, transverse (ratio of width/length = ca. 1.7), widest at middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.78), lateral margins straight to slightly convex before posterior angles (Fig. 30). Anterior margin of pronotum slightly sinuate to almost straight, anterior angles slightly protruding, rounded. Posterior angles slightly obtuse, with apex shortly rounded. Pronotal base slightly sinuate toward posterior angles. Inner and outer basal impressions distinct, wide and shallow. Anterior part of pronotum almost smooth. Pronotal base around both impressions sparsely and finely to coarsely punctate. Elytra short, with slight lustre (male). Striae not deepened. Elytral humeri very obtuse, humeral tooth absent. Last abdominal ventrite not examined. Median lobe of aedeagus elongate and narrow above (Fig. 32). Apex of median lobe elongate and symmetric above.

Female unknown.

Differential diagnosis. *Amara cadoudali* is most closely related to *A. szekessyi*, with which it shares a number of characters (habitus, distinctly thickened head, markedly convex eyes,



Figs 30-33. *Amara cadoudali* Morvan, holotype. 30: head and prothorax, dorsal view; 31: median lobe of aedeagus, lateral view; 32: median lobe of aedeagus, dorso-apical view; 33: right paramere. Scale: 3 mm for Fig. 30, 1 mm for Figs 31-33.
Obr. 30-33. *Amara cadoudali* Morvan, holotypus. 30: hlava a předohruď, dorsální pohled; 31: penis, boční pohled; 32: penis, dorsoapikální pohled; 33: pravá paramera. Měřítko: 3 mm pro obr. 30, 1 mm pro obr. 31-33.

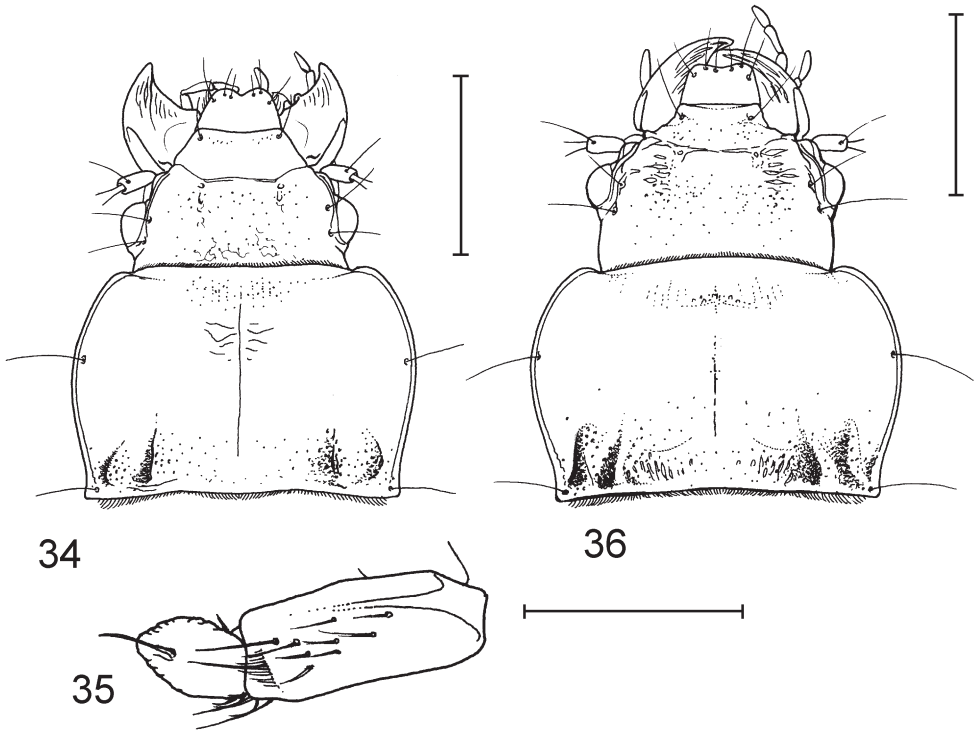
transverse pronotum slightly narrowed toward posterior angles, usually smooth or sparsely and finely punctate anterior part of pronotum, absent humeral tooth, and similarly shaped aedeagus). *Amara cadoudali* is recognisable from *A. szekessyi* by conspicuously prominent eyes, less shiny elytra in male, and shallow elytral striae. Posterior angles of pronotum are slightly obtuse with shortly rounded apex (markedly sharp or shortly rounded in *A. szekessyi*). A similarly distributed species, *A. shirazica* sp. n., is distinguishable from *A. cadoudali* by a more densely and more coarsely punctate head, less convex eyes, more markedly narrowed pronotum toward posterior angles, one impression on each side of pronotal base, and strongly deepened elytral striae.

Distribution and habitat. *Amara cadoudali* is known from the southern Zagros mountain range at an altitude of ca. 2300 m a.s.l. in the Fars province in southern Iran (Fig. 58). The habitat of *A. cadoudali* is unknown. The closely related *A. szekessyi* has a more northern distribution in northwestern, western and northern Iran.

Amara (*Pseudoleirides*) *chodjaii* Morvan, 1975
(Figs 34, 35)

Amara (*Pseudoleirides*) *chodjaii* Morvan, 1975: 72.

Type material examined. Holotype: ♀, teneral specimen, labelled "IRAN, SAHAND, TABRIZ, 2.600 m, VII.1973, MORVAN" and "HOLOTYPE", collected in Azarbayjan-e province, Sahand Mountains, under stone in volcanic terrain (Morvan 1975), coll. MOR.



Figs 34-36. *Amara* spp. 34, 36: head and prothorax, dorsal view; 35: stylus, ventral view. 34, 35: *A. chodjaii* Morvan, holotype; 36: *A. mukusensis* Hieke, female, Turkey, Van province, Gevas, coll. HEJ. Scale: 3 mm for Figs 34 and 36; 1 mm for Fig. 35.
Obr. 34-36. *Amara* spp. 34, 36: hlava a předohruď, dorsální pohled; 35: stylus, ventrální pohled. 34, 35: *A. chodjaii* Morvan, holotypus; 36: *A. mukusensis* Hieke, samice, Turecko, provincie Van, Gevas, coll. HEJ. Měřítko: 3 mm pro obr. 34 a 36; 1 mm pro obr. 35.

Note. *Amara chodjaii* was described according to a single specimen (female).
Redescription. Species similar to *A. mukusensis* from southeastern Turkey, with large body. Total length 12.0 mm. Dorsal side dark brown to dark red-brown (teneral specimen, see above). Labrum, mandibles, antennae, maxillary and labial palpi, legs and sides of elytra brown-red to red-brown. Head thickened, sparsely and rather finely punctate with slightly convex eyes. Pronotum elongate, rather transverse (ratio of width/length = ca. 1.55), widest at middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.75), lateral margins slightly sinuate before posterior angles (Fig. 34). Anterior margin of pronotum slightly sinuate to almost straight, anterior angles not protruding, rounded. Posterior angles rectangular, with apex shortly rounded. Pronotal base slightly and arcuately sinuate toward posterior angles. Inner basal impression wide with relatively deep longitudinal median groove. Outer basal impression wide and deep, separated from lateral margin by a distinct callus. Anterior part of pronotum sparsely to densely and finely punctate. Pronotal base sparsely and finely punctate, around both impressions densely and coarsely so. Elytra large, dull (female).

Striae not deepened. Elytral humeri obtuse, shortly rounded, humeral tooth absent. Posterior margin of last abdominal ventrite with four setiferous punctures (female).

Male unknown.

Styli large, last stylomere very short, pentagon-shaped, with relatively short and fine lateral spurs (Fig. 35).

Differential diagnosis. *Amara chodjaii* is habitually similar to *A. mukusensis*, with which it shares a number of characters (habitus, rectangular posterior angles of pronotum, base of pronotum with two impressions on each side, outer basal impression separated from lateral margin by a distinct callus, and similarly shaped styli). *Amara mukusensis* differs in having the eyes more convex, pronotum more narrowed toward posterior angles (ratio of anterior margin/posterior margin = 0.79-0.83 in four measured specimens, Fig. 36), impressions on the pronotal base deeper, elytral striae moderately to strongly deepened, and more shiny elytra of the female. The sympatric *A. szekessyi* differs especially in having a shorter pronotum, markedly convex eyes, shallow or absent outer basal impression on pronotum, mostly more shiny elytra of the female, and smaller size (8.3-11.5 mm).

Distribution and habitat. *Amara chodjaii* is known from the Kuh-e Sahand Mountains in the Azarbayejan-e Sharqi province in northwestern Iran (Fig. 58). One specimen was collected under stone in volcanic terrain at an altitude of ca. 2600 m a.s.l. (Morvan 1975). The similar *A. mukusensis* has a more western distribution (Van province, southeastern Turkey).

Amara (*Pseudoleirides*) *iranica* Kryzhanovskij, 1968

(Figs 37-40)

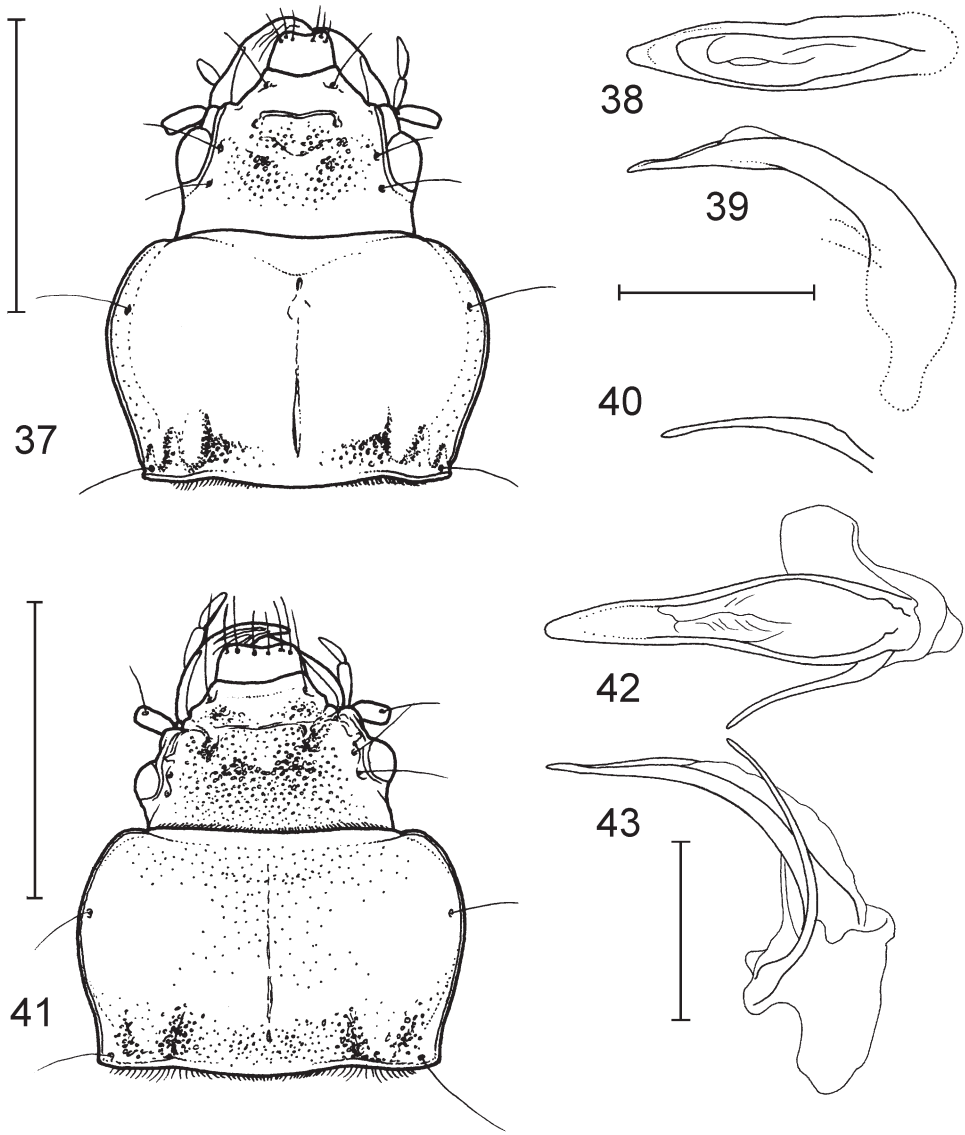
Amara (*Pseudoleirides*) *iranica* Kryzhanovskij, 1968: 170.

Type material examined. Holotype: ♂, labelled "Yu.-Z. Iran, okr. g. Dizful', 10 III 1904, Zarudnyj" and "10.III.04., Zarudnyj" (in Russian alphabet), "Holotypus", "A. (Pseudoleirides) iranica sp.n., ♂, Kryzhanovskij det. 1963" and "ZOOLOGICAL INSTITUTE RAS ST.PETERSBURG", collected in southwestern Iran, environs of "Dizful' " (Kryzhanovskij 1968), coll. ZIP.

Additional material examined. 1 ♂, 1 ♀, labelled "Yu Z Iran, okr. Dizfulya, 13.III.1904, Zarudnyj" (in Russian alphabet), coll. ZIP.

Note. According to the original description, the species was described from two specimens (holotype male and paratype female) of the same origin and deposited in ZIP (Kryzhanovskij 1968).

Redescription. Species similar to *A. pakistana* (known from north-eastern Afghanistan and northern Pakistan) with relatively middle-sized body. Total length 10.7-11.0 mm (holotype 10.8 mm). Dorsal side chestnut-brown (mandibles, lateral margins of pronotum and elytra paler, red-brown). Antennae, maxillary palpi, labial palpi and legs red-brown to pale red-brown. Head slightly thickened, densely and finely to coarsely punctate with large and slightly convex eyes. Pronotum relatively narrow (ratio of width/length = 1.49-1.52, holotype 1.51), widest at anterior two fifths of its length, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.80-0.84, holotype 0.84), lateral margins straight to slightly sinuate before posterior angles (Fig. 37). Anterior margin of pronotum slightly sinuate, anterior angles not protruding, rounded. Posterior angles with small denticle,



Figs 37-43. *Amara* spp. 37, 41: head and prothorax, dorsal view; 38: median lobe of aedeagus, dorso-apical view; 39: median lobe of aedeagus, lateral view; 40: right paramere; 42: aedeagus: median lobe and parameres, dorso-apical view; 43: aedeagus: median lobe and right paramere, lateral view. 37-40: *A. iranica* Kryzhanovskij, holotype; 41-43: *A. loeffleri* Jedlička, holotype. Scale: 3 mm for Figs 37 and 41; 1 mm for Figs 38-40, 42, and 43.
Obr. 37-43. *Amara* spp. 37, 41: hlava a předohruď, dorsální pohled; 38: penis, dorsoapikální pohled; 39: penis, boční pohled; 40: pravá paramera; 42: aedeagus: penis a paramery, dorsoapikální pohled; 43: aedeagus: penis a pravá paramera, boční pohled. 37-40: *A. iranica* Kryzhanovskij, holotypus; 41-43: *A. loeffleri* Jedlička, holotypus. Měřítko: 3 mm pro obr. 37 a 41; 1 mm pro obr. 38-40, 42 a 43.

slightly obtuse to rectangular, sharp. Pronotal base sinuate toward posterior angles. Inner basal impression narrow, deep and long. Outer basal impression rather narrow and deep, separated from lateral margin by indistinct callus. Anterior part of pronotum almost smooth (in holotype) to very sparsely and finely punctate. Lateral margin of pronotum widely flattened, very sparsely and finely punctate. Pronotal base sparsely and finely to coarsely punctate. Elytra short (ratio of length/width = 1.41-1.47, holotype 1.43), shiny in both sexes. Striae distinct, moderately deepened. Elytral humeri with distinct, small and acute humeral tooth. Males with two (in holotype) or three, female with four setiferous punctures at posterior margin of last abdominal ventrite. Median lobe of aedeagus small (holotype: length 2.05 mm, width 0.50 mm) (Figs 38 and 39). Apex of median lobe short and broad above (holotype: ratio of length/width = 1.08), almost symmetric (Fig. 38). Last stylomere of stylus tongue-shaped, with short and broad lateral spurs (see Hieke, 1976, p. 343).

Differential diagnosis. *Amara iranica* is habitually similar to *A. pakistana* due to its similarly shaped eyes and pronotum, flattened lateral margin of pronotum, two impressions on each side of pronotal base, and similarly shaped aedeagus. *Amara pakistana* differs especially in the narrower body, elytral humeri without distinct humeral tooth, lateral margin of pronotum more densely punctate, and probably also in more narrowed sides of pronotum toward posterior angles (ratio of anterior margin/posterior margin = 0.88-0.95 in two measured specimens).

Distribution and habitat. Kryzhanovskij (1968) described *A. iranica* from environs of "Dizful' " city in southwestern Iran (probably Dezful in the Khuzestan province, see Fig. 58). The similar *A. pakistana* inhabits a remote area in northeastern Afghanistan and northern Pakistan at an altitude of ca. 600-1200 m a.s.l. (Hieke 1976: p. 342). The habitat of *A. iranica* is unknown. However, the shape of the body (e.g., large eyes) and habitat preferences of other related species suggest that *A. iranica* is not a strictly alpine species.

Amara (*Pseudoleirides*) *loeffleri* Jedlička, 1963, stat. rest.

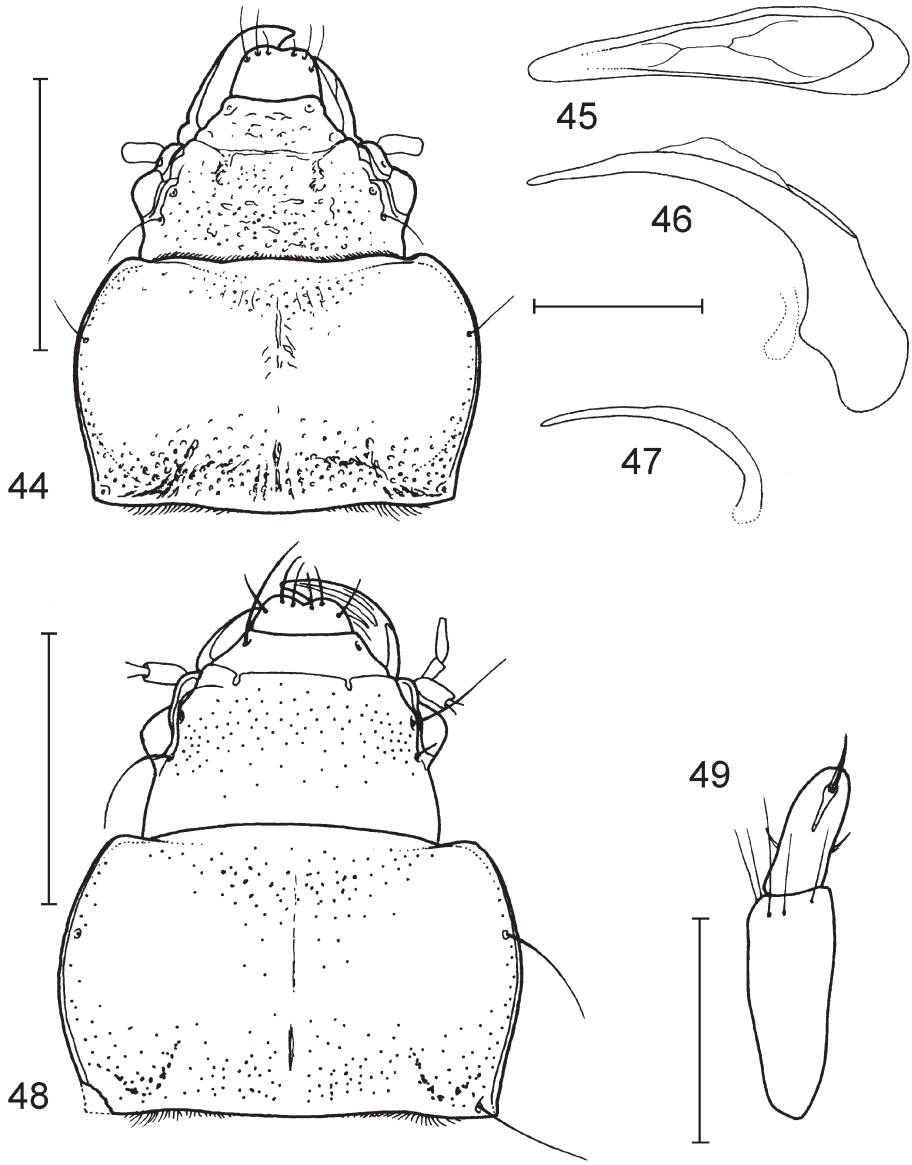
(Figs 41-49)

Amara (? *Percosia*) *löffleri* Jedlička, 1963: 174.
Amara (*Pseudoleirides*) *szekessyi loeffleri*: Hieke 1976: 339 (including new subgeneric placement).
Amara (*Pseudoleirides*) *löffleri*: Hieke 1981: 88 (in press since 1975).
Amara (*Pseudoleirides*) *szekessyi loeffleri*: Hieke 1995: 37.

Type material examined. Holotype: ♂, labelled "PERSIEN, Dr. Löffler", "Holotypus", "Amara löffleri sp.n., det. Ing. Jedlička" and "Amara (Pseudoleirides) löffleri Jedl., det. F. Hieke 1972", collected in Iran, Küh-rang, valley meadows (Jedlička 1963b), coll. NMP. Paratypes (without number): 1 paratype: ♀, labelled "Paratypus", same data as for the holotype, coll. NMP; 1 paratype: ♂, labelled "Küh-räng, Talwiesen, 10.5.50., leg. Dr. H. Löffler", "Dr. H. Löffler, Österr. Iran-Exped. 1949-50", "Paratypus", "Amara löffleri sp.n., det. Ing. Jedlička" and "Am. szekessyi ssp. löffleri Jedl., det. F. Hieke 1977", coll. MNHUB.

Additional material examined. 1 ♂, labelled "IRAN, zagros, Kurang, 2.500 m, VI-1970, MORVAN", coll. HEI; 1 ♀, labelled "IRAN, zagros, KURANG, 3200 m, 6.1970, MORVAN P", coll. MNHUB; 1 ♂, labelled "IRAN BAKHTIYARI, N-E du Zardeh-Kuh, 32°23'N/50°07'E, 2700 m, 20.6.74, A. SENGLET", coll. MNHUB.

Note. The species was described from seven specimens of the same origin (Jedlička 1963b).



Figs 44-49. *Amara loeffleri* Jedlička (continuation). 44-47: paratype, male; 48, 49: paratype, female. 44, 48: head and prothorax, dorsal view; 45: median lobe of aedeagus, dorso-apical view; 46: median lobe of aedeagus, lateral view; 47: right paramere; 49: stylus, ventral view. Scale: 3 mm for Figs 44 and 48; 1 mm for Figs 45-47 and 49.
Obr. 44-49. *Amara loeffleri* Jedlička (pokračování). 44-47: paratypus, samec; 48, 49: paratypus, samice. 44, 48: hlava a předohruď, dorsální pohled; 45: penis, dorsoapikální pohled; 46: penis, boční pohled; 47: pravá paramera; 49: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 44 a 48; 1 mm pro obr. 45-47 a 49.

Redescription. Species related to *A. shirazica* sp. n., with large and broad body. Total length 9.7-12.9 mm (holotype 11.2 mm, average 11.4 mm, *n* = 6). Dorsal side dark brown. Legs, antennae, maxillary and labial palpi dark brown to red-brown. Head thickened, densely to very densely and coarsely punctate with relatively short and slightly convex eyes. Pronotum large and transverse (ratio of width/length = 1.62-1.67, holotype 1.65), widest before (in holotype) or at middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.82-0.86, holotype 0.85), lateral margins straight to slightly sinuate (in holotype) before posterior angles (Figs 41, 44, 48). Anterior margin of pronotum slightly sinuate to straight, anterior angles not (in holotype) or slightly protruding, rounded. Posterior angles slightly obtuse with shortly rounded apex. Pronotal base slightly sinuate toward posterior angles. Inner basal impression narrow (in holotype) to wide and deep. Outer basal impression shallow or absent. Anterior part of pronotum usually densely and coarsely punctate. Lateral margin of pronotum sparsely to very sparsely and finely to coarsely punctate. Pronotal base densely to very densely and coarsely punctate. Elytra large and broad (ratio of length/width = 1.36-1.43, holotype 1.42), shiny in males and dull in females. Striae distinct, moderately to strongly deepened. Elytral humeri angulate to shortly rounded, obtuse, humeral tooth absent. Males with two, female with four to five setiferous punctures at posterior margin of last abdominal ventrite. Median lobe of aedeagus elongate and narrow above (length 2.59-2.85 mm, width 0.45-0.55 mm; holotype 2.85 and 0.55 mm) (Figs 42, 45). Apex of median lobe elongate (ratio of length/width = 2.27-2.48, holotype 2.48) and very slightly curved above to the right. Styli long, last stylomere elongate and narrow, with relatively short and fine lateral spurs (Fig. 49).

Status. Hieke (1976, p. 339) stated that *A. loeffleri* is a subspecies of *A. szekessyi*, with the decision based on an absence of "clear" differences between these two taxa. Both species are undoubtedly closely related. *Amara loeffleri* belongs to the group of four species (*A. cadoudali*, *A. loeffleri*, *A. shirazica* sp. n., and *A. szekessyi*) with similar overall appearance including a distinctly thickened head, transverse pronotum, absent humeral tooth, and similarly shaped aedeagus (the male is unknown in *A. shirazica* sp. n.). However, many differences are available to distinguish these species. *Amara loeffleri* is very similar to *A. shirazica* sp. n. (see below) but I suppose that *A. loeffleri* is a distinct species.

Differential diagnosis. *Amara loeffleri* is most closely related to *A. shirazica* sp. n., with which it shares a number of characters (robust body, distinctly thickened head, transverse pronotum, absent humeral tooth, and similarly shaped styli). *Amara shirazica* sp. n. differs especially in having narrower elytra, shorter and more convex eyes, smaller and more narrowed pronotum toward posterior angles, and shiny elytra in females. The sympatric *A. zagrosensis* is easily recognisable from *A. loeffleri* by its larger head, less convex eyes, more narrowed pronotum toward posterior angles, acute and markedly sharp posterior pronotal angles, narrower elytra, broader last stylomere, and larger size (15.1 mm).

Distribution and habitat. *Amara loeffleri* is known from the Kuh-e Zard Mountains, which belong to the Zagros mountain range, in the Chaharmahal-va-Bakhtiyari province in southwestern Iran (Fig. 58). Seven individuals were collected in valley meadows (Jedlička 1963b). Further specimens were found at an altitude of 2500-3200 m a.s.l. The closely related *A. shirazica* sp. n. inhabits a more southern area (Fars province, southern Iran).

Amara (*Pseudoleirides*) *szekessyi* Jedlička, 1953
(Figs 50-57)

Amara (Subg.?) *Székessyi* Jedlička, 1953: 111.
Amara (*Pseudoleirides*) *szekessyi*: Hieke 1976: 336 (new subgeneric placement).
Amara (*Pseudoleirides*) *szekessyi*: Hieke 1981: 86 (in press since 1975).

Type material examined. Holotype: ♂, teneral specimen, labelled "v. Bodemeyer, Persien, Luristan", "Coll. Reitter", "TYPUS", "Holotypus, Amara székessyi Jedlička, 1953", "Amara (Sbg. ?) Székessy sp.n., det. ING. JEDLIČKA" and "Am. (Pseudoleirides) szekessyi Jedl., det. F. Hieke 1972", coll. HNHMB. Paratypes (without numbers, designated as „Cotype"): 1 paratype: ♀, labelled "Cotype", "Paratypus, Amara székessyi Jedlička, 1953", same data as for the holotype, coll. HNHMB; 1 paratype: ♀, labelled "Cotype", same data as for the holotype and previous paratype except without "Coll. Reitter", coll. NMP.
Additional material examined. 3 ♂♂, 2 ♀♀, labelled "Persien, Luristan, v. Bodemeyer" (1 ♂ labelled "Amara Bodemeyeri Reitter Type"), coll. MNHUB (3 ♂♂, 1 ♀) and coll. NMP (1 ♀); 1 ♂, 1 ♀, labelled "Persia", coll. MNHUB; 1 ♂, labelled "Mesopotamia", coll. MNHUB; 1 ♀, labelled "Plateau Persan Occid. DE HAMADAN A ZENDJAN (ALT. DE 1950 A 1530 M.), 1904, J. DE MORGAN, MUSEUM PARIS", coll. MNHUB; 1 ♀, labelled "Persien, Sultanabad, 35., v. Bodemeyer", coll. MNHUB; 1 ♀, labelled "Iran, Kazvin, 9.I.43, Pavlovskij" (in Russian alphabet), coll. MNHUB; 2 ♂♂, labelled "Iran, Kurdistan, Akinlou, 11.XI.1959, T.Theodorides", coll. MNHUB; 1 ♂, 1 ♀, labelled "Iran, Mts. Elburs, VI 1961", coll. MNHUB; 1 ♀, labelled "Persia, Elburs-Gebg., Demavend, 3000 m, 11-62, Hüdepohl leg.", coll. MNHUB; 1 ♂, 1 ♀, labelled "IRAN, 70 Km E. de KERMANTSHA, 2.III.1965", coll. MNHUB; 1 ♂, labelled "N Iran, C Elburz, Damavand, Lajran, Loc. no. 68, 2400 m, 23.7.70, Exp. Nat. Mus. Praha", 35.16 N, 52.08 E (Hoberlandt 1974; correctly: 35.56 N, 52.08 E), coll. NMP; 1 ♀, labelled "N Iran, 12 km NW Hesárak, Loc. no. 122, 5.3.1973, Exp. Mus. Nat. Praha", Tehran province, 35.54 N, 50.44 E (Hoberlandt 1981), coll. NMP; 2 ♂♂, labelled "IR (Azarbaijan), Sahand, 1800-2200 m, 23.III.1996, Heinz leg.", coll. HEI (1 ♂) and coll. MNHUB (1 ♂); 2 ♂♂, 2 ♀♀, labelled "IR (Azarbaijan): Dashband, 15 km n. Bukan, ca. 1300 m, 23.III.1996, Heinz leg.", coll. HEI (1 ♂, 1 ♀), coll. HEJ (1 ♀) and coll. MNHUB (1 ♂); 1 ♀, labelled "IR (Kordestan), Najafabad, w. Bijar, 1900 m, 24.III.1996, Heinz leg.", coll. HEI; 1 ♂, 1 ♀, labelled "IR: Assadabad, ca. 29 km w. Hamadan, 2000 m, 25.III.1996, Heinz leg.", coll. HEI; 1 ♂, labelled "IR (Hamadan), ca. 15 km e. Tuisserkan, ca. 1700 m, 26.III.1996, Heinz leg.", coll. MNHUB; 3 ♂♂, 1 ♀, labelled "IR (Hamadan), s. Kangavar, Paß 1500 m, 26.III.1996, Heinz leg.", coll. HEI (2 ♂♂, 1 ♀) and coll. MNHUB (1 ♂); 1 ♂, labelled "IR (Tehran): Abali, ne. Tehran, 1900 m, 29.III.1996, Heinz leg.", coll. HEI; 3 ♂♂, labelled "IR (Azarbaijan): ca. 20 km nw. Kiwi, ca. 2000 m, 14.IV.1996, Heinz leg.", coll. HEI (2 ♂♂) and coll. MNHUB (1 ♂); 8 ♂♂, 6 ♀♀, labelled "IR (Azarbaijan), Sahand, 1800-2200 m, 15.IV.1996, Heinz leg.", coll. HEI (4 ♂♂, 2 ♀♀), coll. HEJ (2 ♂♂, 2 ♀♀), coll. MNHUB (1 ♀) and coll. WRA (2 ♂♂, 1 ♀); 4 ♂♂, labelled "IRAN b.occ., HAMADAN env., ALI SADR, 14.5.1999, L. Klíma leg.", coll. KLI (3 ♂♂) and coll. HEJ (1 ♂); 1 ♂, labelled "IRAN, Zanjan Prov., SOLTANYIEH env., 5.IV.2000", coll. HOV; 1 ♂, labelled "NW IRAN, prov. Kordestan, 31 km NW Divandarre (N Sanandag), 17.IV, 2002, lgt. P. Kabátek", coll. ZIE; 1 ♂, 1 ♀, labelled "NW IRAN, prov. Kordestan, 31 km NW Divandarre (N Sanandag), 17.IV, 2002, lgt. S. Kadlec", coll. HEJ

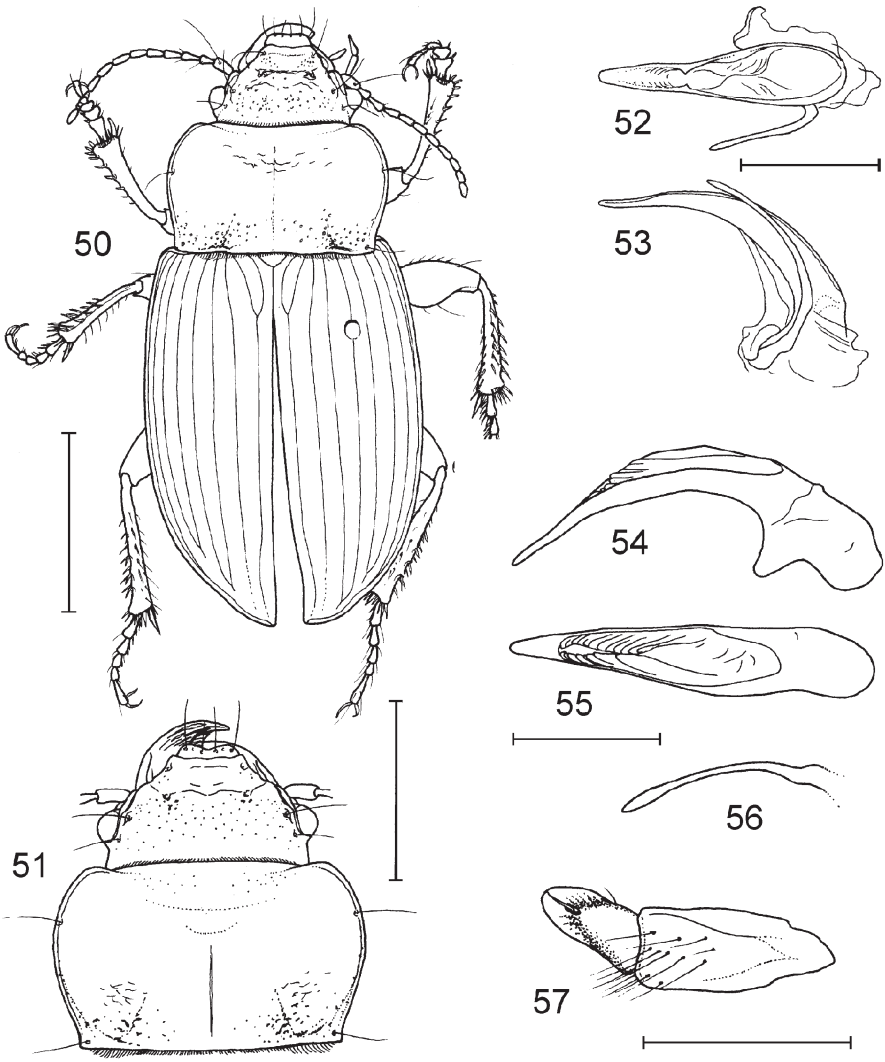
(1 ♂) and coll. ZIE (1 ♀); 1 ♀, labelled "W IRAN, prov. Lorestan, pass 52 km E Horramabad, 18.IV.2002, lgt. P. Kabátek", coll. WRA; 1 ♂, labelled "N IRAN, p. Gilan, 42 km SSE Rašt, 3651N 4941E, 28.V.2003, lgt. P. Kabátek", coll. HEJ; 1 ♂, labelled "IR (Mazanderan): w. Polour, Demavend (N), ca. 2400 m, 10.IV.2006, Heinz leg.", coll. HEI.

Note. The original description mentioned four specimens of both sexes of the same origin (Jedlička 1953). The holotype and two paratypes are deposited in the collection of Hungarian Natural History Museum, Budapest, and one paratype is deposited in NMP (Hieke 2007).

Redescription. Species related to *A. cadoudali*, with relatively broad and short body (Fig. 50). Total length 8.3-11.5 mm (holotype 9.7 mm, average 10.0 mm, $n = 66$). Dorsal side dark brown to black-brown. Legs red-brown to dark brown, antennae, maxillary and labial palpi pale red-brown to red-brown. Head thickened, sparsely to densely and finely to coarsely punctate with short and markedly convex eyes. Pronotum transverse (ratio of width/length = 1.61-1.74, holotype 1.72), widest before (in holotype) or at middle, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.77-0.85, holotype 0.80), lateral margins slightly sinuate (in holotype) to straight before posterior angles (Figs 50, 51). Anterior margin of pronotum slightly sinuate, anterior angles not or slightly protruding, rounded. Posterior angles mostly slightly obtuse, markedly sharp or shortly rounded. Pronotal base slightly sinuate to almost straight toward posterior angles. Inner basal impression very variable, mostly narrow, shallow (in holotype) to deep. Outer basal impression shallow or absent. Anterior part of pronotum smooth (in holotype) or sparsely and finely punctate, in specimens from Azarbayejan-e-Gharbi and Azarbayejan-e-Sharqi provinces sparsely to densely and finely to coarsely punctate. Lateral margin of pronotum mostly sparsely and coarsely punctate. Pronotal base sparsely to densely and coarsely punctate. Elytra short (ratio of length/width = 1.38-1.49, holotype 1.45), shiny in males and shiny or dull in females. Striae shallow to moderately deepened. Elytral humeri angulate to shortly rounded, obtuse, humeral tooth absent. Males with two to four (three in holotype), females with four to five setiferous punctures at posterior margin of last abdominal ventrite. Median lobe of aedeagus elongate and narrow above (length 2.42-2.70 mm, width 0.48-0.55 mm; holotype 2.42 and 0.50 mm) (Figs 52, 55). Apex of median lobe elongate (ratio of length/width = 2.25-2.47, measurement not available for the holotype) and very slightly curved to right or symmetric (in holotype) above. Styli large, last stylomere tongue-shaped, with relatively short and fine lateral spurs (Fig. 57).

Differential diagnosis. *Amara szekessyi* is most closely related to *A. cadoudali*, with which it shares a number of characters (habitus, distinctly thickened head, markedly convex eyes, transverse pronotum with sides slightly narrowed toward posterior angles and anterior part usually smooth or sparsely and finely punctate, absent humeral tooth, and similarly shaped aedeagus). *Amara szekessyi* is recognisable from *A. cadoudali* by less prominent eyes, more shiny male elytra, and more deepened elytral striae. Three sympatric species are easily recognisable from *A. szekessyi* by very different habitus and by slightly to very slightly convex eyes (*A. chodjaii*, *A. khorramabadensis* sp. n., and *A. hamadanensis* sp. n.). Other distinguishing characters are presented in the key below and in the sections on the latter three species.

Distribution and habitat. *Amara szekessyi* is a widely distributed species known from northwestern, western and northern Iran. It has been collected in the following Iranian provinces: Ardabil, Azarbayejan-e Gharbi, Azarbayejan-e Sharqi, Gilan, Hamadan, Kermanshah, Kordestan, Lorestan (type locality), Markazi, Mazandaran, Qazvin, Tehran, and Zanjan (Fig. 58). Locality "Mesopotamia" (see Additional material) suggests that *A. szekessyi* occurs also in the mountains of northeastern Iraq. It lives in a large area including the Kuh-e Sahand Mountains, Kuh-e Alvand Mountains, northern Zagros mountain range, Talesh mountain



Figs 50-57. *Amara szekessyi* Jedlička. 50, 52, 53: holotype, male; 51: paratype, female, coll. NMP; 54-56: male, Kordestan province, "31 km NW Divandarre", coll. HEJ; 57: female, Azarbayejan-e Sharqi province, Kuh-e Sahand Mountains, coll. HEJ. 50: habitus, dorsal view; 51: head and prothorax, dorsal view; 52: aedeagus: median lobe and right paramere, dorso-apical view; 53: aedeagus: median lobe and right paramere, lateral view; 54: median lobe of aedeagus, lateral view; 55: median lobe of aedeagus, dorso-apical view; 56: right paramere; 57: stylus, ventral view. Scale: 3 mm for Figs 50 and 51; 1 mm for Figs 52-57.

Obr. 50-57. *Amara szekessyi* Jedlička. 50, 52, 53: holotypus, samec; 51: paratypus, samice, coll. NMP; 54-56: samec, provincie Kordestan, „31 km NW Divandarre", coll. HEJ; 57: samice, provincie Azarbayejan-e Sharqi, pohoří Sahand, coll. HEJ. 50: habitus, dorsální pohled; 51: hlava a předohruď, dorsální pohled; 52: aedeagus: penis a pravá paramera, dorsoapikální pohled; 53: aedeagus: penis a pravá paramera, boční pohled; 54: penis, boční pohled; 55: penis, dorsoapikální pohled; 56: pravá paramera; 57: stylus, ventrální pohled. Měřítko: 3 mm pro obr. 50 a 51; 1 mm pro obr. 52-57.

range, and Alborz mountain range. It occurs in mountain steppes and other grassy habitats at altitudes of 1300-3000 m a.s.l. The closely related *A. cadoudali* inhabits a more southern area (southern Zagros mountain range, Fars province, southern Iran).

Amara (*Pseudoleirides*) *zagrosensis* (Morvan, 1973)
(Figs 19, 20)

Cyrtonotus zagrosensis Morvan, 1973: 185.
Amara (*Pseudoleirides*) *zagrosensis*: Hieke 2004: 140 (new subgeneric placement).

Type material examined. Paratype: ♀, labelled "IRAN, Zagros, Kurang, 3500 m, VI.1970, MORVAN", "PARATYPE" and "Cyrtonotus zagrosensis MORVAN", collected in Zagros mountain range, "Zardeh-kuh" Mountains, under stones near granular snow (Morvan 1973), coll. MOR.
Note. The species was described from two females (holotype and paratype) of the same origin. The holotype should be deposited in the Muséum National d'Histoire Naturelle (Entomology), Paris, and the paratype in MOR (Morvan 1973) but the holotype was not found in Paris during a recent investigation (Hieke 2004).
Redescription. Species related to *A. yasujensis* sp. n. with conspicuously large and elongate body. Total length 15.1 mm. Dorsal side black-brown. Labrum, antennae, maxillary palpi, labial palpi and tarsi red-brown. Head in relation to pronotum conspicuously large (Fig. 19), very thickened, densely and coarsely punctate with small and slightly to very slightly convex eyes. Pronotum transverse (ratio of width/length = ca. 1.65), widest before middle, markedly narrowed toward posterior angles (ratio of anterior margin/posterior margin = 1.08), lateral margins slightly convex before posterior angles. Anterior margin of pronotum slightly sinuate to almost straight, anterior angles distinctly protruding, rounded. Posterior angles acute, markedly sharp, pronotal base slightly and arcuately sinuate toward posterior angles. Inner basal impression wide with deep longitudinal median groove. Outer basal impression absent. Anterior and lateral margin of pronotum and pronotal base rather densely and mostly coarsely punctate, lateral margin narrowly flattened. Elytra elongate, sides of elytra rather parallel. Striae distinct, moderately to strongly deepened. Elytral humeri angulate, obtuse, humeral tooth absent. Posterior margin of last abdominal ventrite with four setiferous punctures in females.

Male unknown.

Styli large, last stylomere hexagon-shaped (Fig. 20).

Differential diagnosis. *Amara zagrosensis* is most closely related to *A. yasujensis* sp. n., with which it shares a number of characters (habitus, almost parallel-sided elytra, densely and mostly coarsely punctate head, small and slightly to very slightly convex eyes, and narrowly flattened lateral margin of pronotum). *Amara yasujensis* sp.n. differs in having a smaller head, pronotum with sides more narrowed toward anterior angles, anterior angles not or slightly protruding and posterior angles slightly obtuse to right-angled, and being smaller (10.7-12.7 mm). The sympatric *A. loeffleri* is very different from *A. zagrosensis*. It differs especially in having a smaller head, more convex eyes, pronotum less narrowed toward posterior angles, posterior angles of pronotum slightly obtuse with shortly rounded apex, broader elytra, narrower last stylomere, and being smaller (9.7-12.9 mm).
Distribution and habitat. *Amara zagrosensis* is known from the Kuh-e Zard Mountains, which belong to the Zagros mountain range, in the Chaharmahal-va-Bakhtiyari province in southwestern Iran (Fig. 58). Two individuals were collected under stones near granular snow

at an altitude of ca. 3500 m a.s.l. (Morvan 1973). The similar *A. yasujensis* sp. n. inhabits a more southern area (Kuh-e Dinar Mountains, border between Kohgiluyeh-va-Boyer Ahmad and Esfahan provinces, southern Iran).

Key to the Iranian species of *Pseudoleirides*

1 (4) Eyes larger, especially in relation to head; apex of median lobe short and broad in dorsal view (ratio of length/width dorso-apically = 1.08-1.31); last stylomere with broad lateral spurs. Humeral tooth present.

2 (3) Pronotum larger, long and broad, markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.70-0.77), sides convex before posterior angles; head almost smooth to very sparsely punctate. Body very strongly convex; head slightly thickened; pronotum with widely flattened lateral margins in posterior half; base of pronotum with two impressions on each side; styli small; body length 9.2-11.4 mm (average 10.5 mm). Figs 25-29. Species of highlands, found at about 1000 m a.s.l. Northeastern Iran, northwestern part of Khorasan province, western Kuh-e Aladagh Mountains. ..... *A.* (*P.*) *bucharica mazandarana* Hieke, 1976

3 (2) Pronotum smaller, relatively narrow, markedly narrowed toward both anterior and posterior angles (ratio of anterior margin/posterior margin = 0.80-0.84), sides straight to slightly sinuate before posterior angles; head densely punctate. Head slightly thickened; pronotum with widely flattened lateral margins; base of pronotum with two impressions on each side; body length 10.7-11.0 mm. Figs 37-40. Southwestern Iran, environs of "Dizful' " city [= probably Dezful]. ..... *A.* (*P.*) *iranica* Kryzhanovskij, 1968

4 (1) Eyes smaller, especially in relation to head; apex of median lobe elongate in dorsal view (ratio of length/width dorso-apically = 2.25-3.63) (male unknown in *A. chodjaii*, *A. kermanensis* sp. n., *A. shirazica* sp. n., *A. zagrosensis*); last stylomere with fine lateral spurs (female unknown in *A. cadoudali* and *A. hamadanensis* sp. n.). Humeral tooth present or absent. Species of mountains, found at 2000-4000 m a.s.l. (*A. szekessyi* down to 1300 m).

5 (6) Head in relation to pronotum conspicuously large, very thickened; pronotum slightly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 1.08); larger species (body length 15.1 mm). Head densely and coarsely punctate; eyes small and slightly to very slightly convex; pronotum transverse, sides slightly convex before posterior angles; pronotum with narrowly flattened lateral margins; base of pronotum with one impression on each side; humeral tooth absent; styli large. Figs 19 and 20. Southwestern Iran, Chaharmahal-va-Bakhtiyari province, Zagros mountain range, Kuh-e Zard Mountains. .... *A.* (*P.*) *zagrosensis* (Morvan, 1973)

6 (5) Head in relation to pronotum smaller, slightly to distinctly thickened; pronotum markedly narrowed toward anterior angles (ratio of anterior margin/posterior margin = 0.75-0.99); smaller species (body length 8.3-13.4 mm).

7 (8) Pronotum long and narrow (ratio of width/length = 1.47), cordate, sides distinctly sinuate before posterior angles. Dorsal side dull; head slightly thickened, sparsely and finely punctate; eyes slightly to very slightly convex; base of pronotum with one impression on each side; elytral striae shallow; humeral tooth distinct; body length 10.6 mm. Figs 7 and 9. Western Iran, Hamadan province, Kuh-e Alvand Mountains. .... *A.* (*P.*) *hamadanensis* sp. n.

8 (7) Pronotum transverse or rather transverse (ratio of width/length = 1.49-1.74), sides slightly sinuate to markedly convex before posterior angles.

9 (10) Outer basal impression of pronotum deep, separated from lateral margin by distinct callus. Pronotum slightly narrowed toward posterior angles (ratio of anterior margin/posterior margin = 0.75). Head thickened, sparsely and finely punctate; eyes slightly convex; pronotum rather transverse, sides slightly sinuate before posterior angles; humeral tooth absent; styli large; body length 12.0 mm. Figs 34 and 35. Northwestern Iran, Azarbayejan-e Sharqi province, Kuh-e Sahand Mountains. ..... *A.* (*P.*) *chodjaii* Morvan, 1975

10 (9) Outer basal impression of pronotum absent or shallow, not separated from lateral margin by distinct callus. Pronotum slightly to markedly narrowed toward posterior angles (ratio of anterior margin/posterior margin = 0.77-0.99).

11 (16) Pronotum slightly narrowed toward posterior angles (ratio of anterior margin/posterior margin = 0.77-0.86). Humeral tooth absent.

12 (13) Eyes conspicuously prominent; elytra with slight lustre in males. Base of pronotum with two impressions on each side. Head thickened, sparsely and finely punctate; pronotum transverse, sides straight to slightly convex before posterior angles; anterior part of pronotum almost smooth; elytral striae not deepened; body length 9.9 mm. Figs 30-33. Southern Iran, Fars province, southern Zagros mountain range. .... *A.* (*P.*) *cadoudali* Morvan, 1977

13 (12) Eyes slightly to markedly convex; elytra shiny in males. Base of pronotum with 1 or 2 impressions on each side.

14 (15) Eyes markedly convex; pronotum in relation to elytra smaller. Head sparsely to densely and finely to coarsely punctate; anterior part of pronotum usually smooth or sparsely and finely punctate; pronotal base sparsely to densely and coarsely punctate; elytral striae shallow to moderately deepened; styli large, last stylomere broader, tongue-shaped. Head thickened; base of pronotum with 1 or 2 impressions on each side; pronotum transverse, sides slightly sinuate to straight before posterior angles; body length 8.3-11.5 mm (average 10.0 mm). Figs 50-57. Widely distributed in northwestern, western and northern Iran. .... *A.* (*P.*) *szekessyi* Jedlička, 1953

15 (14) Eyes only slightly convex; pronotum in relation to elytra larger. Head densely to very densely and coarsely punctate; anterior part of pronotum usually densely and coarsely punctate; pronotal base densely to very densely and coarsely punctate; elytral striae moderately to strongly deepened; styli long, last stylomere narrower, elongate. Body robust; head thickened; base of pronotum with 1 or 2 impressions on each side; pronotum transverse, sides straight to slightly sinuate before posterior angles; body length 9.7-12.9 mm (average 11.4 mm). Figs 41-49. Southwestern Iran, Chaharmahal-va-Bakhtiyari province, Zagros mountain range, Kuh-e Zard Mountains. ..... *A.* (*P.*) *loeffleri* Jedlička, 1963, stat. rest.

16 (11) Pronotum markedly narrowed toward posterior angles (ratio of anterior margin/posterior margin = 0.90-0.99). Humeral tooth present or absent.

17 (18) Lateral margins of pronotum slightly sinuate before posterior angles; styli long, last stylomere narrower, elongate. Head thickened, densely and finely to coarsely punctate; eyes short and slightly to markedly convex; pronotum transverse; base of pronotum with one impression on each side; elytra relatively narrow and elongate; elytral striae strongly deepened; humeral tooth absent; body length 10.8 mm. Figs 17 and 18. Southern Iran, Fars province, southern Zagros mountain range. ..... *A.* (*P.*) *shirazica* sp. n.

18 (17) Lateral margins of pronotum slightly to markedly convex before posterior angles; styli large, last stylomere broader, tongue-shaped.

19 (20) Head slightly thickened; elytra narrow, almost parallel-sided (ratio of length/width = 1.47-1.54), slightly convex. Eyes smaller, slightly to very slightly convex. Head densely and finely to coarsely punctate; pronotum small, narrow and short, rather transverse; lateral margin of pronotum narrowly flattened; base of pronotum with two impressions on each side; elytral striae moderately deepened; humeral tooth absent or weak; median lobe slightly broadened toward apex dorsally; body length 10.7-12.7 mm (average 11.8 mm). Figs 21-24. Southern Iran, border between Kohgiluyeh-va-Boyer Ahmad and Esfahan provinces, Zagros mountain range, Kuh-e Dinar Mountains. ..... *A.* (*P.*) *yasujensis* sp. n.

20 (19) Head distinctly thickened; elytra large and broad, distinctly widened apicad (ratio of length/width = 1.39-1.47), strongly to very strongly convex. Eyes larger, slightly convex.

21 (22) Basal bead of elytra relatively broad; posterior corners of pronotum right-angled. Head densely and finely to coarsely punctate; pronotum relatively large, rather transverse; lateral margin of pronotum not flattened; base of pronotum with two narrow impressions on each side; pronotal base almost straight to posterior angles; elytral striae moderately to strongly deepened; humeral tooth weak; median lobe markedly broadened toward apex dorsally; apex of median lobe markedly curved above to the left; body length 12.0-13.4 mm (average 12.9 mm). Figs 11-16. Western Iran, Lorestan province, Zagros mountain range. .... *A.* (*P.*) *khorramabadensis* sp. n.

22 (21) Basal bead of elytra narrow; posterior corners of pronotum slightly to markedly obtuse.

23 (24) Pronotum broader, transverse (ratio of width/length = 1.59-1.67), pronotal base almost straight to posterior angles; humeral tooth absent; dorsal side with slight lustre to dull in females. Head densely and finely to coarsely punctate; lateral margin of pronotum very narrowly flattened; base of pronotum with two impressions on each side; elytral striae strongly deepened; median lobe slightly broadened toward apex dorsally; body length 11.0-12.3 mm (average 11.7 mm). Figs 1-6. Southwestern Iran, border between Khuzestan and Chaharmahal-va-Bakhtiyari provinces, Zagros mountain range, Kuh-e Sefid Mountains. .... *A.* (*P.*) *escalerai* sp. n.

24 (23) Pronotum narrower, rather transverse (ratio of width/length = 1.52), pronotal base oblique to posterior angles; humeral tooth present, weak; dorsal side shiny in females. Head densely and coarsely punctate; lateral margin of pronotum narrowly flattened; base of pronotum with two impressions on each side, outer one very short; elytral striae moderately to strongly deepened; body length 11.7 mm. Figs 8 and 10. Southeastern Iran, Kerman province, Kuhha-ye Qohrud mountain range, Kuh-e Lalehzar Mountains. .... *A.* (*P.*) *kermanensis* sp. n.

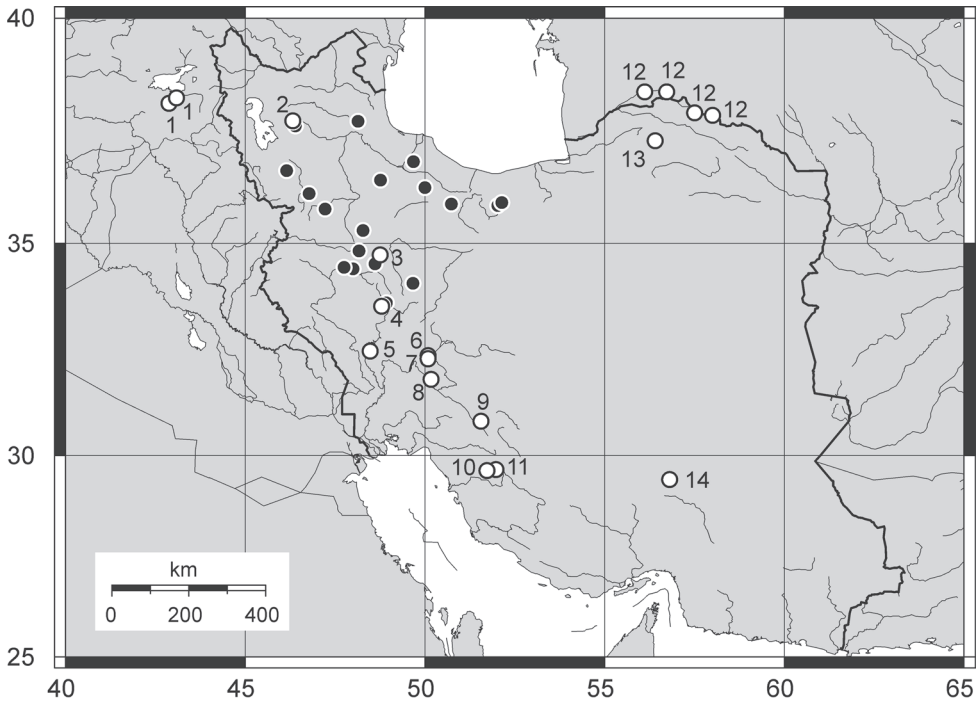


Fig. 58. Map of Iran and neighbouring areas with indicated known localities of *Amara* (*Pseudoleirides*) species: 1 – *A. mukusensis* Hieke (localities in Turkey), 2 – *A. chodjaii* Morvan, 3 – *A. hamadanensis* sp. n., 4 – *A. khorramabadensis* sp. n., 5 – *A. iranica* Kryzhanovskij, 6 – *A. loeffleri* Jedlička, 7 – *A. zagrosensis* (Morvan), 8 – *A. escalerai* sp. n., 9 – *A. yasujensis* sp. n., 10 – *A. cadoudali* Morvan, 11 – *A. shirazica* sp. n., 12 – *A. bucharica kopetdaghi* Kryzhanovskij (localities in Turkmenistan), 13 – *A. bucharica mazandarana* Hieke, 14 – *A. kermanensis* sp. n.; full circles – *A. szekessyi* Jedlička.
Obr. 58. Mapa Íránu a okolních území s vyznačenými lokalitami druhů podrodu *Pseudoleirides* (viz výše).

ACKNOWLEDGMENTS. I am obliged to all the museum curators and collectors mentioned in Material and methods for the kind loan of types and specimens of the genus *Amara* from their collections and to A. Bezděk (Institute of Entomology, České Budějovice), T. Kopecký (Hradec Králové), A. G. Koval (St. Petersburg) and V. Zieris (Pardubice) for their help with arranging the loans. My sincere thanks are due to J. Hájek and J. Jelínek (both National Museum, Praha) for their advice on Iranian localities. I thank J. Růžička (Czech University of Life Sciences, Praha) for technical help with the manuscript. Special thanks go to F. Hieke (Museum für Naturkunde, Berlin) for a discussion on some problems of taxonomy and to J. Velc (Kladno) for drawing the figures.

REFERENCES

HIEKE F. 1976: Revision einiger Gruppen der Gattung Amara Bon. (Col. Carabidae). *Deutsche Entomologische Zeitschrift*, *N. F.*, 23: 297-366.

HIEKE F. 1981: Ergebnisse der tschechoslowakisch-iranischen Entomologischen Expeditionen nach dem Iran (1970 und 1973) (Mit Angaben über einige Sammelresultate in Anatolien). Coleoptera: Carabidae. Die Arten der Gattung Amara Bon. *Sborník Entomologického Oddělení Národního Musea v Praze*, 40: 85-89.

HIEKE F. 1995: Namensverzeichnis der Gattung Amara Bonelli, 1810. Coleoptera Carabidae. *Coleoptera*. *Schwanfelder Coleopterologische Mitteilungen* (Schwanfeld), Sonderheft 2: 1-163.

HIEKE F. 1997: Neue Arten und weitere neue Synonyme in der Gattung Amara Bonelli, 1810 (Coleoptera, Carabidae). *Mitteilungen aus dem Zoologischen Museum Berlin*, 73: 193-264.
HIEKE F. 2007: *Aktueller Katalog der Gattung Amara Bonelli, 1810. Stand: 1. I. 2007. (On-line-Publikation)*. http://download.naturkundemuseum-berlin.de/fritz.hieke/Amkatal.doc (viewed September 1, 2008).
HOBERLANDT L. 1974: Results of the Czechoslovak-Iranian entomological expedition to Iran 1970. No. 1: Introduction. *Sborník Entomologického Oddělení Národního Musea v Praze*, Suppl. 6: 9-20.
HOBERLANDT L. 1981: Results of the Czechoslovak-Iranian entomological expeditions to Iran. Introduction to the Second expedition 1973. *Sborník Entomologického Oddělení Národního Musea v Praze*, 40: 5-32.
HOBERLANDT L. 1983: Results of the Czechoslovak-Iranian entomological expeditions to Iran. Introduction to the Third expedition 1977. *Sborník Entomologického Oddělení Národního Musea v Praze*, 41: 5-24.
JEDLIČKA A. 1953: Neue palaearktische Carabiden aus der Sammlung des Ungarischen Naturwissenschaftlichen Museums (Coleoptera). *Annales Historico-Naturales Musei Nationalis Hungarici*, *Series Nova*, 3 (1952): 105-113.
JEDLIČKA A. 1963a: Neue Carabiden aus Pakistan aus der Sammlung des Bayerischen Staates in München. (Col.). *Opuscula Zoologica*, 68: 1-3.
JEDLIČKA A. 1963b: Die Ergebnisse der Österreichischen Iran-Expedition 1949/50. Coleoptera VIII. Teil. Neue Arten aus der Familie Carabidae. *Sitzungsberichte Österreichischen Akademie Wissenschaften*, *Mathematisch-naturwissenschaftliche Klasse*, Abt. I, 172: 167-178.
KRYZHANOVSKIJ O. L. 1968: Novye i maloizvestnye zhuzhelitsy (Coleoptera, Carabidae) fauny SSSR i granichashchikh s nim stran. [New and little known carabids (Coleoptera, Carabidae) of the fauna of the USSR and adjacent lands]. *Entomologicheskoe Obozrenie*, 47: 160-175 (in Russian).
MORVAN P. 1973: Nouveaux Coléoptères Carabiques d'Iran. *Bulletin Muséum National Histoire Naturelle*, *3e série*, Zoologie 84 (nº 110): 169-186.
MORVAN P. 1975: Nouveaux Coleopteres Carabiques de l'Iran(5). *Journal of the Entomological Society of Iran*, 2: 69-80.
MORVAN P. 1977: Contribution a la connaissance des Carabidae de l'Iran. *Journal of the Entomological Society of Iran*, 4: 21-59.
RECHINGER K. H. 1990: Revision of Pau's types of plants collected by Martínez de la Escalera in Iran (1899). *Anales Jardín Botánico de Madrid*, 47: 361-375.

SOUHRN

Dosud bylo známo v podrodu *Pseudoleirides* Kryzhanovskij, 1968 (rod *Amara* Bonelli, 1810) patnáct taxonů (druhů nebo poddruhů), z toho sedm z Íránu: *A. bucharica mazandarana* Hieke, 1976, *A. cadoudali* Morvan, 1977, *A. chodjaii* Morvan, 1975, *A. iranica* Kryzhanovskij, 1968, *A. szekessyi loeffleri* Jedlička, 1963, *A. szekessyi szekessyi* Jedlička, 1953 a *A. zagrosensis* (Morvan, 1973) (Hieke 2007). S výjimkou široce rozšířeného druhu *A. szekessyi* se jedná o druhy, které obývají velmi malý areál - pravděpodobně jen jediné pohoří.

Íránští zástupci podrodu *Pseudoleirides* jsou bezkřídlé druhy podobné zástupcům rodů *Zabrus* Clairville, 1806 nebo *Molops* Bonelli, 1810. Vyznačují se střední až velkou velikostí (délka od předního okraje horního pysku po konec krovek = 8,3-15,1 mm), většinou velkým a silně vyklenutým tělem. Vrchní strana těla je červenohnědá (u nevybarvených jedinců) až černá, většinou tmavě hnědá nebo černohnědá, bez kovového lesku. Tykadla, čelistní makadla, pysková makadla a nohy jsou světle červenohnědé až hnědé. Druhy podrodu *Pseudoleirides* se odlišují od jiných druhů rodu *Amara* kombinací následujících znaků: tečkovaná hlava, tělo většinou robustní a velké, vrchní strana tmavá, výběžek prosterna vpředu se 2 až 4 štětinkami a stehna středního páru noh na spodní straně před zadním okrajem se 3 až 7 porojamkami.

V práci je z území Íránu popsáno šest nových druhů: *Amara* (*Pseudoleirides*) *escalerai* sp. n. (jihozápadní Írán), *A.* (*P.*) *hamadanensis* sp. n. (západní Írán), *A.* (*P.*) *kermanensis* sp. n. (jihovýchodní Írán), *A.* (*P.*) *khorramabadensis* sp. n. (západní Írán), *A.* (*P.*) *shirazica* sp. n.

(jižní Írán) a *A.* (*P.*) *yasujensis* sp. n. (jižní Írán). Jedná se vesměs o vysokohorské druhy z nadmořských výšek 2000-4000 m (u *A. shirazica* vysokohorský výskyt pouze předpokládám). Typové série obsahují pouze 1 až 5 kusů.

Druhové jméno *A.* (*P.*) *loeffleri* Jedlička, 1963 je navráceno z klasifikační úrovně poddruhu na úroveň druhu (status restitutus).

Taxonomická část obsahuje společnou charakteristiku íránských druhů podrodu *Pseudoleirides*, důležité údaje o jednotlivých druzích (typový materiál, redeskripci, diferenciální diagnózu druhu, rozšíření, biotop) a klíč druhů (českou verzi viz níže). Oddíly s popisy nových druhů obsahují navíc etymologii druhového jména.

Klíč íránských druhů podrodu *Pseudoleirides*

1 (4) Oči větší, zvláště v poměru k hlavě; špice penisu svrchu krátká a široká (index délka/šířka dorsoapikálně = 1,08-1,31); koncový článek stylů se širokými postranními ostruhami. Humerální zoubek přítomný.

2 (3) Štít větší, dlouhý a široký, k předním rohům silně zúžený (index přední okraj/zadní okraj = 0,70-0,77), strany před zadními rohy konvexní; hlava téměř hladká až velmi řídce tečkovaná. Tělo velmi silně vyklenuté; hlava slabě ztlustlá; štít v zadní polovině se široce zploštělými postranními okraji; báze štítu se dvěma vtlaky na každé straně; styly malé; délka těla 9,2-11,4 mm (průměr 10,5 mm). Obr. 25-29. Druh vysočiny, asi 1000 m n. m. Severovýchodní Írán, severozápadní část provincie Khorasan, západní část pohoří Kuh-e Aladagh. ..... *A.* (*P.*) *bucharica mazandarana* Hieke, 1976

3 (2) Štít menší, poměrně úzký, k předním i zadním rohům silně zúžený (index přední okraj/zadní okraj = 0,80-0,84), strany před zadními rohy rovné až slabě vykrojené; hlava hustě tečkovaná. Hlava slabě ztlustlá; štít se široce zploštělými postranními okraji; báze štítu se dvěma vtlaky na každé straně; délka těla 10,7-11,0 mm. Obr. 37-40. Jihozápadní Írán, okolí města „Dizful'". ..... *A.* (*P.*) *iranica* Kryzhanovskij, 1968

4 (1) Oči menší, zvláště v poměru k hlavě; špice penisu svrchu protažená (index délka/šířka dorsoapikálně = 2,25-3,63) (samec neznámý u *A. chodjaii*, *A. kermanensis* sp. n., *A. shirazica* sp. n., *A. zagrosensis*); koncový článek stylů s tenkými postranními ostruhami (samice neznámá u *A. cadoudali*, *A. hamadanensis* sp. n.). Humerální zoubek přítomný nebo chybí. Horské druhy, 2000-4000 m n. m. (*A. szekessyi* od 1300 m).

5 (6) Hlava v poměru ke štítu nápadně velká, silně ztlustlá; štít k předním rohům slabě zúžený (index přední okraj/zadní okraj = 1,08); větší druh (délka těla 15,1 mm). Hlava hustě a hrubě tečkovaná; oči malé a slabě až velmi slabě vyklenuté; štít příčný, strany před zadními rohy slabě konvexní; štít s úzce zploštělými postranními okraji; báze štítu s jedním vtlakem na každé straně; humerální zoubek chybí; styly velké. Obr. 19, 20. Jihozápadní Írán, provincie Chaharmahal-va-Bakhtiyari, horské pásmo Zagrosu, pohoří Kuh-e Zard. .... *A.* (*P.*) *zagrosensis* (Morvan, 1973)

6 (5) Hlava v poměru ke štítu menší, slabě až zřetelně ztlustlá; štít k předním rohům silně zúžený (index přední okraj/zadní okraj = 0,75-0,99); menší druhy (délka těla 8,3-13,4 mm).

7 (8) Štít dlouhý a úzký (index šířka/délka = 1,47), srdčitý, strany před zadními rohy zřetelně vykrojené. Dorsální strana matná; hlava slabě ztlustlá, řídce a jemně tečkovaná; oči slabě až velmi slabě vyklenuté; báze štítu s jedním vtlakem na každé straně; rýhy krovek mělké; humerální zoubek zřetelný; délka těla 10,6 mm. Obr. 7, 9. Západní Írán, provincie Hamadan, pohoří Kuh-e Alvand. ..... *A.* (*P.*) *hamadanensis* sp. n.

8 (7) Štít příčný nebo spíše příčný (index šířka/délka = 1,49-1,74), strany před zadními rohy slabě vykrojené až silně konvexní.

9 (10) Vnější vtlak na bázi štítu hluboký, je oddělen od postranního okraje zřetelným vyvýšeným záhybem. Štít k zadním rohům slabě zúžený (index přední okraj/zadní okraj = 0,75). Hlava ztlustlá, řídce a jemně tečkovaná; oči slabě vyklenuté; štít spíše příčný, strany před zadními rohy slabě vykrojené; humerální zoubek chybí; styly velké; délka těla 12,0 mm. Obr. 34, 35. Severozápadní Írán, provincie Azarbayejan-e Sharqi, pohoří Kuh-e Sahand. ..... *A.* (*P.*) *chodjaii* Morvan, 1975

10 (9) Vnější vtlak na bázi štítu mělký (není oddělen od postranního okraje zřetelným vyvýšeným záhybem) nebo chybí. Štít k zadním rohům slabě až silně zúžený (index přední okraj/zadní okraj = 0,77-0,99).

11 (16) Štít k zadním rohům slabě zúžený (index přední okraj/zadní okraj = 0,77-0,86). Humerální zoubek chybí.

12 (13) Oči nápadně vyčnívající; krovky samce se slabým leskem. Báze štítu se dvěma vtlaky na každé straně. Hlava ztlustlá, řídce a jemně tečkovaná; štít příčný, strany před zadními rohy rovné až slabě konvexní; přední část štítu téměř hladká; rýhy krovek neprohloubené; délka těla 9,9 mm. Obr. 30-33. Jižní Írán, provincie Fars, horské pásmo jižního Zagrosu. ..... *A.* (*P.*) *cadoudali* Morvan, 1977

13 (12) Oči slabě až silně vyklenuté; krovky samce lesklé. Báze štítu s jedním nebo dvěma vtlaky na každé straně.

14 (15) Oči silně vyklenuté; štít v poměru ke krovkám menší. Hlava řídce až hustě a jemně až hrubě tečkovaná; přední část štítu zpravidla hladká nebo řídce a jemně tečkovaná; báze štítu řídce až hustě a hrubě tečkovaná; rýhy krovek mělké až slabě prohloubené; styly velké, koncový článek širší, jazykovitý. Hlava ztlustlá; báze štítu s jedním nebo dvěma vtlaky na každé straně; štít příčný, strany před zadními rohy slabě vykrojené až rovné; délka těla 8,3-11,5 mm (průměr 10,0 mm). Obr. 50-57. Široce rozšířený druh; severozápadní, západní a severní Írán. ..... *A.* (*P.*) *szekessyi* Jedlička, 1953

15 (14) Oči slabě vyklenuté; štít v poměru ke krovkám větší. Hlava hustě až velmi hustě a hrubě tečkovaná; přední část štítu zpravidla hustě a hrubě tečkovaná; báze štítu hustě až velmi hustě a hrubě tečkovaná; rýhy krovek slabě až silně prohloubené; styly dlouhé, koncový článek užší, protažený. Tělo robustní; hlava ztlustlá; báze štítu s jedním nebo dvěma vtlaky na každé straně; štít příčný, strany před zadními rohy rovné až slabě vykrojené; délka těla 9,7-12,9 mm (průměr 11,4 mm). Obr. 41-49. Jihozápadní Írán, provincie Chaharmahal-va-Bakhtiyari, horské pásmo Zagrosu, pohoří Kuh-e Zard. ..... *A.* (*P.*) *loeffleri* Jedlička, 1963, stat. rest.

16 (11) Štít k zadním rohům silně zúžený (index přední okraj/zadní okraj = 0,90-0,99). Humerální zoubek přítomný nebo chybí.

17 (18) Postranní okraje štítu před zadními rohy slabě vykrojené; styly dlouhé, koncový článek užší, protažený. Hlava ztlustlá, hustě a jemně až hrubě tečkovaná; oči krátké a slabě až silně vyklenuté; štít příčný; báze štítu s jedním vtlakem na každé straně; krovky poměrně úzké a protažené; rýhy krovek silně prohloubené; humerální zoubek chybí; délka těla 10,8 mm. Obr. 17, 18. Jižní Írán, provincie Fars, horské pásmo jižního Zagrosu. ..... *A.* (*P.*) *shirazica* sp. n.

18 (17) Postranní okraje štítu před zadními rohy slabě až silně konvexní; styly velké, koncový článek širší, jazykovitý.

19 (20) Hlava slabě ztlustlá; krovky úzké, skoro rovnoběžné (index délka/šířka = 1,47-1,54), slabě vyklenuté. Oči menší, slabě až velmi slabě vyklenuté. Hlava hustě a jemně až hrubě tečkovaná; štít malý, úzký a krátký, spíše příčný; postranní okraj štítu úzce zploštělý; báze štítu se dvěma vtlaky na každé straně; rýhy krovek slabě prohloubené; humerální zoubek chybí nebo slabý; aedeagus svrchu ke špici slabě rozšířený; délka těla 10,7-12,7 mm (průměr 11,8 mm). Obr. 21-24. Jižní Írán, společná hranice provincií Kohgiluyeh-va-Boyer Ahmad a Esfahan, horské pásmo Zagrosu, pohoří Kuh-e Dinar. ..... *A.* (*P.*) *yasujensis* sp. n.

20 (19) Hlava zřetelně ztlustlá; krovky velké a široké, zřetelně dozadu rozšířené (index délka/šířka = 1,39-1,47), silně až velmi silně vyklenuté. Oči větší, slabě vyklenuté.

21 (22) Bazální vroubení krovek poměrně široké; zadní rohy štítu pravoúhlé. Hlava hustě a jemně až hrubě tečkovaná; štít poměrně velký, spíše příčný; postranní okraj štítu není zploštělý; báze štítu se dvěma úzkými vtlaky na každé straně; báze štítu k zadním rohům téměř přímá; rýhy krovek slabě až silně prohloubené; humerální zoubek slabý; aedeagus svrchu ke špici silně rozšířený; špice aedeagu svrchu silně ohnutá doleva; délka těla 12,0-13,4 mm (průměr 12,9 mm). Obr. 11-16. Západní Írán, provincie Lorestan, horské pásmo Zagrosu. ..... *A.* (*P.*) *khorramabadensis* sp. n.

22 (21) Bazální vroubení krovek úzké; zadní rohy štítu mírně až silně tupoúhlé.

23 (24) Štít širší, příčný (index šířka/délka = 1,59-1,67), báze štítu k zadním rohům téměř přímá; humerální zoubek chybí; dorsální strana samice se slabým leskem až matná. Hlava hustě a jemně až hrubě tečkovaná; postranní okraj štítu velmi úzce zploštělý; báze štítu se dvěma vtlaky na každé straně; rýhy krovek silně prohloubené; aedeagus svrchu ke špici slabě rozšířený; délka těla 11,0-12,3 mm (průměr 11,7 mm). Obr. 1-6. Jihozápadní Írán, společná hranice provincií Khuzestan a Chaharmahal-va-Bakhtiyari, horské pásmo Zagrosu, pohoří Kuh-e Sefid. ..... *A.* (*P.*) *escalerai* sp. n.

24 (23) Štít užší, spíše příčný (index šířka/délka = 1,52), báze štítu k zadním rohům zkosená; humerální zoubek přítomný, slabý; dorsální strana samice lesklá. Hlava hustě a hrubě tečkovaná; postranní okraj štítu úzce zploštělý; báze štítu se dvěma vtlaky na každé straně (vnější vtlak velmi krátký); rýhy krovek slabě až silně prohloubené; délka těla 11,7 mm. Obr. 8, 10. Jihovýchodní Írán, provincie Kerman, horské pásmo Kuhha-ye Qohrud, pohoří Kuh-e Lalehzar. ..... *A.* (*P.*) *kermanensis* sp. n.