

New species and new data on the distribution of the subfamily Orgeriinae in the Palearctic Region (Homoptera: Dictyopharidae)

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New data on the distribution of the subfamily Orgeriinae in the Mediterranean Region (Portugal, Spain, Morocco, Lebanon, Israel, Jordan) and contiguous territories (Armenia and Iran) are given. *Pepirus* subgen. n. (*Parorgerioides*) and *Parorgerioides aschei* sp. n., *Coppa volkovitshi* sp. n., *Nymphorgerius armeniacus* sp. n., *Kumluka mandrita* sp. n. are described.

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The paper contains new data on the composition and distribution of the orgeriine tribe Almanini in the Mediterranean and adjacent more eastern countries. This publication is based on the material of Dr. M. Asche (private collection) from Spain, Portugal and Morocco, Dr. R. Linnavuori (deposited in National Museum & Galleries of Wales, Cardiff) from Israel, Jordan and Iran, Dr. M. Volkovitsh (Zoological Institute RAS) from Israel and my material from Armenia. All the findings are of considerable interest because the mentioned regions have not been adequately investigated. The first record of a representative of the genus *Kumluka* from the Iranian desert should be particularly emphasized. The genus *Kumluka* belongs to the subtribe Ototettigina which was known till now as South Turanian only.

The names of collectors are abbreviated as follows: A. – M. Asche, Lnv. – R. Linnavuori, V. – M.G. Volkovitsh & M.Yu. Dolgovskaya.

Iphicara breviceps Horv.

Material. Spain: 3 ♂, 1 ♀, Lerida W Bujaraloz, Salzsteppe-vegetation, 8.VIII.1976 (A.).

Bursinia genei Duf. (?)

Material. Portugal: 1 ♀, Serra de Estrela around Menteiqas nr. Poco de Inferno, 800-1050 m, 10.IX.1976 (A.). **Spain:** 3 ♂, 3 ♀, Lerida, Sierra de Mont-

sech, S Tremp, nr. Regola, 8.VIII.1976 (A.); 1 ♀, Lerida, Coll de Narco, 600 m, 8.VIII.1976 (A.); 6 ♂, 6 ♀, Sevilla, 13 km NE of Marchena, 11.VIII.1976 (A.).

Bursinia vidua Horv.

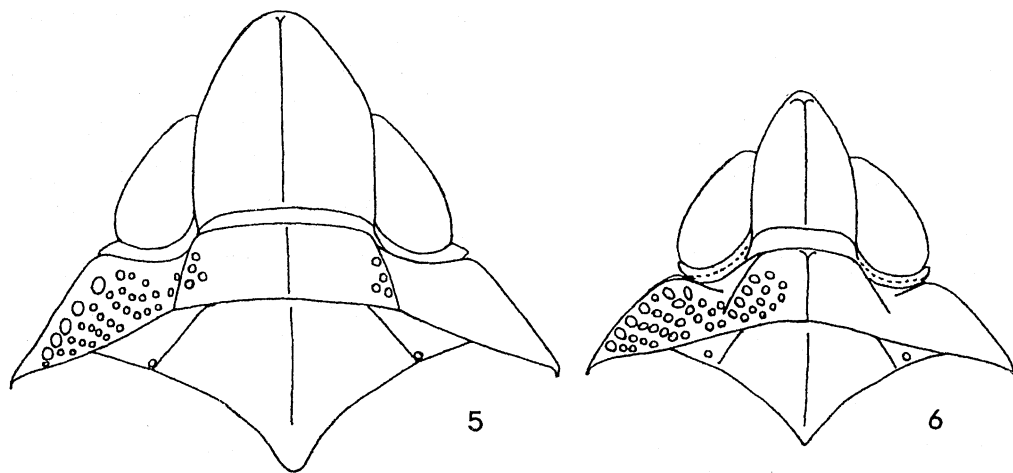
Material. Morocco: 1 ♂, 2 ♀, Moyen Atlas Ouauoumana, 28.VII.1976 (A.); 1 ♂, 2 ♀, NE Seirou E Davet Ifer, 1500 m, 25.VIII.1976 (A.); 1 ♀, Nr. Chauen, 500 m, 15.VIII.1976 (A.); 1 ♀, Rif Mts E Ketama, 1400 m, 17.VIII.1976 (A.); 1 ♀, Rif Mts W Bad Berred, 1120 m, 15.VIII.1976 (A.); 1 ♀, NE Setrou Davet Afouqah, 1300 m, 24.VIII.1976 (A.); 1 ♀, SE Rif Mts, 2 km NW Aknoul, 1100 m, 19.VIII.1976 (A.); 2 ♂, 2 ♀, N of Chauen, 14-15.VIII.1976 (A.); 1 ♀, Moyen Atlas nr. Timonlilt, 670 m, 29.VIII.1976 (A.).

Bursinia latipes Horv.

Material. Spain: 1 ♀, Lerida, Sierra de Montsech S Tremp, nr. Regola, 8.VIII.1976 (A.).

Almana longipes Duf.

Material. Spain: Cadiz: 1 ♂, Espera, 1500 m, 1.VIII.1976 (A.); 1 ♂, SW Montoro, Pedro Abad, 710 m, 11.VIII.1976 (A.); 1 ♀, 5 km NW Tarifa, Casas del Perro, 13.VIII.1976 (A.); 2 ♂, SE of Alcala, 70 m, 12.VIII.1976 (A.); 1 ♀, Sierra del Niño, Casas del Castaño, 12.VIII.1976 (A.); **Madrid:** 5 ♂, 3 ♀, Morata de Tajuña, 700 m, 10.VIII.1976 (A.); 2 ♀, Badajoz: 20 km NW Zafra, 400 m, 9.IX.1976 (A.).



Figs 5, 6. Fore part of body, dorsal view. 5, *Coppa volkovitshi* sp. n.; 6, *Nymphorgerius armeniacus* sp. n.

Parorgerioides bergevini is the most isolated species of the genus and deserves separation in its own subgenus. The new subgenus differs from the nominotypical one in the strongly developed transverse keel of the coryphe and in the presence of an intermediate keel on the abdominal tergites. *P. aschei* described above is closely related to *P. alhauudi* and also has a transverse keel on the coryphe, but differs in the relatively narrow callus apicalis and in the absence of intermediate keels of abdomen. In having large callus apicalis, *P. bergevini* is similar to *P. albofasciatus*, but clearly differs in the other above mentioned characters, although probably is genetically close to it.

***Parorgerioides bergevini* Em.**

(Figs 3, 4)

Material. Morocco: 1 ♀, E Marrakech, S Tahanaut, N Gorges de Rezaia, I.IX.1976 (A.).

***Tachorga recurviceps* Lnv.**

Material. Israel: S. Distr.: 1 ♂, 3 ♀, 1 n., Be'er Hash'abbim, 5.VI.1986 (Lnv.); 1 n., Mt. Ramon, 'Arod, 10.VII.1986 (Lnv.); 1 ♂, 'En Drahot, 15.VII.1986 (Lnv.); 1 ♂, [Ns] ot hakikkar, 16-20.VII.1986 (Lnv.); 1 ♂, 'Iddan, 30.VII.1986 (Lnv.); 4 ♂, 1 nymph, Arava valley, Sappir env., 30.VI-1.VII.1996 (V.); 1 ♂, Central Negev, 'Neqarot, 11 km SE Mizpe Ramon, 5.VII.1996 (V.); 1 ♂, 1 ♀, Central Negev, N. Nizzana, 14 km WSW Mizpe Ramon, 6.VII.1996 (V.); 1 ♂, 2 ♀, Judean Desert, N. Darga, 5 km NW Mizpe Shalem, 12.VII.1996 (V.).

***Coppa huldaensis* Lnv.**

Material. Jordan: 1 ♂, 2 ♀, Nr. Naur, 27.VII.1981 (Lnv.).

***Coppa volkovitshi* sp. n.**

(Fig. 5)

Holotype. ♂, Israel, Upper Galilee, Har Meron, 7-11 km WNW of Zefat, 22-24.VII.1996 (Volkovitsh & Dolgovskaya).

Paratypes. Israel: 1 ♀, Carmel Ridge, Carmel, N. Ne'arot, 10 km S Tirat Karmel, 21.VII.1996 (Volkovitsh & Dolgovskaya); 6 ♂, 12 ♀, Upper Galilee, Har Meron, 7-11 km WNW of Zefat, 22-24.VII.1996 (Volkovitsh & Dolgovskaya); 2 ♂, 4 ♀, Mount Hermon, Mezudat Nimrod (Fortress), 26-27.VII.1996 (Volkovitsh & Dolgovskaya). Lebanon: 1 ♀, Mount Hermon, 1750 m, 3 km NNW Neve Aliv, 26.VII.1996 (Volkovitsh & Dolgovskaya).

Description. Oval, weakly elongate. Head rather large, not very long. Coryphe 1.2-1.3 times as long as wide, about as long as pronotum and scutellum taken together. The outline of coryphe is somewhat intermediate between lancet-arch and pentagonal because of the weak angulation between lateral and anterolateral sides of coryphe. Lateral margins of coryphe straight, parallel; anterolateral margin convex; median keel strong; surface of coryphe slightly tectiform. Callus apicalis subquadrangular. In lateral view, coryphe weakly convex, metope straight. Metope rather narrow, with parallel sides in most of its length, slightly broadening towards postclypeus and narrowing to apex above eyes. Intermediate keels in middle

part slightly bent outwards. Lateral areas of metope groove-shaped, with two rows of sensorial pits from the level of lower eye margin to apex, and some pits of the third row near apex; epiclypeal pits absent. Epiclypeal lobes of metope bounded above by a transverse keel. Postclypeus moderately convex, not wider than metope, juts out into the latter up to the level of the upper margin of antennae. The part of postclypeus embraced by epiclypeal lobes slightly inflated and separated from the lower part by a weak depression.

Subocular keel strong; postocular callus rather strongly obtusely angulate above and gradually obliterated along subocular keel below. Rostrum reaching the middle of genital segment. Pronotum with the disc slightly produced forward and with moderately concave hind margin. Lateral keels of disc strong, reaching hind margin of pronotum; median keel strong. Disc with a row of 3 pits along lateral keel and one pit abreast medially. Lateral lobe of pronotum with 3 pits in the humeral area and one pit near them in the pectoral area. Pectoral areas with mammooids. Keels of scutellum distinct, rather strongly diverging; lateral areas of scutellum with one sensorial pit. Elytra smooth, with distinct subcostal and weak subcomissural keels. Abdomen with strong sublateral and median keels; intermediate keels absent.

Sensorial pits numbering 1+2 on IV-VI tergites, 1+3 on VII tergite medial of sublateral keel and 1-3 in lateral area; III tergite usually with 2-3, rarely with 1 or 4 pits only in lateral area. Legs rather long, slender; hind femora with 5-7 lateral spines.

Head and pronotum whitish pale brown dorsally; scutellum pale whitish-yellowish. Elytra brown, dark brown, or black. Upper part of face below the level of the upper eye margins pale brown. Below eyes but above the antennae and clypeus level, runs a whitish transverse band crossing pronotal lobes and terminating in the middle part of humeral areas. A broader black band runs below the whitish one through epiclypeal lobes of metope, embraced by the lobes of postclypeus, genae, and middle part of pronotal lobes. This broad band covers the mammooids and terminates in posterior part of the pectoral area. Lower part of pectoral area also whitish, composing, together with middle part of postclypeus and propleura, another, an indistinct pale transverse band. Apical part of postclypeus, anteclypeus, and lower part of lorae irregularly dark brown,

as also fore coxae and sternal border of mesopleura. Metathorax and hind coxae unicolorous, mid to dark brown. Fore and middle legs, including coxae, hind femora and tibiae covered with brown or dark brown, partly confluent spots. Abdomen with dense dark spots on brown background or entirely (or nearly so) black.

Length of ♂ 4.5-5.1, of ♀ 4.8-5.6 mm.

Comparison. The new species may be distinguished from *C. huldaensis* Lnv. with the following key.

- 1(2). Head rather short; coryphe 1.2-1.3 times as long as broad, about as long as pronotum and scutellum together; not more than by 2/5 produced before eyes. Upper part of head and pronotum pale brown, scutellum yellowish white *C. volkovitshi* sp. n.
- 2(1). Head long; coryphe more than twice as long as broad, more than 1.5 times longer than pronotum and scutellum together. Upper part of head, pronotum and scutellum uniformly whitish *C. huldaensis* Lnv.

Nymphorgerius armeniacus sp. n.

(Fig. 6)

Holotype. ♂, Armenia, "Khosrov Forest" nature reserve N of Vedi, dry gentle slopes of a valley with gravel, bare ground and sparse plants of Compositae, Labiatae, Gramineae, 11.VII.1984 (Emeljanov).

Paratypes. 34 specimens, as holotype.

Description. Moderately elongate, oval, with moderately elongate head. Coryphe approximately 1.5-1.7 times as long as wide, by 2/5 of its length produced before eyes, its sides between eyes nearly straight and parallel, before eyes evenly curved to acutangularly lancet-arch tip. Keels of coryphe strong, interspaces groove-shaped. Coryphe in lateral view weakly convex, feebly inclined forwards. Callus apicalis rather large, slightly elongate. Metope in lateral view straight or weakly convex; postclypeus weakly convex. In front view, metope not broadened, moderately elongate, 2.5 times as long as it is broad between antennae. Sides of metope between eyes straight, slightly converging upwards, below eyes slightly concave but opposite the antennae convex. Lateral areas of metope in middle part shallowly groove-shaped, clearly visible in front view on each side up to coryphe. Lateral keels of metope distinct along their entire length, strong opposite the antennae, weak between and above eyes. Intermediate keels of metope between and slightly below eyes nearly straight and parallel, above eyes

parabolically converging to apex, below eyes slightly diverging towards clypeus and abruptly slightly before clypeus margin. Lateral areas of metope with two rows of sensorial pits above the level of lower margin of eyes; lower end of intermediate keels of metope with an epiclypeal pit on each side. Postclypeus moderately broad and convex, slightly inflated dorsally between epiclypeal lobes, juts out into metope up to the level of antennae; median keel strong along its entire length. Hind margin of pronotum shallowly concave. Disc of pronotum for approximately a half of its length produced anterior of paradiscal areas, trapezoidal with nearly straight lateral keels not reaching hind margin. Median keel of disc nearly half as long as hind margin of disc and approximately as long as its fore margin. Scutellum broad, transverse, with strong keels. Sensorial pits on lateral lobes of scutellum comparatively large, distant from lateral keels. Elytra smooth, shining, without subcomisural keels; subcostal keels developed only in fore half. Abdomen with strong middle and sublateral keels, intermediate keels absent. IV-VII tergites with 1+3 sensorial pits, occasionally IV-V tergites with 1+2; VIII tergite with a row of 3 pits dorsally and some irregular pits on sides. Lateral lobes of pronotum with mammoids and with 2/1 sensorial pits. Legs long, slightly dilated. Hind tibiae with 5-7 lateral spines.

General colour brown, formed by dispersed dark brown pattern on a pale brown background. Coryphe with dense dark spots; vertical plots entirely darkened with a pale immaculate transverse band in front of them; ridges of keels and callus apicalis darkened. Metope above lower margins of eyes with darkened sensorial pits and dark dots in median areas, concentrated in posterior half or third of this space and becoming sparser upwards. A black band interrupted here and there runs over upper part of postclypeus, epiclypeal lobes of metope, and genae around and below antennae; it continues on pronotal lobes. Median keel of postclypeus and lateral border of epiclypeal lobes of metope pale. A whitish band runs above the mentioned black band through lower part of metope, genae under the eyes and subocular keel. Free part of postclypeus pale with V-shaped brown stripes; lateral and lower margins of postclypeus infusate. Anteclypeus with dark spots; lower ends of lorae infusate. Upper part of pronotum

with darkened sensorial pits; lateral slopes of discal lateral keels with dark spots. Humera areas of pronotum with longitudinal black stripe anteriorly, truncate at the posterior end. Intermediate part of pronotal lateral lobes infusate, this infuscation being continuation of the above-mentioned black band. The lower part below the level of the lower margin of genae – base of costa, and the upper part over the level of the upper margin of antennae – hind end of pronotal lateral keel remain pale. Humeral keel pale pectoral sensorial pit with pale bordering. Lower margin of black band on mammoic with deep narrow emargination reaching the middle of mammoic. Scutellum entirely light or with few dark spots. Elytra with entire or interrupted and weakened reticulate pattern, their base on each side of light subcostal keel bearing a black spot with diffuse edge completing the black band on head and prothorax. Abdomen dorsally pale brown, often with small dark spots leaving free pale longitudinal band along isolated median pits. Male pygofer with dark diffuse spot on each side. Female pygofer always without dark punctures, with three-pointed black spot lying on the bifurcated posteriorly median keel; visible lobes of the first valvula of ovipositor darkened. Underside without distinct pattern. Legs with black confluent spots; fore and middle tibiae darkened subbasally and in apical third.

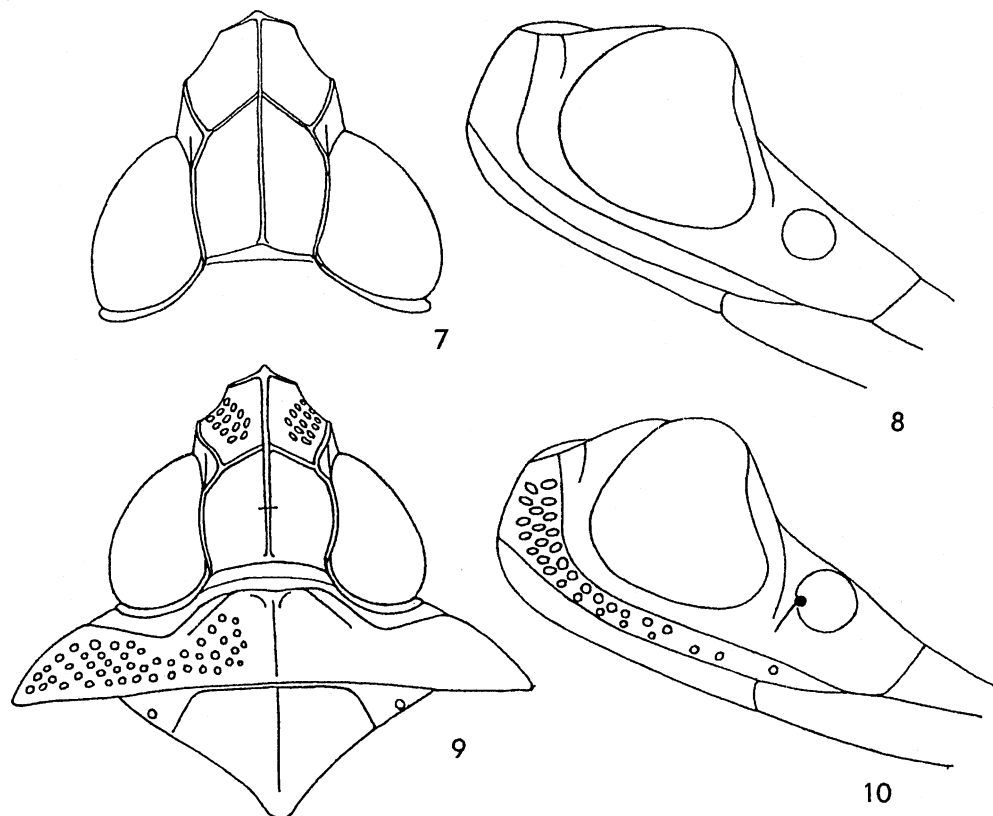
Length of ♂ 3.9-4.6, of ♀ 4.1-5.0 mm.

A brief key to species of the *Nymphorgerius transcausicus* group

- 1(8). Humeral area of pronotum with 2 sensorial pits.
- 2(5). Infuscation of mammoids unbroken.
- 3(4). Elytra with reticulate pattern *N. emeljanovi* Dlab.
- 4(3). Elytra with uniform coloration, black to brown *N. transcausicus* Sid.
- 5(2). Infuscation of mammoids with deep pale excision below.
- 6(7). Coryphe and upper part of face with black spots *N. armeniacus* sp. n.
- 7(6). Coryphe and upper part of face uniformly pale *N. balchanicus* Em.
- 8(1). Humeral area of pronotum with more than 2 pits.
- 9(10). Pectoral area of pronotum with 1 pit only *N. curticeps* Lnv.
- 10(9). Pectoral area of pronotum with 2-3 pits *N. gemmatus* Horv.

***Nymphorgerius gemmatus* Horv.**

Material. Lebanon: 1 ♀, Mount Hermon, 1750 m, 3 km NNW Neave Aliv, 26.VII.1996 (V.).



Figs 7-10. Fore part of body. 7, 8, *Kumlika surda* Osh. (sensory pits not shown): 7, dorsal view, 8, left side view; 9, 10, *K. mandrita* sp. n.: 9, dorsal view; 10, left side view.

Nymphorgerius plotnikovi Kusn.

Material. Iran: 1 ♀, Khorasan, 15 km E Bojnurd, 15 VII 1994, (Lnv.).

Tigrahauda ototettigoides Osh.

Material. Iran: Khorasan: 1 ♀, nr. Kahe, 30-60 km W Kashmar, 21-22.VI.1994 (Lnv.); 1 ♀, Rishi, 20 km SE Isfaraen, 1350 m, (Dlabola).

Remark. The latter specimen was sent by J. Dlabola to the collection of Zoological Institute, St.Petersburg in oversight among specimens of *Nymphorgerius convergens*.

Kumlika mandrita sp. n.

(Figs 9, 10)

Holotype. ♂, Iran, Khorasan, nr. Parvand, 70 km W of Sabzevar, 31.V.-1.VI.1994 (R. Linnavuori).

Paratypes. Same locality, 3 ♂, 1 nymph, 31.V.-1.VI.1994, and 2 ♂, 1 ♀, 4.VII.1994 (R. Linnavuori).

Description. Similar to *K. surda* Osh. Body almost round or oblong oval. Head rather

short. Coryphe approximately 1.3 times as long as wide, its apex lying at the level of anterior margin of eyes; lateral margins nearly straight, slightly divergent forwards, their length slightly exceeding width of coryphe. Keels of coryphe strong but not foliaceous. Transition of lateral margins into the anterior one more or less abrupt, obtuse-angulate, lying slightly behind the point of divergence of metope lateral keel (at the boundary between the trigon and supraocular area). Fore margins converging to apex at an angle of 120° , nearly straight but with a small angular prominence at the point of divergence of metope lateral keel. Median keel of coryphe distinct but with sharp interruption near the middle. In lateral view, coryphe straight, horizontal, anterior part of median keel slightly arched. Metope meets coryphe at obtuse angle; the angle with lateral keels distinctly smaller than with median keel. Seen in front of its lower part, metope short, distinctly narrowing to apex, lateral margins

in middle part weakly concave, in lower part weakly convex, in upper part straight, parallel. Intermediate keels of metope in middle part parallel, above eyes rather strongly arched and meeting, below the middle of eyes rather strongly divergent towards postclypeus and continued along its sides for half length of epiclypeal lobes. In lateral view, metope weakly convex below the bend, more distinctly in upper half of lower part. Upper part of metope meets the lower part at right angle. Intermediate keels of metope in lateral view weakly evenly convex. Lateral keels in front of eyes sharply bent at obtuse angle slightly more than 90° and meeting keel on coryphe at obtuse angle. Postclypeus rather broad and inflated, juts out into metope nearly to the level of lower margin of eyes. Epiclypeal sensorial pits lying slightly above the level of upper margin of antennae. Disc of pronotum arcuately produced forward, 2.5 times as broad as long. Hind margin of pronotum shallowly concave. Sensorial pits of discal and paradiscal areas on both sides non-separated. Elytra dull with scarcely convex net of veins and rather distinct subcommissural keels.

All integuments pale yellow, straw-coloured or whitish grey; male without distinct pattern, female with a well-developed dark brown pattern. A black vertical spot is present at the margin of supraocular and preocular areas (at the trigon site). Sensorial pits in upper part of lateral metope areas and on pronotum darkened, anterolateral margins of disc darkened before keel. Lateral lobes of pronotum with pale dark spots. Disc of scutellum infuscated to dark brown, but posterolateral margins pale, nearly white, the pale stripe broadening in the middle. Elytra without pattern or with brown net of veins except in costal area. Abdomen with weakly or rather distinctly pronounced moderately to dark brown pattern, darkened around sensorial pits, paler lateral of clusters of pits on III-IV tergites and, less distinctly, on the subsequent tergites. On III tergite,

pale spots nearly white, and dark spots nearly black; lateral areas with a dark spot, well-developed on IV and V tergites and often missing from III tergite. Abdomen without distinct pattern ventrally. Legs with dark spots between keels on femora and tibiae, the pattern more intense on femora and on fore legs; in hind legs, ventral and apical parts of femora and base of tibiae infuscated. In the single female available, femora entirely darkened dorsally and tibiae mottled with spots which weaken distally and disappear near the middle of tibiae.

Length of σ 3.6-3.8, of φ 3.8 mm.

Differences between *K. mandrita* sp. n. and *K. surda* Osh. are given in the key below.

1(2). Upper and lower parts of preocular area of nearly equal width. Apex of coryphe obtuse-angulate (about 120°); seen from above, lies approximately at the level of fore margins of eyes. Coryphe margin opposite trigon forming lateral prolongation of fore margin. In lateral view, apical keel of head and lower part of lateral keel of metope noticeably converging upwards

***K. mandrita* sp. n.**

2(1). Upper part of preocular area twice as broad as lower part. Apex of coryphe approximately rectangular; seen from above, distinctly produced forward to the level of fore margins of eyes. Coryphe margin opposite trigon weakly bent medially and forming lateral coryphe margin; distinct bending of coryphe margin corresponds to the point of conjunction of lateral keels of metope. Apical part of the keel on head and lower part of lateral keel on metope only slightly converging upwards in lateral view. . . ***K. surda* Osh.**

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