

New and Little Known Orthoptera from Tajikistan*

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Abstract. The following new taxa are described: *Calopterus mistshenkoi* n. sp., *C. pamirica immatura* n. ssp., *Platycleis irinae* n. sp., *Pravdiana mira* n. gen. and sp. Morphological details are shown in 9 figures. New data are presented on distribution of *Platycleis meridiana* Stol. and *Oedipoda juxartensis* Uv.

Examination of the author's collections and materials of the Institute of Zoology and Parasitology of the Tajik Academy of Sciences revealed new Orthopteran taxa and extended knowledge of the distribution of known forms. Holotypes and part of the paratypes were sent to the Institute of Zoology of the Russian Academy of Sciences (St. Petersburg) and the remaining paratypes are deposited in the Biological Institute, Siberian Division of the Russian Academy of Sciences (Novosibirsk) and the Institute of Zoology and Parasitology of the Tajik Academy of Sciences (Dushanbe). The authors sincerely thank L. L. Mishchenko and L. I. Podgornoy for constant advice.

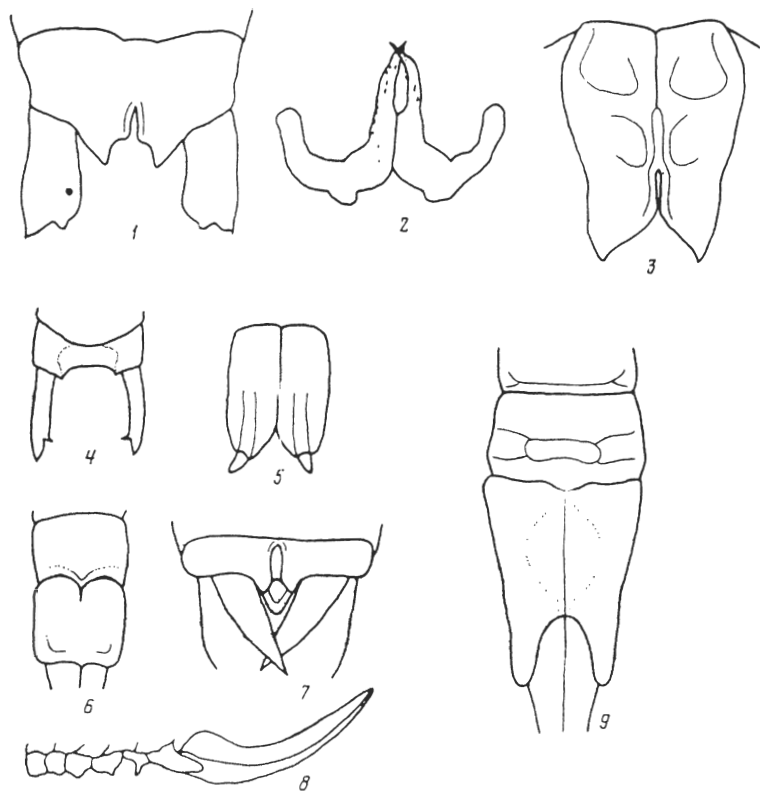
Calopterus mistshenkoi Sergeev and Pokivajlov, sp. n.

Material. Holotype ♀, Tajikistan, Hissar Range, S slopes, Yavroz, 26.VII.1988 (B. Pulatov); 1 ♂, 1 ♀, Tajikistan, Hissar Range, Romit Nature Reserve, 18.VII.1982; 1 ♀, same locality, 23.IX.1989; 3 ♂s, same locality, 19.X.1989 (Pokivajlov).

Description. ♂. Body large. Tip of vertex 1.3 times as wide as 1st antennal segment. Posterior margin of pronotum rounded; lateral lobe with distinct humeral emargination. Tegmina extending to middle of first abdominal tergite. Forefemora bearing 3-5 spines on lower inner margin and two inner knee spines. Front tibiae outwardly and dorsally bearing 3 spines, outwardly and ventrally 6, and ventrally and inwardly 6. Midfemora ventrally and outwardly bearing 4 spines, inwardly 1-2; inner and outer knee spines, distinct. Midtibiae dorsally and outwardly bearing 3 spines, dorsally and inwardly 6, ventrally and outwardly and inwardly 6 each. Hindfemora ventrally and outwardly bearing 4 to 8 spines, inwardly 3 to 8 spines. Length of hindfemur 5.7 times width. Ultimate abdominal tergite bearing 2 triangular lobes separated by rounded emargination, which becomes furrow intersecting last third of tergite (Fig. 1). Cerci flattened, 2.6-3 times as long as wide at base; cerci apically slightly expanded, outer margin flat, inner one convex in apical half. Tip of cerci bearing small but distinct spine in dorsal view; lateral denticle thick, blunt, spinule on its tip usually pointed downwardly and not visible dorsally. Subgenital plate distinctly elongated, bearing triangular emargination apically and distinct lateral and medial carinae. Length of styles twice their length [sic]. Coloration gray brown to brown, posterior margin of pronotum with indistinct and not always well developed dark band, hindfemora grayish, apically slightly darkened. Genitalia typical of tribe Drymadusini (Fig. 2).

♀. Similar to ♂, somewhat larger. Tip of vertex slightly wider than first antennal segment. Tegmina extending to posterior margin of mesonotum. Forefemora bearing 3-4 spines along ventral inner margin and 2 inner knee spines. Foretibiae dorsally and outwardly bearing 3 spines,

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Figs. 1-9. Details of abdomens of new species. *Calopterus mistshenkoi* sp. n. (1-3); *Platycleis irinae* sp. n. (4-6); and *Pravdiniana mira* gen. et sp. n. (7-9): 1, 4) end of ♂ abdomen in dorsal view; 2) ♂ genitalia; 3) ♀ subgenital plate; 5) ♂ subgenital plate; 6) end of ♀ abdomen in ventral view; 7) end of ♀ abdomen in dorsal view; 8) same in lateral view; 9) same in ventral view.

ventrally and outwardly 6, ventrally and inwardly 6. Midfemora ventrally and outwardly with 4 to 6 spines, inwardly 1-2, and 2 inner knee spines. Midtibiae dorsally and outwardly and with 2 spines, dorsally and inwardly with 4-5, ventrally and outwardly and ventrally and inwardly with 6 each. Hindfemora ventrally and outwardly with 6-7 spines, inwardly with 7. Ultimate tergite with broad rounded emargination. Cerci long, conical. Subgenital plate with shallow triangular emargination continuing into slitlike depression; lateral transverse carinae developed (Fig. 3); slitlike depression framed by carinae fusing into medial carina only in middle of plate; anterior part is replaced by depression. Lateral triangular lobes acute, curved toward base of ovipositor apically. Ovipositor curved downward a little shorter than hindfemora. Coloration brownish, posterior margin of pronotum with indistinct dark edging. Tips of ovipositor tibiae, and tarsi darkened.

Body length: ♂ 31.5-35.0, ♀ 33 (without ovipositor); pronotum: ♂ 10.5-11.0, ♀ 10.5; tegmina: ♂ 4, ♀ 1.8; hindfemora: ♂ 30.0-31.1, ♀ 33; ovipositor: 27 mm.

Species is named in memory of L. L. Mishchenko.

Ecology. Found at elevation of 1200-1400 m above sea level. Occurs on pebbly-stony sections in stream valleys and on mountain slopes, among brush and herbaceous vegetation (*Tamarix*, *Cotoneaster*, *Atraphaxis*, common *Hypericum*, barley, onions, and *Eremurus*). Imagines appear during 2nd ten-day period of July and are found until mid-November. In summer they are typically

crepuscular; in fall they are more active in the middle of the day. Common in crevices between rocks, also found among hedge roses and *Atraphaxis*. ♂'s sing in the second half of the day in bushes.

Differential diagnosis. The *C. mistshenkoi* sp. n. ♂ differs from that of *C. werneri* (Turkmen-Khorsan Mountains, Paropamiz) in having elongated cerci, from *C. lindbergi* B.-Bien (Central Afghanistan) in having an elongated subgenital plate and the inner denticle of the cerci weakly set off, and from *C. platycerca* B.-Bien (same locality) and *C. pamirica* Stol. (W Pamir) in the absence of a well-developed dark border along the posterior margin of the pronotum and in the shape of the cerci. The ♀ of the new species is well distinguished from all known species of the genus (Stolyarov, 1970), primarily in the shape of the subgenital plate and structure of the ultimate abdominal tergite. It differs from *C. werneri* in addition in having shorter tegmina and from *C. lindbergi* and *C. platycerca* in the absence of a wide, distinctly developed black band edging the posterior part of the pronotum. The ♀ of the new species differs from *C. pamirica* in addition in having a deeper emargination at the tip of the subgenital plate.

Finding the new species of *Calopteryx* Uv. in the Hissar Range significantly expands the range of the genus northwestward.

Calopteryx pamirica immatura Sergeev and Pokivajlov, ssp. n.

Material. 1 ♂ (holotype), 1 ♀ (late instar larvae), Tajikistan, Khozratishokh Range, Chil'-Dukhtaron, 21.VII.1987 (Pokivaylov).

Description. ♂. Body large. Tip of vertex 1.3 times as wide as 1st antennal segment. Forefemora with 4-6 spines ventrally and inwardly and 2 inner knee spines. Foretibiae dorsally and outwardly with 4 spines, ventrally and outwardly with 6, ventrally and inwardly with 1-2 spines and 2 knee spines. Midtibiae dorsally and outwardly with 3 spines, dorsally and inwardly with 5-6, ventrally and outwardly with 6-7, ventrally and inwardly with 6. Hindfemora with 6-7 spines ventrally and outwardly and 8-9 inwardly. Coloration grayish brown, pronotum with indistinct dark brown band along posterior margin. Fore- and midtarsi as well as tips of tibiae and tip of hindfemur darkened. Hindtibiae at base with indistinct dark ring.

♀. Similar to ♂, larger. There may be one spine less than in the ♂ in the rows of spines on the middle and hind appendages. Darkening of fore- and midtarsi inconspicuous.

Body length: ♂ 31, ♀ 34 (without ovipositor); pronotum: ♂ 9, ♀ 10; hindfemora: ♂ 24, ♀ 27; ovipositor: 24 mm.

Ecology. The subspecies is found at 1300-1900 m above sea level together with the next species.

Differential diagnosis. The new species differs clearly from the nominate subspecies (Stolyarov, 1969) in having a more developed armature of the appendages.

Platycleis irinae Sergeev and Pokivajlov, sp. n.

Material. 1 ♂ (holotype), 1 ♀, Tajikistan, Khozratishokh Range, Chil'-Dukhtaron, 21.VII.1987 (Pokivaylov).

Description. ♂. Body of average size. Eyes small, almost rounded; edge adjacent to antennae straight. Vertex broad, protruding: greatest width of vertex 2.7 times greatest width of 1st

antennal segment. Pronotum flat and elongated, along anterior margin with weak transverse furrow; in middle with V-shaped short transverse furrow; lateral carinae weak, posterior half of pronotum with distinct medial carina; posterior margin broadly rounded; lateral lobes trapeziform, strongly narrowed toward ventral margin, with weakly arched emargination in posterior margin. Tegmina short, reaching posterior margin of 2nd abdominal tergite, on dorsum overlying each other, with rounded tip. Hindfemora thick, length of femur 4.5 times greatest width. Hindtibiae little shorter than hindfemora. Ultimate abdominal tergite with broad indistinct median depression and shallow median emargination in posterior margin (Fig. 4). Cerci long, well proportioned, weakly arcuate, weakly tapered apically, inner side of cerci apically bearing short pointed curved denticle, inner denticle considerably shorter than apical part of cerci. Subgenital plate longitudinal, with distinct median carina; posterior part with distinct lateral carinae, posterior margin with deep triangular emargination (Fig. 5). Styles thin and long, conical, length 4 times greatest width. Basic coloration gray brown, with small dark spots scattered throughout body. Tegmina with bright longitudinal and transverse veins and rows of dark brown spots between them.

Genitalia lost in preparing specimen in field.

♀. Similar to ♂, larger. Tegmina not extending to posterior margin of 2nd abdominal tergite. Ultimate abdominal tergite with shallow, subtriangular emargination not quite as deep as width at base. Abdominal sternite VII in posterior part with indistinct prominence in middle, without rounded lateral ridges, posterior margin emarginate (Fig. 6). Subgenital plate rather long, subquadrate, with carina in anterior part; anterior margin with distinct triangular emargination in middle and 2 triangular lateral ridges; posterior margin almost straight. Ovipositor short, falcate, pointed, thick at base, 1.5 times as long as pronotum. Coloration as in ♂; ovipositor dark with light base.

Body length: ♂ 19.4, ♀ 22 (without ovipositor); pronotum: ♂ 6.3, ♀ 6.5; tegmina: ♂ 5.6, ♀ 5.5; hindfemora: ♂ 26.3, ♀ 17.2; ovipositor 9.2 mm.

Ecology. The species was captured in the broadleaf forest belt 2000 m above sea level on screes among maples with an admixture of juniper and hedge roses, fennel, and *Prangos pabularia*.

Differential diagnosis. The new species is very close to *P. sogdiana* Mistsh. (Hissar Range) (Mishchenko, 1952), but differs from it in greater length of tegmina of both sexes and in shape of ultimate abdominal tergite, cerci, and subgenital plate of ♂ and shape of 7th sternite and subgenital plate of ♀. In the ♂ of *P. sogdiana* the depression on the ultimate tergite is distinct, delimited by carinae, and with a median emargination, the inner denticle on the cerci is only a little shorter than the apical part, and the emargination on the posterior margin of the subgenital plate is distinct but short. In the ♀ of this species the 7th sternite of the abdomen bears distinct rounded lateral projections and the subgenital plate is distinctly transverse with a uniformly rounded anterior margin. The new species differs distinctly from *P. meridiana* Stol., which is found along with it, in the shape of the ♂ cerci and ♀ ovipositor.

Platycleis meridiana Stol.

Material. 1 ♂, 1 ♀, Tajikistan, N spur of Peter the First Range near Tajikabad Plateau, 7.VII.1984 (Sergeev); 1 ♂, Tajikistan, S spurs of Karatenginskiy Range, N of Garm, 4.VII.1984 (Sergeev, Kazakova, and Mel'nikov); 1 ♀, Tajikistan, Vakhshiy Range, Sari-Khosor, 27.VII.1987 (Pokivaylov); 1 ♂, 3 ♀s, Tajikistan, Khozratishok, Chil'-Dukhtaron, 16 and 20.VII.1987 (Pokivaylov).

This interesting species was described from the W part of Peter the First Range (Stolyarov,

1969). New data show that it is distributed considerably more widely. During quantitative counts of Orthoptera it was also found in the vicinity of Fayzabad (Karateginskiy Range) and Fakhrrabad (Aktau Range). Like other mountainous brachypterous representatives of the genus *Platycleis* Fieb., this species occurs primarily on mountain slopes with sparse tall grasses or steppe vegetation and rocky soils from 1400 to 2400 m above sea level. It is not very abundant, but in the vicinity of Fakhrrabad reached 42 spms/h. We found no differences from typical individuals.

Pravidiniana Sergeev and Pokivajlov, gen. n.

Pronotum moderately elongated, dorsally weakly depressed, with indistinct but obvious lateral carinae; in posterior part with median carina developed; lateral lobes of pronotum with broad pale edging. Tegmina shortened, broadly rounded. Hindfemora long. Ultimate abdominal tergite of ♀ with depression separating 2 short lobes less than length of cerci. Lengths of abdominal sternites V-VII in ♀ approximately equal, each distinctly modified; sternite VII with distinct transverse lamellate carina; subgenital plate elongate, depressed in middle, with barely marked median carina and 2 large apical lobes. Ovipositor short; length twice length of pronotum; arched at base with obtuse angle.

The name is of the feminine gender; it is in memory of F. N. Pravdin.

Type species *Pravidiniana mira* Sergeev and Pokivajlov, sp. n.

Within the tribe Platycleidini the new genus is well distinguished from most others by the ovipositor being distinctly arcuate at the base. It is closest to genera *Tessellana* Zeun. and *Incertana* Zeun. (Zeuner, 1941), differing most distinctly from them in the specialization of the last sternites of the ♀ abdomen. From species of *Tessellana* the new genus differs in the broadly rounded tips of the tegmina and from *Incertana* in the shape of the ultimate abdominal tergite. In these 2 genera sternites V and VI usually are not modified but sternite VII is structured differently (Zeuner, 1941). In addition, in *Tessellana* the tips of the tegmina are extended, and in *Incertana* the lobes of the ultimate tergite become long spines comparable in length to the cerci.

Pravidiniana mira Sergeev and Pokivajlov, sp. n.

Material. 3 ♀s (including holotype), Tajikistan, Khozratishokh Range, Chil'-Dukhtaron, 21.VII.1987 (Pokivajlov).

Description. ♀. Body of average dimension. Eyes small, almost rounded; margin adjacent to antennae straight. Vertex broad, protruding, greatest width of tip of vertex 2.3 times greatest width of 1st antennal segment. Pronotum weakly depressed dorsally, in middle with V-shaped short transverse furrow; lateral carinae weak; posterior half of pronotum with median carina well developed; posterior margin of pronotum broadly rounded; lateral lobes tapered toward truncate ventral margin, posterior margin almost straight. Tegmina short, extending to posterior margin of 2nd abdominal tergite, overlying each other on dorsum; tips broadly rounded. Hindfemora moderately thickened: length of femora 5.2 times greatest width. Hindtibiae a little shorter than hindfemora. Ultimate abdominal tergite with median depression and rounded emargination along posterior margin (Fig. 7); in one paratype median depression inconspicuous; lateral lobes short, blunt. Cerci long, conical, pointed. Abdominal sternites 3-4 weakly swollen, 5-6 with distinct conical structures, 7 with high flattened transverse carina (Figs. 8, 9). Subgenital plate long, depressed in center with weakly marked longitudinal median carina; end with 2 long lobes separated by broad emargination. Ovipositor short, curved at base at obtuse angle (Fig. 8), twice as long as pronotum; ventral valvulae apically slightly serrate. Coloration gray brown, lateral lobes with broad paler edging. Head posterior to eyes, main part of lateral lobes of pronotum, and sides along anterior margin of

tegmina dark brown, but sometimes of same color as entire body. Tegmina usually covered with small dark spots scattered between veins. Ovipositor pale at base, main part dark, and dorsal margin black. Spines on appendages with dark tips.

Body length: 16.0-17.4 (without ovipositor); pronotum 4.6-4.7; tegmina 3.6-4.5; hindfemora 15.0-16.6; ovipositor 8-9 mm.

♂ not known.

Oedipoda juxartensis Uv.

Material. 4 ♂s, 2 ♀s, Tajikistan, Tigrovaya Balka Nature Reserve, 15-16.VIII.1987 (Pokivaylov).

The species was described from the Syr-Dar'ya River valley. Finding it in the southern part of the Amu-Dar'ya basin suggests that its range is considerably wider than was previously known. Characters of the individuals correspond to the types. At Tigrovaya Balka, as in the northern part of the range, this species is associated with riparian forest.

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