Biodiversity of the short horned grasshoppers of the tribe Oedipodini (Orthoptera: Acrididae: Acridinae) in Kashmir Himalayas

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Abstract

Tribe Oedipodini is redefined. Key to genera of Oedipodini found in Kashmir and diagnostic characters of each genus are given. Key to species wherever necessary along with their habitats are also given.

Keywords: Biodiversity, Oedipodini, Kashmir.

Tribe Oedipodini Scudder, 1875

The tribe Oedipodini can be characterized as follows:-

Body somewhat sturdy; antennae always filiform; fastigial foveolae present or absent, if present they are never contiguous in front, often they are small or triangular, more rarely oblong trapezoidal, but not quadrangular; frons vertical; pronotum usually without lateral carinae, if present, they are weak and less developed, median carina in some species high; tegmina and wings well developed, tegmina with spurious median vein strong, in some species absent or weak; wings often brightly marked with different shades of blue, dark blue, red or yellow, quite often with a black band; arolium small.

Key to genera of the tribe Oedipodini Scudder found in Kashmir

1. Dorsum of pronotum without x-shaped pattern.................................................................2
   ----Dorsum of pronotum with x-shaped pattern................................................Oedaleus Fieber

2. Median carina of pronotum intersected by two transverse sulci..................................................3
   ----Median carina of pronotum entire or intersected by only one transverse sulcus ......................5

3. Body small to medium size; median carina of pronotum not forming teeth like projection .................................................................4
   ----Body small; median carina of pronotum forming teeth like projections...................... Trilophidia Stal

4. Frontal ridge flat or with a depression near median ocellus; pronotum longer than its width, with angular posterior margin............... 9
   ----Frontal ridge with a groove throughout its length; pronotum as long as or shorter than its width, with widely rounded posterior margin................................. Acrotylus Fieber

5. Pronotum with well developed median carina......................................................6
   ----Pronotum with weak median carina....................
   ......................................................... Aiolopus Fieber

6. Median carina of pronotum not excised at posterior sulcus.............................................. 7
7. Antennae longer than head and pronotum together; frontal ridge shallowly sulcate; pronotum not crest like, angulated behind with the tip rounded off. .................. Dittopternis Saussure

----Antennae shorter than head and pronotum together; frontal ridge flat; pronotum crest like, acutely angulated behind. .................. Gastrimargus Saussure

8. Antennae about as long as head and pronotum together; frontal ridge flat; median carina of pronotum equally raised in prozona and metazoan, slightly excised by posterior transverse sulcus; wings without a dark transverse band; thorax ventrally with dense hairs. .................. Locusta Linnaeus

----Antennae slightly longer than head and pronotum together; frontal ridge sulcate; median carina of pronotum strongly raised in prozona and moderately in metazoan, deeply excised by only one transverse sulcus; wings with a dark transverse band or the band may be weak or absent; thorax ventrally without dense hairs. .................. Oedipoda Latreille

9. Tegmina with spurious median vein strongly approaching M apically; wings usually with a dark band. .................. Sphingonotus Fieber

----Tegmina with spurious vein at equidistant from M and CuA; wings without a dark band. .................. Leptopternis Saussure

10. Pronotum with small sparse tubercles, lower margin of hind femur with long dense hairs. .................. Pternoscirta Saussure

----Pronotum without small sparse tubercles, lower margin of hind femur without long dense hairs. .................. Epacromius Uvarov

Genus Oedipoda Latreille


Type-species: Gryllus caerulescens Linnaeus (= Gryllus caerulescens caerulescens)


Distribution: Asia, Europe, N. Africa.

Diagnosis: Small to medium sized insects; antennae filiform, slightly longer than head pronotum together; fastigium of vertex concave, with raised lateral carinulae; fastigial foveolae present; frontal ridge sulcate; pronotum with median carina sharp, distinctly raised, sharply intersected by posterior transverse sulcus; lateral carinae often present, strongly interrupted by transverse sulci and obliterated in metazoan, dorsum rugose and tuberculate, metazoan longer than prozona, its posterior margin angular; mesosternal interspace longer than wide; tegmina and wings fully developed, wings with dark band, base of wing brightly coloured; arolium small; male with supra-anal plate elongate, angular, cercus conical, subgenital plate conical with obtuse apex, epiphallus with narrow bridge and bilobate lophi; female with ovipositor valves short, tips recurved, ventral valve with external lateral projection.

The genus can easily be distinguished in having pronotum with median carina deeply excised at posterior transverse sulcus and dark band of the wing usually sends off a branch towards the base of the wing. The genus is represented by two species in Kashmir.

Key to species of Oedipoda Latr. Found in Kashmir

1. Tegmina with apical half hyaline; wings with dark band narrow reaching up to the posterior wing margin. .................. Oedipoda himalayana Uvarov

----Tegmina with only apex hyaline; wings with dark band wide, reaching up to the mid of posterior wing margin. .................. Oedipoda miniata miniata (Pallas)

Oedipoda himalayana Uvarov

**Distribution**: Kashmir, Afghanistan, Uzbekistan. This species has been recorded from Kashmir by Bei-Bienko and Mischenko (1951), but the present authors could not collect any specimen of this species.

**Material examined**: IARI, New Delhi collection, India: Kashmir, Rising Gorg, 6000 ft, 2F, 04.x.1923 (Fletcher).

*Oedipoda miniata miniata* (Pallas) (Fig. 1)

**Distribution**: Southern Europe, Kazakhstan, West Siberia, Asia, North Africa. The general morphological characters are same as described under genus. The genitalic characters are as follows:-

Males having supra-anal plate with wavy apical margins, tip nearly rounded, cercus elongate, broader at base, narrow apically; epiphallus with bridge narrow, undivided medially, ancorae broad in the middle with pointed tips, lophi bilobate; female with supra-anal plate broad, subtriangular, slightly truncated on sides near apex, covered with setae; subgenital plate with posterior margin wavy, setae present, egg guide short about one and a half times longer than wide; ovipositor valves shorter than lateral apodeme, with blunt tips; spermatheca with apical diverticulum short, pre-apical diverticulum long, much broad, sac like with a tubercle like projection facing towards the tip of apical diverticulum.


**Habitat**: The specimens of this species have been collected from stony soil with sparse grassy vegetation.

**Remarks**: This subspecies has been recorded for the first time from Kashmir.

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**Genus Sphingonotus** Fieber

**Type-species**: *Gryllus locusta caerulans* Linne.

**Distribution**: Cosmopolitan

**Diagnosis**: Medium sized insects; antennae filiform, slightly longer than or about as long as head and pronotum together; fastigium of vertex concave, with lateral and sometimes with median carinulae; fastigial foveolae present, sometimes indistinct; frontal ridge shallowly sulcate; pronotum saddle shaped, narrowed and constricted in prozona, median carina low, thin sometimes indistinct and intersected by three transverse sulci, lateral carinae absent, metazoan longer than prozona, its posterior margin obtusely angular, with almost rounded apex; mesosternal interspace longer than wide; tegmina and wings fully developed, spurious median vein of tegmina more convex than the adjacent sector R and M and apically comes closer to M than CuA, wings with coloured base, often with a dark band of varied length; spurs of hind tibia not specialized; arolium small; male epiphallus with moderately narrow bridge, large ancorae and with bilobate lophi.

The genus can easily be identified on the basis of median carina of pronotum never raised in prozona; female with subgenital plate having acute posterior margin; ovipositor short, with moderately robust valves, ventral valve with externo-lateral projections. In Kashmir the specimens of this species are found in stony soil and wings are usually with a dark band. The genus is represented by four species in Kashmir.

**Key to species of Sphingonotus found in Kashmir**

1. Mesosternal interspace narrow, less than twice as wide as long; wings with dark transverse band well developed and broad ...................2
2. Mesosternal interspace wide, twice or more as wide as long; wings with dark band diffused......*Sphingonotus kashmirensis* Uvarov
2. Wings sky blue near the base ..........3
-----Wings colourless near the base.........3

Sphingonotus savignyi Saussure

3. Smaller species; wings with dark transverse band distinctly wide, hardly attenuating towards posterior end..................
..Sphingonotus balteatus himalayanus Uvarov
-------Larger species; wings with dark transverse band never wide, conspicuously attenuating beyond middle and towards its posterior end...........S. longipennis Saussure

Sphingonotus kashmirensis Uvarov

Distribution: Kashmir, Eastern Afghanistan.
The species has been described and recorded by Uvarov (1925) and Bie-Bienko and Mischenko (1951) from Kashmir. However the present authors could not collect any specimen of this species from the region.

Sphingonotus savignyi Saussure (Fig. 2)

Distribution: India, Pakistan, North Africa, Arabia, Palestine.
The characteristic features of this species same as described under genus and in the key to species.


Habitat: The specimens of this species have been collected from stony soil having patches of grassy vegetation.

Remarks: This species has earlier been recorded from Kashmir by Bie-Bienko and Mischenko (1951).

Sphingonotus balteatus himalayanus Uvarov
Oedipoda balteata Serville, 1839. Ins. Orth.734.


Distribution: India (Kashmir), Pakistan, Arabia, Egypt.
The species has already been described by Bei-Bienko and Mischenko (1951).

Remarks: This species has earlier been recorded by Kirby (1914) from Kashmir. The present authors however could not collect any specimen of this species from the region.

Sphingonotus longipennis Saussure (Fig. 3)

Distribution: India, Pakistan, Africa, Europe.
The characteristic features of the species are same as described under genus and in the key to the species except in the followings:-

Male with supra-anal plate subtriangular, lateral margins curved medially, cercus elongate, more than twice as long as wide, with rounded apex; subgenital plate wide, flattened, wider than long, apex obtusely rounded, epiphallus with bridge narrow and undivided medially, ancorae broad in the middle, lophi bilobate; female with supra-anal plate subtriangular, covered with setae apically, subgenital plate with wavy posterior margin, setae absent, Jannone’s organ present, ovipositor with dorsal valve much shorter than lateral apodemes, spermatheca with apical diverticulum short, tubular and narrow, pre-apical diverticulum long and sac like.

Material examined: 15 F, 8 M, Kashmir: Kupwara,

**Habitat:** The specimens of this species have been collected from the stony soil having sparse vegetation along the river bank.

**Remarks:** This species has earlier been recorded from Kashmir by Bie-Bienko and Mischenko (1951). But the material collected by the authors slightly differs from the description given by Bie-Bienko and Mischenko in having hind tibia without dark band, instead it is having white band. It also differs from the description given by Kirby (1914) in having median carina present on pronotum.

**Genus Oedaleus Fieber**


**Distribution:** Africa, Arabia, S. Europe, Middle East, erstwhile USSR, China, Oriental region, Australia.

**Diagnosis:** Medium sized insects; antennae filiform, longer than head and pronotum together; fastigium of vertex flat or slightly concave with obtuse lateral carinulae, with or without median longitudinal carinula; frontal ridge flat or shallowly sulcate with marginal carinulae diverging ventrally, reaching or nearly reaching unto clypeus; pronotum with obtuse median carina, often intersected by posterior transverse sulcus, lateral carinae absent, dorsum with x-shaped pattern, metazoan equal to or little longer than prozona, posterior margin rounded or angular; mesosternal interspace wider than long, widening posteriorly; tegmina and wings fully developed, spurious median vein approximately equidistant between M and CuA, sometimes closer to CuA than M at base, wings usually with a dark band; hind femur with external ventral knee lobe acutely rounded; arolium of medium size or small; male with supra-anal plate angular, cercus conical with obtuse apex, subgenital plate conical with obtuse apex; females with ovipositor valves robust, curved, ventral valve with elongate external lateral projection, spermatheca with sac like apical diverticulum with or without a short pre apical diverticulum.

The genus can easily be distinguished from other genera on the basis of having a light x-shaped marking on the dorsum of pronotum.

The genus is represented by three species in Kashmir.

**Key to species of the genus Oedaleus Fieber found in Kashmir**

1. Dark band of the hind wing reaches anteriorly to the anterior margin; spermatheca with small apical diverticulum ............................................... 2
   ----Dark band of the hind wing not reaching to the anterior margin; spermatheca without apical diverticulum. ........................................... *Oedaleus abruptus* (Thunberg)

2. Pronotum with posterior transverse sulcus placed behind the middle; hind wing pale pink at base .................... *Oedaleus rosescens* Uvarov
   ----Pronotum with posterior transverse sulcus placed at the middle; hind wing pale yellow at base .................... *Oedaleus senegalensis* (Krauss)

**Oedaleus abruptus** (Thunberg) (Fig. 4)


**Distribution:** Afghanistan, India, China, Myanmar, Nepal, Sri Lanka, Thailand.

The distinguishing characters of this species are same as described under genus and in the key to species.
Material examined: 3 F, 1 M, Kashmir: Kupwara, Handwara, Shatgund Payeen on grass, 27.ix.2006 (Shabir A. Reshi); 4 F, 5 M, locality same as above, 03.x.2006 (Shabir A Reshi).

**Habitat:** The specimens of this species have been collected from the cultivated field having mixed vegetation of maize, sorghum and grasses along the river bank.

**Remarks:** This species has been recorded for the first time from Kashmir (India). Earlier, Perwin et al. (1985) recorded it from Muzaffarabad (POK).

**Oedaleus rosecens Uvarov**


**Distribution:** India (Rajasthan, Punjab), N.E. Pakistan.


**Habitat:** The specimens of this species have also been collected from the cultivated field having mixed vegetation of maize, sorghum and grasses along the river bank.

**Remarks:** This species has also been recorded for the first time from Kashmir.

**Oedaleus senegalensis** (Krauss) (Fig. 5)


**Distribution:** North Africa, erstwhile USSR, Middle East, Afghanistan, Pakistan, India.


**Habitat:** Same as in above mentioned two species.

**Remarks:** This species has also been recorded for the first time from Kashmir.

**Genus Trilophidia Stal**


**Type-species:** *Trilophidia cristella* Stal

**Distribution:** Ethiopian region, Oriental region and some parts of Palaeartic region.

**Diagnosis:** Smaller sized insects; antennae short, slightly or distinctly widened apically, usually longer than head and pronotum together; fastigium of vertex concave with truncate apex and undulated lateral carinulae; fastigial foveolae irregularly triangular or oval, sometimes indistinct; frontal ridge sulcate; pronotum with median carina distinct in prozona with two teeth like projections due to deeply incised anterior sulci and it seems to be bidentate in profile, lateral carinae irregular, forming small teeth like lateral tubercles in front of first sulcus, strongly diverging or sometimes weak in metazoan, metazoan longer than prozona, slightly inflated, posterior margin rectangular with obtuse apex; mesosternal interspace wider than long; tegmina and wings fully developed, tegmina with spurious median vein come closer to M than CuA apically, hind wings without band, slightly coloured or colourless at base; female with spermatheca having short apical and large sac like pre-apical diverticula; ovipositor valves short, with robust curved valves, ventral valve with small rounded externo-lateral projection.

This genus can easily be distinguished from other genera on the basis of having two teeth like projections on prozona of pronotum.

The genus is represented by a single species in Kashmir.

**Trilophidia annulata** (Thunberg) (Fig. 6)


**Distribution**: India, Pakistan, Bangladesh, Srilanka, Myanmar, China, South East Asia.

**Material examined**: 1 F, 3 M, Kashmir: Baramulla, Uri, Uranbuha on maize, 13.ix.2005 (Shabir A. Reshi); 4 F, 5 M, Kupwara, Kamah, Gundigujran on grass, 24.ix.2005 (Shabir A. Reshi); 3 F, 3 M, Srinagar, Dachigam National Park on grass, 12.x.2006 (Shabir A. Reshi).

**Habitat**: The specimens of this species have been collected from the fields having mixed vegetation of maize, sorghum and grasses and from the fields having short grasses and thorny vegetation.

**Remarks**: This species has earlier been recorded by Hollis (1965) from Kashmir, later Bhat & Qadri (1999) recorded it from Dachigam National Park.

**Genus Acrotylus Fieber**


**Type-species**: *Gryllus insubricus* Scopoli.

**Distribution**: Asia, Australia, Africa, South Europe.

**Diagnosis**: Small or medium sized insects; body covered with hairs; antennae filiform, longer than head and pronotum together; fastigium of vertex concave with margins raised; fastigial foveolae usually present, triangular in shape, sometimes indistinct; frontal ridge wide, sulcated, narrowing upwards, pronotum constricted just before middle, with well developed median and irregular tuberculate lateral carinae, which are sometimes absent in metazoan, median carina intersected by two transverse sulci, metazoan longer than prozona, its posterior margin broadly rounded; tegmina and wings fully developed; spurious median vein of tegmina close to CuA at base but at apex it is close to M; wings coloured at base with or without a dark band; hind tibia with inner pair of spur longer than outer pair.

The genus can easily be distinguished from other genera on the basis of having pronotum with indistinct median carina on prozona intersected by two transverse sulci, posterior margin broadly rounded.

The genus is represented by a single species in Kashmir.

**Acrotylus humbertianus** Saussure (Fig. 7)


**Distribution**: India, Pakistan, Srilanka, Afghanistan.

**Material examined**: 4 F, 6 M, Kashmir: Baramulla, Gurez, Dawar on grass, 16.ix.2006 (Shabir A. Reshi).

**Habitat**: The specimens of this species have been collected from rocky soil having sparse vegetation.

**Remarks**: This species has earlier been recorded by Bei-Bienko and Mischenko (1951) from Kashmir.

**Genus Aiolopus Fieber**


**Type-species**: *Gryllus thalassinus* Fabricius

**Distribution**: India, Australia, Europe and Africa.

**Diagnosis**: Medium sized insects; antennae filiform as long as or longer than head and pronotum together; fastigium of vertex elongated, slightly concave with well developed lateral carinae; fastigial foveolae present, elongate trapezoidal anteriorly reaching the fastigium of vertex; frontal ridge flat, more rarely with a groove; pronotum with median carina thin, low intersected by one transverse sulcus in front of the middle, lateral carinae absent, metazoan longer than prozona, its posterior margin obtuse angular, with rounded or obtuse apex; mesosternal interspace slightly wider than long; tegmina and wings fully developed; spurious median vein of tegmina sharp, strongly approaching M on the apex or nearly touching it; wings without dark band near the base colourless or slightly tinted; male with supra-anal plate elongate angular, cercus narrow conical with obtuse
apex; subgenital plate subconical with obtuse apex.

The genus can easily be separated from other genera on the basis of having pronotum with prozona constricted and without lateral carinae.

The genus is represented by single species in Kashmir.

**Aiolopus thalassinus** (Fabricius) (Fig. 8)

**Distribution**: Ethiopian region, North-West India, Palaearctic region.

**Material examined**: 4 F, 5 M, Kashmir: Kupwara, Handwara, Nowgam on grass, 28.viii.2004 (Shabir A. Reshi); 8 F, 6M, Srinagar, Dachigam National Park on grass, 11.ix.2004 (Shabir A. Reshi); 2 F, 7 M, Baramulla, Palhalan on maize, 28.x.2005 (Shabir A. Reshi).

**Habitat**: The specimens of this species have been collected from the grassy fields.

**Remarks**: This species has been recorded from Kashmir for the first time.

**Genus Dittopternis** Saussure

**Type-species**: *Dittopternis ceylonica* Saussure

**Distribution**: India, Srilanka, Australia, South Africa.

**Diagnosis**: Medium sized insects; head broad; antennae longer than head and pronotum together; fastigium of vertex concave, longer than broad; frontal ridge sulcated; pronotum with median carina intersected by the principal sulcus before the middle, front border truncated, hind border rectangular with tips rounded; tegmina and wings fully developed, tegmina long, narrow densely reticulated, opaque beyond the middle, wings with base coloured followed by a curved black band, wings reaching beyond the abdomen; hind tibia with external apical spine absent, spines yellow with tips black, inner pair of spurs at the apex comparatively longer than the outer pair, upper carina of hind femur with spinules; male epiphallus with bridge broad, ancorae with tips pointed, lophi bilobate; female with ovipositor valves having blunt tips.

The genus is represented by a single species from Kashmir.

**Dittopternis venusta** (Walker) (Fig. 9)

**Distribution**: India.

**Material examined**: 5 F, 5 M, Kashmir: Baramulla, Uri, Chandanwari on maize, 8.ix.2004, (Shabir A. Reshi).

**Habitat**: The specimens of this species have been collected from Maize fields adjacent to forest.

**Remarks**: This species has been recorded for the first time from Kashmir. Earlier Sharma and Gupta (1977) have recorded it from Jammu region of J & K state.

**Genus Gastrimargus** Saussure
*Gastrimargus* Saussure, 1884.

**Distribution**: Asia, Australia, Africa.

**Diagnosis**: Medium to large sized insects; antennae filiform, about as long as or shorter than head and pronotum together; fastigium of vertex with truncate apex and well developed lateral and weakly developed
median carinulae; fastigial foveolae if visible elongate and triangular; frontal ridge flat, wide with obtuse lateral carinulae; pronotum longer with sharply raised median carina which is sometimes entire and sometimes cut by only weak posterior sulcus, lateral carinae absent, x-shaped marking absent, rarely present, metazoan longer than prozona, its posterior margin acutely angular; mesosternal interspace wider than long; tegmina and wings fully developed, reaching beyond the apex of abdomen; spurious median vein closer to M than CuA throughout its length, dark band of the wings variable, basal area of the wing pale blue, pale greenish, yellow, pale yellow or bright sulphur yellow.

The genus can easily be separated from other genera on the basis of having pronotum with median carina raised, crest like, entire or intersected by one transverse sulcus, posterior margin acutely angular.

The genus is represented by two species in Kashmir.

**Key to species of Gastrimargus Saussure found in Kashmir**

1. Median carina of pronotum distinctly intersected by posterior transverse sulcus; inner margins of hind femur blue black in colour..................................*G. africanus* Saussure

----Median carina of pronotum not distinctly intersected by posterior transverse sulcus; inner margins of hind femur dirty yellow in colour.............................*G. marmoratus* Thunberg

**Gastrimargus africanus** Saussure (Fig. 10)


**Distribution**: India: Kashmir, H.P., Bihar, Goa, Pakistan, Africa, South of Sahara, S.W. Africa.

**Diagnosis**: The characteristic features of the species are same as described under genus and in the key to species. Some additional characters are as follows:

- Hind tibia reddish apically, the inner pair of spurs longer than outer pair; male epiphallus with large bridge, lophi bilobate; female with supra-anal plate subtriangular, sugenital plate with posterior margin wavy, egg guide long, dorsal ovipositor valve with incurved blunt tip, as long as lateral apodeme, ventral valve with concave depression.


**Habitat**: The specimens of this species have been collected from the grassy range land surrounded by forest and from fields having mixed vegetation of grasses and bushes.

**Remarks**: This species has earlier been recorded from Kashmir by Bhat & Qadri (1999). Mahmood and Yousuf (1999) also recorded it from POK.

**Gastrimargus marmoratus** (Thunberg)


**Distribution**: India: Kashmir, Assam; Japan.

- The collected specimens fully agree with the description given by Bei-Bienko and Mischenko (1951) and Ritchie (1982).

**Material examined**: 3F, 4M, Kashmir: Baramulla, Uri, Chandanwari on grass, 01.ix.2007 (Shabir A. Reshi).

**Habitat**: The specimens of this species have been collected from range land surrounded by forest.

**Remarks**: This species has earlier been
recorded from Kashmir by Bei-Bienko and Mischenko (1951).

**Genus Locusta Linnaeus**


Type-species: *Gryllus (Locusta) migratorius* Linne.

**Distribution:** All over the world.

**Diagnosis:** Large sized insects; antennae filiform, about as long as head and pronotum together; fastigium of vertex slightly concave, not delimited anteriorly from the frontal ridge and extending roundly over into it; frontal ridge wide, flat, slightly constricted and depressed at the median ocellus; median carina of pronotum slightly concave or arcuate, intersected by posterior transverse sulcus, metazoan slightly longer than prozona, its posterior margin almost rounded or obtusely angular; mesosternal interspace about as long as wide or slightly longer; thorax ventrally with dense hairs making tomentum; tegmina and wings fully developed, spurious median vein of tegmina closer to CuA than to M, wings without dark band; male with supra-anal plate angular, cercus with obtuse apex, subgenital plate conical with subacute apex; female ovipositor short, robust with curved valves, ventral valve with angular, external, lateral projections. The genus can easily be separated from other genera on the basis of having thorax on the ventral side covered with dense hairs; wings without dark band; body robust.

The genus is represented by a single species in Kashmir.

*Locusta migratoria* Linnaeus (Fig. 11)


**Distribution:** India, Pakistan, Kazakhstan, Africa, Southwestern Pacific.

**Material examined:** 3 F, 2 M, Kashmir: Baramulla, Gurez, Dawar on maize, 18.ix.2004 (Shabir A. Reshi).

**Habitat:** The specimens of this species have been collected from maize fields along the river bank (Kishan Ganga) at an altitude of 8000 ft.

**Remarks:** This species has been recorded for the first time from Kashmir (India). Earlier, Mahmoud and Yousuf (1999) recorded it from POK.

**Genus Leptopternis Saussure**


Type-species: *Oedipoda gracilis* Eversmann

**Distribution:** From Northwestern Mongolia and Dzungaria to Sahara.

**Diagnosis:** Medium sized insects; antennae filiform, longer than head and pronotum together; fastigium of vertex concave, lateral carinulae present; fastigial foveolae present, triangular; frontal ridge shallowly concave; pronotum with linear median carina, lateral carinae absent, dorsum crossed by three sulci, metazoan longer than prozona, its posterior margin obtusely angular; mesosternal interspace wider than long; tegmina and wings fully developed, wings without dark band; male with supra-anal plate elongate and angular, cercus narrow, conical with obtuse apex, epiphallus with a narrow bridge, ancorae large, lophi bilobate; females with acutely produced ovipositor valves.

The genus is represented by a single species in Kashmir.

*Leptopternis gracilis* (Eversmann)

The species has been recorded from Kashmir by Bei-Bienko and Mischenko (1951). Later, Mahmood and Youusuf (1999) recorded it from POK. However, the present authors could not collect any specimen of this species.

**Genus Pternoscirta Saussure**


Type-species: *Pternoscirta cinctifemur* (Walker)

**Distribution**: Oriental region.

**Diagnosis**: Medium sized insects; ventral part of body and legs with long dense hairs; head short, somewhat rugose; vertex short, wide, flat; fastigial foveolae not reaching to the anterior margin of fastigium; pronotum slightly roughened with small sparse tubercles, median carina distinct, moderately raised; opening of tympanal organ widely uncovered; spurious median vein of tegmina comes closer to M than CuA apically, wings coloured basally, dusky on the apex and along the anterior margin, dark band absent; hind tibia with inner pair of spurs longer than the outer pair; arolium nearly equal to half the length of claw.

The genus is represented by a single species in Kashmir.

**Pternoscirta caliginosa** (DeHaan)


**Distribution**: India (Kashmir, Sikkim), South China, Malacca.

**Remarks**: The species has been recorded from Kashmir by Bei-Bienko and Mischenko (1951). However, the present authors could not collect any specimen of this species.

**Genus Epacromius Uvarov**


Type-species: *Epacromius tergestinus* Charpentier

**Distribution**: Palaearctic & Oriental regions.

**Diagnosis**: Medium sized insects; body slender; fastigium of vertex with apex rounded; fastigial foveolae well developed, elongated; frontal ridge flat or shallowly sulcate at least in males; pronotum with median carina thin, low, lateral carinae absent; mesosternal interspace open; tegmina and wings fully developed, spurious median vein of tegmina often irregular, extending along the middle field or runs moderately close to M apically; male subgenital plate flattened.

The genus is represented by a single species in Kashmir.

**Epacromius coerulipes** (Ivano)


**Distribution**: Europe, Kazakhstan, Australia, Hungary, Mongolia, Korea, China.

**Remarks**: The species has been reported from Kashmir by Bei-Bienko and Mischenko (1951). However, the present authors could not collect any specimen of the species.

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Fig. 1: *Oedipoda miniata miniata* (Pallas)

Fig. 2: *Sphingonotus savignyi* Saussure
Fig. 3: *Sphingonotus longipennis* Saussure

Fig. 4: *Oedaleus abruptus* (Thunberg)
Fig. 5: *Oedaleus senegalensis* (Krauss)

![Fig. 5: *Oedaleus senegalensis* (Krauss)](image)

Fig. 6: *Trilophidia annulata* (Thunberg)

![Fig. 6: *Trilophidia annulata* (Thunberg)](image)
Fig. 7: *Acrotylus humbertianus* Saussure

Fig. 8: *Aiolopus thalassinus* (Fabricius)

Fig. 9: *Dittopternis venusta* (Walker)
Biodiversity of the short horned grasshoppers of the tribe Oedipodini (Orthoptera: Acrididae: Acridinae) in Kashmir Himalayas

Fig. 10: *Gastrimargus africanus* Saussure

Fig. 11: *Locusta migratoria* Linn.
References


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