

REICHENBACHIA

STAATLICHES MUSEUM FÜR TIERKUNDE IN DRESDEN

Bd. 6

Ausgegeben: 3. November 1965

Nr. 1

New *Oedipoda* Latr. Species and Subspecies from Central and West Asia

(Orthoptera, Acrididae)

with 37 figures

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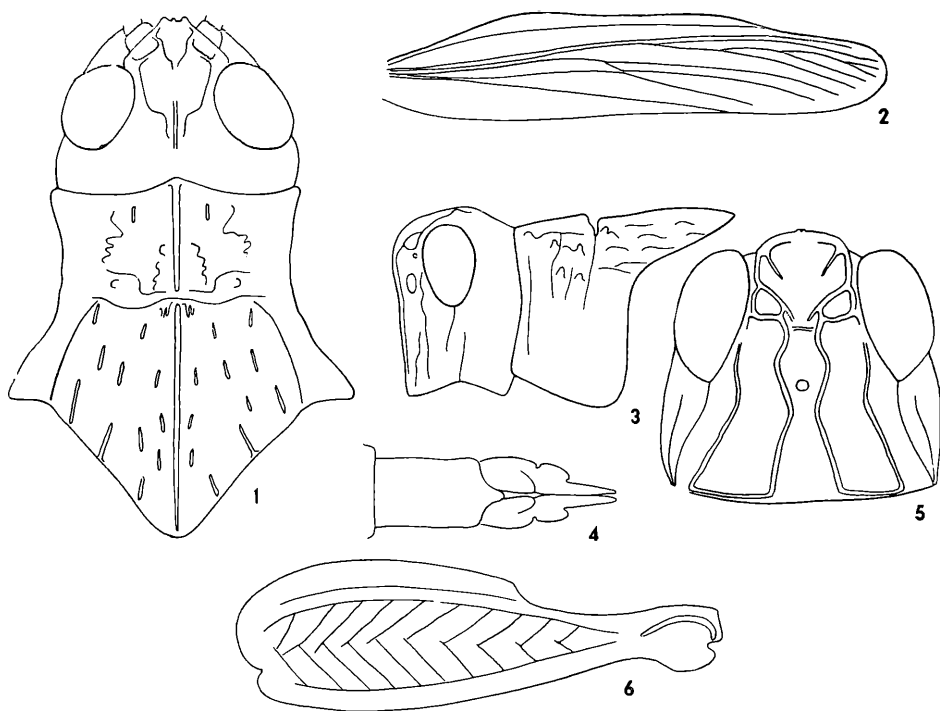
The working out of the Orthoptera Collection of the Hungarian Natural History Museum began in recent years. An especially rich material was gathered from Central and West Asia, mainly from Kazakhstan, amply complemented by a material from Jordan for identification. In the study of the more than ten thousand specimens collected in the above areas, some new species and subspecies were also found, whose description and insertion in the identification key of the known taxa from the areas given above are as follows.

Genus: ***Oedipoda*** LATREILLE, 1829

***Oedipoda perurbana* sp. n.** (Figs. 1–6)

Head, when viewed from above, wider than long, portion of vertex strongly sulcate. Pits of vertex deep, rims formed by high ribs. Eyes rather large, oval, their height considerably surpassing width of vertex-section between eyes. When viewed laterally, forehead arching forward, scape originating slightly below median line of eyes. Facial rib between eyes strong, sinuously decurrent. Scape short, wide, not extending beyond height of frontal rib when extended.

Pronotum, when viewed from above, medium scabrous, surface with largely elongately arranged riblets, metazone with largely transversal ones. Median ridge conspicuous, elevated lamelliform especially on prozone. Anterior margin of segment arched on both sides of median keel, slightly projecting medially. Posterior margin moderately elongated, slightly acute-angled, terminally rounded. When viewed laterally, median ridge of pronotal prozone slightly higher than median ridge of meso- or metazones; both together horizontal, slightly curved only at end of metazone. Median ridge extending largely aligned with highest point of vertex. Anterior (cephalic) margin of lateral lobe (laterally depressed portion of segment) straight, antero-inferior corner obtuse, postero-inferior corner widely rounded.

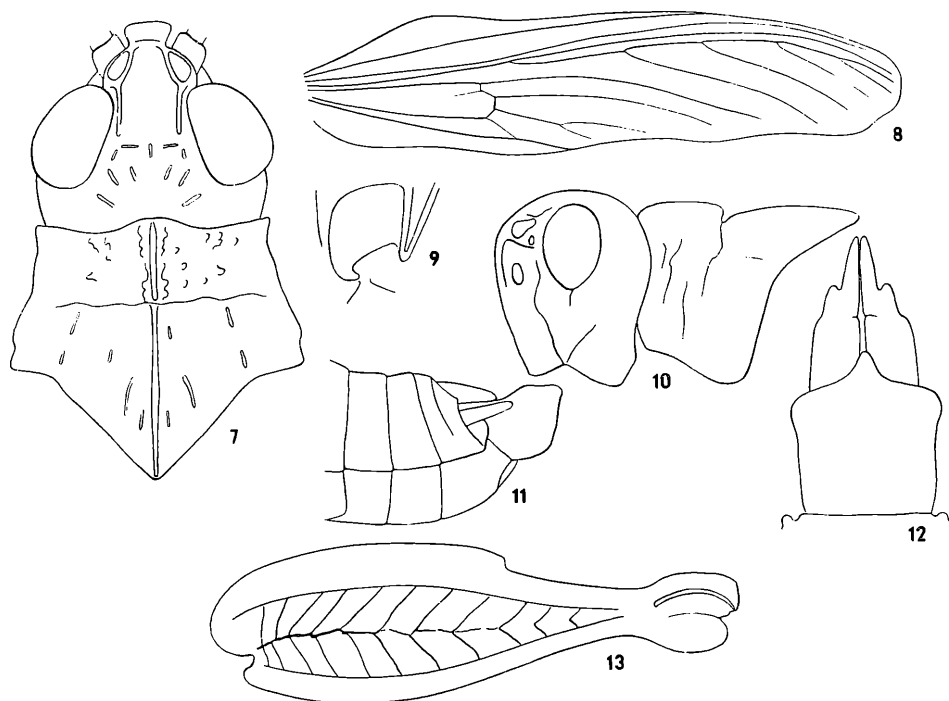


Oedipoda perurbana sp. n.: 1 = head and pronotum from above, 2 = tegmen, 3 = head and pronotum laterally, 4 = abdominal end of female from below, 5 = head anteriorly, 6 = posterior femur.

Wings long, when at repose considerably extending beyond end of abdomen and femur, reaching about middle of hind tibia. Tegmen with 3 sharp, dark brown spots. Apex of hind wing colorless, hyaline, its black band weak, narrow, not reaching posterior margin, ending in middle section of wing. Legs orange. Excision on upper margin of femur of posterior leg relatively sharp; inner surface black, with a light band in front of knee. Tibia of posterior leg yellowish, with a black row of 11 spines each on posterior margin. Arolia between claws of medium size, round. Last abdominal sternite of female narrow, relatively long, with a medium long median extrusion on posterior margin.

Combined length of head, thorax, and abdomen: 18–21 mm; length of tegmen: 24–25; width of tegmen: 4.5–5; length of posterior femur: 13–14.5; breadth of posterior femur: 4.2 mm.

Holotype female: "USSR, Kazakhstan, Alma-Ata, 1954. VIII" (without name of collector); paratype females: "USSR, Kazakhstan, Alma-Ata, 1954. VII. 2". Three exemplars in the Zoological Department of the Hungarian Natural History Museum.



Oedipoda aurea jordamica ssp. n.: 7 = head and pronotum from above, 8 = tegmen, 9 = tympanal organ, 10 = head and pronotum laterally, 11 = abdominal end of male laterally, 12 = abdominal end of female from below, 13 = posterior femur.

***Oedipoda aurea jordamica* ssp. n. (Figs. 7–13)**

Head, thorax, and tegmen, as well as legs deep rufous brown, with numerous black dots and lines in basic color, rendering a peculiar marmoration. Head, when viewed from above, as wide as long. Eyes oval, considerably longer than width of vertex-plate between eyes. This latter weakly scrobiculate, with a conspicuous pair of ribs decurrent backwards to median line of eyes from between and behind sharply outlined triangular pits of vertex. Area between ribs depressed, but depression shallow. Head, when viewed laterally, long. Frontal rib strongly shifted anteriorly, scape originating from a lower level. Facial rib arising between scapes and eyes thick, sinuous. Facial rib below eyes oblique, decurrent toward posterior margin of eyes (Fig. 10).

Pronotum, when viewed from above, moderately scrobiculate, its surface ornamented with medium high, punctiform tubercles; humeral ribs laterally of meta-zone rather low, interrupted. Median ridge of segment high, entire extent well discernible, rather lamelliform in prozone. When viewed laterally, head and median ridge of pronotum forming a straight line, but head slightly more elevated, that is, median ridge of pronotum largely aligned with upper margin of eyes. Anterior

margin of lateral lobe of pronotum slightly sinuous, antero-inferior corner obtuse, postero-inferior corner widely rounded.

Tegmen medium narrow and long, with sharp deep and light brown striae. A usually wide, triangular band between first and second dark stripes. Apex of hind wing hyaline, with a black band medially, differing from nominate form by its shorter extense; terminating usually at very margin of posterior margin. Base of wing vivid lemon yellow.

Aperture of tympanal organ wide, inner margin of small plate on its anterior part straight. Legs whitish to yellowish brown. Excision on upper margin of posterior femur relatively sharp, inner surface of femur black, with a sharp, yellow band in front of knee. Knee of posterior tibia dark, otherwise tibia light, whitish yellow, with 10–11 black spines each on posterior margin. Subgenital plate of male laterally short, upper portion straight, truncate. Last ventral sternite of female medium long, posterior margin wider than anterior one, its middle portion an elongated section (Fig. 11).

Diagnostic measurements in mm

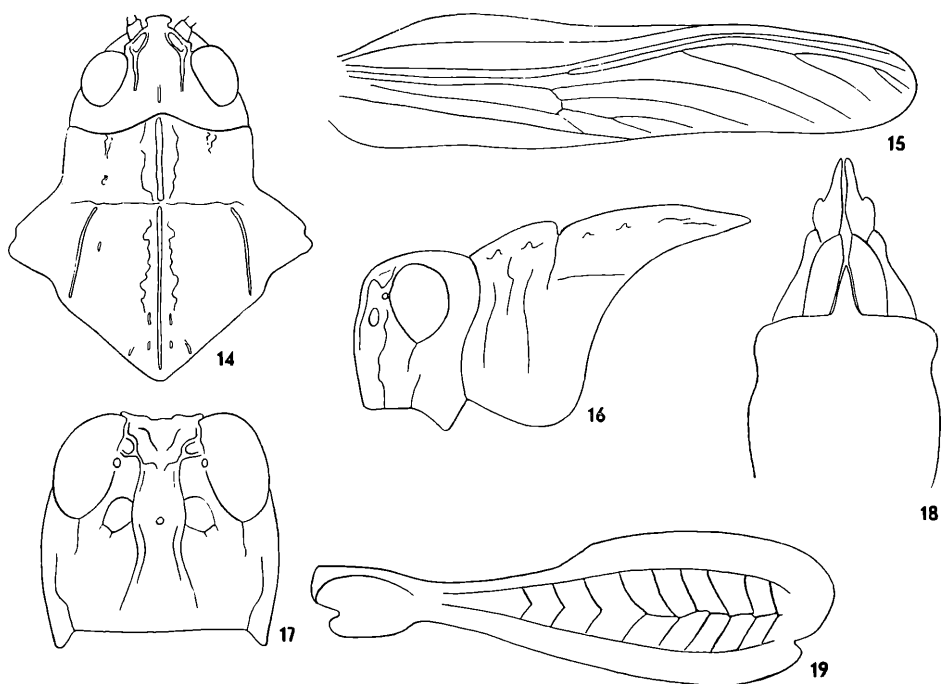
	male	female
Length of body	14 –18	22 –24
Length of tegmen	15.5–18	24 –25
Length of hind femur	11 –10	13 –14
Width of hind femur	2.8– 2.9	3.1– 3.3

Holotype male: "O. Jordania, Amman, 800 m, 1957. 10. 16, leg. J. KLAPPERICH". — Allotype female: "O. Jordania, Wald b. Jerasch, 600 m, 1958. 10. 19, leg. J. KLAPPERICH". — Paratypes: "O. Jordania, Amman, 800 m, 1957. 10. 16, leg. J. KLAPPERICH", 1 male; "O. Jordania, Kubebeh b. Jerusalem, 600 m, 1958. 6. 103, leg. J. KLAPPERICH", 1 male; "O. Jordania, Fuhes, N. Amm, 1000 m, 1958. 9. 14, leg. J. KLAPPERICH", 2 males; "O. Jordania, Amman, 800 m, 1959. 9. 17, leg. J. KLAPPERICH", 1 male; "O. Jordania, Amman, 800 m, 1959. 6. 9, leg. J. KLAPPERICH", 1 male; "O. Jordania, Homer, N. Amm., 700 m, 1959. 6. 20, leg. J. KLAPPERICH", 1 female; "O. Jordania, Amman, 800 m, 1959. 9. 17, leg. J. KLAPPERICH", 1 male and 1 female. Deposited in the Zoological Department of the Hungarian Natural History Museum.

***Oedipoda turkestanica* sp. n.** (Figs. 14–19)

Head, when viewed from above, longer than wide. Anterior portion of vertex strongly depressed, posterior portion mottled with minute pits. Median frontal rib moderately developed, about as long as scapes, pits of vertex deep, largely triangular. Distance between eyes, when measured on vertex, shorter than length of eye when viewed laterally. Head medium long in a lateral view. Scape and facial rib originating between eyes flat, hardly elevated yet well discernible and sinuously decurrent. Sulcus below eye short and shallow. Rib below eye well discernible.

Pronotum wide; when viewed from above, anterior margin medially visibly protruding, median ridge relatively high, slightly lamelliform. Prozonal surface with

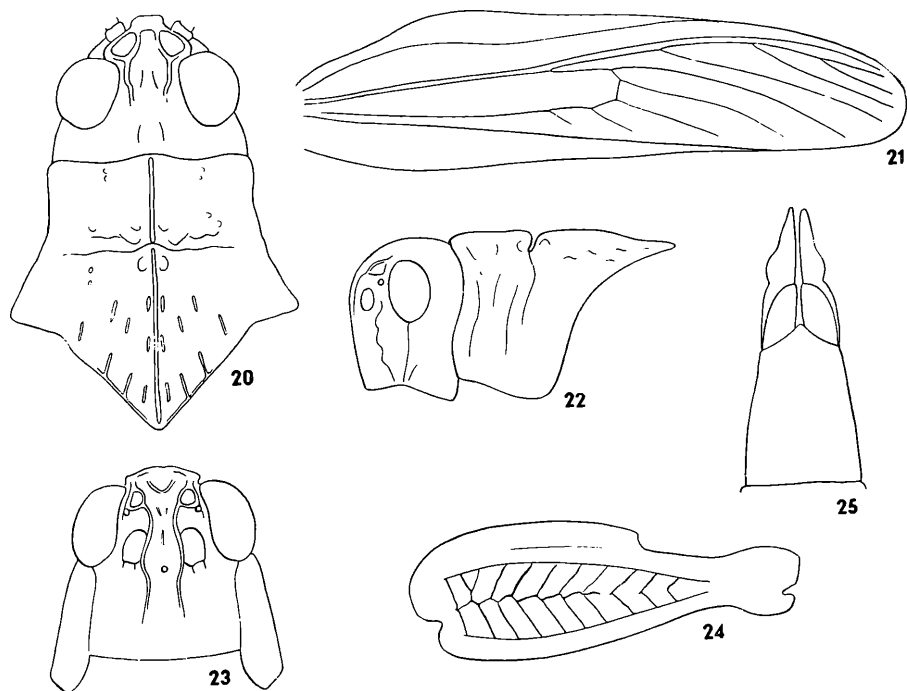


Oedipoda turkestanica sp. n.: 14 = head and pronotum from above, 15 = tegmen, 16 = head and pronotum laterally, 17 = head anteriorly, 18 = abdominal end of female from below, 19 = posterior femur.

numerous tubercles and shallow furrows, but metazonal sides with a well discernible rib each. Surface sprinkled with minute, largely round or slightly oval, tubercles. When viewed laterally, median ridge of segment situated entirely above level of vertex (Fig. 16). Median ridge once incised, its line arched. Lateral lobe of pronotum strongly sinuous on anterior margin, antero-inferior corner almost right-angled, inferior margin oblique, posterior-inferior corner widely rounded.

Tegmen well developed, with two dark, oblique stripes and, near apex, an indistinct, dark blotch. Dark transversal bands narrow, interior light stripe wider than combined breadth of two dark bands. Apex of hind wing hyaline, black transversal band terminating in middle section of posterior margin, ray toward base short. Basal portion of wing pale yellowish to yellowish green.

Legs yellow to pale brown. Excision on upper margin of posterior femur relatively sharp, with rounded corners. Inner surface of hind femur black, but with a light band in front of knee. Postero-interior ridge of hind tibia with 10 spines of light base and black apex. Extrusion on lateral portion of lower genital claspers of female extremely low, rounded, apices of claspers blunt.



Oedipoda schochi monotona ssp. n.: 20 = head and pronotum from above, 21 = tegmen, 22 = head and pronotum laterally, 23 = head anteriorly, 24 = posterior femur, 25 = abdominal end of female from below.

Combined length of head, thorax, and abdomen: 25.3 mm; length of tegmen: 24.9; width of tegmen: 4.6; length of femur of posterior leg: 13; width of femur of posterior leg: 2.9 mm.

Holotype female: "Turkestan, Kisil-Su, leg. ALMASSY". Deposited in the Zoological Department of the Hungarian Natural History Museum.

***Oedipoda schochi monotona* ssp. n. (Figs. 20–25)**

Head and thorax, when viewed from above, moderately scrobiculate, sculptured especially on dorsal side with longer to shorter, smaller or larger ribs, pegs, and other irregularly shaped excrescences. Head slightly wider than long. Eyes relatively small, when viewed laterally, shorter than breadth of vertex between eyes. Pits of vertex rather shallow. Facial rib not more protuberant than length of scape. In a lateral view, scape and facial rib between eyes low, sinuously decurrent, visible only by magnification. Furrow below eye shallow, but traceable onto lower section of facial segment.

Pronotum, when viewed from above, wide. Median ridge discernible in its entire length, but not lamelliform, resembling rather a low crest. Posterior end of median ridge of prozone slightly extended. Lateral section of metazone of segment without humeral rib. Anterior margin sinuous, its median portion only slightly elongate. In a lateral view, entire median ridge above level of vertex slightly arched. Anterior margin of segment strongly sinuous. Antero-inferior corner of laterally decumbent lobe obtuse, postero-inferior corner widely rounded.

Tegmen relatively wide, long, with a dark pattern subdivided into three groups and forming indistinct stripes consisting of minute spots and dots. Hind wing pale bluish grey, well discernible basal section bordered by an obsolescent dark band.

Legs yellowish brown. Hind femur dark, almost blackish blue, rather thick, wide and short. Hind tibia without light band, basic color black, its outer posterior margin with 10 black spines. Extrusion on lower genital claspers of female hardly discernible; claspers pointed, slightly arcuate.

Combined length of head, thorax, and abdomen: 26.5–28 mm; length of tegmen: 28–29; width of tegmen: 6.6–7.2; length of hind femur: 20.8–20.9; width of hind femur: 6.8–6.9 mm.

Holotype female: "Diarbekir (Turkey), 1937. VII. 6–7, leg. Dr. VASVÁRY". Paratypes: "Diarbekir, 1937. VII. 6–7, leg. Dr. VASVÁRY", 2 ♀♀ Deposited in the Zoological Department of the Hungarian Natural History Museum.

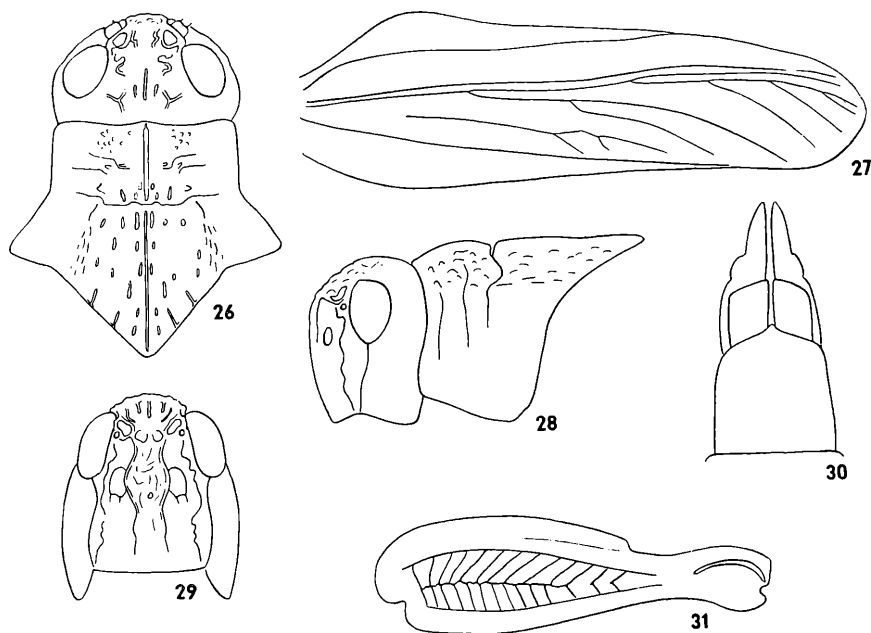
***Oedipoda discesa* sp. n. (Figs. 26–31)**

Head and upper portion of pronotum moderately scrobiculate, but considerably more so than in *Oedipoda schochi schochi* SAUSS. Head slightly wider than long, lamelliform excrescences well discernible from above. Length of eyes measured laterally slightly smaller than width of vertical plate between eyes. Pits of vertex shallow. Vertex with a network of "cells" framed by riblets. In a lateral view, scape and facial rib between eyes low, interrupted, traceable only in part. Facial furrow below eye rather deep, sinuous, well discernible and traceable to facial plate.

Pronotum, when viewed from above, wide, ornamented with elongate riblets consisting of minute lath-shaped lamellae. Median ridge visible in its entire length, but not lamelliform. Anterior margin of plate slightly sinuous, almost straight, extended only in front of median ridge. Incision of median ridge essentially shallower than in preceding species. In place of lateral ribs on metazonal sides a wide area with a ramifying and disjointed rib. Posterior margin almost right-angled, posterior corner rounded.

Tegmen wide and short, with three conspicuous stripes: one broad near base, two others near one another in apical third. These latter rather narrow. Base of hind wing colorless, hyaline, slightly opalescent. Black band wide but short, extending to middle of posterior margin.

Upper margin of posterior femur excised beyond a rather long stretch, inferior surface dark, nearly black. Hind tibia black, with a yellow band below knee, its postero-inferior margin with 10 black spines. Last abdominal sternite of female wide, terminally obtusely truncate, apically slightly pointed.



Oedipoda discesa sp. n.: 26 = head and pronotum from above, 27 = tegmen, 28 = head and pronotum laterally, 29 = head anteriorly, 30 = abdominal end of female from below, 31 = posterior femur.

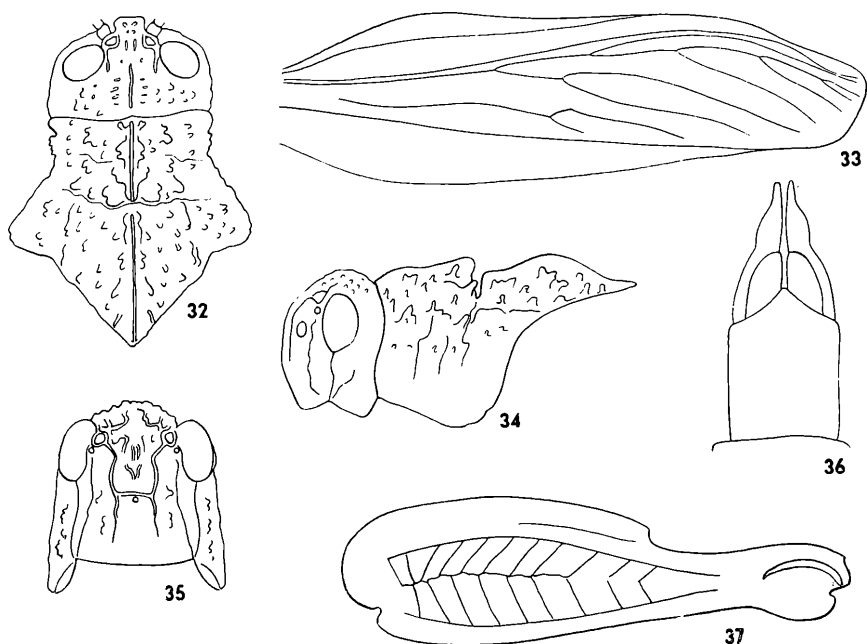
Combined length of head, thorax, and abdomen: 29 mm, length of tegmen: 24.7; width of tegmen: 7.1, length of hind femur: 18, width of hind femur: 5.8 mm.

Holotype female: "Beilik River, Keschan (? Turkey), 1906. July, leg: Dr. LENDL". Deposited in the Zoological Department of the Hungarian Natural History Museum.

***Oedipoda pernix* sp. n. (Figs. 32–37)**

Visible portions of head and prothorax extremely scrobiculate, occasionally with peg-like excrescences, protuberances, tubercles. Head, when viewed from above, slightly wider than long, section of vertex between eyes wide, wider than length of eye measured laterally. Anterior portion of vertex not hollowed; meshed portion, subdivided into "cells" by minute, sinuous riblets, extending also to median section of fascial rib decurrent between scapes. In a lateral view, eyes small, frontal line of head conspicuously arcuate, rounded. Area between forehead and facial ribs also with sections irrorated with tubercles.

Pronotum strikingly scrobiculate from above; anterior margin strongly sinuous, medially slightly projecting. Median ridge rather high, but not lamelliform. In a lateral view, postero-inferior corner of lateral lobe of pronotum with a semicircular



Oedipoda pernix sp. n.: 32 = head and pronotum from above, 33 = tegmen, 34 = head and pronotum laterally, 35 = head anteriorly, 36 = abdominal end of female from below, 37 = posterior femur.

incision. Median section of median ridge with a sharp and well discernible incision in a lateral view, edge of crest sinuous, with a strong projection especially in middle portion of metazone.

Tegmen relatively short and wide, with two darker portions: first at base, wider and more extensive than second, narrower one at middle of wing. A small basal spot consisting of minute dots; a median, extensive, stripe-like patch, and some scattered minute spots in apical quarter. Hind wing entirely hyaline despite raspberry tint of base; apical area aqueous clear. A dark but also transparent band aligned with dark central stripe of tegmen.

Legs sand-colored. Hind femur broad, almost thrice longer than wide, lower and inner surfaces dark bluish black. Postero-exterior margin of hind tibia with 9 violet spines, 5–9 longer than first four ones. Tibia with a yellow band below knee, otherwise violet blue. Posterior margin of last abdominal sternite of female straight, medially slightly elongate, hence plate pentagonal.

Combined length of head, thorax, and abdomen: 25.2 mm; length of tegmen: 24.6, width of tegmen: 5.6; length of hind femur: 16.9; width of hind femur: 6.1 mm.

Holotype female: "Jordania, Amman, 800 m, 12. 7. 1958, leg. J. KLAPPERICH" (Deposited in the collection of the collector).

Instead of the comparative and differentiating diagnoses of the above species and subspecies, the following key is submitted:

Identification key of Central and West Asiatic species

- 1 (22) Hind femora not too wide, essentially narrower than width of tegmen. Vertex slightly depressed, its ridges elevated. In a lateral view, width of plate of vertex between eyes considerably smaller than height of eye.
- 2 (9) Almost entire apical half of tegmen hyaline, vitreous, shining, venation sparse. Inner side of lower surface of hind femora light, dirty whitish, occasionally bluish but not blackish or blackish brown. Band of wings frequently narrow or eventually absent.
- 3 (4) Wings without black band, darker only near costa, base brick-red. Pronotum without lateral ridges in metazone. Median ridge not transected by transversal furrow. Tegmen long, reaching at repose middle of hind tibia. Male 16.5–18 mm long, tegmen 19–20 mm long; female 24–27 mm long, tegmen: 25–27 mm long.⁴⁾
jaxartensis UV.
- 4 (3) Wings not brick-red at base; dark band present. Metazone of pronotum with lateral ridges; prozone with sharp, occasionally oblique excrescences (ridges, laths, ribs), especially near anterior margin.
- 5 (8) Dark band of wings narrow, apex of first three alar lobes conspicuously hyaline, vitreous. Lateral ridges of metazone of pronotum less sharp, flattening posteriorly.
- 6 (7) Base of wings pink. Dark band posteriorly extending to posterior margin. Lateral ridges in anterior section of prozone of pronotum not strongly elevated and not tuberculated. Posterior section of prozone with two depressed, oval pits (in front of lateral furrow) on both sides of median ridge. ♂♂: 18, 19; ♀♀ 23, 21.5 mm
himalayana UV.
- 7 (6) Base of wings pale violet, slightly bluish, or raspberry colored. Dark band frequently disjointed from first dark ray, occasionally weak and pale, not reaching middle of either costa or posterior margin. Lateral ridges of pronotum sharply elevated and tuberculiform in prozone. Posterior portion of prozone without paired pits, or if present, very shallow.
 - a (b) Smaller individuals. Tegmen shorter, at repose not or hardly reaching middle of posterior tibia. Base of wings with a weak bluish tint, whereas other portions pale violet or raspberry colored, or entirely blue to band. Inner surface of posterior femora with two light bands. ♂♂: 15–19, 15–21; ♀♀ 21–25, 19–24 mm
fedtshenkoi fedtshenkoi SAUSS.
 - b (a) Larger specimens. Tegmen at repose extending to, or even beyond, middle of posterior tibia. Base of hind wings unicolorous raspberry colored. Inner surface of posterior tibia with one light band. ♂♂: 17–21, 19–23; ♀♀ 24–27, 24–31 mm
fedtshenkoi pamirica RME.

⁴⁾ In the following, the values ordered in this sequence designate the above measurements.

- 8 (5) Dark band of hind wing broad; apex of first three alar lobes darker on male, whereas only anterior margin of second and third lobes dark on female. Lateral ridges of prozone sharply elevated and pointed. Base of tegmen light raspberry colored. ♂♂: 16.5–17.2, 15–16; ♀♀ 22, 20.8 mm **infumata** B.-BIENKO
- 9 (2) Only apex or apical third to fourth of tegmen hyaline, vitreous, shining and sparsely veined. Inner surface of inferior side of hind femora black, only occasionally brownish black with a bluish shade. Band powerful, not hyaline, frequently wide.
- 10 (13) Hind wings blue.
- 11 (12) Pronotum smooth or relatively smooth. Excision on upper margin of posterior femur obtuse. Arolia between tarsal claws relatively large, triangular. ♂♂: 15–21, 16–22; ♀♀ 22–28, 22–26 mm **coerulescens** L.
- 12 (11) Pronotum strongly scrobiculate. Excision on upper margin of posterior femur sharp. Arolia between tarsal claws relatively small. ♂♂: 15–20, 15–21; ♀♀ 21–24, 22–24 mm **charpentieri** FIEB.
- 13 (10) Hind wings vivid red, sometimes rosy pink or raspberry colored, that is, yellow or colorless.
- 14 (17) Hind wings vivid red, sometimes rosy pink or raspberry colored. Black band of wings long, extending along posterior margin far toward base, or reaching only middle of posterior margin.
- 15 (16) Pronotum weakly scrobiculate, metazone without lateral ridges. Band of wings narrow, twice or thrice narrower than hyaline portion of apex. Basal area light, dull red. ♂♂: 17–23, 16–22; ♀♀ 23–28, 20–25 mm **germanica meridionalis** RME.
- 16 (15) Pronotum conspicuously scrobiculate, occasionally quite rough, metazone with lateral ridges. Arolia between tarsal claws small, oval.
a (b) Posterior tibia inside yellow or dirty bluish, base of spines not black, but sometimes dark blue. ♂♂: 16–20, 28–23; ♀♀ 21–27, 23–29 mm **miniata miniata** PALL.
b (a) Posterior tibia inside dark, nearly black, spines entirely black. ♂♂: 17–21, 19–23; ♀♀ 22–28, 23–30 mm **miniata atripes** B.-BIENKO
- 17 (14) Base of hind wings yellow or colorless, that is, dirty whitish with main veins orange.
- 18 (19) Base of hind wings dirty white or colorless, main veins orange. A relatively small species. ♂ unknown; ♀♀ 18–20.5, 24–25 mm **perurbana** sp. n.
- 19 (18) Base of hind wings yellow. Relatively larger species.
- 20 (21) Lateral ridges of metazone of pronotum absent, shoulders rounded. Last abdominal sternite of female pentagonal, median section of posterior margin evenly elongate; apex of upper and lower genital claspers fine, elongate, pointed. Head and pronotum straight in a lateral view; head at a higher level, and median ridge of pronotum entirely aligned with upper margin of eye. Arolia between tarsal claws small.
a (b) Wedge-shaped appendage in front of tympanal opening wide; plates before and below tympanal opening long, anterior margin almost straight. Dark band

of hind wings wide, whole, extending far along posterior margin toward base. ♂♂: 18–20, 19–20; ♀♀ 22–26, 22–24 mm **aurea aurea** UV.

b (a) Wedge-shaped appendage in front of tympanal opening narrow; plates before and below tympanal opening short, anterior margin arcuate. Dark band of hind wings narrow, pale, slightly sinuous, reaching only middle of posterior margin. Pronotum relatively rough, scrobiculate. ♂♂: 14–18, 15.5–18; ♀♀ 22–24, 24–25 mm **aurea jordanica** ssp. n.

- 21 (20) Lateral ridges of metazone of pronotum strong, well discernible, shoulders angular. Last abdominal sternite of female quadrangular, posterior margin with a small median elongated part. Upper and lower genital claspers thick, apically blunt. Head and pronotum arched in a lateral view; median ridge of pronotum in its entirety above level of head. Arolia between tarsal claws large. ♂ unknown; ♀♀ 25.3–24.9 mm **turkestanica** sp. n.

- 22 (1) Posterior femora very wide, wider than tegmen. Robust, highly scrobiculate species. Base of wings pale, aqueous blue, pale blue or pale and transparent pink. Vertex usually wide, eye in lateral view shorter than width of vertical plate between eyes.

- 23 (24) Base of hind wing pale bluish grey or pale blue; dark band in apical area with sharp or indistinct margins.

a (b) Hind wing pale blue, dark band of wings with sharp margins. Dorsal surface of head and pronotum relatively less scrobiculate. ♂♂: 22–27, 22–24; ♀♀ 29–33, 23–28 mm **schochi schochi** SAUSS.

b (a) Hind wing bluish grey, dark band of wings with indistinct margins, not a quarter circle but rather an arched stripe. Surface of head and pronotum scrobiculate. ♂ unknown; ♀♀ 26.5–28, 28–29 mm **schochi monotona** ssp. n.

- 24 (23) Base of hind wing colorless or pale, transparent pink. Head and pronotum medium to strongly scrobiculate.

- 25 (26) Base of hind wing colorless. Head and pronotum medium scrobiculate, excrescences low. Upper margin of hind femur excised beyond a longer stretch. Last abdominal sternite of female with widely rounded posterior corners, posterior appendages largely quadrangular, flatly dentiform (Fig. 30). Costa of tegmen strongly projecting in basal third. ♂ unknown; ♀ 29, 24.7 mm **discessa** sp. n.

- 26 (25) Base of hind wing pale reddish. Dorsal surface of head and pronotum strongly scrobiculate, excrescences high. Upper margin of posterior femur excised beyond a short stretch. Posterior corners on last abdominal sternite of female slightly angular, posterior appendages largely triangular (Fig. 36). Costa of tegmen only slightly projecting in basal third. ♂ unknown; ♀: 25.2, 24.6 mm **pernix** sp. n.

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Zeitschrift/Journal: [Reichenbachia](#)

Jahr/Year: 1965-1966

Band/Volume: [6](#)

Autor(en)/Author(s): Steinmann Henrik

Artikel/Article: [New Oedipoda Lair. Species and Subspecies from Central and West Asia \(Orthoptera, Acrididae\) 1-13](#)