

# Diagnostic characters of *Leptoceraea viridis* Jakovlev, 1873 and *L. femoralis* (Horváth, 1897) and distribution of these species in the former USSR and adjacent countries (Heteroptera: Rhopalidae)

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Distinctive features of two closely related species of *Leptoceraea* are discussed. Diagnoses for *L. viridis* Jakovlev, 1873 and *L. femoralis* (Horváth, 1897) based on the structure of the male genitalia are given. Distribution of both species in the former USSR and adjacent territories is clarified and illustrated by a map.

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## Introduction

*Leptoceraea* is considered either as a subgenus or synonym of *Agraphopus* Stål (1872) or as a distinct genus. The latter view is adopted here as it was accepted by Göllner-Scheiding (1983) in the catalogue of World Rhopalidae. Three species are currently included in the genus, of them *L. granulosa* Hsiao, 1965 from China is not included in this study. *L. femoralis* (Horváth, 1897) was synonymized with *L. viridis* Jakovlev, 1873 by some authors (Kerzhner, 1964; Putshkov & Kerzhner, 1983; Putshkov, 1986), but Göllner-Scheiding (1977) justly considered it to be a good species. The distribution of these two species in the Central and Eastern Palaearctic remained poorly known. The aim of this paper is to clarify the distinguishing characters and distribution of these species. The work is based on the study of the material kept at the Zoological Institute, Russian Academy of Sciences.

Horváth (1897) compared *L. femoralis* with a few specimens of *L. viridis* borrowed from V.E. Jakovlev and found the following distinctions: the third antennal segment of male is shorter than the fourth segment in *L. viridis*, but longer in *L. femoralis*; membrane is surpassing the apex of abdomen in *L. femoralis* and not extending beyond apex of abdomen in *L. viridis*; specimens of *L. viridis* have a black stripe on the abdomen, which is lacking in *L. femoralis*.

Göllner-Scheiding (1977) noted other distinctions of these species. According to her, *L. viridis*

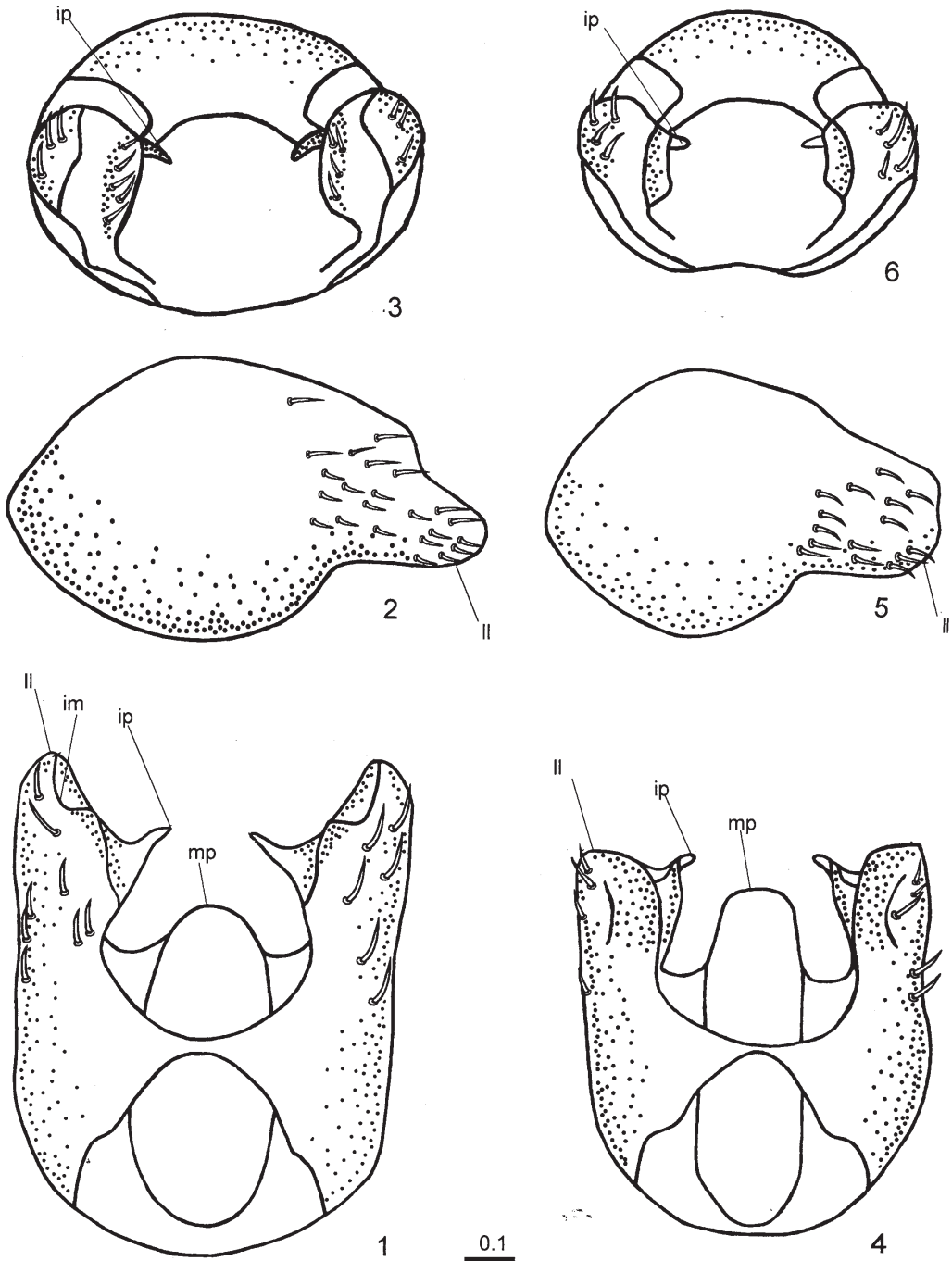
differs from *L. femoralis* in the shorter and more convex head and narrower clypeus. In addition, in *L. viridis*, unlike *L. femoralis*, the first antennal segment is not reaching or slightly extending beyond the apex of head, pronotum is wider, ground colour of the lateral part of hemelytra is brighter, hind legs and spines on the hind femora are longer. Göllner-Scheiding also found that the first valvifer and first valvula in *L. viridis* are larger than in *L. femoralis* and there are some distinctions in the shape of the parameres and the genital capsule. Careful examination of the available material shows that there are no distinctions between *L. femoralis* and *L. viridis* in the external characters, though on average the body of *L. viridis* is longer in both males and females, antennal segments longer, head and pronotum longer and wider than in *L. femoralis*.

All distinctions mentioned above, except the structure of the genital capsule, vary greatly and hardly could be used as diagnostic characters.

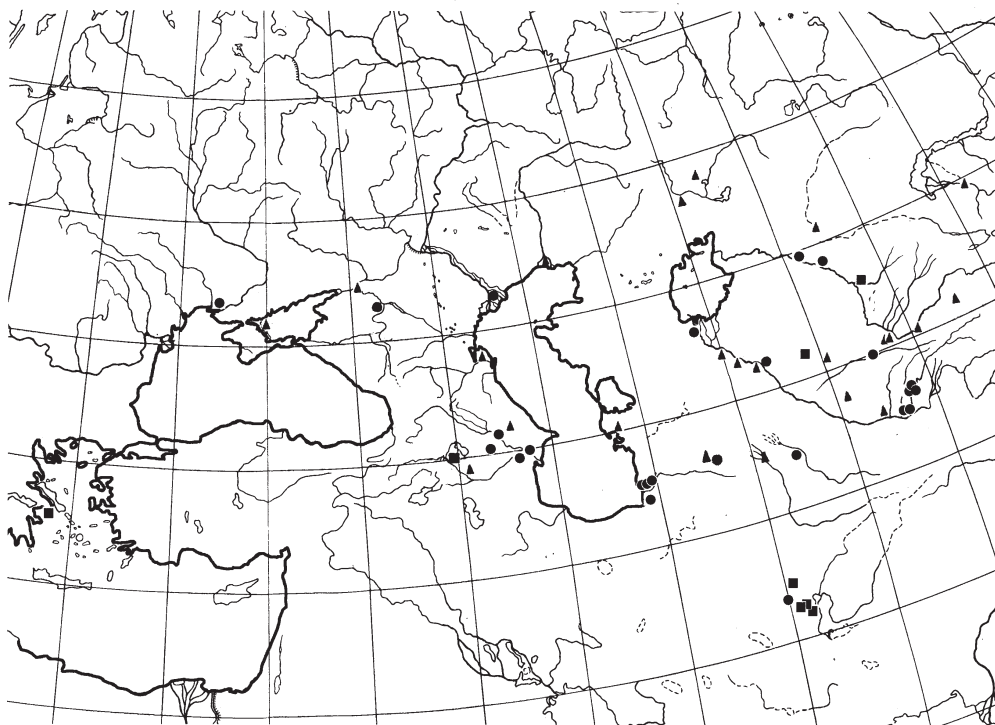
## *Leptoceraea viridis* Jakovlev, 1873

(Figs 1-3, 7)

*Material examined.* **Russia:** 5 ♂, 6 ♀ (lectotype and paralectotypes), Astrakhan, 1873 (Jakovlev); 1 ♂, Rostov Prov., railway station Torgovaya, 9.VI.1924 (Doinikov); **Ukraine:** 8 ♂, 8 ♀, Dniepr estuary, 25 km downstream of Kherson, 15.VII.1954 (Putshkov); **Azerbaijan:** 1 ♂, Evlakh on the Kura River, 17-20.VI.1949 (Bogachev); 1 ♂, Khaldan, 10 km from Evlakh, 15-18.VII.1949 (Bogachev); 1 ♂, Karadonly on the Araks River, Mugan' area, 8.VI.1933 (Lukyanovich); 3 ♂, 3 ♀, near Dzha-farkhan, Kalagainy, 15-21.V.1935 (Lukyanovich); 3 ♂,



**Figs 1-6.** *Leptoceraea viridis* (1-3) and *L. femoralis* (4-6), genital capsule: 1, 4, ventral view; 2, 5, lateral view; 3, 6, caudal view. *im*, inner margin of lateral lobe; *ip*, inner process; *ll*, lateral lobe; *mp*, median projection.



**Fig. 7.** Distribution of *Leptoceraea viridis* (circles), *L. femoralis* (squares) and unidentified females of *Leptoceraea* (triangles), based on the collection of the Zoological Institute, St.Petersburg.

9 ♀, Geoktapa, S of Khanlar, former Elisabethpol [= Gandja] Prov., 6-20.VII.1901 (Schmidt); 2 ♀, same locality, 4.VII.1915 (Bianchi); 2 ♀, same locality (Shelkovnikov); **Kazakhstan:** 1 ♂, Perovsk [= Qyzylorda], 4-9.VII.1904 (Oshanin); 1 ♂, Dzheleq, Syr Darya River, VII-VIII.1910 (Kozhanchikov); **Uzbekistan:** 1 ♂, Amu-Darya, Kzyl-Rabat, 20.VIII.1939 (collector unknown); 16 ♂, 1 ♀, Yargak near Khatyrchi, 6-27.VII.1928 (Zimin); 4 ♂, Kyzyl-Dzhar, E. of Kungrad, 28-30.VI.1938 (Zimin); **Turkmenistan:** 1 ♂, Gassan-Kuli [= Essenguli], mouth of the Atrek River, 27.VI.1932 (Ushinskiy); 2 ♂, Choloyuk, Atrek River, 10.IX.1932 (Ushinskiy); 2 ♂, Ak-yayla, Atrek River, 26.VII-21.VIII.1932 (Ushinskiy); 1 ♂, Annau, 9.VI.1928 (Gussakovskiy); 1 ♂, Bayram-Ali, 20-21.VII.1930 (Bogush); **Tajikistan:** 14 ♂, 4 ♀, Kurgan-Tyube [= Qirghontepa], valley of Vakhsh, 29.V.1935 (Gussakovskiy); 1 ♂, same locality, 13.VIII.1948 (Popov); 2 ♂, Staraya Pristan, Dzhilikul, Vakhsh River, 12-14.VIII.1941 (Gussakovskiy); 2 ♂, Dzhilikul, Vakhsh River, 1.IX.1935 (Gussakovskiy); 5 ♂, 1 ♀, Kuybyshevsk, lower Yavan-su, 25.VII.1943 (Kiritshenko); 17 ♂, 21 ♀, 6 km E of Kuybyshevsk, valley of lower Vakhsh, 11.VII-29.VIII.1943 (Kiritshenko); 1 ♂, 1 ♀, Tigrovaya Balka, lake Halka-kul, 6.VI.1957 (Luppova); 1 ♂, Molotovabad [= Dusti], 4.VIII.1939 (Luppova); **Iran:** 1 ♂, Durukh-Gezik, Nakhbandan, 10.X.1898 (Zarudny); 3 ♂, 1 ♀, Kara-su River, 15-28.VII.1914 (Kiritshenko).

**Diagnosis.** Median projection of genital capsule not reaching half length of lateral lobes (Fig. 1); apex of lateral lobes narrowed and

rounded (Fig. 1); inner margin of lateral lobe with subrectangular emargination (Figs 1, 2); inner process of lateral lobe pointed and located far from the lobe apex (Figs 1, 3).

**Distribution.** In addition to the countries listed in the material examined, the species was recorded from Israel (Palestine) (Linnavuori, 1960), Algeria (Eckerlein & Wagner, 1965), Tunisia, Egypt, Syria, Turkey, Romania (Stichel, 1960), Albania (Josifov, 1970) and Pakistan (Ahmad & Kamaluddin, 1981). The record from Tunisia refers to *L. femoralis* (Carapezza, 1997), the records from Romania (Kis, 2001) and Pakistan are correct, other records should be verified. Putshkov (1986) cited this species from Kuibyshev [= Samara] Province of Russia, but this is apparently a misinterpretation of Kuibyshevsk in Tajikistan, as *Aeluropus*, the host plant of *Leptoceraea*, does not occur in Samara Province.

***Leptoceraea femoralis* (Horváth, 1897)**  
(Figs 4-7)

**Material examined.** **Greece:** 1 ♂, Scapamagka, 20 km S. of Athens, 25.VIII.1936 (Jenjouriste); **Armenia** (new record): 2 ♂, Kamarlyu [= Artashat], valley of Araks,

11.VIII.1931 and 16.VII.1932 (Korinek); **Kazakhstan**: 2 ♂, 3 ♀, railway station Timur, 50 km E. of Turkestan town, V-IX.1903 (Klare); **Uzbekistan** (new record): 5 ♂, 2 ♀, Syr Darya, "tugay" [river-valley forest] Syrykamysh [? near Tashkent], 7-12.10.VI.1939 (Chirkun); 1 ♂, Ayak-agytma, Bukhara Prov., 28.V.1948 (Kiritshenko); **Iran**: 1 ♂, Tamin near Taftan, eastern Kirman, 24.VIII.1898 (Zarudny); 4 ♂, 7 ♀, Neizar, northwestern Seistan, 11.IX.1898 (Zarudny); 2 ♂, well Cha-i-Novar, Seistan, 6-8.VIII.1898 (Zarudny); 1 ♂, 1 ♀, Ayselabad, Seistan, 31.V.1898 (Zarudny); 1 ♂, Nasratabad, Seistan, 12.V.1898 (Zarudny); 1 ♂, 2 ♀, Husseinabad, Seistan, mouth of the Helmand River, 22.V.1898 (Zarudny).

**Diagnosis.** Median projection of the genital capsule reaching half length of lateral lobes (Fig. 4); apex of lateral lobe truncate (Fig. 4); inner margin of lateral lobe not emarginated (Figs 4, 5); inner process of lateral lobe rounded at apex and located near the lobe apex (Figs 4, 6).

**Distribution.** In addition to the countries listed in the material examined, the species was recorded from southern France (Horváth, 1897), Spain (Vázquez, 1987), Greece, Iraq (Göllner-Scheiding, 1977), Cyprus (Lindberg, 1948), Saudi Arabia (Linnavuori, 1986), Kuwait (Al-Houty & Dolling, 1999), Egypt, Israel (Hoberlandt, 1956) and Tunisia (Carapezza, 1997). The records from Romania (Göllner-Scheiding, 1977) and Tajikistan (Kiritshenko, 1964) refer to *L. viridis*.

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