PART - I
CHAPTER - 4

TAXONOMY
Family Acrididae Latreille

Diagnosis
Body and head of variable shape; head with frons vertical or oblique; frontal ridge wide or narrow, with or without median depression; pronotum with or without median and lateral carinae; tegmina and wings fully developed, reduced or absent; stridulatory organs present or absent; tarsi 3-segmented, arolium present; external apical spine of hind tibia present or absent; tympanum usually present; epiphallus usually bridge shaped, rarely disc-shaped, ancorae and lophi usually present; aedeagus with basal and apical valves connected by a flexure, sometimes divided; spermatheca usually with apical and preapical diverticula.

Key to subfamilies of Acrididae

1. Fastigial furrow absent; epiphallus without dorsolateral appendages, ancorae usually present; aedeagus with basal and apical valves connected by flexure, gonopore process present; tegmina and wings usually present .......................................................... 2
   Fastigial furrow present; epiphallus with dorsolateral appendages, ancorae absent; aedeagus usually with basal and apical valves contiguous without flexure and gonopore process; tegmina and wings present or absent ........................................ Pyrgomorphinae Brunner

2. Prosternal process usually absent; hind tibia without external apical spine; spermatheca with apical diverticulum short or absent, preapical diverticulum sac-like; epiphallus bridge shaped, bridge undivided ..........
   Prosternal process always present; hind tibia with or without external apical spine; spermatheca with apical and preapical diverticula tubular; epiphallus disc or bridge shaped, bridge divided or undivided ........................................... Acridinae Latreille
   Prosternal process always present; hind tibia with or without external apical spine; spermatheca with apical and preapical diverticula tubular; epiphallus disc or bridge shaped, bridge divided or undivided ........................................... Catantopinae Brunner
Subfamily: Pyrgomorphinae Brunner

Diagnosis
Body of various shapes; small to large; head conical or subconical; antennae filiform or ensiform; frons oblique to semi oblique, sometimes vertical; fastigial foveolae absent; dorsum of pronotum of various shapes; prosternal process present; mesosternal interspace of various form, open or closed; tympanum present, absent or rudimentary; tegmina and wings fully developed; hind femur with lower basal lobe usually longer than upper one; external apical spine of hind tibia present or absent; stridulatory mechanism absent; male with epiphallus bridge or disc shaped, ancorae absent, lophi hook like, aedeagus with basal and apical valves usually contiguous, flexure and gonopore process present; female with spermatheca of various shapes.

Key to tribes of Pyrgomorphinae Brunner found in Kashmir

1. Body not depressed; prosternum without collar like anterior margin; tegmina without nodules........................................................................2
   Body not depressed; prosternum with collar like anterior margin; tegmina with nodules..................................................Chrotogonini Bolivar, 1884

2. Pronotum saddle shaped, with sharp tubercles..............................................
   ........................................................................Taphronotini Bolivar, 1904
   Pronotum never saddle shaped or tuberculate...........................................3
3. Smaller insects; tegmina never pointed; hind femur with lower basal lobe longer than upper one; external apical spine of hind tibia absent; epiphallus bridge shaped..............................Pyrgomorphini Brunner 1874
Small to medium sized insects; tegmina usually pointed; hind femur with lower basal lobe shorter than upper one; external apical spine of hind tibia present; epiphallus anchor shaped.............Atractomorphini Bolivar, 1884

**Tribe: Chrotogonini Bolivar, 1884**

**Diagnosis**
Body brownish, dorsoventrally depressed, with tuberculate integument; head short; antennae filiform, apical segment elongated, shorter than combined length of head and pronotum; fastigium of vertex short, apically angular, concave; frontal ridge between antennae compressed; pronotum with dorsum strongly tuberculate, posterior angles of lateral lobes spreading sideways; prosternum with anterior margin collar like; mesosternal interspace open, metasternal suture close to mesosternal interspace; tegmina and wings fully developed, reduced or absent, tegmina if developed, with small nodules; hind femur short, lower basal lobe longer than upper one; hind tibia with external apical spine absent; male with supra-anal plate angular, cerci short and conical, subgenital plate obtusely conical, epiphallus bridge shaped, with narrow bridge, ancorae absent, lophi laterally directed; female spermatheca with apical part S-shaped.

Bolivar (1884) recognised chrotogonae as subtribe. Jacobson and Bianki (1905) erected it as subfamily chrotogonini. Since then, its status was changed frequently as tribe, subtribe, section, group, until Kevan (1959) accepted it as tribe Chrotogonini, which has been followed by the present author.

The tribe is represented by a single genus in Kashmir.
Chrotogonus Serville

Chrotogonus Serville, 1839. *Ins. Orth.* 702

**Type species:** *Ommexycha lugubre* Blanch, 1836

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

**Diagnosis**

Body small, brown, depressed; integument strongly tuberculate; antennae filiform, thick, apical segment elongated, shorter than the combined length of head and pronotum together; fastigium of vertex concave, angular; occipital carinula present; frontal ridge between antennae compressed; pronotum with dorsum strongly tuberculate, with irregular, interrupted, median and lateral carinae, intersected by three transverse sulci, posterior margin angular, prozona shorter than metazona; prosternum with collar like anterior margin and a pair of tubercles ventrolaterally; tegmina and wings fully developed, shortened or rudimentary, tegmina if developed, with small nodules; hind femur with lower basal lobe longer than upper one; hind tibia without external apical spine, internal pair of spurs much longer than outer pair; arolium of moderate size; male with supra-anal plate angular, cercus short, conical, subgenital plate subconical with obtuse apex, epiphallus with laterally directed long lophi; ovipositor with lateral apodemes as long as dorsal valve; spermatheca S-shaped.

**Remarks:** The species of this genus are called “Toad Locusts”. Kevan (1954) stated: “Toad Hopper” would be a better name since they are not gregarious and it would also avoid confusion with the non-gregarious S. African “Batrachotetrigini” which have received a similar English name. The majority of the species of this genus are insidious crop pests and attack almost all crops in India. The genus can easily be identified in having small body, strongly tuberculate integument and dorsum of pronotum.
The genus is represented by five species in Kashmir, including two new species.

**Key to the species of Kashmir**

1. Tegmina well developed ................................................................. 2
   Tegmina rudimentary .................................................. *Chrotogonus brachypterus* Bolivar

2. Tegmina nearly reaching or not reaching to the apex of abdomen .......... 3
   Tegmina extending beyond the tip of abdomen ........................................
   ............................................................................
   *Chrotogonus kashmiriensus* sp.n.

3. Wings smaller than the tegmina ............................................................... 4
   Wings nearly as long as the tegmina ...... *Chrotogonus trachypterus* Blanch

4. Median carina in metazona thick; ventral side of abdomen with blackish spots basally, but posteriorly with blackish tinge ........................................
   ............................................................................
   *Chrotogonus armatus* Steinmann
   Median carina in metazona thin; ventral side of abdomen with blackish tinge, spots absent ............................................................. *Chrotogonus karnansus* sp.n.

*Chrotogonus brachypterus* Bolivar

(Plate 1)


**Distribution:** India

**Diagnosis**

General characters same as *Chrotogonus kashmiriensus* sp.n., some of the other characters are:
Vertex about as long as broad, slightly produced before the eyes; occipital carinula reaching to the tip of fastigium; pronotum with median carina intersected by one transverse sulcus, posterior margin broadly rounded, prozona as long as metazona; tegmina rudimentary; hind tibia with 9 inner and 7 outer spines; ventral surface of abdomen with darkish spots.

**Measurements (mm):**

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**Material examined:** 3♀, Kashmir: Kupwara, kamah, Gundi Gujran on maize, 09-ix-2005 (Shabir Reshi).

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

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

**Chrotogonus kashmiriensus sp.n.**

(Plate 1)

**Diagnosis**

Female: Small sized body; head short, strongly tuberculated; antennae filiform, 10 segmented, apical segment elongated, shorter than the combined length of head and pronotum together; fastigium of vertex concave, apex angular; occipital carinula present; eyes prominent, bulging outwards and nearly rounded; frontal
ridge narrow, raised, sulcated, obsolete below mid-oellus; pronotum with dorsum strongly tuberculate, median carina irregular in prozona, regular in metazona, prozona with large tubercles, metazona with small tubercles, its posterior margin angularly produced and with six lobes, lateral carinae distinct in metazona, prozona smaller than metazona, with three pairs of large dents projecting laterally; prothorax with a pair of tubercles ventrolaterally; tegmina and wings extending beyond the tip of abdomen, wings smaller than the tegmina, tegmina with apex narrowly rounded and with whitish nodules; hind femur with lower basal lobe longer than upper one, upper carina covered with hairs; hind tibia with 9 inner and 6 outer spines, spines with tips dark red, external apical spine absent, inner pair of spurs at the apex comparatively longer than the outer pair; arolium small, less than half of claw length; ovipositor valves with short blunt tips, ventral valve with lateral projection; female supra-anal plate triangular.

**Measurements (mm):** (1♀)

- BL: 19
- HL: 5
- PL: 4
- TL: 14
- HFL: 9
- HTL: 8

**Holotype:** 1♀, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2004 (Shabir Reshi). Deposited in the Museum, P. G. Deptt. of Zoology, University of Kashmir, Srinagar, India.

**Remarks:**
The species runs near to *Chrotogonus fuscescens*, but differs in the taxonomic character that wings are not as long as tegmen.
*Chrotogonus trachypterus* Blanchard

*(Fig. 1) (Plate 2)*


**Distribution:** India.

**Diagnosis**

Body brown, rugose and tuberculate; head short and broad; antennae 11 segmented; pronotum short, broad with small tubercles; sternum yellowish; tegmina reaching near to the tip of abdomen, covered with numerous prominent nodules, wings nearly as long as the tegmen; hind femur as long as the abdomen; hind tibia with 7 external and 9 internal spines; abdomen brown above, paler beneath, without darkish spots, but with darkish tinge; ovipositor valves with tips more blunt than *Chrotogonus kashmiriensus*, ventral valve without lateral projection, cerci short.

**Measurements (mm):**

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</table>
Fig. 1: *Chrotogonus trachypterus* Blanchard

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Material examined: 2♀, Kashmir: Kupwara, karnah, Gundi Gujran on maize, 09-ix-2005 (Shabir Reshi); 3♀, Kashmir: Baramulla, Uri, Chandanwari on maize, 13.ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from the maize fields and grassy range lands.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Chrotogonus armatus* Steinmann

(Plate 2)


Distribution: India.

Diagnosis

General characters same as *Chrotogonus kashmiriensus*, the additional characters are:

Antennae 13 segmented; median carina in metazona thick, posterior margin blackish; abdomen ventrally with blackish spots basally but posteriorily with blackish tinge; ventral valves of ovipositor without lateral projections.

Measurements (mm):

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<th>Range</th>
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<td>HTL</td>
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</table>
Material examined: 3♀, Kashmir: Kupwara, karnah, Gundi Gujran on maize, 09-ix-2005 (Shabir Reshi).

Habitat: The specimens of this species have been collected from the cultivated fields having maize.

Remarks: This species has been recorded for the first time from Kashmir (India).

Chrologonus karnansus sp.n.
(Plate 3)

Remarks: Similar to Chrologonus kashmiriensus sp.n. but differs from it as:
Body ventrally with darkish tinge, spots absent; ventro-lateral tubercles on prothorax slightly visible; tegmina and wings not reaching to the apex of abdomen, wings with darkish tinge; female supra-anal plate short, cerci short with rounded apex.

Measurements (mm): (1♀)
BL: 22
AL: 5
HL: 4
PL: 4.5
TL: 13
HFL: 8
HTL: 7.5

Holotype: 1♀ Kashmir: Kupwara, karnah, Gundi Gujran on grass, 05-ix-2004 (Shabir Reshi). Deposited in the Museum, P. G. Deptt. of Zoology, University of Kashmir, Srinagar, India.

Habitat: The specimens of this species have been collected from fields having short grasses.
Tribe: Taphronotini Bolivar, 1904

Diagnosis
Medium to large sized insects; head short, conical or elongated conical with dorsum convex; antennae filiform; fastigium of vertex from short to elongated with angular or rounded apex; frons slightly oblique; pronotum saddle shaped, dorsum covered with sharply defined teeth, tubercles or granules; prosternal tubercle pyramidal; mesosternal lobes with inner margins slightly divergent behind, metasternal interspace distant from mesosternal interspace; tegmina and wings fully developed or shortened; hind femur with lower basal lobe distinctly longer than upper lobe; hind tibia with external apical spine present; tympanum present; epiphallus with lophi dorsolaterally directed; apical valves of aedeagus slightly curved upwards; spermatheca with convoluted apical diverticulum.

The tribe is represented by a single genus in Kashmir.

Aularches Stal


Type species: Gryllus (Locusta) miliaris, L. 1758

Distribution: India.

Diagnosis
Body large, stout; head with dorsum strongly convex; fastigium of vertex short, triangular; frontal ridge narrow, sulcated, ceasing below the basis of antennae; pronotum strongly tuberculate above, with two large contiguous humps in front, metazona about as long as prozona; tegmina fully developed, sub-parallel sided, apex obtusely rounded, with callous spots; wings membranous, opaque, as long as the tegmina; male with supra-anal plate angular, cerci short and conical.
subgenital plate short, subconical, epiphallus with lateral plates broad; female having ovipositor with dorsal valve longer than lateral apodeme, apices strongly curved, spermatheca with convoluted apical part.

Remarks: The species of this genus are commonly known as the spotted locusts in Sri Lanka and India, and also as the spotted grasshoppers or Northern spotted grasshoppers in India.

The genus is represented by a single species in Kashmir

*Aularches punctatus* (Drury, 1773)

*Gryllus (Locusta) punctatus*, Drury, 1773. *iii. Exot. Ent. 2. fig 4.*

Distribution: Kashmir, H.P., Garwal (U.P), Tibet, Nepal, Malaya and Java.

Remarks: The species has been earlier reported from Kashmir (India) by Kirby (1914) and later, Bhat and Qadri (1999) again collected it from Dachigam National Park, Srinagar, Kashmir. The present author, however, could not collect any specimen of this species.

Tribe: Pyrgomorphini Brunner, 1874

Diagnosis

Body of small size; head conical; antennae filiform; fastigium of vertex short or elongated, apex angular or rounded; pronotum never saddle shaped; prosternal process present; mesosternal interspace open; tympanum present or absent; tegmina and wings fully developed, shortened, vestigial or absent, if developed, never pointed; hind femur usually slender with lower basal lobe longer than upper
one; hind tibia with or without external apical spine; male with epiphallus bridge shaped, without ancorae, lophi of varied sizes, aedeagal valves not or slightly curved upwards apically, basal and apical valves contiguous.

The tribe is represented by a single genus in Kashmir.

*Pyrgomorpha* Serville

*Pyrgomorpha* Serville, 1839. *Ins. Orth.* P. 583

**Type species:** *Acridium conicum* Oliv.

**Distribution:** Cosmopolitan.

**Diagnosis**

Smaller insects; body more or less granulated; head conical; antennae widened in basal part, shorter than head and pronotum together; fastigium of vertex projecting much before the eyes, convex, apex rounded; frons oblique or incurved; frontal ridge narrow, slightly sulcated; pronotum with posterior margin widely rounded, median carina sharp, lateral carinae irregular, dorsum crossed by 2-3 transverse sulci, prozona longer than metazona, lower margin of lateral lobes sinuate; prosternal process conical; tegmina and wings fully developed or shortened; arolium moderately long; male with supra-anal plate angular, cerci conical, subgenital plate subconical, epiphallus with short lophi, large hooks; female with ovipositor moderately long, ventral valve with external lateral projection, spermatheca S shaped.

**Remarks:** The genus is reported for the first time from Kashmir.

The genus is represented by a single species in Kashmir.
Pyrgomorpha conica Olivier
(Fig. 2) (Plate 3)

Acrydium conicum Olivier, 1791. Encycl. Meth., Ins. VI, P. 230
Truxalis rosca Charpentier, 1825. Hor. Soc. Ent. Ross. p. 128, pl.iii, fig 8
Truxalis rhodoptila Herrich-Schiffer, 1838. Panzer faun. Ins. Germ. Cl vii, pl.16
Opomala cingulata Walker, 1870. Cat. Derm. Salt. B.M. iii, p. 517

Distribution: Europe, Africa, Asia.

Diagnosis
Smaller insects; grey or green; antennae filiform, shorter than head and pronotum together; fastigium of vertex longer than broad, apex rounded; occiput and vertex with distinct median carinula; frontal ridge sulcated, constricted much below mid ocellus; pronotum rounded behind, median carina not raised, intersected by two transverse sulci, lateral carinae visible before first transverse sulcus, absent in metazona, surface of pronotum finely granulose; meso and metasternal interspace wide open; tegmina and wings reaching near to the apex of hind femur; hind tibia with 8 external and 13 internal spines in female, external apical spine absent, the internal pair of spurs comparatively longer than the outer pair; ovipositor valves with blunt tips.

Measurements (mm):

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Fig. 2: *Pyrgomorpha conica* Olivier

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)

E. Supra-anal plate (♂)
Fig. 2
Material examined: 3♀, 2♂, Kashmir: Baramulla, Nowgam on grass, 08-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from the cultivated fields having mixed vegetation of grasses, maize and vegetables.

Remarks: This species has been recorded for the first time from Kashmir (India).

Tribe: Atractomorphini Bolivar, 1884

Diagnosis
Small, medium or large sized insects; head elongate, conical; antennae slightly ensiform; fastigium of vertex elongate, angular; dorsum of pronotum subcylindrical, posterior margin angular; meso and metasternal interspace open; tegmina and wings fully developed, tegmina usually very pointed; hind femur with lower basal lobe shorter than upper one; hind tibia with external apical spine present; male with epiphallus anchor shaped; female spermatheca with two diverticula apically.

Bolivar (1884) proposed the tribe Atractomorphini based on the type genus Atractomorpha, which was elevated to the rank of subfamily by Jacobson & Bianki (1904). The later workers followed Boliver (1884) and again considered it as a tribe which was also followed by present author.

The tribe is represented by a single genus from Kashmir.

*Atractomorpha* Saussure


Type genus: *Truxalis crenulatus* F.
**Distribution:** Ethiopian, Oriental, Australian regions.

**Diagnosis**
Body long and slender; head conical with a row of postocular granules extending to the middle coxae; antennae shorter than the combined length of head and pronotum; fastigium of vertex elongate with parabolic or angular apex; frontal ridge narrow, shallowly sulcate; pronotum elongate, posterior margin widely obtuse angular, almost rounded, dorsum crossed by three sulci, median and lateral carinae weak, metazona much shorter than prozona; prosternal process developed; male with supra-anal plate elongate, angular, cerci short and conical, subgenital plate short with rounded apex; female having posterior margin of subgenital plate with a semicircular notch medially, ovipositor moderately long, with valves curved at apices, dorsal valve as long as or slightly longer than lateral apodeme.

**Remarks:** Banerjee and Kevan (1960) made a preliminary revision of the genus *Atractomorpha* Saussure and gave key to species. Later Kevan and Chen (1969) divided the genus into 4 groups: Aberrans, Crenulata, Psittacina & Erenaticeps, mainly based on aedeagus valves. This grouping resulted in somewhat different arrangement of species from that of Banerjee and Kevan (1960).

The genus is represented by 6 species from India, among which 2 are reported from Kashmir.

**Key to the species of Kashmir**

1. Fastigium of vertex somewhat longer, never broad; base of hind wings purple; smooth membranous area on the posterior part of lateral pronotal lobe (particularly in female) well distinct..............................

Atractomorpha crenulata (Fabricius)

Fastigium of vertex broader, flattened; base of hind wings rosy........

Atractomorpha sinensis montana Kevan and Chen
Atractomorpha crenulata (Fabricius)
(Fig. 3) (Plate 4)

Truxalis crenulata Fabricius, 1793. Ent. Syst., 2: 28
Atractomorpha crenulata (Fabricius) Saussure, 1862. Ann. Soc. ent. Fr., 4: 1

Distribution: India, Sri Lanka.

Diagnosis
General characters same as discussed under genus.

Measurements (mm):

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Material examined: 3♀, 2♂, Kashmir: Srinagar, Dachigam National Park on grass, 05-ix-2004 (Shabir Reshi); 2♀, 1♂, Kashmir: Handwara, Shatgund-payeen on grass, 11-ix-2005 (Shabir Reshi); 3♀, 2♂, Kashmir: Baramulla, Nowgam on grass, 17-ix-2006 (Shabir Reshi).
Fig. 3: *Atractomorpha crenulata* (Fabricius)

A. **Spermatheca** (♀)

B. **Subgenital plate** (♀)

C. **Supra-anal plate** (♀)

D. **Ovipositor valves** (♀)

E. **Epiphallus** (♂)

F. **Supra-anal plate** (♂)
Fig. 3
Habitat: The specimens of this species have been collected from the cultivated fields having mixed vegetation of grasses, maize and vegetables.

Remarks: It is commonly known as Tobacco grasshopper in India. The species is widely distributed in India and in the neighbouring Indo Malayan subregion. The size and colour of this species is extremely variable. It can easily be separated by generally slender body form, fastigium of vertex somewhat longer, longer tegmina, purple colour at the base of the wings. It feeds upon a variety of plants. This species has been recorded for the first time from Kashmir (India).

*Atractomorpha sinensis montana* Kevan and Chen

(Plate 4)


Distribution: Kashmir.

Diagnosis: The specimens in hand fully agree with the description given by Kevan and Chen (1969) for this species.

Measurements (mm):

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<th>Male</th>
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Material examined: 2♀, 3♂, Kashmir: Baramulla, Uri, Uranbuha on grass, 13-ix-2005 (Shabir Reshi).

Habitat: The specimens of this species have been collected from the cultivated fields having mixed vegetation of grasses, maize and vegetables.

Remarks: This species has been earlier recorded from Kashmir (India) by Balderson and Yin (1991).

Subfamily: Acridinae Latreille, 1802

Size small to large; head usually acute, sometimes obtusely conical; fastigial foveolae lateral, distinct, but sometimes entirely absent; frons oblique or vertical; pronotum with median and lateral carinae usually present, sometimes absent; prosternal process mostly absent, rarely present; tegmina and wings usually well developed, but sometimes reduced or absent; tympanum usually present; male with epiphallus bridge shaped, ancorae and lophi usually present, aedeagus with basal and apical valves flexured, gonopore process absent; female spermatheca with apical diverticulum short, pre-apical diverticulum sac-like.

Key to tribes of Acridinae Latreille, 1802

1. Stridulatory mechanism on inner side of hind femur absent..................2
   Stridulatory mechanism on inner side of hind femur present..........................
   .....................................................................................................................Gomphocerini

2. Body usually slender; frons oblique; pronotum usually with lateral carinae; tegmina with intercalary vein usually absent, if present, never serrated in both sexes; wings without dark band..........................Acridini
   Body somewhat sturdy; frons vertical; pronotum usually without lateral carinae or they are weak and only partly developed; tegmina with intercalary vein present and usually serrated, wings very often with a dark band..........................................................Oedipodini
Uvarov (1943) assigned six genera: *Brachycrotaphus* Krauss, *Mesopsis* Bolivar, *Aswatthamanus* Kirby, *Kirmania* Uvarov, *Dhimbama* Henry and *Psectrocnemus* Henry in the group Mesopsis. He was of the opinion that the group represents a specialised offshoot from the group Ochrillidiae, the specialization consisting mainly in the extreme elongation of the body and in the tendency to develop a highly elaborate stridulatory mechanism. The elongation of the body is in agreement with the habitat of these insects which all live among tall savanna grasses.

Dirsh (1965) placed the gomphocerine genera under the subfamily Truxalinae. Uvarov (1966) divided the Truxalinae of Dirsh into two groups: Gomphocerinae in which the stridulatory file consists of a series of peg like hairs, Truxalinae in which the file consists of unmodified hairs lying between peg like cuticular expansions.

Later authors expressed reservations on giving it the subfamily status by Uvarov. They were of the opinion that too much emphasis on stridulatory mechanisms was unjustified. They suggested that peg row is unreliable because it may vary with the sex. Hence, this may result the placement of female in Acridinae and male in Gomphocerinae or Truxalinae.

Harz (1975) treated Gomphocerinae as subfamily and divided it into two tribes: Gomphocerini and Chorthippini.

Gomphocerini is treated here as tribe under the subfamily Acridinae and is defined as:

Body moderately slender; head of variable shape; antennae normally filiform, but tend to be compressed and ensiform in species with elongated body; eyes never nearer to apex of head than to its base; pronotum with median and lateral carinae; prosternal process usually absent; femoro-tegmal stridulatory mechanism.
present, consisting of a row of modified peg like hairs located on the lower edge of
the inner area of hind femur, which impinges on the raised first radial vein of the
tegmen. In Brachypterous forms, this mechanism is often reduced or absent.

Key to genera

1. Pronotum with lateral carinae angularly incurved; arolium of small size
........................................................................................................................................2

Pronotum with lateral carinae parallel, slightly diverging in metazona;
arolium of medium size................................. ........Chorthippus Fieber

2. Small sized insects; vertex without lateral carinulae; hind tibia with inner
spur of inner side about as long as external one................. .Leva Bolivar
Medium sized insects; vertex with lateral carinulae; hind tibia with inner
spur of inner side longer than external one.................Dnopherula Karsch

Chorthippus Fieber

Chorthippus Fieber, 1852. Kelch. Orth. Oberschles, 1: 1, 4

Type species: Chorthippus albomarginatus (De G.)

Distribution: Asia, Europe, Africa, N. America.

Diagnosis

Small to medium sized insects; antennae filiform, longer than the combined length
of head and pronotum together; fastigium of vertex with median carinula; fastigial
foveolae elongate; frontal ridge flat; pronotum with posterior margin obtuse
angular or rounded, median carina intersected by posterior transverse sulcus only,
lateral carinae straight, slightly diverging or angularly incurved, metazona shorter,
as long as or longer than the prozona; tegmina and wings fully developed or
shortened; arolium of medium size; male with supra-anal plate elongate angular,
cerci short and conical, subgenital plate short and subconical, epiphallus bridge shaped; female with ovipositor valves short.

The genus is represented by a single species in Kashmir

*Chorthippus (Chorthippus) dorsatus dorsatus* (Zetterstedt)  
(Plate 5)


**Distribution:** Europe, North Africa, Kazakhstan.

**Diagnosis**

General characters same as described under genus.

**Measurements (mm):**

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<th>Female</th>
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<th>Male</th>
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**Material examined:** 2 ♀, 1♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi); 3 ♀, 4♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 10-ix-2006 (Shabir Reshi).
Habitat: The specimens of this species have been collected from fields having tall grasses.

Remarks: The species has been recorded for the first time from Kashmir (India).

Leva Bolivar

Stenohippus Uvarov, 1926. Trans. ent. Soc. Lond., (1925)., 73 (3-4): 423

Type species: Gymnobothrus indicus Bolivar, 1902

Distribution: South West Asia, Africa (south of Sahara).

Diagnosis
Small sized body; head subconical; antennae filiform, longer than combined length of head and pronotum; fastigium of vertex concave; fastigial foveolae not visible from above; frontal ridge sulcate; pronotum with distinct median and lateral carinae, lateral carinae angularly incurved, dorsum crossed by three sulci, median carina intersected by only posterior transverse sulcus, metazona and prozona of almost equal length; mesosternal interspace wider than long; tegmina and wings fully developed; hind tibia with inner spur of inner side about as long as external one; arolium small; male with supra-anal plate elongate angular, cercus short and conical, subgenital plate short, subconical with obtuse apex, epiphallus bridge shaped, bridge narrow, aedeagus with apical valve shorter than basal valve; female with subgenital plate with posterior margin convex medially, without setae, ovipositor with dorsal valve shorter than lateral apodeme.

Remarks: This genus resembles with Dnopherula Karsch, but differs from it in having fastigial foveolae invisible from above.
The genus is represented by three species in Kashmir.

**Key to the species of Kashmir**

1. Tegmina longer than the abdomen ........................................................................... 2
   Tegmina shorter than the abdomen .................................... *Leva apicalis* (Walker)

2. Frontal ridge between antennae sulcate; tegmina slightly longer than the abdomen ....................................................................................... *Leva cruciata* Bolivar
   Frontal ridge between antennae flat; tegmina much longer than the abdomen ..................................................................................... *Leva mundus* (Walker)

*Leva apicalis* (Walker)

(Plate 6)


**Distribution**: India.

**Diagnosis**: The collected specimens fully agree with the published description (Kirby, 1914; Uvarov, 1921) for this species.
Measurements (mm):

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<th>Male</th>
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<tr>
<td>HTL</td>
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Material examined:

2♀, 3♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 05-ix-2005 (Shabir Reshi); 3♀, 1♂, Kashmir: Srinagar, Mirgund on grass, 07-ix-2006 (Shabir Reshi); 1♀, 2♂, Kashmir: Srinagar, Dachigam National Park on grass, 11-ix-2006 (Shabir Reshi); 7♀, 4♂, Kashmir: Baramulla, Palhalan on grass, 18-ix-2006 (Shabir Reshi); 4♀, 7♂, Kashmir: Baramulla, Gurez on grass, 19-ix-2006 (Shabir Reshi).

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

Remarks: This species has been recorded for the first time from Kashmir (India).
Leva cruciata Bolivar
(Fig. 4) (Plate 6)


Distribution: India, Srilanka.

Diagnosis: The collected specimens fully agree with the published description (Uvarov, 1921) for this species.

Measurements (mm):

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<th>Male</th>
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Material examined:
5♀, 2♂, Kashmir: Handwara, Shatgund-payeen on grass, 05-ix-2005 (Shabir Reshi); 4♀, 3♂, Kashmir: Srinagar, Mirgund on grass, 07-ix-2006 (Shabir Reshi); 1♀, 3♂, Kashmir: Srinagar, Dachigam National Park on grass, 11-ix-2006 (Shabir Reshi); 5♀, 5♂, Kashmir: Baramulla, Palhalan on grass, 18-ix-2006 (Shabir Reshi); 3♀, 3♂, Kashmir: Baramulla, Bandipora on grass, 18-ix-2006 (Shabir Reshi); 3♀, 1♂, Kashmir: Baramulla, Gurez on grass, 08-x-2006 (Shabir Reshi).
Fig. 4: *Leva cruciata* Bolivar

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Habitat: The specimens of this species have been collected from the grassy rangelands and from the fields having mixed vegetation of grasses, maize and sorghum.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Leva mundus* (Walker)
(Fig. 5) (Plate?)


*Dociostaurus mundus* Kirby, 1914. *Fauna British India*, 1: 119


*Dociostaurus epacromoides* Kirby, 1914. *Fauna British India*, 1: 119


Distribution: India.

Diagnosis: The collected specimens fully agree with the published description (Kirby, 1914) for this species.

Measurements (mm):

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<td>HTL</td>
<td>10-11</td>
<td>10.5</td>
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</tbody>
</table>
Fig. 5: *Leva mundus* (Walker)

A. **Spermatheca (♀)**

B. **Subgenital plate (♀)**

C. **Ovipositor valves (♀)**

D. **Epiphallus (♂)**
Material examined: 4♀, 3♂, Kashmir: Srinagar, Mirgund on grass, 07-ix-2006 (Shabir Reshi); 3♀, 5♂, Kashmir: Budgam, Doodpathri on grass, 22-x-2006 (Shabir Reshi); 2♀, 1♂, Kashmir: Srinagar, Dachigam National Park on grass, 01-xi-2006 (Shabir Reshi).

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

Remarks: This species has been recorded for the first time from Kashmir (India).

_Dnopherula_ Karsch


_Aulacobothrus_ Bolivar, 1902. *Annls. Soc. ent. Fr.*, 70:57


Type species: _Dnopherula callosa_ Karsch, 1896

Distribution: Cosmopolitan.

Diagnosis

Body small; head subconical; antennae filiform, shorter, as long as or slightly longer than head and pronotum together; fastigium of vertex longer than wide, slightly concave in middle, with median and lateral carinulae; fastigial foveolae hardly visible from above, weakly concave; frontal ridge flat; pronotum with dorsum flattened, posterior margin obtuse angular, median carina sharp, intersected
by only posterior transverse sulcus, lateral carinae divergent in metazona; tegmina and wings fully developed or shortened; hind tibia with inner spur of inner side slightly longer, curved at apex; male with supra-anal plate angular, cercus conical, subgenital plate short, subconical with obtuse apex, epiphallus with narrow bridge; female with subgenital plate convex medially, ovipositor with dorsal valve shorter than lateral apodeme, spermatheca with short apical and large sac like pre-apical diverticulum.

Remarks: Dirsh (1965) and Hollis (1966) assigned the genus *Dnopherula* Karsch in Truxalinae. Later, Jago (1971) shifted the genus to Gomphocerinae. The genus can easily be identified in having vertex with lateral carinulae and hind tibia with inner spur of inner side longer than external one.

The genus is represented by two species in Kashmir.

**Key to the species of Kashmir**

1. Frontal ridge flat ............ *Dnopherula (Aulacobothrus) decisus* (Walker)
   Frontal ridge sulcate........... *Dnopherula (Aulacobothrus) luteipes* (Walker)

*Dnopherula (Aulacobothrus) decisus* (Walker)
(Fig. 6) (Plate 7)

*Dociostaurus decisus* Kirby 1914. *Fauna British India*, 1: 120

**Distribution:** India.
Diagnosis
Smaller insects; antennae 24 segmented; fastigial foveolae elongated and shallowly depressed; vertex depressed; a pale band extends from the fastigium of vertex up to the posterior margin of pronotum along median carina; occiput with slightly visible median carinula; frontal ridge flat, slightly depressed at mid ocellus; pronotum with median carina distinct, intersected by posterior transverse sulcus only, lateral carinae constricted in the middle of prozona, diverging in metazona, dorsum with three transverse sulci; meso and metasternal interspace open, metasternal interspace constricted at base; hind tibia without external apical spine; upper carina of hind femur terminating into a small spine; female genitalia with ovipositor valves not pointed.

Measurements (mm):

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<th>Male</th>
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Material examined: 7♀, 3♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi); 3♀, 4♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 10-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from fields having tall grasses and from the fields having short grasses and shrubs.

Remarks: This species has been recorded for the first time from Kashmir (India).
Fig. 6: *Duopherula (Aulacobothrus) decisus* (Walker)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Fig. 6
Dnopherula (Aulacobothrus) luteipes (Walker)
(Plate 8)

Stenobothrus (?) luteipes Kirby, 1914. Fauna British India, 1: 121
Aulacobothrus taeniatus Bolivar, 1902. Annls. Soc. ent. Fr., 70:600

Distribution: India, China, Japan, Europe, N. America.

Diagnosis: The specimens in hand fully agree with the published description (Kirby, 1914) for this species.

Measurements (mm):

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Material examined: 4♀, 5♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi); 4♀, 1♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 10-ix-2006 (Shabir Reshi).
**Habitat:** The specimens of this species have been collected from fields having tall grasses and from the fields having short grasses and shrubs.

**Remarks:** This species has been recorded for the first time from Kashmir (India). Earlier, Kirby (1914) recorded it from Pakistan Occupied Kashmir.

**Tribe: Acridini Latreille, 1802**

Body usually slender; pronotum usually with median and lateral carinae; tegmina and wings fully developed; spurious median vein of tegmina usually absent; prosternal process usually absent; femoro-tegminal stridulatory mechanism absent; hind femur without row of modified peg like structures at lower edge of inner surface; male with epiphallus bridge shaped, with ancorae and lophi, aedeagus with basal and apical valves connected by flexure.

The members of two subtribes of Acridini are found in Kashmir.

**Key to subtribes of Acridini found in Kashmir**

1. Head strongly oblique; antennae ensiform; hind legs long and slender; epiphallus with bilobate lophi.......................................................... Acridina
   Head slightly oblique; antennae usually filiform, rarely slightly ensiform; hind legs never very long and slender; epiphallus usually with unilobate lophi..........................................................Phalaeobina

The subtribe Acridina is represented by a single genus i.e., Acrida from Kashmir. The subtribe phalaeobina is also represented by a single genus i.e., Phaleoba from Kashmir.
**Acrida Linnaeus**


_Acrida Chopard 1922. Faune de France. 3: 141; Willemse, C., 1930. Tijdschrift voor Entomol.. 73: 42, 47_

Type species: _Gryllus (Acrida) turritus_ Linnaeus, 1758

**Distribution:** India, China, Japan, Southeastern Europe, Africa.

**Diagnosis**
Large sized insects; body elongated, almost stick like; head elongated, conical; antennae ensiform, gradually tapering to the apex; fastigium of vertex projecting strongly in front of eyes; fastigial foveolae absent; frontal ridge narrow, shallowly sulcate; pronotum elongate, dorsum crossed by posterior transverse sulcus only, median and lateral carinae low, but distinct, posterior margin obtuse or acute angular; mesosternal interspace open; tegmina and wings fully developed with acute to obtuse apex; lobes of hind knee with acute to obtuse apices, upper inner lobe slightly longer than external; arolium moderately large, shorter than claw; male with supra-anal plate triangular, cercus short, conical, subgenital plate conical, epiphallus with ancorae large, lophi bilobate; female with subgenital plate obtuse angular, weakly trilobate or almost truncate, ovipositor short, robust with broad, slightly curved valves.

**Remarks:** The genus can easily be distinguished in having elongated stick like body and conical head.

The genus is represented by three species in Kashmir.
**Key to the species of Kashmir**

1. Body greenish, lateral carinae of pronotum not edged within with a black line..............................................................2
   Body dry grass coloured, lateral carinae of pronotum edged within with a black line.................................................*Acrida gigantea* Herbst

2. Tegmina without distinct coloured margin..................................................*Acrida exaltata* Walker
   Tegmina very narrowly edged with pinkish brown..............
   ............................................................................................*Acrida lugubris* Burr.

*Acrida gigantea* (Herbst, 1794)
(Plate 8)

*Truxalis giganteus* Herbst. 1794. *Fuessly Archiv.*, 173


**Distribution:** India, Nepal, Africa, Europe (S. Europe).

**Diagnosis:** The specimens in hand fully agree with the published description (Kirby 1914) for this species, except in colour, which is brownish.

**Measurements (mm):**

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<th>Female</th>
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Habitat: The specimens of this species have been collected from the cultivated fields having maize and from the fields having mixed vegetation of grasses, herbs and shrubs.

Remarks: This species has been recorded for the first time from Kashmir (India). Earlier, Sharma and Gupta (1997) recorded it from Jammu province of J & K state.

*Acrida exaltata* (Walker)

(Fig. 7) (Plate 9)


*Truxalis brevicollis* Bolivar, 1893. Feuille Jeunes Nat., 27: 162, No 8


Distribution: India, Bangladesh, Pakistan, Srilanka, Afghanistan, Iran, Tibet.

Diagnosis

Body uniformly green; head elongated, conical; antennae ensiform; fastigium of vertex elongated, concave, its apex parabolic; frontal ridge shallowly sulcate, constricted below mid-oellus, obliterated towards clypeus; prothorax with median carina slightly raised, intersected by posterior transverse sulcus only, lateral carinae bluntly raised, running parallel in prozona, diverging in metazona, metazona slightly longer than prozona, its posterior margin acute angular; mesosternal interspace longer than wide; tegmina slightly reaching beyond the apex of hind knee; wings slightly infumated; hind legs extra-ordinary long and slender; hind femur without stridulatory pegs on lower edge of inner area, lobes of knee with acute apices; abdomen dorsally pinkish; male subgenital plate long and pointed; female subgenital plate with posterior margin setose, dorsal valve of
ovipositor shorter than lateral apodeme, spermatheca with apical diverticulum well developed, pre-apical diverticulum sac like.

**Measurements (mm):**

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<thead>
<tr>
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<th>Male</th>
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**Material examined:** 4 ♀, 7♂, Kashmir: Kupwara, Kurnah, Gundi Gujran on grass, 06-ix-2005 (Shabir Reshi); 4 ♀, 5♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 09-ix-2005 (Shabir Reshi); 3 ♀, 7♂, Kashmir: Kupwara, Handwara, Nowgam on maize, 11-ix-2005 (Shabir Reshi); 11♀, 7♂, Kashmir: Srinagar, Dachigam National Park on grass, 21-ix-2005 (Shabir Reshi); 8♀, 3♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 04-xi-2006 (Shabir Reshi); 4♀, 3♂, Kashmir: Srinagar, Dachigam National Park on grass, 08-xi-2006 (Shabir Reshi); 11♀, 9♂, Kashmir: Baramulla, Uri, Chandanwari on maize, 09-ix-2006 (Shabir Reshi).

**Habitat:** The specimens of this species have been collected from the cultivated fields having maize, sorghum and vegetables, and from the fields having mixed vegetation of grasses, herbs and shrubs.

**Remarks:** This species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951). Sharma and Gupta (1997) also reported it from Jammu
Fig. 7: *Acrida exaltata* (Walker)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)

G. Pronotum (Dorsal view)

H. Pronotum (Lateral view)

I. Meso and metasternum
Fig. 7
province of J & K state. The species is widely distributed throughout the valley and can easily be distinguished in having elongated stick like body.

*Acrida lugubris* Burr.


**Distribution:** Kashmir, Madras.

**Diagnosis:** The species is known to the author from the description given by Kirby (1914) for this species.

**Remarks:** This species has been recorded from Kashmir by Kirby (1914). Sharma and Gupta (1997) recorded it from Jammu province of J and K state. The present author, however, could not collect any specimen of this species.

*Phaleoba* Stal


**Type species:** *Gomphocerus rusticus* Stal, 1860.

**Distribution:** Oriental region.

**Diagnosis**

Smaller insects; head short; antennae shorter, as long as or longer than the combined length of head and pronotum together, basal half widened and flattened; fastigium of vertex short, slightly projecting forward, widely angular, wider than long, with distinct median carinula; fastigial foveolae absent; frontal ridge shallowly sulcate from base of antennae; pronotum with posterior margin rounded,
median and lateral carinae distinct, lateral carinae parallel, median carina intersected by posterior transverse sulcus only, metazona shorter than prozona; mesosternal interspace open; tegmina and wings fully developed, as long as or longer than abdomen or lobiform; hind femur as long as or slightly exceeding tip of abdomen; arolium of large size; male with supra-anal plate angular, cerci short, conical, subgenital plate short, subconical, with obtuse apex, epiphallus bridge shaped, ancorae short, lophi bilobate; female with ovipositor valves long and slightly curved.

The genus is represented by a single species in Kashmir.

*Phlaeoba tenebrosa* (Walker)


**Distribution**: Southern China, Kashmir.

**Remarks**: The species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951). The present author, however, could not collect any specimen of this species.

**Tribe**: Oedipodini Scudder, 1875

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 partly developed, median carina in some species high; tegmina and wings completely 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 the genera of 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 tooth like projections ............................................4
   Body small; median carina of pronotum forming tooth 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 median carina weak...................................................... *Aiolopus* Fieber

6. Median carina of pronotum, not excised at posterior sulcus....................7
   Median carina of pronotum slightly excised at posterior sulcus.............8
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, strongly acute angular 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 metazona, 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 metazona, 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 median vein 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.................................Pternosciria Saussure
Pronotum without small sparse tubercles, lower margin of hind femur without long dense hairs.................................Epacromius Uvarov

Oedaleus Fieber

Oedaleus Fieber, 1853. Lotos., 3: 126 (as subgenus of Oedipoda Serville);
Stal, 1873. Recens. Orth., 1: 123 (as subgenus of Pachytylus Fieber);
Type species: *Acrydium nigrofasciatum* Degeer, 1773


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 not reaching clypeus; pronotum with obtuse median carina, often intersected by posterior transverse sulcus, lateral carinae absent, dorsum with x-shaped pattern, metazona equal to or little longer than prozona, posterior margin rounded or angular; mesosternal interspace wider than long, widening posteriorily, usually wider than metasternal interspace; tegmina and wings fully developed, spurious median vein approximately equidistant between M and CuA, sometimes only in the basal part slightly closer to CuA than to M, 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; female with ovipositor valves robust, curved, ventral valve with elongate, external lateral projection, spermatheca with sac like apical diverticulum, with or without a short preapical diverticulum.

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

The genus is represented by three species in Kashmir.
Key to the species of Kashmir

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

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

Oedaleus abruptus (Thunberg)
(Fig. 8) (Plate 10)

Pachytylus (Oedaleus) abruptus: Stal, 1873. Recens. Orth., 1:127

Distribution: Afghanistan, India, China, Burma, Nepal, Srilanka, Thailand.

Diagnosis
Smaller insects; antennae filiform, 22 segmented; fastigium of vertex longer than wide, concave with margins bluntly raised; occiput flat with slightly visible median carinula, which extends near to the tip of fastigium of vertex; frontal ridge flat above and depressed below the basis of antennae; pronotum with white coloured x-shaped marking on the dorsum, median carina low, arcuate, entire, posterior margin rounded or obtuse- angular; meso and metasternal interspace wide open, mesosternal interspace longer than the metasternal interspace; wings extending
beyond the tip of abdomen; hind tibia with 12 outer and 14 inner spines, external apical spine absent, the inner pair of spurs at the apex comparatively longer than the outer pair; arolium much shorter than half of the length of claw; female having ovipositor valves with tips darkish, cerci short with tips rounded, spermatheca without preapical diverticulum.

Measurements (mm):

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<th>Male</th>
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Material examined: 3♀, 1♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 27-ix-2006 (Shabir Reshi); ♀4, 5♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 03-x-2006, (Shabir Reshi).

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

Remarks: The species has been recorded for the first time from Kashmir (India). Earlier, Perwin et al. (1985) recorded it from Muzaffarabad (Pakistan Occupied Kashmir). According to Mahmood and Yousuf (1999), this species has been earlier, recorded from Kashmir (India) by Kirby (1914), but the present author, after going through the literature (Kirby, 1914) did not find any evidence
Fig. 8: *Oedaleus abruptus* (Thunberg)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Fig. 8
pertaining to its earlier occurrence in Kashmir (India). So the species is hereby designated as a new record from Kashmir (India).

*Oedaleus roescescens* Uvarov  
*(Plate 10)*


**Distribution:** India: Rajasthan (Noak), Punjab (Khewra, salt range); N. E. Pakistan.

**Diagnosis**

Antennae 22 segmented, one and a half times as long as head and pronotum together; fastigium of vertex concave, narrowing anteriorly, with margins raised; frontal ridge slightly expanded at mid-ocellus; pronotum with median carina slightly raised and barely intersected by posterior transverse sulcus, hind margin obtuse angular; inner apical spur of hind tibia longer than the outer one; arolium half the length of claw; wings with dark band reaching posterior margin; female with ovipositor valves short, spermatheca with apical diverticulum sac like and pre-apical diverticulum short.

**Measurements (mm):**

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<th></th>
<th>Male</th>
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Material examined: 4♀, 3♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 27-ix-2006 (Shabir Reshi); 2♀, 1♂, Kashmir: Kupwara, Handwara, Shatgund-payeen on grass, 03-x-2006 (Shabir Reshi).

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

Remarks: The species has been recorded for the first time from Kashmir (India).

**Oedaleus senegalensis** (krauss)

(Fig. 9) (Plate 11)


Pachytylus mlokoziewizteki Bolivar, 1884. Annls. Soc. ent. Belg., 28 : 105


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

Diagnosis

Antennae about twice as long as head and pronotum together; fastigium of vertex little longer than wide, concave, with bluntly raised margins; occiput convex with median carinula; frontal ridge flat above and sulcated below mid ocellus; pronotum with posterior margin rounded, median carina not intersected by posterior transverse sulcus; meso and metasternal interspace wide open, mesosternal interspace more long than metasternal interspace, mesosternal interspace square
shaped, metasternal interspace half circle like; wings extending beyond the tip of abdomen; hind tibia reddish, with 12 outer and 13 inner spines, external apical spine absent, inner pair of spurs at the apex comparatively longer than the outer pair; arolium about half of the length of claw; male cercus short; female with ovipositor valves blunt.

Measurements (mm):

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

Remarks: The species has been recorded for the first time from Kashmir (India).
Fig. 9: *Oedaleus senegalensis* (krauss)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Fig. 9

A

B

C

D

Fig. 9
**Trilophidia Stal**


**Type genus:** *Trilophidia cristella* Stal

**Distribution:** Ethiopian region, Oriental region and some parts of Palaearctic region (Mongolia, China, Korea and Japan).

**Diagnosis**

Smaller sized insects; antennae short, slightly or distinctly widened in the apical part, 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 forming two high tooth like projections due to deeply incised anterior sulci and it seems to be bidentate in profile, the posterior tooth turned caudad, lateral carinae irregular, forming small tooth like lateral tubercles in front of first sulcus, strongly diverging and sometimes weak in metazona, metazona 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 in the apex comes closer to M than to CuA, hind wings without band, slightly coloured or colourless at the base; spermatheca with short apical and large sac like preapical diverticula; ovipositor short, with robust curved valves, ventral valve with small, rounded, externo lateral projection.

**Remarks:** The genus can easily be distinguished form other genera in having two tooth like projections on prozona of pronotum.

The genus is represented by a single species in Kashmir.
**Trilophidia annulata** (Thunberg)

(Fig. 10) (Plate 11)


*Acracidium (Oedipoda) vulneratum* de Haan, 1842. *Temminck verhandel Orth.*, 16: 163, fig 13


*Trilophidia annulata*: Kirby, 1914. *Fauna British India, Orth.*, 1:149


**Distribution**: India, Pakistan, Bangladesh, Srilanka, Thailand, Vietnam, Korea, Japan, Singapore, Myanmar, China, Indonesia, Malaysia.

**Diagnosis**

Smaller sized dark grey insects; antennae 17-21 segmented, normally of even diameter but sometimes with apical segments inflated; fastigium of vertex concave with bluntly raised margins, fastigial foveolae irregularly oval, vertex behind eyes with a pair of tubercles; frontal ridge distinct, sulcate throughout its length, slightly constricted below mid ocellus, widened towards clypeus; pronotum with median carina cut by 2 transverse sulci, median prozonal projections of varying strength and with 3 pairs of lateral projections which decrease in size posteriorily, metazona longer than prozona with sharp median and lateral carinae; mesosternal interspace
square shaped, metasternal interspace nearly rectangular; tegmina extending beyond the tip of abdomen; hind femur black ventrally, with a pale band near apex; hind tibia with 8 outer and 9 inner spines, base blackish ventrally, followed by a pale and black band alternatively towards the apex.

**Measurements (mm):**

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<td>8-9</td>
<td>8.5</td>
<td>7-9</td>
<td>7.7</td>
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</table>

**Material examined:** 1♀, 3♂, Kashmir: Baramulla, Uri, Uranbuha on maize, 13-ix-2005 (Shabir Reshi); 4♀, 5♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 24-ix-2005 (Shabir Reshi); 9♀, 7♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 08-ix-2006 (Shabir Reshi); Kashmir: Baramulla, Palhalan on maize, 11-ix-2006 (Shabir Reshi); 3♀, 5♂, Kashmir: Baramulla, Uri, Uranbuha on maize, 01-x-2006 (Shabir Reshi); 3♀, 3♂, Kashmir: Srinagar, Dachigam National Park, on grass, 12-x-2006 (Shabir Reshi).

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

**Remarks:** This species has been earlier recorded from Pakistan Occupied Kashmir, by Perwin et al. Hollis (1965) recorded it from Srinagar, Kashmir (India). Later on Bhat and Qadri (1999) recorded it from Dachigam National Park,
Fig. 10: *Trilophidia annulata* (Thunberg)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Pronotum (Lateral view)

G. Meso and metasternum
Srinagar, Kashmir (India). The present author however, recorded it for the first time from the localities mentioned above, in addition to the localities mentioned by Hollis (1965) and Bhat and Qadri (1999).

*Acrotylus* Fieber


Type species: *Gryllus insubricus* Scopoli, 1786

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, sometimes indistinct; frontal ridge wide, sulcated, narrowing upwards; pronotum constricted in front of the middle, with well developed median and irregular tuberculate lateral carinae, which are sometimes absent in metazona, median carina cut by two transverse sulci, metazona longer than prozona, its posterior margin broadly rounded; tegmina and wings fully developed; spurious median vein of tegmina near the base approaches CuA, but towards the apex, it gradually approaches M; wings coloured at base, with or without a dark band; hind tibia with inner pair of spurs at apex longer than outer pair.

Remarks: The genus can easily be distinguished form other genera in having pronotum with ill defined 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. 11) (Plate 12)


Distribution: India, Pakistan, Srilanka, Afghanistan.

Diagnosis: The collected specimens exactly tally with the published descriptions (Kirby, 1914; Bei-Bienko and Mishchenko, 1951) for this species.

Measurements (mm):

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
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</thead>
<tbody>
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<tr>
<td>HTL</td>
<td>7-9</td>
<td>8</td>
<td>7-8</td>
</tr>
</tbody>
</table>

Material examined: 4♀, 6♂, Kashmir: Baramulla, Gureez, Dawar on grass, 16-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from rocky soil having sparse grassy vegetation.
Fig. 11: Acrotylus humbertianus Saussure

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Remarks: This species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951).

*Aiolopus Fieber*


*Epacromia* Fischer, 1853. *Orth. Eur.*, 296, 360


Type Species: *Gryllus thalassinus* Fabricius, 1781

Distribution: India, Australia, Europe, Africa.

Diagnosis

Medium sized insects; antennae filiform, as long as or longer than head and pronotum together; fastigium of vertex elongate, slightly concave, with well developed lateral carinulae; 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 middle, lateral carinae absent, metazona 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 and nearly or entirely 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.

Remarks: The genus can easily be separated from other genera in having pronotum with prozona constricted and without lateral carinae.
The genus is represented by a single species in Kashmir viz. *Aiolopus thalassinus* which in turn is represented by two subspecies.

**Key to the subspecies found in Kashmir**

1. Frontal ridge narrow; hind tibia with apical red colouration, if present broadly separated from basal black band by bluish grey band

   

   ................................................

   *Aiolopus thalassinus tamulus* (Fabricius)

   Frontal ridge broad; hind tibia with apical red colouration, if present, narrowly separated from basal black band by ochraceous band

   ................................................

   *Aiolopus thalassinus thalassinus* (Fabricius)

*Aiolopus thalassinus tamulus* (Fabricius)

(Plate 12)

*Gryllus tamulus* Fabricius, 1798. *Ent. Syst. Suppl.* 195


*Aeolopus tamulus*: Kirby, 1914. *Fauna British India, Orth.*, 1: 122


**Distribution:** India, China, Japan, Phillipine, Isle, Australia.

**Diagnosis**

Medium sized insects; antennae filiform; fastigium of vertex concave; fastigial foveolae nearly rectangular; occiput smooth; frontal ridge with a slight depression at mid-ocellus; pronotum with median carina slightly raised in metazona, intersected by two transverse sulci, angularly produced posteriorily; a pair of white bands extend from eyes posteriorily, constricting near posterior transverse sulcus, diverges in metazona; meso and metasternal interspace open, square shaped,
mesosternal interspace more wide than metasternal interspace; hind tibia reddish apically, with 11 inner and 9 outer spines, external apical spine absent, inner pair of spurs at apex comparatively longer than the outer pair, spines whitish at base with tips black; female subgenital plate with posterior margin covered with setae, egg guide longer and conical, ovipositor valves short with blunt tips.

**Measurements (mm):**

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<thead>
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<th>Male</th>
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<td>Range</td>
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<td>HTL</td>
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<td>9-10</td>
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**Material examined:** 3♀, 5♂, Kashmir: Kupwara, Handwara, Nowgam on grass, 28-viii-2004 (Shabir Reshi); 5♀, 3♂, Kashmir: Kupwara, Handwara, shatgund payeen on grass, 09-ix-2004 (Shabir Reshi); 8♀, 5♂, Kashmir: Srinagar, Dachigam National Park on grass, 11-ix-2004 (Shabir Reshi); 11♀, 6♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 22-ix-2005 (Shabir Reshi); 2♀, 3♂, Kashmir: Baramulla, Palhalan on maize, 28-x-2005 (Shabir Reshi); 2♀, 5♂, Kashmir: Bandipora on grass, 01-x-2006 (Shabir Reshi).

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

**Remarks:** This species has been recorded for the first time from Kashmir (India). Earlier, Mahmood and Yousuf (1999) recorded it from Pakistan Occupied Kashmir.
**Aiolopus thalassinus thalassinus** (Fabricius)  
(Fig. 12) (Plate 13)

**Gryllus thalassinus** Fabricius, 1781. *Species Insectorium*, 1: 367  

**Distribution**: Ethiopian region, North to west India, Westwards to Palaeartic region.

**Diagnosis**

Head and pronotum dorsally reddish; fastigial foveolae elongate, distinctly visible; vertex concave with margins raised; occiput smooth; frontal ridge distinct, slightly constricted below mid-ocellus, obliterating towards clypeus, flat, with a slight depression at mid ocellus; pronotum angularly produced posteriorly with rounded apex, median carina cut by a transverse sulcus before middle; mesosternal interspace wide open, more wide than metasternal interspace; tegmina and wings extending beyond the tip of abdomen; hind femur greenish with two black bands on inner side; hind tibia with 10 outer and 11 inner spines, which are whitish at base with tips black, inner pair of spurs at the apex longer than the outer pair; arolium small.

**Measurements (mm):**

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<thead>
<tr>
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<th>Male</th>
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<td>Range</td>
<td>Mean</td>
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<td><strong>AL</strong></td>
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<td>8-9.5</td>
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</table>
Fig. 12: *Aiolopus thalassinus thalassinus* (Fabricius)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Material examined: 4♀, 5♂, Kashmir: Kupwara, Handwara, Nowgam on grass, 28-viii-2004 (Shabir Reshi); 2♀, 7♂, Kashmir: Kupwara, Handwara, shatgund paycen on grass, 09-ix-2004 (Shabir Reshi); 8♀, 6♂, Kashmir: Srinagar, Dachigam National Park on grass, 11-ix-2004 (Shabir Reshi); 3♀, 2♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 22-ix-2005 (Shabir Reshi); 2♀, 7♂, Kashmir: Baramulla, Palhalan on maize, 28-x-2005 (Shabir Reshi); 4♀, 3♂, Kashmir: Srinagar, Mirgund on maize, 03-x-2006 (Shabir Reshi); 2♀, 4♂, Kashmir: Bandipora on grass, 12-x-2006 (Shabir Reshi).

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

Remarks: This species has been recorded for the first time from Kashmir (India).

**Dittopternis Saussure**


Type species: *Dittopternis ceylonica* Saussure

Distribution: India, Srilanka, Australiia, 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 the tip rounded off; tegmina and wings fully developed; tegmina long, narrow, densely reticulated, opaque beyond the middle; wings with the base coloured followed by a curved black band; hind femur denticulate.

The genus is represented by a single species in Kashmir.
Dittopternis venusta (Walker)

(Fig. 13) (Fig. 14) (Plate 13)


7(9): 488

Distribution: India.

Diagnosis

Medium sized insects; antennae filiform, 23 segmented; fastigium of vertex concave, margins bluntly raised; frontal ridge slightly sulcated in the middle, wide between the basis of antennae, constricted below mid ocellus; pronotum with median carina intersected by a transverse sulcus, lateral carinae absent, posterior margin angularly produced with rounded apex; meso and metasternal interspace wide open, mesosternal interspace longer than metasternal interspace; wings reaching beyond the tip of 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 and terminating into a short spine apically; male epiphallus with bridge broad, ancorae with tips pointed, lophi bilobate; female ovipositor valves with blunt tips.

Measurements (mm):

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<th>Male</th>
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<tr>
<td>HTL</td>
<td>19-22</td>
<td>20</td>
<td>13-15.5</td>
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</table>
Fig. 13: *Dittopternis venusta* (Walker)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Dorsal ovipositor valve (♀)

E. Ventral ovipositor valve (♀)
Fig. 13
Fig. 14: *Dittopternis venusta* (Walker)

A. **Epiphallus** (*♂*)

B. **Supra-anal plate** (*♂*)

C. **Phallic complex** (*♂*)

D. **Hind wing**

E. **Forewing**

F. **Meso and metasternum**

G. **Pronotum** *(Lateral view)*
Fig. 14
Material examined: 5♀, 5♂, Kashmir: Baramulla, Uri, Chandanwari on maize, 08-ix-2004 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize fields adjacent to forests.

Remarks: This species has been recorded for the first time from Kashmir (India). Earlier, Sharma and Gupta (1997) recorded it from Jammu province of J & K state.

Gastrimargus Saussure


Type species: Gryllus verescens (Thunberg, 1815)

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 weak median carinulae; fastigial foveolae if perceptible, are elongate 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, more rarely present, metazona longer than prozona, its posterior margin acute angular; mesosternal interspace more wide than long; tegmina and wings fully developed, reaching beyond the apex of abdomen; spurious median vein throughout its length closer to M than to CuA, dark band on the wings complete, incomplete or absent, basal area of hind wing pale blue, pale greenish, yellow, pale yellow or bright sulphur yellow.
Remarks: The genus can easily be distinguished from other genera in having pronotum with median carina raised, crest like, entire or intersected by only one transverse sulcus, posterior margin acute angular.

The genus is represented by two species in Kashmir.

Key to the species of Kashmir

1. Median carina of pronotum distinctly intersected by posterior transverse sulcus; hind femur ventrally and internally usually blue black ..............

..............................................................Gastrimargus africanus Saussure

Median carina of pronotum not distinctly intersected by posterior transverse sulcus; hind femur ventrally and internally dirty yellow......................

..............................................................Gastrimargus marmoratus Thunberg

Gastrimargus africanus Saussure

Oedaleus (Gastrimargus) marmoratus var. africana Saussure, 1888:39

Diagnosis
Fastigium of vertex with a slight concave depression, margins of which are bluntly raised; fastigial faveolae absent; occiput convex; frontal ridge flat above mid ocellus and below it with an elongated depression; pronotum with median carina moderately arcuate, three transverse sulci present, hind margin acute angular; meso and metasternal interspace wide open; tegmina and wings projecting beyond the tip of abdomen; hind tibia light reddish apically, the inner pair of spurs longer than the outer pair; male epiphallus with large bridge, lophi bilobate; female with supra-anal plate subtriangular, subgenital 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.

There are two subspecies of Gastrimargus africanus Saussure in Kashmir.
Key to subspecies of *Gastrimargus africanus* Saussure found in Kashmir.

1. Hind wing basally bright yellow................................................................................

   .................................................. *Gastrimargus africanus africanus* Saussure

   Hind wing basally greenish yellow........................................................................

   .................................................. *Gastrimargus africanus sulphureus* Bei-Bienko

*Gastrimargus africanus africanus* Saussure

(Fig. 15) (Plate 14)


Distribution: India: Kashmir, H. P., Bihar, Goa; Pakistan, Africa south of the Sahara; S.W. Arabia.

Measurements (mm):

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<thead>
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<th></th>
<th>Female</th>
<th>Male</th>
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<tbody>
<tr>
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<td>PL</td>
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<tr>
<td>HTL</td>
<td>17-19</td>
<td>18</td>
</tr>
</tbody>
</table>
Fig. 15: *Gastrimargus africanus africanus* Saussure

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)

G. Pronotum lateral view

H. Meso and metasternum

I. Hind Wing
Fig. 15
Material examined: 6♀, 3♂, Kashmir: Kupwara, Handwara, Nowgam on grass, 28-viii-2004 (Shabir Reshi); 6♀, 3♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 13-ix-2005 (Shabir Reshi); 2♀, 11♂, Kashmir: Srinagar, Dachigam National Park on grass, 22-ix-2005 (Shabir Reshi); 2♀, 3♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 24-ix-2005 (Shabir Reshi); 2♀, 6♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 01-x-2006 (Shabir Reshi).

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

Remarks: This subspecies has been earlier recorded from Kashmir (India) by Bhat and Qadri (1999). Mahmood and Yousuf (1999) also recorded it from Pakistan Occupied Kashmir.

Gastrimargus africanus sulphureus Bei-Bienko


Distribution: India, Pakistan, Nepal.

Measurements (mm):

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Material examined: 3♀, 5♂, Kashmir: Kupwara, Handwara, Nowgam on grass, 28-viii-2004 (Shabir Reshi); 2♀, 3♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 13-ix-2005 (Shabir Reshi); 3♀, 3♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 24-ix-2005 (Shabir Reshi); 2♀, 1♂, Kashmir: Srinagar, Dachigam National Park on grass, 22-x-2006 (Shabir Reshi); 2♀, 6♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 01-ix-2007 (Shabir Reshi).

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

Remarks: This species is known to occur in Kashmir (Bhowmik, 1985). Mahmood and Yousuf (1999) recorded it from Pakistan Occupied Kashmir.

Gastrimargus marmoratus (Thunberg)
(Plate 14)

Gryllus transversus Thunberg, 1815. Ibid., 232
Gryllus virescens Thunberg, 1815. Ibid., 245
Gryllus assimilis Thunberg, 1815. Ibid., 246
Pachytylus (Oedaleus) marmoratus Stal, 1873. Recens. Orth., 1:123
Oedaleus (Gastrimargus) marmoratus Saussure, 1884. Mem. Soc. Phys. nat. Geneve, 28 (9):112
Oedaleus (Gastrimargus) marmoratus strips sundaicus Saussure, 1884. Ibid., 28 (9):113
Oedaleus (Gastrimargus) marmoratus var. grandis Saussure, 1888. Ibid., 30(1): 39
Gastrimargus assimilis Kirby, 1910. Ibid., 226
Gastrimargus marmoratus Kirby, 1910. Ibid., 226
Gastrimargus transversus Kirby, 1910. Ibid., 227
**Gastrimargus sundaicus** Kirby, 1910. *Ibid.*, 228


**Gastrimargus marmoratus var. grandis forma rectinotus** Sjostedt, 1928. *Ibid.*, 6(3):37


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

**Diagnosis**: The collected specimens fully agree with the published description (Bei-Bienko and Mishchenko, 1951; Ritchie, 1982) of this species.

**Measurements (mm):**

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<th>Female</th>
<th></th>
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<td>13-17</td>
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<td>18-20</td>
<td>19</td>
<td>12-16</td>
<td>14</td>
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</tbody>
</table>

**Material examined**: 3♀, 4♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 01-ix-2007 (Shabir Reshi).

**Habitat**: The specimens of this species have been collected from range land surrounded by forests.
Remarks: This species has been earlier recorded from Kashmir (India) by Bei-Bienko and Mishchenko (1951).

Locusta Linnaeus

Gryllus Fabricius, 1775. Syst. Ent., 287
Oedipus Berthold, 1827. Weimar, Indistr. Compt., 402
Pachytulus Fieber, 1853. Lotos, 3: 121

Type species: Gryllus locusta migratorius Linne. 1758

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 median ocellus; median carina of pronotum slightly concave or arcuate, intersected by posterior transverse sulcus, metazona slightly longer than prozona, its posterior margin almost rounded or obtuse 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; arolium of hind tibia small; male with supra-anal plate angular, cercus with obtuse apex, subgenital plate conical, with subacute apex; female ovipositor short, robust, with cruved valves, ventral valve with angular, external, lateral projections.
Remarks: The genus can easily be distinguished from other genera in having thorax covered ventrally with dense hairs, wings without a dark transverse band and in having large robust body.

The genus is represented by a single species in Kashmir.

*Locusta migratoria migratoria* Linnaeus

(Fig. 16) (Plate 15)


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

**Diagnosis**

Large sized insects; fastigium of vertex concave, with margins bluntly raised; fastigial foveolae absent; occiput and vertex with slightly visible median carinula; frontal ridge broad, flat with a slight depression at mid ocellus; pronotum with posterior margin angular, not acutely pointed, median carina raised, intersected by posterior transverse sulcus, lateral carinae absent; meso and metasternal interspace wide open, mesosternal interspace longer than metasternal interspace; thorax ventrally covered with dense hairs; tegmina and wings extending beyond the tip of abdomen; hind femur blackish inside upto middle with alternate black and pale bands towards apex, upper external region adjacent to upper carina greenish; upper carina bear spinules; hind tibia with 9-11 outer and 11-12 inner spines, external apical spine absent.
Fig. 16: *Locusta migratoria migratoria* Linnaeus

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
Measurements (mm):

<table>
<thead>
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<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
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</thead>
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<tr>
<td>HTL</td>
<td>20-23</td>
<td>21</td>
<td>15-17</td>
</tr>
</tbody>
</table>

Material examined: 3♀, 2♂, Kashmir: Baramulla, Gureez, Dawar on maize, 18-ix-2004 (Shabir Reshi); 2♀, 5♂, Kashmir: Baramulla, Gureez, Dawar on maize, 16-ix-2005 (Shabir Reshi); Kashmir: Baramulla, Gureez, Dawar on grass, 25-ix-2006 (Shabir Reshi).

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

Remarks: This species has been recorded for the first time from Kashmir (India). Earlier, Mahmood and Yousuf (1999) recorded it from Pakistan Occupied Kashmir.

Oedipoda Latreille

Ctypohippus Fieber, 1852. Kelch. Orth. Oberschl., pp. 2
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 and 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 metazona, dorsum rugose and tuberculate, metazona longer than prozona, its posterior margin angular; mesosternal interspace more long than wide; tegmina and wings fully developed; wings with dark band, which sends off a branch towards base or the band may be weak or absent; 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 valves of ovipositor short, tips recurved, ventral valve with external lateral projection.

**Remarks**: 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.

The genus is represented by two species in Kashmir.

**Key to the species of Kashmir**

1. Tegmina with apical half hyaline, wings with dark band narrow, fully reaching the posterior margin behind.............*Oedipoda himalayana* Uvarov
Tegmina with only apex hyaline, wings with dark band wide, only touching the middle of the posterior wing margin.................................................................\textit{Oedipoda miniata miniata} (Pall.)

\textit{Oedipoda himalayana} Uvarov

\textit{Oedipoda himalayana} Uvarov, 1925. \textit{Mission Babautl Inde, Acrididae}, 22

\textbf{Distribution:} Kashmir, Afghanistan, Uzbekistan.

\textbf{Diagnosis:} The species is known to the author from the description given by Bei-Bienko and Mischenko (1951) for this species.

\textbf{Material examined:} IARI-collection: India, Kashmir, Risin Gorg, 6000ft, 2♀, 04-x-1923 (Fletcher)

\textbf{Remarks:} This species has been earlier recorded from Kashmir (India) by Bei-Bienko and Mischenko (1951).

\textit{Oedipoda miniata miniata} (Pallas)

(Fig. 17) (Plate 15)

\textit{Gryllus miniatus} Pallas, 1771. \textit{Reise. Russ. Reiches.}, 1: 467
\textit{Oedipoda miniata} Chopard. 1922. \textit{Faune de France}. 3:134, 163

\textbf{Distribution:} Southern Europe, Kazakhstan, West Siberia, Asia, Iran, Iraq, Arabia, North Africa.
**Diagnosis**

Medium sized insects; greyish brown in colour; head weakly projecting above the pronotum; fastigial foveolae irregularly rounded, fully visible when seen from above; vertex elongate, concave with bluntly raised margins; occiput with median carina slightly visible; frontal ridge with a shallow groove between the basis of antennae and below median ocellus; eyes oval projecting sideways, greater diameter of eye about 1.26 times the length of subocular groove; inter ocular distance about 1.54 times the width of frontal ridge between antennae; pronotum roughened, saddle shaped, median carina distinct, sharply raised in prozona, slightly flat in metazona, distinctly intersected by posterior transverse sulcus, metazona 1.5 times longer than prozona, its posterior margin triangularly produced, posterior part of prozona in front of the transverse groove with two pairs of depressed pits one on either side of median carina, anterior part of prozona with a pair of wide somewhat triangular depressions, one on either side of the median carina, dorsum of metazona with raised narrow elongated rugae; meso and metasternal interspace wide open; tegmina extending beyond the tip of abdomen, spurious median vein closer to M than to CuA, wings rosy at base, followed by a dark band which sends off a branch towards the base along anterior margin, its width at anterior margin is less than the width of the transparent apical part of the wing; the length of hind femur about 3.1 times its maximum width, reaching upto the tip of abdomen, hind tibia dark bluish with a pale strip near base, 11 spines on inner side, 10 on outer side, spines tipped black, the inner pair of spures at the apex being longer than the outer pair; male having supra-anal plate with sides weavy, tip nearly rounded with sides straight, cercus elongate, broader at base, narrowing apically with rounded apex, epiphallus with bridge narrow, undivided medially, ancorae broad in middle with pointed tips, lophi bilobate; female with supra-anal plate broad, subtriangular, slightly truncated on sides near apex, with nearly rounded apex, covered with setae, cerci conical about 1.5 times longer than its maximum width, subgenital plate with posterior margin weavy, setae present, egg guide short with nearly rounded apex about 1.42 times longer than its maximum width, dorsal ovipositor valve shorter than lateral apodeme, with blunt tips,
Fig. 17: *Oedipoda miniata miniata* (Pallas)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Epiphallus (♂)

E. Supra-anal plate (♂)

F. Hind Wing

G. Pronotum

H. Meso and metasternum
Fig. 17
spermatheca with apical diverticulum short, preapical diverticulum long, much broad, sac like with a tubercle like projection on the portion facing towards the tip of apical diverticulum.

Measurements (mm):

<table>
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<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
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<td>10-11</td>
<td>10.4</td>
<td>8-9</td>
<td>8.75</td>
</tr>
</tbody>
</table>

Material examined: 5♀, 2♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi).

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.

*Sphingonotus* Fieber


Type species: *Gryllus locusta caerulans* Linne. 1867

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, metazona longer than prozona, its posterior margin obtuse-angular, with obtuse, almost rounded apex; mesosternal interspace more long 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 to CuA, wings with a 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.

Remarks: The genus can easily be distinguished in having the median carina of pronotum never raised in prozona, female subgenital plate with posterior margin V shaped, ovipositor short, with moderately robust curved valves, ventral valve with externo-lateral projection. In Kashmir, these insects are mostly of grey colour found in stony soils and wings are usually with a dark band.

The genus is represented by four species in Kashmir.

Key to the 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
   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..................*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..............................
Sphingonotus longipennis Saussure

Sphingonotus Kashmirensis Uvarov


Distribution: Kashmir, Eastern Afghanistan.

Diagnosis: The species is known to the author from the description given by Bei-Bienko and Mishchenko (1951).

Remarks: This species has been earlier recorded from Kashmir (India) by Uvarov (1925) and Bei-Bienko and Mishchenko (1951). The present author, however, could not collect any specimen of this species.

Sphingonotus savignyi Saussure

(Fig. 18) (Plate 16)


Distribution: India, Pakistan, North Africa, Arabia, Palestine.
Diagnosis
Grey coloured; pronotum constricted in prozona, obtusely rounded off behind, lateral carinae absent; tegmina and wings well developed, tegmina with basal third opaque, very thickly reticulated, spurious median vein strongly curved in an S-shape and on the apex comes closer to M than to CuA, wings colourless near the base, farther on with a narrow curved black band; hind femur on the inner side yellow, with one dark band.

Measurements (mm):

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<th>Female</th>
<th></th>
<th>Male</th>
<th></th>
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</table>

Material examined: 5♀, 4♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2006 (Shabir Reshi); 1♀, 2♂, Kashmir: Baramulla, Gureez, Dawar on grass, 16-ix-2006 (Shabir Reshi); 3♀, 2♂, Kashmir: Baramulla, Uri, Lal Bridge, on grass 11-x-2006 (Shabir Reshi).

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

Remarks: The species has been earlier recorded from Kashmir (India) by Bei-Bienko and Mishchenko (1951).
Fig. 18: *Sphingonotus savignyi* Saussure

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)
**Sphingonotus balteatus himalayanus** Uvarov

*Oedipoda balteata* Serville, 1839. *Ins. Orth.* 734


**Distribution:** India: Kashmir, Pakistan, Arabia, Egypt.

**Diagnosis:** The species is known to the author from the description given by Bei-Bienko and Mishchenko (1951) for this species.

**Remarks:** This species has been earlier recorded from Kashmir (India) by Kirby (1914). The present author, however, could not collect any specimen of this species.

**Sphingonotus longipennis** Saussure

*(Fig. 19) (Fig. 20) (Plate 16)*


**Distribution:** India, Pakistan, Africa, Europe.
Diagnosis

Body hairy, greyish brown in colour; antennae filiform; fastigium of vertex not delimited from frons; fastigial foveolae absent; occiput and vertex with slightly visible median carinula; vertex depressed, with margins bluntly raised; frontal ridge raised, flat above and sulcated below the basis of antennae; eyes prominent, projecting sideways and oval; pronotum saddle shaped, median carina slightly visible both in prozona and metazona, intersected by three transverse sulci; meso and metasternal interspace wide open; tegmina and wings fully developed, reaching beyond the apex of abdomen, tegmina light brown at the base, followed by a wide plae band and a rather ill defined broad brown transverse band, spurious median vein more convex than adjacent sector R and M; wings sky blue at base, followed by a black band, varying in width, curved, not extending fully upto the hind margin, the area beyond the band is hyaline; hind femur bluish on inner side with a pale band near apex; hind tibia blue varied with white, with 7-8 spines on outer side, 10 spines on inner side, base of spines blue, tipped with black; male with supra-anal plate subtriangular, with lateral margins curved medially, cercus elongate, more than thrice as long as wide, with rounded apex; male with subgenital plate wide, flattened, wider than long, with 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 posterior margin wavy, setae absent, Jannone's organ present, dorsal ovipositor valve much shorter than lateral apodeme, spermatheca with apical diverticulum short, tubular and narrow, preapical diverticulum long and sac like.
Fig. 19: *Sphingonotus longipennis* Saussure

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Dorsal valve (♀)

F. Dorsal valve (♀)
Fig. 20: *Sphingonotus longipennis* Saussure

A. Epiphallus (♂)

B. Supra-anal plate (♂)

C. Subgenital plate (♂)

D. Meso and metasternum

E. Hind Wing
Measurements (mm):

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<th>Female</th>
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<th>Male</th>
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</table>

Material examined: 15♀, 7♂, Kashmir: Kupwara, Handwara, Shatgund payeen on grass, 6-ix-2005 (Shabir Reshi); 7♀, 5♂, Kashmir: Kupwara, Handwara, Shatgund payeen on grass, 8-x-2005 (Shabir Reshi); 4♀, 9♂, Kashmir: Kupwara, Handwara, Shatgund payeen on grass, 11-ix-2006 (Shabir Reshi); 6♀, 2♂, Kashmir: Kupwara, Handwara, Shatgund payeen on grass, 07-ix-2007 (Shabir Reshi).

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

Remarks: This species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951). The specimens examined differs from the description given by Bei-Bienko and Mishchenko (1951) in that the hind tibia is without dark band, but bluish varied with white and from Kirby (1914) in that median carina is present in pronotum.

**Leptopternis Saussure, 1884**

*Sphingonotus (Leptopternis) Saussure. 1884. Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. 28(9):193*

Distribution: From Northwestern Mongolia and Dzungaria to Sahara.
Type species: *Oedipoda gracilis* Eversmann

**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, metazona longer than prozona, its posterior margin obtuse angular; mesosternal interspace wider than long; tegmina and wings fully developed, wings without a dark band; male with supra-anal plate elongate angular, cercus narrow, conical with obtuse apex, epiphallus with narrow bridge, large ancorae, lophi bilobate; female with ovipositor valves acute.

The genus is represented by a single species in Kashmir.

*Leptopternis gracilis* (Eversmann, 1848)


**Distribution:** Kazakhstan, China, North Africa.

**Diagnosis:** The species is known to the author from the description given by Bei-Bienko and Mishchenko (1951) for this species.

**Remarks:** The species has been recorded from Kashmir (India) by Bei-Bienko and Mishchenko (1951) (According to Mahmood and Yousuf, 1999). It has also been reported from Pakistan Occupied Kashmir by Mahmood and Yousuf (1999). The present author, however, could not collect any specimen of this species.

*Pternosciria* Saussure


*Pternosciria* Saussure, Kirby, 1914. *Fauna British India, Orth.*, 1: 134

*Pternosciria* Saussure, Bei-Bienko and Mishchenko, 1951. *Locusts and grasshoppers of USSR and adjacent countries*, 2: 233
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 to CuA apically, wings colored 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* (Haan)

*Acridium (Oedipoda) caliginosum*, De Haan, 1842. *Temminck, Verhandel, Orth.* pp. 161, pl. XXI.


Distribution: India: Kashmir, Sikkim; South China, Malacca.

Remarks: The species has been reported form Kashmir by Bei-Bienko and Mishchenko (1951). The present author, however, could not collect any specimen of this species.
**Epacromius Uvarov**


**Type species:** *Epacromius tergestinus* Charpentier

**Distribution:** Palearctic, Oriental regions.

**Diagnosis**

Medium sized insects; body slender; fastigium of vertex with apex rounded; fastigial foveolae well developed, elongate; frontal ridge flat or shallowly sulcate, at least in male; 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 of median 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)**

*Epacromius coerulipes* Ivano, 1887. *Trudy obshchestva Ispyatelei prirody Khar’ Kovskogo Universiteta*, XXI: 348

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

**Remarks:** The species has been reported from Kashmir by Bei-Bienko and Mishchenko (1951).
Subfamily: Catantopinae Brunner, 1893

Diagnosis
Small to large sized insects; head of variable shape; pronotum with median carina present or absent, lateral carinae present or absent; prosternal process present; mesosternal interspace usually open, metasternal interspace open or closed; tegmina and wings fully developed, reduced or absent; spurious median vein of tegmina present or absent; tympanum normally present, rarely absent; hind femur with lower basal lobe generally shorter than the upper one, sometimes apically terminating into a spine; hind tibia with or without external apical spine; male with epiphallus disc or bridge shaped, bridge divided or undivided, ancorae mostly present, lophi of variable form and usually present, rarely absent; female spermatheca with apical and preapical diverticulae tubular.

Key to the tribes of Kashmir

1. Lower knee lobe of hind femur without spine like apex; hind tibia never flattened, ovipositor valves usually never serrated or spined................2
   Lower knee lobe of hind femur with spine like apex; hind tibia usually flattened; ovipositor valves serrated or spined..................Oxyini Brunner

2. Hind femur not very robust, usually reaching beyond apex of abdomen; epiphallus bridge shaped, ancorae usually curved, lophi present; male cercus never toothed apically.................................................................3
   Hind femur very robust, never reaching beyond apex of abdomen; epiphallus disc shaped, ancorae finger shaped, lophi absent; male cercus toothed apically ......................................................Calliptamini Brunner

3. Radial area of tegmen without transverse stridulatory veinlets; arolium of variable size; aedeagus valves flexured.................................4
Radial area of tegmen with a series of regular, parallel, transverse stridulatory veinlets; arolium of large size; aedeagus valves divided or connected by small or indistinct flexure.............................Hemiacridini Dirsh

4. Pronotum with median carina never raised; mesosternal lobes rounded; apical diverticulum of spermtheca moderately long; epiphallus with ancorae well developed and curved.......................................................5
Pronotum with median carina slightly raised; mesosternal lobes rectangular; apical diverticulum of spermtheca very long; epiphallus with ancorae small, sometimes indistinct..............Cyrtacanthacridini Uvarov

5. Pronotum with dorsum flat or weakly tectiform, lateral carinae present (Sometimes obliterated) and linear; male cercus with apex curved downward...............................................Eyprepocnemidini Brunner
Pronotum with dorsum of variable shape, lateral carinae absent, if present, not linear; male cercus with normal apex.............. ........Catantopini Brunner

Tribe: Oxyini Brunner

Medium sized insects; head short, subconical; fastigium of vertex short; pronotum with median carina weak, linear or absent, lateral carinae absent; prosternal process usually conical; mesosternal interspace open; tegmina and wings fully developed or shortened; tympanum present; hind femur with lower basal lobe shorter than upper one and terminating into a spine like apex; hind tibia usually flattened with apical external spine present; stridulatory mechanism absent; epiphallus bridge shaped, bridge divided or with tendency to division, lophi and ancorae present; basal and apical valves of penis flexured; posterior margin of female subgenital plate often with denticles, ventral surface with or without longinudional ridges; ovipositor valves serrate or spined.

The tribe is represented by a single genus viz oxya in Kashmir.
*Oxya Serville*


**Type species:** *Oxya hyla Serville*

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

**Diagnosis**

Body of medium size; antennae filiform; fastigium of vertex short, with widely rounded or obtuse apex, without median longitudinal carinula; frontal ridge sulcate, with margins raised; pronotum with dorsum slightly flattened, crossed by three transverse sulci, median carina weak, lateral carinae absent, metazona shorter than prozona with rounded or widely obtuse angular posterior margin; prosternal process conical with rounded or subacute apex, often slightly bent backwards; mesosternal interspace open; tegmina fully developed, radial area without series of regular, parallel transverse stridulatory veinlets; hind femur slender, upper knee lobe rounded, lower knee lobe terminating into spine like projection; hind tibia expanded in apical two third, external apical spine present; male with supra-anal plate subtriangular with apex rounded or angular, cercus simple or compressed, subgenital plate short and conical, epiphallus with bridge divided medially, lophi bilobate; female having subgenital plate with posterior margin often with denticles, ventral surface with or without longitudinal ridges, posterior marginal setae absent, ovipositor valves long, slender and toothed, dorsal valve longer than lateral apodeme, spermatheca with apical diverticulum narrow, preapical diverticulum broad and tubular, longer than apical diverticulum.

**Remarks:** The genus can easily be distinguished in having lower knee lobe of hind femur spined, ovipositor valves toothed. The grasshoppers of this genus cause heavy damage to paddy and maize crops in Kashmir. These insects were
found feeding in large numbers on paddy and maize crops in the months of August and September.

The genus is represented by five species in Kashmir.

Key to the species of Kashmir

1. Posterior ventral basivalvular sclerites of ovipositor without any well defined spines on its lower inner margin, ventral surface of female subgenital plate concave with lateral longitudinal ridges..................2 Posterior ventral basivalvular sclerites of ovipositor with one or two tooth like spines on its inner ventral margin.................................3

2. Female subgenital plate with median pair of spines on posterior margin set close together, male cercus with bifid apex.............. Oxya grandis Willemse Female subgenital plate with median pair of spines on posterior margin set wider apart, male cercus conical with subacute apex.................................

............................................................................. Oxya velox (Fabricius)

3. Ventral surface of female subgenital plate with lateral longitudinal ridges bordering a median concavity, posterior margin not smooth.........................4 Ventral surface of female subgenital plate flat or convex, without lateral longitudinal ridges, posterior margin straight and smooth.................................

............................................................................. Oxya fuscovittata (Marschall)

4. Ovipositor valves with long hook like dents, posterior ventral basivalvular sclerite with very small spinelets on its inner ventral margin, lateral longitudinal ridges on ventral surface of female subgenital plate spined, male cercus with subacute or truncate apex............. Oxya hyla hyla Serville Ovipositor valves with short dents, posterior ventral basivalvular sclerite with a large spine on its inner ventral margin, lateral longitudinal ridges on
ventral surface of female subgenital plate with or without spines, male cercus with bifid subacute or truncate apex.................................5

5. Lateral longitudinal ridges on ventral surface of female subgenital plate with spines along their whole length, males with antennae much longer than combined length of head and pronotum together, in males cercus with bifid apex...........................................\textit{Oxya japonica vitticollis} (Blanchard)
Lateral longitudinal ridges on ventral surface of female subgenital plate without spines except at apices, males with antennae as long as or slightly longer than combined length of head and pronotum together, male cercus with subacute or truncate apex.................................................................\textit{Oxya japonica japonica} (Thunberg)

\textit{Oxya grandis} Willemse

(Fig. 21) (Plate 17)

\textit{Oxya grandis} Willemse, 1925. \textit{Tijdschr. v. Ent.}, 68:36

\textbf{Distribution:} India.

\textbf{Diagnosis}
Antennae as long as or longer than combined length of head and pronotum; tegmina fully developed, anterior margin without spines; male with supra-anal plate with broadly triangular posterior lobe, cercus with bifid apex, epiphallus with hook like outer lophi and broad tooth like inner lophi; ventral surface of female subgenital plate with a long median concavity bordered on each side by a well developed lateral longitudinal ridge, posterior margin with a pair of small median spines set close together; female ovipositor valves with small dents, posterior ventral basivalvular sclerite without spines on its inner ventral margin.
Fig. 21: *Oxya grandis* Willemse

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Supra-anal plate (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Measurements (mm):

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Material examined: 1♀, 3♂, Kashmir: Baramulla, Safapora on *Oryza sativa*, 09-x-2005 (Shabir Reshi); 1♀, Kashmir: Srinagar, Harwan on *Oryza sativa*, 13-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from paddy fields.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Oxya velox* (Fabricius)
(Fig. 22) (Plate 17)

*Gryllus velox* Fabricius 1787. *Mantissa Insectorum*, 1:239


Distribution: India, Pakistan, Srilanka, Singapore, China, Thailand, Myanmar, Java.

Diagnosis
Medium sized body; antennae 22-26 segmented; fastigium of vertex concave; frontal ridge sulcated; pronotum with median carina slightly visible, lateral carinae absent, posterior margin broadly obtuse angular; prosternal tubercle tongue shaped; mesosternal interspace narrow, constricted in middle, mesosternal lobes pentagonal, metasternal interspace closed; tegmina and wings fully developed, anterior margin of tegmen weakly spined; hind tibia with 9 outer and 10 inner spines; male with supra-anal plate triangular; epiphallus with narrow bridge, ancorae absent, with hook like outer lophi and large tooth like inner lophi; ventral surface of female subgenital plate in posterior half with a median longitudinal concavity bordered on each side by a lateral longitudinal ridge, posterior margin with a pair of median spines set wider apart; female spermatheca with preapical diverticulum broadly tubular and curved, as long as apical diverticulum, ovipositor valves with small and blunt dents, posterior ventral basivalvular sclerite without spines on its inner ventral margin.

Measurements (mm):

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Fig. 22: *Oxya velox* (Fabricius)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Supra-anal plate (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Material examined:
1♀, 3♂, Kashmir: Kupwara, Shatgund-Payeen on Oryza sativa, 10-ix-2004 (Shabir Reshi); 4♀, 4♂, Kashmir: Kupwara, Karnah, Gundi Gujran on Oryza sativa, 09-ix-2005 (Shabir Reshi); 7♀, 2♂, Kashmir: Kupwara, Nowgam on Oryza sativa, 11-ix-2005 (Shabir Reshi); 6♀, 2♂, Kashmir: Kupwara, Shatgund-Payeen on Oryza sativa, 17-ix-2005 (Shabir Reshi); 6♀, 11♂, Kashmir: Baramulla, Safapora on Oryza sativa, 21-ix-2005 (Shabir Reshi); 2♀, 2♂, Kashmir: Srinagar, Dachigam National Park on grass, 23-x-2005 (Shabir Reshi); 3♀, 1♂, Kashmir: Kupwara, Karnah, Gundi Gujran on Zea mays, 05-ix-2006 (Shabir Reshi); 3♀, 7♂, Kashmir: Kupwara, Shutgund-Payeen on Zea mays, 11-ix-2006 (Shabir Reshi); 1♀, 2♂, Kashmir: Kupwara, Handwara on Oryza sativa, 17-ix-2006 (Shabir Reshi); 3♀, 4♂, Kashmir: Baramulla, Uri, Uranbuha on Oryza sativa, 21-ix-2006 (Shabir Reshi); 6♀, 2♂, Kashmir: Baramulla, Bandipora on grass, 04-x-2006 (Shabir Reshi); 6♀, 2♂, Kashmir: Srinagar, Harwan on Oryza sativa, 13-x-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize and paddy fields.

Remarks: This species has been earlier recorded from Kashmir (India) by Kirby (1914). Sharma and Gupta (1997) recorded it from Jammu province of J & K state. It is a very common Indian grasshopper and a sporadic pest of paddy in Kashmir. Besides, it has also been found to attack Zea mays and grass in the valley.

Oxya fuscovittata (Marschall)
(Fig. 23) (Plate 18)


**Distribution**: India, Western Pakistan, Afghanistan, USSR.

**Diagnosis**

Medium sized body; antennae 26-28 segmented, in male as long as or slightly longer than the combined length of head and pronotum together, in female slightly shorter than the combined length of head and pronotum together; fastigium of vertex shallowly depressed; occiput without median carinula; frontal ridge sulcated; tegmina and wings fully developed, anterior margin of tegmen weakly spined; male having supra-anal plate with lateral projections more pronounced, cercus strongly compressed and bifid, epiphallus with narrow bridge, without ancorae, with boot shaped outer and tooth like inner lophi, having left lophus always less developed than the right one; female with subgenital plate flat on ventral surface, posterior margin almost straight and smooth or sometimes with two very small medial spines, spermatheca with apical diverticulum tubular, ovipositor valves with small uniform blunt dents, posterior ventral basivalvular sclerite with small spines on its inner ventral margin.

**Measurements (mm):**

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Fig. 23: *Oxya fuscovittata* (Marschall)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Supra-anal plate (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Material examined:
6♀, 11♂, Kashmir: Kupwara, Shatgund-Payeen on Oryza sativa, 17.ix-2005 (Shabir Reshi); 5♀, 2♂, Kashmir: Baramulla, Safapora on Oryza sativa, 9.x-2005 (Shabir Reshi); 5♀, 2♂, Kashmir: Baramulla, Uri, Uranbuha on Oryza sativa, 21.ix-2006 (Shabir Reshi); 4♀, 3♂, Kashmir: Anantnag, Qazigund on Oryza sativa, 7.x-2006 (Shabir Reshi); 4♀, 1♂, Kashmir: Budgam on Zea mays, 10.x-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize and paddy fields.

Remarks: This species has been earlier recorded from Kashmir (India) by Hollis (1971). This species is a well known pest of paddy in various countries.

Oxya hyla hyla Serville
(Fig. 24) (Plate 18)

Oxya acuminata Willemse, 1925. Tijdschr. V. Ent., 68: 42. Syn. by Hollis, 1971
Oxya ebneri Willemse, 1925. Tijdschr. V. Ent. 68: 44, Syn. by Hollis, 1971

Distribution: Asia, Africa, Australia.
Diagnosis
Body of medium size; antennae filiform, slightly longer than the combined length of head and pronotum together in male, in female slightly shorter than the combined length of head and pronotum together; fastigium of vertex concave; occiput convex; frontal ridge sulcated, with margins raised; pronotum with a pair of chocolate coloured bands laterally, extending up to eyes, median carina slightly visible, intersected by three transverse sulci, posterior margin rounded; prosternal process covered with longer hairs; mesosternal interspace open, metasternal interspace closed; anterior margin of tegmen with a dense row of short bristles; male having epiphallus with narrow bridge, without ancorae, inner lophi usually well developed, cercus conical or compressed laterally with subacute apex; female having subgenital plate with a pair of median spines set close together on posterior margin, ventral surface with a median longitudinal concavity, which is bordered on each side by a longitudinal ridge bearing short spines, spermatheca with pre-apical diverticulum tubular, slightly longer and broader than apical diverticulum, ovipositor valves with long hook like dents, posterior ventral basivalvular sclerites with very small spinelets on its inner ventral margin.

Measurements (mm):

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Fig. 24: *Oxya hyla hyla* Serville

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Material examined: 4♀, 5♂, Kashmir: Kupwara, Handwara, Shatgund-Payeen on Oryza sativa, 10-ix-2004 (Shabir Reshi); 3♀, 5♂, Kashmir: Kupwara, Handwara, Nowgam on Oryza sativa, 11-ix-2005 (Shabir Reshi); 9♀,11♂ Kashmir: Kupwara, Handwara, Shatgund-Payeen on Oryza sativa, 17-ix-2005 (Shabir Reshi); 8♀,11♂, Kashmir: Kupwara, Karnahe, Gundi Gujran on Oryza sativa, 11-ix-2005 (Shabir Reshi); 6♀, 11♂, Kashmir: Baramulla, Safapora on Oryza sativa, 19-ix-2005 (Shabir Reshi); 4♀, 2♂, Kashmir: Srinagar, Dachigam National Park on grass, 17-x-2005, (Shabir Reshi); 7♀, 7♂, Kashmir: Kupwara, Karnahe, Gundi Gujran on Oryza sativa, 05-ix-2006 (Shabir Reshi); 4♀, 5♂, Kashmir: Kupwara, Handwara, Shatgund-Payeen on Zea mays, 11-ix-2006 (Shabir Reshi); 6♀, 5♂, Kashmir: Baramulla, Uri, Uranbuha on Oryza sativa, 21-ix-2006 (Shabir Reshi); 4♀, 9♂, Kashmir: Baramulla, Bandipora on grass, 04-x-2006 (Shabir Reshi); 6♀,3♂, Kashmir: Srinagar, Mirkund on Oryza sativa, 13-x-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize, paddy and grass fields.

Remarks: This subspecies has been earlier recorded from Kashmir (India) by Bhat and Qadri (1999) and is widely distributed in different parts of India.

Oxya japonica (Thunberg)


Hollis (1971) recognized two subspecies of Oxya japonica (Thunberg)
Oxya japonica vitticollis (Blanchard)
(Plate 19)

Acridium vitticole Blanchard, 1853. In Dumont d' Urville. J. Voyage an pole Sud., 4: 373

Distribution: Oriental, Australian regions.

Diagnosis
Similar to Oxya japonica japonica (Thunberg) but differs from it as:
Male: Antennae much longer than combined length of head and pronotum together; cercus with bifid apex.
Female: Lateral longitudinal ridges on ventral surface of subgenital plate with spines all along their length.

Measurements (mm):

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<tr>
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Material examined: 2♀, 3♂, Kashmir: Kupwara, Handwara on Oryza sativa, 13-ix-2006 (Shabir Reshi); 2♀, 1♂, Kashmir: Srinagar, Shalimar on Oryza sativa, 17-ix-2006 (Shabir Reshi).
Habitat: The specimens of this subspecies have been collected from paddy fields.

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

*Oxya japonica japonica* (Thunberg)
(Fig. 25) (Plate 19)


Distribution: India, Pakistan, Srilanka, China, Japan., Thailand, Vietnam, Malaysia, Singapore, Sunatra, Phillipine.

Diagnosis

Medium sized insects; antennae 22 segmented, slightly longer or as long as combined length of head and pronotum together; in female interocellar distance as wide as or slightly wider than frontal ridge at median ocellus, in male as wide as or slightly narrow than frontal ridge at mid-ocellus; male cercus with bifid apex; epiphallus with narrow bridge, without ancorae, with hook like outer lophi and short slender inner lophi; female having subgenital plate with a deep median longitudinal concavity along ventral surface bordered on either side by a lateral longitudinal ridge, posterior margin with a pair of median spines set close together, spermatheca with pre-apical diverticulum tubular, longer than apical
diverticulum, ovipositor valves with short dents, posterior ventral basivalvular sclerite with a large spine on its inner ventral margin.

**Measurements (mm):**

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<th>Male</th>
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<td>HTL</td>
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<td>14</td>
<td>11-12</td>
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**Material examined:** 1♀, 5♂, Kashmir: Kupwara, Handwara on *Oryza sativa*, 13-ix-2006 (Shabir Reshi); 5♀, 9♂, Kashmir: Srinagar, Shalimar on *Oryza sativa*, 17-ix-2006 (Shabir Reshi).

**Habitat:** The specimens of this subspecies have been collected from paddy fields.

**Remarks:** This subspecies has been recorded for the first time from Kashmir. It is widely distributed in India and is variable in size, relative length of tegmen and in the form of male cercus.
Fig. 25: Oxya japonica japonica (Thunberg)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)
Tribe: Calliptamini Brunner, 1893

Diagnosis
Small to large sized insects; antennae filiform; fastigium of vertex short; fastigial foveolae absent; pronotum with median and lateral carinae present; prosternal process present and of various shapes; mesosternal interspace open; tympanum present; tegmina and wings fully developed or shortened; hind femur widened, lower basal lobe shorter than upper one, apical lobes rounded; external apical spine of hind tibia absent; male with supra-anal plate angular, subgenital plate subconical, cercus elongated, forcep like, gonopore process present, epiphallus disc shaped, ancorae short, lophi absent; female ovipositor with curved valves.

Calliptaminae as subfamily was erected by Jacobson and Bianki (1904). Later authors treated it as a part of subfamily Catantopinae. Mishchenko (1952) treated it as a tribe under Catantopinae, which has been followed by the present author.

Key to the genera found in Kashmir

1. Pronotum moderately tectiform or not so, with or without strong median and lateral carinae; tegmina fully developed.................................................................2
   Pronotum very markedly tectiform above, with median and lateral carinae strong; tegmina reduced to dorsolateral scales; male cercus bilobed apically with lower lobe longer than upper.................................Peripolus Martinez

2. Male cercus apically trilobed, its outer surface rugosely pitted..................
   .................................................................................................................. Indomerus Dirsh
   Male cercus apically bi or trilobed, its outer surface relatively smooth......3

3. Male cercus well developed, apically trilobed; hind tibia with apical spurs of equal length.................................................................Calliptamus Serville
Male cercus weak, apically bilobed; hind tibia with inner apical spur of inner side elongate.......................................................... *Caloptenopsis* Bolivar

*Peripolus* Martinez


**Type species:** *Calliptamus pedarius* Stal

**Distribution:** India.

**Diagnosis**
Medium sized insects; antennae filiform; fastigium of vertex sloping, forming an obtuse angle with the frontal ridge; pronotum very markedly tectiform above, obtusely angulated behind, with strong median and lateral carinae, lateral carinae diverging behind or parallel, prozona longer than metazona; prosternal tubercle cylindro-conical; tegmina reduced to dorsolateral scales; male with supra-anal plate having three longitudinal furrows, the lateral ones converging behind, cerci compressed, bilobed apically with lower lobe longer than upper; female supra-anal plate triangular.

The genus is represented by a single species in Kashmir.
Periponus pedarius Stal
(Fig. 26) (Plate 20)


Distribution: India.

Diagnosis
Medium sized body; antennae filiform; head with boat shaped concave depression dorsally, margins of which are bluntly raised; occiput with slightly visible median carinula; frontal ridge distinct, raised, flat, with a small depression at mid-ocellus; pronotum triangularly produced posteriorly, median carina distinct, intersected by three transverse sulci, lateral carinae distinct; prosternal process spatulate, covered by setae; meso and metasternal interspace wide open, mesosternal interspace square shaped, metasternal interspace rectangular; tegmina rudimentary; hind tibia with inner spur of inner pair at the apex longer than the rest, hind tibia and tarsal segments covered with longer hairs.

Measurements (mm):

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<td>12.8</td>
<td>10-13</td>
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</table>
Fig.26: *Peripolus pedarius* Stal

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ventral ovipositor valve (♀)

E. Dorsal ovipositor valve (♀)

F. Meso and metasternum
Fig. 26
Material examined: 5♀, Kashmir: Kupwara, karnah, Gundi-Gujran, on grass 09-ix-2005 (Shabir Reshi); 1♀, 3♂, Kashmir: Kupwara, Karna, Gundi Gujran on grass, 05-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from fields having tall grasses.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Calliptamus* Serville


Type species: *Gryllus italicus* Linnaeus (= *Gryllus italicus italicus*)

Distribution: Middle Asia, Southwestern Europe.

Diagnosis

Medium sized insects; antennae filiform, shorter than head and pronotum together; fastigium of vertex elongate, depressed, with strong lateral carinulae; occiput with distinct carinula; frontal ridge flat; pronotum with distinct median and lateral carinae, posterior margin angularly produced; prosternal process subcylindrical with rounded apex; tegmina fully developed or shortened; hind femur moderately robust; male supra-anal plate acutely angular with acute apex; epiphallus with small ancorae and narrow posterior projections; male cercus robust; female ovipositor valves short, with acute curved apices.

The genus is represented by a single species in Kashmir.
Calliptamus italicus (Linnaeus)
(Fig. 27) (Plate 20)

Gryllus (Locusta) italicus Linnaeus, 1758. Systema Naturae per Regna tria naturae (10th ed.). 1:432

Gryllus italicus Thunberg, 1815. Mémoires de l'Académie Impériale des Sciences de St. Pétersburg. 5:227

Caloptenus (Calliptamus) italicus Moritz, 1914. Naturfreund St. Petersburg. 9:321-332

Calliptamus italicus Chopard, 1922. Faune de France. 3:137, 172

Distribution: India, Afghanistan, Kazakhstan, Italy, France, Caucasus, Africa, Greece.

Diagnosis
The characters are same as described under genus.

Measurements (mm): 

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<tr>
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Material examined: 6♀, 2♂, Kashmir: Srinagar, Dachigam National park on grass, 17-ix-2005 (Shabir Reshi); 4♀, 1♂, Kashmir: Baramulla, Uri, Uranbuha on grass, 21-ix-2006 (Shabir Reshi); 3♀, 2♂, Kashmir: Srinagar, Dachigam National park on grass, 23-ix-2006 (Shabir Reshi).
Fig. 27: *Calliptamus italicus* (Linnaeus)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphalus (♂)

F. Supra-anal plate (♂)

G. Pronotum dorsal view

H. Meso and metasternum
Habitat: The specimens of this species have been collected from fields having mixed vegetation of grasses and bushes.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Indomerus* Dirsh


Type species: *Indomerus noxius* Dirsh

Distribution: India.

Diagnosis

Medium sized insect; antennae filiform; fastigium of vertex concave; occiput with median carinula slightly visible; pronotum triangularly produced posteriorly, lateral and median carinae distinct; wings reaching near to the tip of abdomen, with rounded apex; meso and metasternal interspace wide open; hind femur moderately robust; hind tibia with external apical spine absent, apical spurs showing some degree of elongation and modification; male cercus rather weak, markedly tapering towards apex, apex bilobed, lobes subequal.

The genus is represented by a single species in Kashmir.

*Indomerus noxius* Dirsh

(Plate 21)


Distribution: India: Til Ajmer
Diagnosis

Medium sized body; antennae filiform, longer than the combined length of head and pronotum; fastigial foveolae absent; occiput with median carina slightly visible, extending into the boat shaped concave depression between eyes, margins of which are raised; eyes oval; frontal ridge distinct, raised with a slight depression at mid ocellus; pronotum with median carina intersected by two transverse sulci, lateral carinae distinct, cut by three transverse sulci, metazona longer than prozona; prosternal tubercle spathulate, heavy, covered by longer hairs; meso and metasternal interspace wide open, mesosternal interspace more wide than metasternal interspace, metasternal interspace constricted at base; wings reaching near to the tip of abdomen, with apex rounded; upper carina of hind femur with spinules and apically terminating into a small spine; hind tibia with 9 external and 9 internal spines, internal spur of inner pair at the apex longer than the rest; hind tibia and tarsal segments covered with longer hairs.

Measurements (mm):

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<td>HTL</td>
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Material examined: 5♀, 3♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi); 1♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 05-ix-2006 (Shabir Reshi).
Habitat: The specimens of this species have been collected from fields having mixed vegetation of grasses and bushes.

Remarks: This species has been recorded for the first time from Kashmir (India).

Tribe: Hemiacridini Dirsh, 1956

Diagnosis
Body of variable shape; prosternal process present; mesosternal interspace open or closed; tegmina and wings fully developed, reduced or absent, radial area of tegmen with series of thickened transverse, stridulatory veinlets; tympanum present or absent; hind femur usually reaching beyond apex of abdomen, lower basal lobe shorter than upper one; hind tibia with external apical spine present or absent; arolium large; male with supra-anal plate angular, subgenital plate short, conical or subconical, epiphallus bridge shaped, bridge sometimes divided, ancorae and lophi present, valves of aedeagus divided or connected by a small or indistinct flexure, cercus never toothed apically; female with ovipositor valves curved at apex.

The tribe is represented by a single genus and a single species in Kashmir.

Spathosternum Krauss


Type species: Tristria nigrotaeniata, Stal

Distribution: India, Africa, South-Eastern China.

Diagnosis
Body small; head conical; antennae filiform, shorter than combined length of head and pronotum together; frons oblique; frontal ridge narrow, deeply sulcated;
dorsum of pronotum flattened, crossed by 3 transverse sulci, median and lateral carinae present, metazona shorter than prozona; prosternal process large, spathulate, inclined backwards; mesosternal interspace strongly constricted; tegmina and wings fully developed or shortened; tympanum large; hind tibia with external apical spine present; male with supra-anal plate elongate angular, cercus conical, subgenital plate short, subconical with obtuse apex, epiphallus with undivided bridge, short ancorae; female with ovipositor valves short.

The genus is represented by a single species and two subspecies in Kashmir.

_Spathosternum prasiniferum xizangense_ Yin.


_Distribution_: China, Nepal.

_Diagnosis_: The present author could not trace out the original description of this subspecies, due to which a key to separate the subspecies is not provided here.

_Remarks_: This subspecies has been earlier recorded from Nishat Garden, Srinagar, Kashmir, by Balderson and Yin (1991). The present author, however, could not collect any specimen of this species.

_Spathosternum prasiniferum prasiniferum_ (Walker)

(Fig. 28) (Plate 21)


_Spathosternum prasiniferum prasiniferum_ Tinkham, 1940. _Lingnan Sci. J., Canton._ 19(3): 286
Distribution: India.

Diagnosis
General characters same as described under genus. Some of the additional characters are: male with supra-anal plate conical, cerci rounded apically, epiphallus with bridge wide, ancorae and lophi short; female having supra-anal plate with cerci short, subgenital plate with straight posterior margin, and covered with marginal setae, a pair of Jannone's organs present, ovipositor with dorsal valve as long as lateral apodeme, ventral valve without lateral tooth, spermatheca having apical diverticulum elongated, broader at base, preapical diverticulum uniformly broad and curved apically.

Measurements (mm):

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</table>

Material examined: 3♀, 5♂, Kashmir: Srinagar, Mirgund, on maize, 01-ix-2006 (Shabir Reshi); 3♀, 5♂, Kashmir: Srinagar, Mirgund, on paddy, 11-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize and paddy fields.
Fig. 28: *Spathosternum prasiniferum prasiniferum* (Walker)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)

F. Supra-anal plate (♂)
Fig. 28
Remarks: This subspecies has been recorded for the first time from Kashmir (India). It is a very common subspecies of grasshopper to be met everywhere in India.

Tribe: Cyrtacanthacridini Uvarov, 1925

Diagnosis
Medium to large sized insects; head subglobular; antennae filiform; frons vertical; pronotum with median carina slightly raised, lateral carinae absent, dorsum crossed by three sulci; prosternal process large; mesosternal interspace open, mesosternal lobes rectangular; tympanum present; tegmina without transverse stridulatory veinlets; hind femur with lower basal lobe shorter than upper one, dorsal carina finely denticulate, sometimes smooth; external apical spine of hind tibia usually absent; stridulatory mechanism absent; males with basal and apical valves of penis flexured, epiphallus robust, bridge shaped, ancorae small or indistinct, lophi large, lobiform or tooth like; in female, spermatheca with apical diverticulum very long and slender.

Key to the genera of tribe Cyrtacanthacridini Uvarov found in Kashmir

1. Tegmina apex rounded or obliquely rounded, veinlets in the apical part more or less perpendicular to the veins; aedeagus with apical valve curved upwards.................................................................2
Tegmina apex obliquely truncated, with oblique venation in the apical part; aedeagus with apical valve curved downwards..............Pachyacris Uvarov

2. Prosternal process strongly curved backwards touching or nearly touching mesosternum, inflated in the middle.................Cyrtacanthacris Walker
Prosternal process straight or slightly bent towards mesosternum, not touching it.................................................................3
3. Integument finely punctuate; prosternal process cylindrical, slightly widened in the middle; male cercus wide with almost truncate apex.......................... *Schistocerca* Stal
Integument coarsely punctuate; prosternal process slightly compressed laterally, conical or subconical; male cercus slightly compressed, short, narrow at base with pointed apex.......................... *Patanga* Uvarov

**Pachyacris Uvarov**


Type species: *Acridium violascens* Walker, F.

Distribution: India, Burma, Sri Lanka, Nepal, China.

Diagnosis
Large sized insects; antennae filiform; vertex depressed; frontal ridge flat; pronotum with posterior margin broadly angulated, metazona shorter than prozona; prosternal process short, straight and conical; mesosternum in female with a trapezoidal space between the lobes; tegmina with the apex obliquely truncated, veinlets in the apical part with regular oblique feather like reticulation, transverse veins situated obliquely to principal veins; in male aedeagus with apical valve curved downwards, cercus elongate conical with acuminate apex; in female supra-anal plate angulated, ovipositor valves short.

The genus is represented by a single species in Kashmir.
Pachyacris vinosa (Walker)
(Fig. 29 D) (Plate 22)

Orthacanthacris vinosa Kirby, 1914. Fauna British India, Orth., 1: 288

Distribution: India, Nepal, China, Myanmar.

Diagnosis
Large sized insects; antennae filiform; eyes elongated in male with 8 clear longitudional strips; fastigial foveolae almost triangular; vertex depressed; occiput convex; frontal ridge flat, with a slight depression at mid ocellus; pronotum somewhat tectiform, with posterior margin broadly angulated, median carina distinct in metazona, slightly visible in prozona, three transverse sulci visible on the dorsum, metazona shorter than prozona; prosternal process cylindrical; mesosternal interspace open, metasternal interspace constricted at base; wings moving far beyond the tip of abdomen reaching upto the middle of hind tibia; tegmina with oblique venation in the apical part; hind tibia with 11 internal and 8 outer spines, spines whitish at base, tips black, external apical spine absent, internal spines usually longer; male with cerci conical, thin, acute, subgenital plate short, acutely pointed; female with supra-anal plate transverse, broadly angulated apically, valves of ovipositor short, curved, lower valve with a pair of ventral projections.
Fig. 29:

A. *Navasia insularis*: Supra-anal plate (♂)

B. *Navasia insularis*: Epiphallus (♂)

C. *Patanga succincta*: Epiphallus (♂)

D. *Pachyacris vinosa* (Walker): Spermatheca (♀)
Measurements (mm):

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Material examined: 3♀, 3♂, Kashmir: Baramulla, Uri, Chandanwari on maize, 01-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from maize fields.

Remarks: This species has been recorded for the first time from Kashmir (India). It is fairly well distributed in India. It can easily be identified in having tegmina with oblique venation in apical part, transverse veins situated obliquely to principal veins, mesosternum in female with a trapezoidal space between the lobes, male cercus elongate conical with acuminate apex.

Cyrtacanthacris Walker


Type species: *Gryllus tataricus* Linnaeus (= *Gryllus tatarica tataricus*)

Distribution: Oriental region.
Diagnosis
Large sized insects; antennae filiform, about as long as the combined length of head and pronotum; fastigium of vertex depressed in middle; frontal ridge flat, with a slight depression at mid ocellus; pronotum with posterior margin angularly produced, metazona slightly longer than prozona; prosternal process large, gradually narrowing towards subacute apex, strongly bent towards mesosternum, touching or nearly touching it; tegmina and wings fully developed, apex of tegmina rounded; in male supra-anal plate slightly trilobate, cercus broad at base, subconical with subacute apex, subgenital plate elongate, acutely conical; in females, valves of ovipositor moderately robust, with curved spines, ventral valve with external lateral projection.

The genus is represented by a single species in Kashmir.

Cyrtacanthacris tatarica (Linnaeus)
(Fig. 30)

Gryllus (Locusta) tataricus Linnaeus, 1758. Syst. Nat., ed. 10, 1: 432
Gryllus tataricus Fabricius, 1775. Syst. Ent. pp. 289
Gryllus (Locusta) ranaceus Stoll, 1813. Spect. Saunt., pp. 30
Acridium tataricum Burmeister, 1838. Ibid., pp. 632
Acridium aeruginosum Burmeister, 1838. Ibid., pp. 630
Acridium ruficorne Serville, 1838. Hist. nat. Ins., pp. 643
Cyrtacanthacris inficita Walker, 1870. Ibid., pp. 565
Cyrtacanthacris subliturata Walker, 1870. Ibid., 4: 613
Cyrtacanthacris compta Walker, 1870. Ibid., pp. 613
Cyrtacanthacris ranacea Walker, 1870. Ibid., 3: 556
Acridium tataricus Rehn, 1901. Canad. Ent., 33: 121
Cyrtacanthacris tatarica Kirby, 1902. Trans. Ent. Soc. Lond., pp. 102


Acridium comptum Finot 1907. Ibid., pp. 332


Distribution: Oriental region.

Diagnosis

The general characters are same as described under genus.

Measurements (mm):

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Material examined: 3 ♀, 4 ♂, Kashmir: Kupwara, karnah, Gundi Gujran, on grass, 05-ix-2006 (Shabir Reshi).
Fig. 30: *Cyrtacanthacris tatarica* (Linnaeus)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Ovipositor valves (♀)

D. Epiphallus (♂)

E. Supra-anal plate (♂)
Fig. 30
Habitat: The specimens of this species have been collected from a field having mixed vegetation of grasses and shrubs.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Schistocerca* Stal

*Schistocerca* Stal, 1873. *Recens. Orth.* i., pp. 64

Type species: *Schistocerca gregaria* (Forskal)

Distribution: India, Africa, South Europe, America.

Diagnosis

Large sized insects; antennae shorter than the combined length of head and pronotum; fastigium of vertex shallowly depressed; frontal ridge with a slight depression at mid ocellus; pronotum constricted in the middle with rounded posterior margin, metazona slightly longer than prozona; prosternal process cylindrical, slightly widened in middle with narrowed apex, straight or slightly bent towards mesosternum, but not touching it, usually laterally compressed; male having supra-anal plate elongate angular, with attenuate apex, cercus wide with almost truncate apex, subgenital plate deeply bilobate, epiphallus without ancorae, with large, lobiform lophi; female with ovipositor valves short, robust, with curved apices, ventral valve externally with obtuse lateral projection.

Remarks: The members of this genus are commonly called tree locusts or bird locusts and are widely distributed throughout the world.

The genus is represented by a single species in Kashmir.
Schistocerca gregaria (Forskål)
(Fig. 31) (Plate 22)

Gryllus (Locusta) tatarica Linnaeus, 1758. Syst. Nat., ed. 10, 1: 432
Gryllus gregarius Forskal, 1775. Descrip. Animal., pp. 81
Acridium (Schistocerca) peregrinum Stal, 1878. Recens. Orth., 1: 65
Schistocerca gregaria ph. solitaria Shaw, 1933. Entomol., 66: 176
Schistocerca gregaria ph. transiens Chopard, 1936. Ibid., pp. 72

Distribution: India, Srilanka, Mediterranean region, South and Central America.

Diagnosis
Large sized body; antennae filiform; vertex depressed, depression hexagonal; front perpendicular; frontal ridge almost flat with a slight depression below the basis of antennae; pronotum broadly rounded behind, median carina visible only in metazona, three transverse sulci visible on the dorsum of pronotum; proteral process cylindrical; mesosternal interspace rectangular, more long than broad, metasternal interspace constricted at base; tegmina and wings extending beyond the tip of abdomen; tegmina with brownish black spots apically; hind femur greatly
Fig. 31: *Schistocerca gregaria* (Forskal)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ovipositor valves (♀)

E. Epiphallus (♂)
expanded with knee marked with blackish; hind tibia with external apical spine absent, the internal pair of spurs comparatively longer than the outer pair; male with supra-anal plate elongate angular with attenuate apex, cercus with almost truncated apex, subgenital plate with deeply incised apex, epiphallus without ancorae; in female, ovipositor valves with tips blunt and black.

**Measurements (mm):**

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**Material examined:** 3♀, 3♂, Kashmir: Baramulla, Uri, Chandanwari on maize, 01-ix-2006 (Shabir Reshi).

**Habitat:** The specimens of this species have been collected from a maize field near forest.

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

*Patanga Uvrov*


**Type species:** *Gryllus succinctus* Johannson
Distribution: India, Pakistan.

Diagnosis
Large sized insects; vertex depressed; pronotum broadly rounded behind, with median carina low; prosternal process straight conical or subconical, slightly bent towards mesosternum, not touching it, usually laterally compressed; mesosternal lobes rectangular; tegmina and wings well developed, extending beyond the tip of abdomen, tegmina with straight venation in the apical part, transverse veins forming almost right angle with principal veins, radial area without stridulatory veinlets; lower external lobe of hind knee with apex rounded, angular or subacute but not spine like; male subgenital plate long, curved upwards, conical, with pointed apex, cercus slightly compressed with pointed apex, epiphallus with triangular lophi.

The genus is represented by a single species in Kashmir.

Patanga succincta (Johannson)
(Fig. 29 C) (Plate 23)

Gryllus (Locusta) succinctus Johannson, 1763. Amoen. Acad., 6: 398

Distribution: India, Pakistan, South and South Eastern Asia, Malayan Archipelago.

Diagnosis
Large sized insects; antennae filiform; vertex depressed; occiput dome shaped, without median carinula; frontal ridge slightly constricted at mid ocellus, sulcated
below the basis of antennae; pronotum broadly rounded behind, with slightly visible median carina intersected by three transverse sulci, dorsum with dry grass coloured lining which extends onto the vertex; meso and metasternal interspace wide open, mesosternal interspace wider than metasternal interspace, metasternal interspace constricted at base, mesosternal interspace longer than broad; tegmina and wings extending far beyond the tip of abdomen, tegmina with straight venation in apical part, transverse veins forming almost right angle with principal veins, wing base rosy violet or colourless, apically colourless; hind tibia with 8-10 white black tipped spines; male subgenital plate long, curved upwards, conical with pointed apex.

**Measurements (mm):**

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**Material examined:** 4♀, 2♂, Kashmir: Kupwara, karnah, Gundi Gujran, on grass, 05-ix-2006 (Shabir Reshi).

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

**Remarks:** This species has been recorded for the first time from Kashmir (India).
It is popularly known as Bombay locust and is widely distributed throughout plains of Indian subcontinent.

**Tribe: Eyprepocnemidini Brunner, 1893**

Body medium to large; head subconical or subglobular; fastigium of vertex short, rounded or slightly angular; fastigial foveolae absent; pronotum with median carina never raised, lateral carinae usually present and linear; prosternal process present; mesosternal interspace open, lobes rounded; tegmina and wings fully developed or shortened, radial area of tegmina without transverse stridulatory veinlets; tympanum present; hind femur with lower basal lobe shorter than upper one; external apical spine of hind tibia usually absent; male with last abdominal tergite without well developed furcula, supra-anal plate angular, cerci of various shapes, subgenital plate short, without transverse fold, epiphallus with bridge usually wide and undivided medially, ancorae large and curved, lophi large and lobiform, aedeagus valves flexured; female with ovipositor valves short, with apices curved, spermatheca with apical diverticulum moderately long.

Eyprepoceminae as subfamily was erected by Jacobson and Bianki, (1904). Later authors considered it as a group Eyprepocnemi of the subfamily Catantopinae. Mistshenko (1952) regarded it as a tribe. Dirsh (1956) considered it as a group and later (1961) raised it to subfamily rank, but Usmani and Shafee (1990) again treated it as tribe which has been followed by the present author.

**Key to genera of tribe Eyprepocnemidini Brunner found in Kashmir**

1. Antennae shorter or slightly longer than head and pronotum together; prosternal process cylindrical or antero posteriorily compressed.............2

2. Antennae much longer than head and pronotum together; prosternal process conical.................................................................Navasia Kirby
2. Medium sized body; male abdomen with apex not inflated..................3
Large sized body; male abdomen with apex inflated...........................
.............................................................................................................Choreodocus Bolivar

3. Pronotum with weakly developed lateral carinae; male cercus widened,
strongly compressed, with apex rounded or subacute........Shirakiacris Dirsh
Pronotum with well developed lateral carinae; male cercus narrow, weakly
compressed, with apex acute...............................Eyprepocnemis Fieber

Navasia Kirby

Navasia Kirby, 1914. Fauna British India, Orth., 1: 255

Type species: Navasia insularis Kirby, W.F.

Distribution: India.

Diagnosis
Medium sized insects; antennae much longer than the combined length of head and
pronotum; eyes large, oval, separated by a gap as wide as the lower part of frontal
ridge; frontal ridge narrowed above and slightly widened below; pronotum
rounded behind, median carina distinct, intersected by three transverse sulci, lateral
carinae indistinct; prosternal process conical; tegmina long, narrow, longer than the
abdomen; wings hyaline, narrow, nearly as long as the tegmina; hind femur
moderately thinkened at base, longer than the abdomen; male supra-anal plate with
apex rounded, cerci long.

Remarks: The genus can easily be identified in having antennae much longer than
the combined length of head and pronotum together and in having conical
prosternal process.

The genus is represented by a single species in Kashmir.
**Navasia insularis** Kirby
(Fig. 29 A, B) (Plate 23)

*Navasia insularis* Kirby, 1914. *Fauna British India, Orth.*, 1: 255

**Distribution:** India: Narandam Island.

**Diagnosis:** (♂)
Medium sized body; antennae filiform, longer than the length of head and pronotum together, 25 segmented; fastigial foveolae absent; vertex concave; median carinula slightly visible between eyes; frontal ridge narrow above the basis of antennae, flat, with a slight depression at mid ocellus; pronotum rounded behind, median carina distinct, intersected by 3 transverse sulci, lateral carinae visible in prozona only; prosternal process cylindrical; mesosternal interspace narrow, metasternal interspace closed; tegmina with darkish spots; wings extending beyond the tip of abdomen; hind femur with spinules along upper carina; hind tibia with 14 external and 11 internal spines, covered with long hairs, external apical spine absent, the inner pair of spurs at the apex being comparatively longer than the outer pair; supra-anal plate with apex broadly rounded, cerci long, concave anteriorily towards apex, subgenital plate covered with longer hairs.

**Measurements (mm):** 1(♂)

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Material examined: 1♂, Kashmir: Kupwara, karnah, Gundi-Gujran on grass, 09-ix-2005 (Shabir Reshi).

Habitat: The single specimen of this species has been collected from a field having mixed vegetation of tall grasses, bushes and maize.

Remarks: This species has been recorded for the first time from Kashmir (India).

_Choreodocus_ Bolivar

_Choreodocus_ Bolivar, 1914: 5, 8

Type species: Demodocus capensis

Distribution: India, Sri Lanka, China, Burma, South Africa.

Diagnosis
Large sized insect; antennae filiform, longer than head and pronotum together; fastigium of vertex ovate, concave with a complete or incomplete median carinula; fastigial foveolae absent; frontal ridge raised, flat, with a slight depression at mid ocellus; pronotum with distinct median carina, posterior margin rounded; prosternal process cylindrical; mesosternal interspace open; tegmina and wings fully developed, reaching beyond the apex of abdomen; arolium large; apex of male abdomen inflated.

The genus is represented by two species in Kashmir.

Key to the species of Kashmir

1. Prosternal process spathulate.................. _Choreodocus illustris_ (Walker)
   Prosternal process cylindrical.................. _Choreodocus capensis_ Thunberg
Choreodocus illustris (Walker)
(Fig. 32) (Plate 24)

Heteracris illustris Kirby, 1914. Fauna British India, Orth., 1: 263
Choroedocus illustris Uvarov, 1921. Trans. R. Ent. Soc. Lond., 69 (1&2), 109

Distribution: India.

Diagnosis
Large sized body; antennae filiform, much longer than head and pronotum together; fastigium of vertex distinctly depressed, obtusely and roundedly angular in front; fastigial foveolae absent; occiput with a slightly visible median carinula, which extends anteriorly unto the middle of vertex; frontal ridge flat, constricted above the basis of antennae, gradually widened towards clypeus; pronotum with posterior margin broadly rounded, median carina raised, intersected by three transverse sulci, prozona shorter than metazona; prosternal process spathulate, well developed, covered with setae; meso and metasternal interspace open; tegmina slightly surpassing posterior femur, a little longer than wings, subhyaline, covered with darkish spots, apex rounded, spurious median vein absent, cubital field almost triangular; hind tibia pinkish, covered with long hairs, outer spur of inner pair is comparatively longer than the rest; arolium large; male with subgenital plate conical.
Fig. 32: *Choreodocus illustris* (Walker)

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ventral ovipositor valve (♀)

E. Dorsal ovipositor valve (♀)

F. Pronotum

G. Meso and metasternum
Measurements (mm):

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Material examined: 3 ♀, 2♂, Kashmir: Kupwara, karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi).

Habitat: The single specimen of this species has been collected from a field having mixed vegetation of tall grasses, bushes and maize.

Remarks: This species has been recorded for the first time from Kashmir (India). Previously it has been reported from South India, Bihar and Himachal Pardesh. Its availability in Kashmir is therefore, very interesting and indicates its wide distribution.

*Choreodocus capensis* Thunberg

(Plate 24)


Distribution: India, Srilanka, Burma, China, South Africa.
Diagnosis: General characters same as *Choreodocus illustris*.

Measurements (mm):

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</table>

Material examined: 2 ♀, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi).

Habitat: The specimens of this species have been collected from a field having mixed vegetation of tall grasses, bushes and maize.

Remarks: This species has been recorded for the first time from Kashmir (India).

*Shirakiacrises* Dirsh
(Fig. 33) (Plate 5)


Type species: *Euprepocnemis shirakii* Bolivar, 1.

Distribution: India, China.
Fig. 33: Shirakiacris sp.

A. Epiphallus (♂)

B. Supra-anal plate (♂)

C. Subgenital plate (♂)
Diagnosis

Medium sized insects; antennae filiform; fastigial foveolae present; vertex concave; pronotum with median carina intersected by three transverse sulci, lateral carinae weakly developed, metazona rounded behind; tegmina and wings extending beyond the tip of abdomen; prosternal process cylindrical; mesosternal interspace open, metasternal interspace constricted at base; hind femur with spinules along upper carina; hind tibia covered with longer hairs, external apical spine absent, inner pair of spurs comparatively longer than the outer pair; apex of male abdomen not inflated, male cercus widened, strongly compressed, apex rounded or sub acute, never downcurved.

Material examined: 3♀, 5♂, Kashmir: Baramullah, Uri, Chandanwari on grass, 10-x-2006 (Shabir Reshi).

Remarks: The specimens could not be identified up to species level.

Eyrepocnemis Fieber

Eyrepocnemis Fieber, 1853. Lotos, iii, pp. 98; iv, 1854. pp. 9

Type Species: Gryllus plorans Charp

Distribution: Asia, Africa, Europe.

Diagnosis

Medium sized insects; antennae filiform; frontal ridge flat, sometimes with a slight depression at mid ocellus; pronotum with distinct median and lateral carinae, posterior margin obtuse angular; prosternal process cylindrical, slightly curved backwards, with rounded or sometimes slightly inflated apex; mesosternal interspace elongate; hind femur moderately long, slightly produced beyond the apex of abdomen; hind tibia with spines sparsely distributed, external apical spine absent; male with supra-anal plate angular, cercus moderately broad at base,
gradually narrowing towards acute apex, apex of abdomen not inflated, subgenital plate short, subconical, epiphallus with narrow bridge, ancorae large, lophi lobiform; female with subgenital plate trilobate, ovipositor moderately robust.

**Remarks:** The genus can easily be recognized in having frontal ridge flat; pronotum with lateral carinae distinct; prosternal process cylindrical and slightly curved backwards; male cercus with acute apex.

The genus is represented by a single species in Kashmir.

*Eyprepocnemis unicolor* Tarbinsky

*(Plate 25)*


**Distribution:** Asia, Turkmenistan, Uzbekistan, Tadzhikistan.

**Diagnosis**

Medium sized insects; vertex with a triangular depression, without median carinula; frontal ridge flat, with a slight depression at mid ocellus; pronotum with median carina distinct, intersected by three transverse sulci; prosternal tubercle spatulate; mesosternal interspace open, more long than broad, metasternal interspace closed; wings and tegmina well developed, tegmina exceeds apex of abdomen and hind knee, narrowed in apical part; male epiphallus with bridge narrow, incurved ancorae with subacute apex, lophi obtuse angular; female with subgenital plate having a pair of outer as well as median acute notch along posterior margin, spermatheca with apical diverticulum long and tubular, preapical diverticulum narrow at basal half and broadened at apical half, ovipositor with dorsal valve as long as wide, more than 3 times as along as broad, ventral valve with basal sclerite punctate, mesial valve slightly dilated apically.
### Measurements (mm):

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<th>Male</th>
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**Material examined:** 2 ♀, 3 ♂, Kashmir: Kupwara, karnah, Gundi Gujran, on grass, 09-ix-2005 (Shabir Reshi).

**Habitat:** The specimens of this species have been collected from a field having mixed vegetation of tall grasses, bushes and maize.

**Remarks:** This species has been recorded for the first time from Kashmir (India). The species can be distinguished in having tegmina and wings extending beyond the tip of abdomen and hind femur; hind tibia light or orange red.

**Tribe: Catantopini Brunner 1893**

Small to large sized insects; head of variable shape; antennae mostly filiform, fastigial foveolae absent; dorsum of pronotum of various shapes, median carina present or absent, if present, never raised, lateral carinae mostly absent, if present, never linear; prosternal process present; mesosternal interspace open, lobes rounded; tegmina and wings fully developed, shortened, lobiform, vestigial or absent, tegmina without spurious median vein (rarely present); tympanum mostly present, rarely absent; sound producing organs absent; male with supra-anal plate
and subgenital plate of variable shapes, cercus variable, never strongly compressed, apex normal, epiphallus bridge shaped, bridge usually undivided medially but sometimes divided; female genitalia with ovipositor of various shapes, spermatheca with apical diverticulum moderately long.

Key to the genera of tribe Catantopini Brunner

1. Tegmina reduced, wings absent
   Tegmina and wings fully developed
   Catantops Schaum

2. Prothoracic process conical; hind tibia with outer apical spine present
   Prothoracic process broadened, wedge shaped with bifled apex; hind tibia without outer apical spine
   Dicranophyma Uvarov

3. Pronotum with lateral carinae barely discernible
   Pronotum with lateral carinae distinct in anterior and median parts, obliterated posteriorly
   Conophyma Zubovskii

Catantops Schaum

Catantops Schaum, 1853. Bericht Akad. Berlin, pp. 779

Type species: Catantops melanostictus Schaum

Distribution: Oriental, African and Australian regions.

Diagnosis
Body small to medium size; head considerably produced between antennae; antennae filiform, shorter than or as long as the combined length of head and pronotum; fastigium of vertex depressed in the middle; frontal ridge flat or slightly
depressed; pronotum with median carina weak or obliterated, lateral carinae absent, metazona about as long as prozona; prosternal process cylindrical or slightly anterio posteriorly compressed with rounded apex; mesosternal interspace slightly constricted; hind femur serrated above; external apical spine of hind tibia absent; arolium large sized; male with supra-anal plate angular, subgenital plate short and subconical, epiphallus bridge shaped, ancorae large and incurved, lophi moderately small and lobiform; female with ovipositor moderately long, with curved valves, ventral valve with external lateral projection.

Remarks: This genus can easily be distinguished in having prosternal process cylindrical with rounded apex; male cercus expanded apically.

The genus is represented by a single species in Kashmir.

Catantops karnyi Kirby
(Fig. 34) (Plate 25)

Catantopss karnyi Kirby, 1910. Syn. Cat. Orth. iii, pp. 483

Distribution: India, Nepal.

Diagnosis
Medium sized insects; antennae filiform, slightly shorter than combined length of head and pronotum; fastigial foveolae absent; vertex depressed; frontal ridge flat with a slight depression at mid ocellus; pronotum with median carina slightly visible, intersected by three transverse sulci, posterior margin triangularly produced with rounded apex; prosternal process with inflated apex; mesosternal interspace open, metasternal interspace closed; tegmina and wings extending beyond the tip of abdomen; hind femur with three darkish bands on upper carinula and a blackish scar near apex, anterior base reddish, lower carina with a row of black dots for the whole length, upper carina and upper external and internal
carinulae with spinules all along their length, upper carina terminating into a slightly visible spinule apically; hind tibia light reddish, with one or two black spots near the base, external apical spine absent, internal pair of spurs at apex comparatively longer than the outer pair; female having subgenital plate with marginal setae, supra-anal plate with cerci broader at base, covered with longer hairs, apex rounded, ovipositor valves with bluntly pointed apex and covered with hairs; male cercus with broad apex.

**Measurements (mm):**

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<th>Male</th>
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**Material examined:** 5♀, 3♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 09-ix-2005 (Shabir Reshi); 9♀, 6♂, Kashmir: Kupwara, Karnah, Gundi Gujran on grass, 11-ix-2006 (Shabir Reshi); 3♀, Kashmir: Baramulla, Uri, Uranbuha on maize, 15-ix-2006 (Shabir Reshi).

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

**Remarks:** This species has been recorded for the first time from Kashmir (India).
Fig. 34: *Catantops karnyi* Kirby

A. Spermatheca (♀)
B. Subgenital plate (♀)
C. Ovipositor valves (♀)
D. Supra-anal plate (♂)
E. Pronotum lateral view
F. Meso and metasternum
Fig. 34
**Dicranophyma Uvarov**


**Type Species:** *Dicranophyma hingsloni* Uvarov, 1921

**Distribution:** Palearctic region.

**Diagnosis**

Small to medium sized insects; head short; antennae filiform, as long as, shorter than or longer than the combined length of head and pronotum; eyes irregularly oval; frontal ridge flat or depressed; pronotum with posterior margin triangularly produced and deeply notched, median and lateral carinae distinct, prozona longer than metazona along median carina; prothoracic process broadened, wedge shaped, with bifid apex; hind tibia of varied colouration, without external apical spine; tympanum large; female subgenital plate with a median process, supra-anal plate with rounded apex, cerci short, conical and pointed, ovipositor valves short and broad.

**Remarks:** The genus can easily be distinguished in having pronotum with lateral carinae distinct; prothoracic process broadened, wedge shaped with bifid apex; hind tibia without external apical spine.

The genus is represented by three species in Kashmir.

**Key to the species of Kashmir**

1. Antennae as long as or longer than head and pronotum together; hind tibiae partly or completely red

   Antennae shorter than head and pronotum together; hind tibiae brown

   ----------------------------------------------

   *Dicranophyma uvarovi* Salfi
2. Antennae longer than head and pronotum together; hind tibiae red...........

.................................*Dicranophyма hingstoni* Uvarov
Antennae as long as head and pronotum together; hind tibiae with base
black, ventral and inner sides red..........................................

.................................*Dicranophyма babaulti* Uvarov

**Dicranophyма uvarovi** Salfi


**Distribution:** Kashmir.

**Diagnosis:** This species is known to author from the description given by Bei-
Bienko and Mishchenko (1951) for this species.

**Remarks:** The species has been earlier recorded from Kashmir (India) by Bei-
Bienko and Mishchenko (1951), (according to Salfi). Mahmood et al. (2002)
recorded it from Pakistan Occupied Kashmir. The present author, however, could
not collect any specimen of this species.

**Dicranophyма hingstoni** Uvarov


**Distribution:** Kashmir.

**Diagnosis:** This species is known to the author from the descriptions given by
Bei-Bienko and Mishchenko (1951) and Mahmood et al. (2002), for this species.
Remarks: The species has been earlier recorded from Kashmir by Bei-bienko and Mishchenko (1951) (male-holotype), and female (allotype) was described by Mahmood et al. (2002), from Pakistan Occupied Kashmir. The present author, however, could not collect any specimen of this species.

**Dicranophyma babaulti** Uvarov

(Fig. 35) (Plate 26)


**Distribution:** Kashmir.

**Diagnosis**

Small to medium sized insects; antennae filiform, as long as the combined length of head and pronotum together; eyes irregularly oval; frontal ridge sulcated below median ocellus; pronotum with posterior margin deeply and angularly notched, median and lateral carinae distinct, prozona along median carina about twice as long as metazona; prosternal process transverse, wedge shaped, with apex bifid; tympanum large and uncovered; tegmina rudimentary, lateral; wings absent; upper carinula of hind femur smooth; ovipositor valves short, broad with apex hooked.

**Measurements (mm):**

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<th>Male</th>
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</table>
Fig. 35: *Dicranophyina babaulti* Uvarov

A. Spermatheca (♀)

B. Subgenital plate (♀)

C. Supra-anal plate (♀)

D. Ventral ovipositor valve (♀)

E. Ovipositor valves (♀)

F. Pronotum

G. Meso and metasternum
Material examined: 5♀, 5♂, Kashmir: Baramulla, Gurez, Tulil, Sheikpora on grass, 01-x-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from forest land at an altitude of 8000 ft., having mixed vegetation of small grasses and shrubs.

Remarks: This species has been earlier recorded from Kashmir by Uvarov (1925). Later on, Balderson and Yin (1991) described its female from Kashmir.

Paraconophyma Uvarov


Type Species: Paraconophyma polita Uvarov

Distribution: India, Nepal, Iran.

Diagnosis
Body small to medium size; antennae filiform, about as long as or slightly longer than head and pronotum together; fastigial foveolae present; vertex concave with margins raised; frontal ridge depressed or flat, distinctly projecting between antennae; pronotum with posterior margin emarginated, median carina low, thin, lateral carinae obtuse, reaching at least first sulcus, prozona longer than metazona; prothoracic process conical, pointed; mesosternal interspace open; tegmina reduced, wings absent; male supra-anal plate angulated, cerci short, laterally compressed, conical with pointed apex, subgenital plate short with rounded apex; female with supra-anal plate almost tongue shaped, ovipositor valves short and curved.

The genus is represented by two species in Kashmir.
Key to the species of Kashmir

1. Antennae slightly longer than head and pronotum together; hind tibiae sky blue in colour..........................\textit{Paraconophyma kashmiricum} Mistshenko

   Antennae as long as head and pronotum together; hind tibiae reddish or greenish in colour..........................\textit{Paraconophyma scabra} (Walker)

\textit{Paraconophyma kashmiricum} Mistshenko

(Fig. 36) (Plate 26)


Distribution: Kashmir.

Diagnosis

Smaller insects; head small, rounded; antennae filiform slightly longer than head and pronotum together; fastigial foveolae present and represented by broad pitted spaces; vertex long, narrow, concave with margins raised; eyes oval and short; frontal ridge narrow, slightly sulcated with obtuse edges; pronotum with median carina low intersected by three transverse sulci, lateral carinae barely visible; tegmina reduced and lateral; wings absent; hind tibiae sky blue, with 9 outer and 9 inner spines; arolium large; male supra-anal plate trilobate, subgenital plate short, with broadly rounded apex, cerci short, conical with pointed apex; ovipositor valves short and curved.
Fig. 36: *Paraconophyyma kashmiricum* Mistshenko

A. Spermatheca ($\varphi$)

B. Subgenital plate ($\varphi$)

C. Supra-anal plate ($\varphi$)

D. Ovipositor valves ($\varphi$)

E. Epiphallus ($\delta$)

F. Supra-anal plate ($\delta$)

G. Meso and metasternum
Fig. 36
Measurements (mm):

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Material examined: 5♀, 5♂, Kashmir: Baramulla, Uri, Chandanwari on grass, 09-ix-2005 (Shabir Reshi).

Habitat: The specimens of this species have been collected from pine forests having mixed vegetation of short grasses and shrubs.

Remarks: This species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951) (female holotype). Mahmood et al. (2002) recorded its male (allotype) for the first time from Pakistan Occupied Kashmir.

*Paraconophyma scabra* (Walker)


*Mesambria scabra*: Kirby, 1914. *Fauna British India, Orth.*, 1: 221


Distribution: India.

Diagnosis: The species is known to author from the descriptions given by earlier workers (Kirby, 1914; Bhowmik & Halder 1983) for this species.
Remarks: The species is known to occur in Kashmir (Bhowmik and Haldar, 1983), but the present author could not collect any specimen of this species.

Conophyma Zubovskii


Type species: Conophyma semenovi Zubovskii, 1898 (= Conophyma semenovi semenovi)

Distribution: Asia.

Diagnosis

Body of medium size; antennae filiform, as long as or longer than combined length of head and pronotum; fastigium of vertex rounded apically; frontal ridge slightly depressed, widened at median ocellus; pronotum with dorsum slightly convex, sometimes almost flat, median carina low, intersected by posterior transverse sulcus only, lateral carinae distinct anteriorly, obliterated posteriorily; prosternal process conical; mesosternal interspace open; tegmina and wings absent; hind tibia expanded and curved apically; arolium of medium size; male with supra-anal plate triangular, square or trapezoidal, cercus compressed, apically narrowed, subgenital plate short, conical with apex blunt rounded or pointed; female with subgenital plate slightly expanded apically, posterior margin with distinct triangular projection medially, ovipositor valves short with acute tips, dorsal valve wide, ventral valve narrow.

Remarks: The genus can easily be distinguished in having pronotum with lateral carinae distinct in anterior and median parts, obliterated posteriorily, prosternal process conical, tegmina and wings absent, male cercus dorso-laterally compressed.

The genus is represented by two species in Kashmir.
Key to the species of Kashmir

1. Head in female large, strongly projected forward; mesosternal interspace very wide in female; hind femur in female slender ..........................................................

.............................................................................Conophyma kashmiricum Mistshenko

Head in both sexes small, moderately projected forward; mesosternal interspace moderately wide in female; hind femur in female stout..........................

..............................................................................................Conophyma mitcheli Uvarov

Conophyma kashmiricum Mistshenko


Distribution: Kashmir.

Diagnosis: This species is known to author from the descriptions given by Bei-Bienko and Mishchenko (1951) and Balderson and Yin (1991) for this species.

Remarks: This species has been earlier recorded from Kashmir by Bei-Bienko and Mishchenko (1951). Its male was first described from Kashmir by Balderson and Yin (1991). The present author, however, could not collect any specimen of this species.

Conophyma mitcheli Uvarov

Conophyma mitcheli Uvarov, 1921, Ent. Montly Mag.. 7(3): 268-270


Distribution: Kashmir.

Diagnosis

The species is known to author from the descriptions given by earlier workers.
Remarks: This species has been earlier recorded from Kashmir (India) by Uvarov (1921). Later on, Bhat and Qadri (1999) again collected it from Kashmir. The present author, however, could not collect any specimen of this species.

*Caloptenopsis I. Bolivar, 1889*

*Caloptenopsis* Bolivar, 1889. *Jorn. Sci. Lisb.* (2) 1, p. 173

Type species: *Caloptenus vittalus* Bolivar

Distribution: India, Africa.

Diagnosis
Medium sized body; antennae filiform, usually shorter than the combined length of head and pronotum; fastigium of vertex elongate, narrow, with longitudinal concavity and strong lateral carinulae; occipital carinula present; frontal ridge flat; pronotum with distinct median and lateral carinæ, metazona longer than prozona, posterior margin angular; prosternal process well developed; hind femur thickened, lower marginal area expanded, shorter than the abdomen, serrated above; hind tibia with inner spur of inner side elongate; male with supra-anal plate angular, cercus robust, with apex bilobate, subgenital plate subconical with obtuse or rounded apex; female with valves of ovipositor short, robust with apices curved.

The genus is represented by two species in Kashmir.
Key to the species of Kashmir

1. Hind femur with lower outer carina marked with an interrupted black line; prosternal tubercle thick, slightly transverse............................................................

................................. Caloptenopsis glaucopsis (Walker)
Hind femur with lower outer carina pale; prosternal tubercle small and conical.................................................. Caloptenopsis liturifer Walker

Caloptenopsis glaucopsis (Walker, 1870)

(Plate 27)


Distribution: India, Africa.

Diagnosis
Medium sized insects; fastigium of vertex longer than broad, concave, margins raised, occiput with rugae; frontal ridge distinct, flat above, slightly sulcated below the basis of antennae, obliterates towards clypeus; pronotum with posterior margin angular, median carina distinct, intersected by a transverse sulcus, prozona with rugae, metazona with a few rugae on dorsum; prosternal tubercle thick, obtuse, slightly transverse; meso and metasternal interspace open, mesosternal lobes square shaped; tegmina and wings well developed, extending beyond the tip of abdomen, tegmina with apex rounded; hind tibia bluish apically, base with a pale band.
Measurements (mm):

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<tr>
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</table>

Material examined: 3♀, 2♂ Kashmir: Kupwara, Karna, Gundu Gujran on grass, 09-ix-2006 (Shabir Reshi).

Habitat: The specimens of this species have been collected from a field having mixed vegetation of grasses and bushes.

Remarks: This species has been earlier recorded from Kashmir by Bhat and Qadri (1999).

*Caloptenopsis liturifer* Walker, 1870


Distribution: India.

Remarks: The species has been recorded from Kahsmir by Kirby (1914). The present author, however, could not collect any specimen of this species.