

**RESULTS OF THE CZECHOSLOVAK-IRANIAN
ENTOMOLOGICAL EXPEDITION TO IRAN 1970****No. 2: Heteroptera : Aradidae**

LUDVÍK HOBERLANDT

Department of Entomology, National Museum (Nat. Hist.), Praha

All the species of the family Aradidae known hitherto from Iran are recorded from North Iran, the only region with numerous forests of different types. There have been previously recorded 6 species of Aradidae from Iran. During the expedition 5 species of Aradidae were collected of which one species is new to science. The total number of Aradidae known at present to occur in Iran is eight.

ANEURINAE

***Aneurus laevis intermedius* Wagner, 1971**

2 ♂♂, 13 ♀♀ and 4 nymphs — Plain of Kalardasht, northern slope of the Alam Kuh massif, Rudbarak, 1850 — 2400 m, Alborz, 13. 8. 1970, Tehran (province), North Iran (loc. no. 92). Sifted from old trunk of *Quercus* sp.

Previously recorded from the same region North Iran: Rudbarale, 1800 m., valley Sardaband, Mazandaran (Wagner 1971). Kiritshenko (1959) records from Gorgan, Kishtybi *Aneurus laevis* (Fab.). Undoubtedly mentioned specimens (2 ♂♂) belong to *Aneurus laevis intermedius* Wagner, described as species (Wagner 1971) and later by Štys placed as subspecies of *laevis*. This locality ranges to the North Iranian forest region like Rudbarale and Rudbarak.

ARADINAE

***Aradus safavii* n. sp.**

(Fig. 1)

Male: Length 5.55–6.0 mm, width (across abdomen) 2.8–3.05 mm. Head: length 1.15 mm., width 1.25 mm., synthlipsis 0.85 mm. Antennae: length of segment I, 0.25 mm., II, 0.35 mm., III, 0.8 mm., IV, 0.45 mm. Pronotum: length 0.7 mm., width 2.0 mm. Scutellum: length 1.3 mm., width 0.75 mm.

General shape of the body rather elongate, 1.9 times as long as broad, apically distinctly broadened.

Head rather large, 1.1 times as broad across eyes as long in the middle. Head frontal process parallel, apically broadly rounded, reaching to the proximal third of the length of second antennal segment, antenniferous tubercles

rather short and stout, slightly sinuate interiorly, apically subacute and embracing the exterior margin of first antennal segment, exterior margin of antenniferous tubercles near to eyes with a distinct tubercle. Eyes globular, distinctly stylate, projecting rather laterally than posteriorly. Head behind eyes strongly neck-like narrowed, near to the posterior margin of eyes with a large distinctly projecting postocular tubercle. Disc of head slightly regularly arched, laterally at the level of eyes with a deep elongate impression, delimited from eyes by an elongate distinct elevation fusing with projecting postocular tubercle. Rostrum reaches anterior coxae. Antennae thick, 1.5 times as long as the width of head across eyes. First antennal segment subglobular, second antennal segment distinctly wider than first and apically broadened, third antennal segment of equal width to second segment, twice as long as the second segment, only slightly widened in apical direction, fourth segment slightly narrower than the third segment, cylindrical, apex obtuse. Surface of antennae with dense regular distinct tubercles and with very short sparse hairs. Surface of head with more or less obsolete plain granules.

Pronotum 2.85 times as broad as long in the middle, lateral margins subangulate, anteriorly straight and convergent, anterolateral angles obtuse and only slightly projecting. Postocular angles broadly rounded, posterior pronotal margin at the level of scutellum deeply emarginate. Pronotum lowest at the middle, whilst lateral parts rather flattened and margins distinctly raised and finely serrate; central disc of pronotum with two sharply delimited parallel carinae, anteriorly transversally joined and exteriorly with a transverse elevation close to longitudinal carina. Surface of pronotum with plain irregular granules, which are absent on sides of longitudinal carinae and transverse elevations. Scutellum narrow, 2.85 times as long as broad, margin strongly raised, mainly in anterior half, and there only slightly convergent, posterior half of scutellum strongly narrowed and apically pointed; disc of scutellum rather plain, anteriorly depressed, surface and margins of scutellum with irregular plain granules. Sternum flattened below with plain granules. Legs slender, rather long, femora cylindrical, tibiae slightly sinuate, tarsi very slender.

Hemelytra stenopterous, corial margins proximally strongly broadened, rounded, as broad as the width of pronotum, corium then strongly narrowed, membrane reduced, apically widened and broadly rounded, reaching nearly to the end of abdomen. Veins of corium elevated, veins of membrane distinct.

Abdomen flattened, ovate, posteriorly widened, distinctly wider than the width of pronotum. Connexivum not delimited, exterior margins of respective abdominal segments rounded, posterior angles projecting and standing out. 8th abdominal male segment spoon-like, lobes subquadriangulate, in the middle of lobal posterior margin slightly notched. Spiracles ventral, that of 8th segment lateral.

Body unicolorous brown, only extreme exterior angles of respective connexival segments, veins of hemelytra and legs slightly paler.

1 ♂ (holotype) and 3 ♂♂ (paratypes) — Vicinity of Dasht, Shah Mohammad Reza Wildlife Park, 650 m., 27.–30. 7. 1970, Mazandaran, North Iran (loc. no. 77). Collected on small branches of *Quercus castaneifolia*. Together with adults there were collected 20 nymphs of 1st to 4th instar.

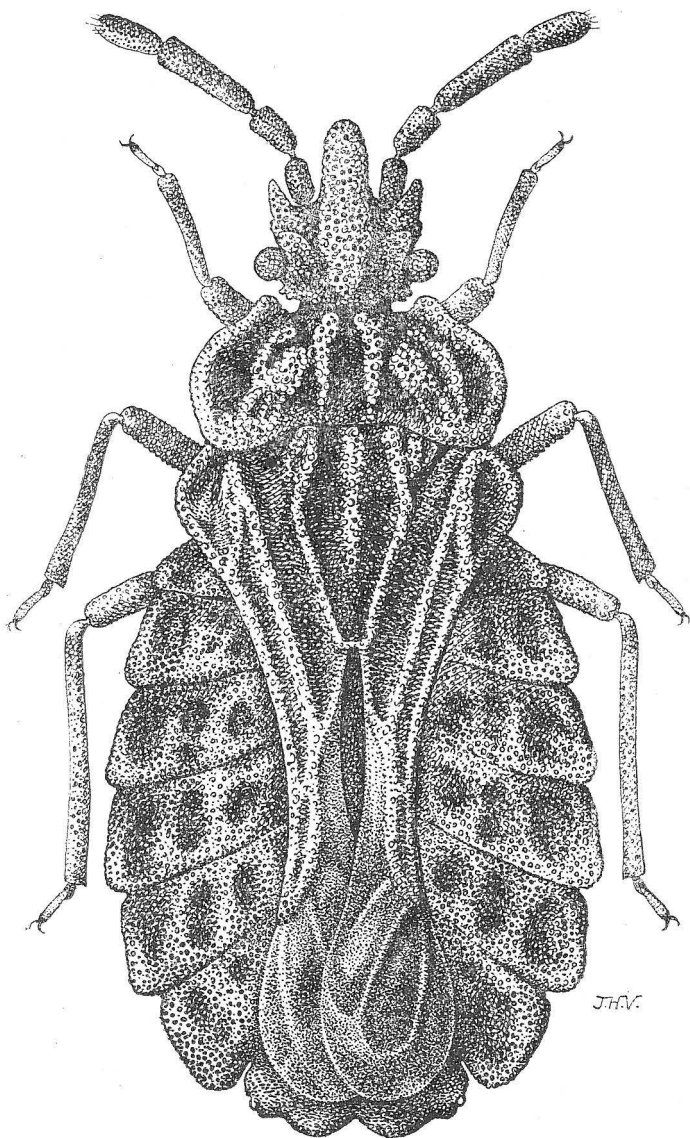


Fig. 1. *Aradus safavii* n. sp. — male (holotype), Mazandaran, North Iran.

2 nymphs (of 2nd and 3rd instar) — Robate-Ghareh Bil, east part of Shah Mohammad Reza Wildlife Park, 1000 m., 30. 7. 1970, Mazandaran, North Iran (loc. no. 78).

This new species belongs to a small group of palaeartic species of *Aradus versicolor* H. Sch., *A. diversicornis* Horv. and *A. spinicollis* Jak. The new species differs from the other three species in conspicuously short pronotum which is 2.85 times as broad as long in the middle and in very deep emarginated posterior pronotal margin. The head of the new species is very large with very well developed postocular tubercles on strongly narrowed head behind eyes. The hemelytra are stenopterous. *Aradus safavii* n. sp. is unicolorous dark brown whilst the other three species are bicoloured. *Aradus safavii* n. sp. is most closely related to *Aradus diversicornis* Horv. a species of Caspian distribution. I examined the holotype of *Aradus diversicornis* Horváth, deposited in the collections of the Hungarian Natural History Museum, Budapest and I present below its redescription to be compared with the new species.

***Aradus diversicornis* Horváth 1878**

Aradus diversicornis Horváth 1878, in O. Schneider: Naturwissenschaftliche Beitr. zur Kenn. des Kaukasländer: 80.

Aradus diversicornis; Kiritschenko, 1913: Faune de la Russie, VI, 1:60, 72-74.

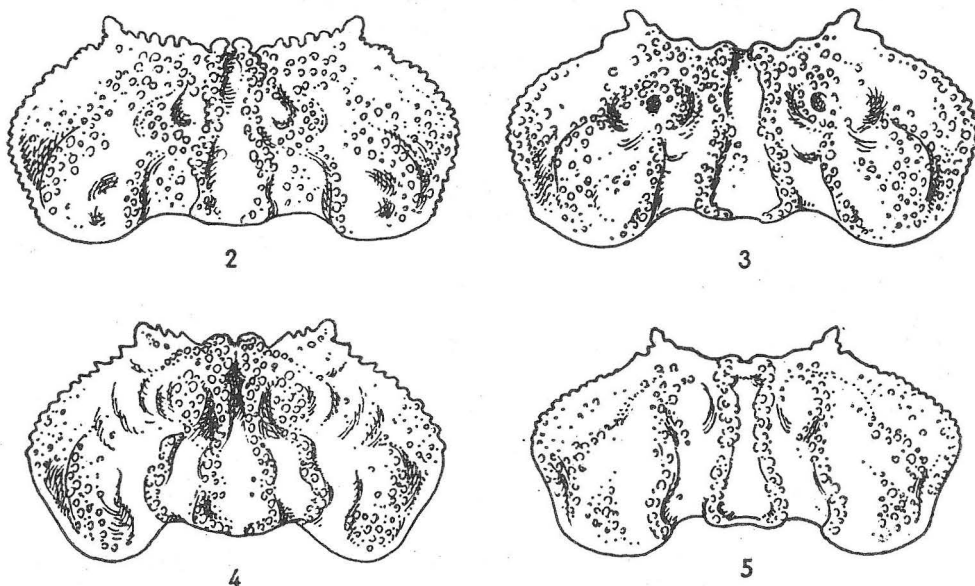
Aradus diversicornis; Kiritschenko, 1913: Mem. Mus. du Caucase, A, 6:74.

Female. Length 7.5-8.5 mm, width 3.9-4.2 mm. Head: length 1.3 mm, width 1.61 mm., synthlipsis 1.11 mm. Antennae: length of segment I, 0.31 mm., II, 0.56 mm., III, 0.93 mm., IV., 0.68 mm. Pronotum: length 1.18 mm., width 3.04 mm. Scutellum: length 1.67 mm., width 1.12 mm.

Body twice as long as broad, posteriorly regularly moderately widened.

Head 1.2 times across eyes as broad as long, frontal head precess parallel, apically rounded and reaching to the proximal fourth of second antennal segment. Antenniferous tubercles short, acute, directed forward, lateral margins of head in the middle between apex of antenniferous tubercles and eyes with a process strongly projecting forward. Eyes very small globular, stylate, projecting laterally. Head beyond eyes truncate with a reduced granulate postocular tubercle. Disc of head moderately rounded, with a deep V-shaped anteriorly open impression. Rostrum reaches anterior coxae. Surface of head with dense tubercles rather missing on V-shaped impression of the disc. Antennae very thick, 1.56 times as long as the width of head across eyes, first antennal segment globular, second segment distinctly broader than first segment and apically widened. Third antennal segment stoutest, from base towards the apex distinctly broadened, fourth segment slenderest, cylindrical and apically rounded with long bristles. Surface of antennae with dense tubercles and very short bristles. Relative lengths of antennal segments 6:11:18:12.

Pronotum 2.38-2.45 times as broad as long in the middle variable in the shape (figs. 2-5), lateral margins of pronotum subrounded or roundedly angulate, with posterior arm roundish or slightly straightened and anterior arm slightly sinuate; anterior pronotal angles subacute slightly projecting, flattened, posterior angles broadly rounded, posterior margin at the level of scutellum slightly emarginate. Disc of pronotum rather plain, laterally depressed and pronotal margins mainly anteriorly raised. Disc of pronotum in the middle with two insignificant posteriorly slightly divergent carinae and laterally on each side with another more or less obsolete longitudinal carina. Surface of



Aradus diversicornis Horváth — variability of pronotal shape: fig. 2: female (holotype), from Lenkoran; fig. 3: male, from Lenkoran; fig. 4: female, from N. Iran, C. Alburz, Haraz Chay; fig. 5: female, from N. Iran, Behshahr.

pronotum with irregularly dispersed small granules more densely accumulated on carinae. Lateral pronotal margins finely serrate. Scutellum 1.4–1.5 times as long as broad, lateral margins elevated and distally strongly narrowed, apex very narrow. Disc of scutellum plain, with irregular granules. Sternum flattened, with plain granules. Legs slender and long, tibiae slightly sinuate.

Hemelytra reaching anterior part of 8th abdominal segment, basal part of corium roundedly widened, raised and distinctly broader than the width of pronotum, corial margins then sinuately narrowed; corial veins distinctly elevated, membrane slightly longer than the length of corium, veins distinct, posterior margin narrowly rounded.

Abdomen flat, broad, regularly rounded, distinctly wider than the width of corium at base. Connexivum well separated, broad, exterior margins of respective segments moderately roundish, posterior exterior angles projecting, those of 6th and 7th segment very conspicuously. Spiracles ventral, those of 8th segment lateral.

Colour of the body in general reddish brown or brown. Head and antennae unicolorous dark brown. Pronotum brown, extreme anterior angles yellowish. Scutellum unicolorous brown. Proximal part of corium and corial veins yellowish, posteriorly darkened. Posterior angles of respective connexival plates and terminal margins of lobes of 8th abdominal segment paler. Lower surface of the body dark brown, legs slightly paler.

Lobes of 8th abdominal female segment very broad, rather rounded, exteriorly behind spiracles with small triangular projection.

Male. Length 6.4–6.5 mm., width 3.2–3.4 mm.

In general similar to female, more narrower proteriorly, not so distinctly widened as in female, 2.1 times as long as broad. Posterior angles of respective connexial plates more distinctly projecting.

8th abdominal male segment spoon-like, lobes subquadriangulate, terminal interior angle rounded, terminal margin sinuate.

1 ♀ – Behshahr, 25. 7. 1970, Mazandaran, North Iran (loc. no. 72). Collected under bark of old *Ficus carica*.

1 ♀ – Valley of the river Haraz Chay, 22 km. S. of Amol, 400 m., Alborz, 23.–24. 7. 1970, Mazandaran, North Iran (loc. no. 69). Sifted from old trunk of *Ulmus scabra*.

1 nymph – Plain of Kalardasht, northern slope of Alam Kuh massif, Rudbarak, 1500 m., Alborz, 12. 8. 1970, Tehran (province), North Iran (loc. no. 91). On *Prunus divaricata*.

Further material examined: 1 ♀ (holotype) – “Lenkoran“ (Hungarian Natural History Museum, Budapest).

1 ♂ – “Kaspisches Meer-Gebiet, Lenkoran, 1897, Kober“ (Hungarian Natural History Museum, Budapest).

In Iran recorded from Gorgan, Mazandaran (by Kiritshenko 1913 from “Askhabad“ or “Astarabad“ with a question-mark).

Species distributed in Soviet Azarbaidjan: Lenkoran (type-locality), Lirik, Amurat and in Georgia: Borzhomi. This species seems to be widely distributed in Caspian region.

Aradus turkestanicus Jakovlev, 1894

1 ♀ – Robate-Ghareh Bil, east part of Shah Mohammad Reza Wildlife Park, 1000 m., 30. 7. 1970, Mazandaran, North Iran (loc. no. 78). On *Juniperus oxycedrus*?

Species previously recorded only from Soviet Middle Asia, Uzbek SSR (Tashkent type-locality). New record for the fauna of Iran.

Aradus crenatus Say, 1831

1 ♀ and 1 nymphs of 4th instar – Valley of the river Haraz Chay, 22 km. S. of Amol, 400 m., Alborz, 23.–24. 7. 1970, Mazandaran, North Iran (loc. no. 69). Sifted from old trunk of *Ulmus scabra*.

1 ♀ and 2 nymphs of 2nd and 4th instar – Robate-Ghozlog, 10 km. S. of Gorgan, 500 m., 26. 7. 1970, Mazandaran, North Iran (loc. no. 74). Sifted from a old trunk of *Ulmus scabra*.

In Iran recorded from North Iran, Mazandaran (Kiritshenko 1913).

Species distributed through Europe and North America.

Further species of *Aradus* recorded from Iran:

***Aradus versicolor* Herrich Schaeffer, 1835**

Asalem, 80 km. N. W. of Bandare Pahlavi, Gilan, North Iran (Wagner 1968).
Species of European distribution.

***Aradus depressus leptocerus* Horváth, 1881**

Shahrud, Simnan, N. E. Iran (Kiritshenko 1913)

Subspecies *leptocerus* Horv. recorded from Soviet Azarbaijan: Lenkoran (type-locality). *Aradus depressus depressus* (Fab.) of European distribution.

Key to the species of *Aradus* occurring in Iran.

1. Second antennal segment distinctly shorter than the third segment, thicker than tibiae, second and third antennal segment more or less widened posteriorly, abdomen distinctly wider than the width of pronotum 2.
- Second antennal segment longer than the third segment 4.
2. Pronotum at least 2.5 times as broad as the length of pronotum in the middle. Body with pale markings on pronotum and the proximal part of corium. Third antennal segment as well as entire scutellum unicolorous dark brown or distal part of third antennal segment and scutellum laterally in front of apex pale yellowish 3.
- Pronotum 2.85 times as broad as the length of pronotum in the middle, posterior pronotal margin deeply emarginated. Hemelytra stenopterous. Antennae and the whole body unicolorous dark brown *A. safavii* n. sp.
3. Third antennal segment and scutellum unicolorous dark brown
- Third antennal segment bicoloured, distal part pale yellowish, lateral margins of the scutellum in front of apex narrowly yellowish *A. diversicornis* Horv.
4. Second antennal segment only slightly longer than the third segment, pronotum not broader than width of proximal part of corium. Antennae distinctly longer than length of head, rather paler and stout 5.
- Second antennal segment distinctly longer than the third segment, pronotum conspicuously broader than proximal part of corium. Second antennal segment nearly cylindrical and slightly widened posteriorly 6.
5. Body relatively broad, with relatively short and thicker antennae *A. depressus depressus* (Fab.)
- Body relatively narrow with relatively longer and thinner antennae *A. depressus leptocerus* Horv.
6. Second antennal segment shorter than the third and fourth segment together. Fourth segment distinctly shorter than third. Antennae cinnamomeous
- Second antennal segment distinctly longer than the third and fourth segment together. Fourth segment as long as the third or only slightly shorter. Second antennal segment shorter than length of head. Antennae dark coloured. Lateral margins of pronotum projecting in a blunt angle, margins finely serrate *A. turkestanicus* Jak.

MEZIRINAE

Previously recorder only:

***Rusthen bellicosus* Kormilev, 1957**

Iran (Persia, without correct locality), recorded and described by Kormilev 1957.

LITERATURE

- Kiritshenko A. N., 1913: Insectes Hémiptères. Vo. VI. Livr. 1. Dysodiidae et Aradidae. Faune de la Russie, pp. I-II, 1-301, figs 1-90, Tab. I-II.
- 1959: New and little known Brachyrhynchidae (Hemiptera - Heteroptera). *Rev. ent. USSR*, **38**:179-195, figs 1-11.
- Kormilev N. A., 1957: Notes on Aradidae from the Eastern Hemisphere (Hemiptera). XIII. On some Aradidae in the Drake-Collection. *Quart. Jour. Taiwan Mus.*, **10**: 37-46, figs 1-12.
- Wagner E., 1968: Contribution à la faune de l'Iran. 7. Hémiptères Hétéroptères (pro parte). *Ann. Soc. ent. Fr. (N. S.)*, **4**:437-453.
- 1971: Drei neue Heteropteren aus Iran. *Reichenbachia*, **14**:31-37, figs 1-4.