

## Two new species of the genus *Aradus* F., 1803, from Palaearctic region (Hemiptera: Aradidae)

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(Mit 4 Textabbildungen)

Manuskript eingelangt am 3. Juni 1969

By the kind offices of Herrn Prof. Dr. MAX BEIER, Hofrat at the Naturhistorisches Museum in Vienna, and Mr. WAYNE GAGNÉ, Research Assistant at the University of California, Berkeley, I have had a privilege to study a lot of 87 Aradids from various parts of the World, for what I am expressing them my sincere gratitude.

Among this lot were two new species of the genus *Aradus* F., 1803, which are described in this paper. The first is from Italy and the second from Russian Far East.

Subfamily ARADINAE AMYOT and SERVILLE, 1843

Genus *Aradus* FABRICIUS, 1803

*Aradus italicus* new species

Figs 1—2

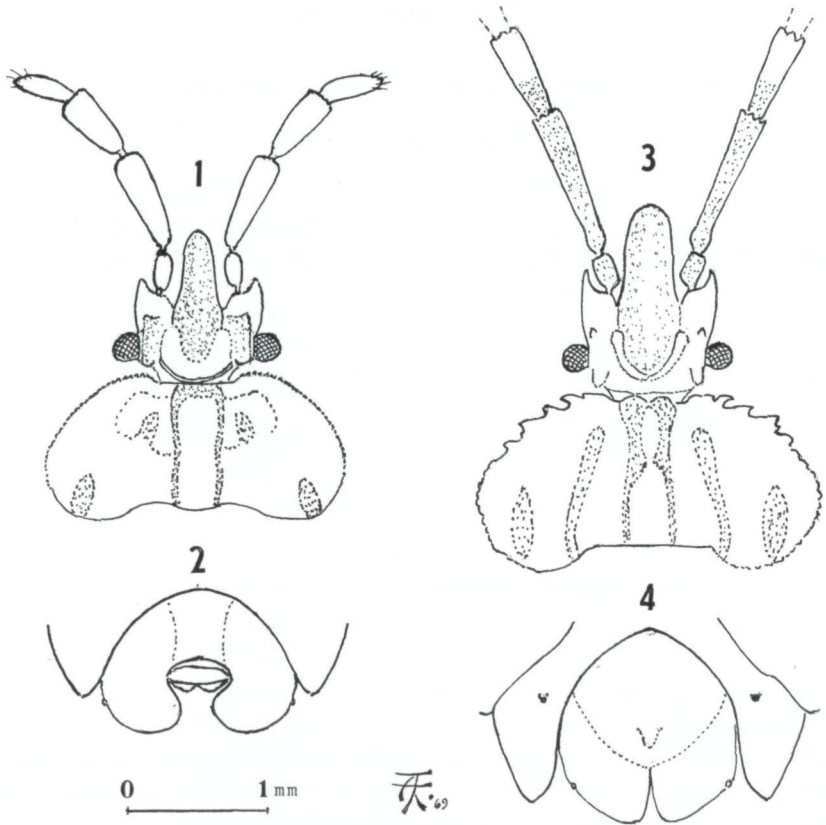
Female. Ovate, strongly attenuated anteriorly and finely granulate.

Head as long as its width across eyes (32:32). Anterior process tapering from base forward for  $\frac{2}{3}$  of its length, then with parallel sides, reaching beyond base of antennal segment II. Antenniferous tubercles short, stout at base, dentiform, slightly divergent, then parallel, reaching basal  $\frac{1}{3}$  of antennal segment I; their outer borders unarmed. Eyes reniform, subpedunculate. Preocular tubercles blunt, postocular practically absent; postocular borders strongly convergent. Vertex granulate, with semicircular, depressed, white line. Antennae strong, increasing in thickness from I to III. Segment I cylindrical, rounded at base, II and III petiolate and widening from base to apex, IV elongate ovate. Relative length of antennal segments, I to IV, are: 7:20:15:12. Labium reaches fore border of mesosternum.

Pronotum trapezoidal with rounded and somewhat reflexed sides, less than half as long as its maximum width at  $\frac{2}{5}$  of its length (25:58). Anterior angles rounded; lateral borders strongly convex, rounded, very finely denticulate. Basal border narrowly truncate in middle, twice (1+1) sinuate laterad of median portion, convex latero-posteriorly. Disc with 2 (2+2) parallel, stout, longitudinal carinae, extending from collar to hind border; 2 (1+1) short, stout ridges laterad of inner carinae, and 2 (1+1) more short ridges at postero-lateral angles.

Scutellum longer than its basal width (35:25). Disc depressed at base, slightly raised at middle, and transversely rugose apically. Lateral borders slightly convex and reflexed, with exception of basal, depressed portion of disc; apex acute.

Hemelytra narrow, reaching fore border of tergum VI. Baso-lateral portion of corium expanded, rounded, and reflexed; there hemelytra are wider



*Aradus italicus* n. sp., ♀, Fig. 1, head and pronotum; fig. 2, tip of abdomen from above.  
*Aradus kiritshenkoi* n. sp., ♂, Fig. 3, head and pronotum; fig. 4, tip of abdomen from below.

than pronotum (68:58). Corium deeply punctured between veins. Membrane abbreviated and narrow, inner borders of membranes are contiguous. Hind wings strongly reduced, reaching only fore border of tergum III.

Abdomen ovate, strongly convex laterally, concave on dorsal side, shorter than its maximum width across segment V (82:90). Connexivum moderately reflexed; exterior borders of connexiva II to VI slightly convex, finely crenulate; PE-angles II to VI not protruding; link between VII and lobes of VIII deeply cut out, lobes strongly rounded, not contiguous. Spiracles II not visible, III to VII ventral, placed far from border, VIII lateral and visible from above.

Sternum and venter sulcate medially; sternum II laterally with 2 (1+1) oblique, reddish, glabrous carinae; hind borders of sterna III to VI carinate, reddish and glabrous; discs of sterna and genital segments very finely granulate.

Color: black; antennal segment I, antero-lateral expansions and veins of corium, and legs, are brown to dark brown; coxae whitish; fore borders of connexivum II on ventral side red.

Total length 6.25 mm; width of pronotum 2.07 mm; width of abdomen 3.21 mm.

Holotype: ♀, North Italy, Monte Grigna, GANGLBAUER coll.; deposited at the Naturhistorisches Museum in Vienna.

*Aradus italicus* n. sp. is related to *A. tauricus* JAKOVLEV, 1906, but is smaller, postocular tubercles practically absent, hemelytra are longer, antennal segment II tapering toward base and petiolate, lobes of VIII regularly rounded, not cut out.

*Aradus kiritshenkoi* new species.

Figs 3—4

Male elongate ovate, female more ovate.

Head slightly longer than width across eyes (♂-35:33, ♀-39:36). Anterior process robust, compressed laterally, with parallel sides, reaching basal  $\frac{1}{4}$  of antennal segment II. Antenniferous tubercles robust, with pointed tips, without teeth exteriorly, reaching  $\frac{3}{4}$  of antennal segment I. Preocular tubercles tiny, acute; postocular larger, blunt. Vertex with a semicircular, white streaks in the semicircular depression. Antennae moderately stout; antennal segment I cylindrical, II evenly tapering toward base, III also tapering toward base, apically as wide as II, IV is missing. Relative length of antennal segments, I to III, are: ♂-7:30:16:-, ♀-7:30:-:- (two apical are missing). Labium reaching hind border of fore coxae (♂), or fore border of mesosternum (♀).

Pronotum less than half as long as its maximum width (♂-30:68, ♀-31:70). Collar slightly cut out in middle, truncate laterally; antero-lateral borders denticulate, the size of teeth diminishing backward; lateral borders strongly convex, subangularly rounded, crenulate; posterior border cut out in middle and straight; lateral borders moderately reflexed.

Scutellum much longer than its basal width (♂-37:29, ♀-37:31). Lateral borders widely rounded and reflexed, tip angularly rounded; disc raised at basal  $\frac{1}{3}$  of its length.

Hemelytra reaching over fore border of genital lobes (♂), or fore border of tergum VIII (♀). Baso-lateral border of corium expanded and rounded; width of hemelytra across expansion is greater than across pronotum (♂-76:68, ♀-77:70), corium reaching  $\frac{2}{3}$  of connexivum V (♂), or  $\frac{2}{5}$  of connexivum V (♀).

Abdomen elongate ovate (♂), or ovate (♀), longer than its maximum width across segment V (♂-93:84, ♀-106:97). Exterior borders of connexiva II to VII weakly convex, PE-angles II to V slightly protruding, more in female,

VI strongly protruding over base of VII, PE-VII forming rounded lobes in both sexes. Genital lobes (♂) contiguous at base, divergent apically, their posterior borders obliquely convergent. Genital lobes (♀) not contiguous, their posterior borders obliquely convergent. Spiracles II not visible, III to VII ventral, placed far from border, VIII lateral and visible from above.

Sternum and venter finely sulcate medially.

Color: grey-brown to brown; veins on corium (♀) partly orange-yellow; apical  $\frac{2}{3}$  of antennal segment III yellow.

Total length: ♂-7.00, ♀-7.75 mm; width of pronotum: ♂- 2.43, ♀-2.50 mm; width of abdomen: ♂-3.00, ♀-3.46 mm.

Holotype: ♂, Russian far east, Vladivostok, I. Bryner coll.; deposited at the Naturhistorisches Museum in Vienna.

Allotype: ♀, collected with holotype; in the same collection.

It is a pleasure to dedicate this species to the eminent Russian hemipterologist, Prof. Dr. ALEXANDER N. KIRITSHENKO, who contributed so much to our knowledge of Palaearctic Aradidae.

In KIRITSHENKO's key for Palaearctic *Aradus* species (1913:60), the new species runs to *Aradus semilacer* KIRITSHENKO, 1913, but may be separated by: pronotum differently shaped, PE-angles II to V less protruding, and by apical  $\frac{2}{3}$  of antennal segment III yellow.

Note: In descriptions the length of abdomen was taken for convenience from the tip of scutellum to tip of genital lobes. In ratios the first figure represents the length, and the second the width of measured portion. 28 units = 1 mm.

#### References:

- JAKOVLEV, V. E., (1906): (Hemiptera-Heteroptera of the Gouvernement of Tauria, 2nd supplement; in Russian). — Rev. Russe Ent., 6: 220—221.
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Jahr/Year: 1970

Band/Volume: [74](#)

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Artikel/Article: [Two new species of the genus Aradus F., 1803, from Palaeartic region \(Hemiptera: Aradidae\). 201-204](#)