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## A review of the genus *Chloebora* Saussure (1884) (Oedipodinae: Acrididae: Orthoptera) From Pakistan

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### Abstract

The species of the genus *Chloebora* Saussure are reviewed. The occurrence of *Chloebora crassa* Walker (1870), *Ch. Grossa* Saussure 1884 is confirmed and their distribution is extended to new localities. *Ch. Bramina* Saussure 1884 is a new record. Whereas *Chloebora bishamensis* is described as a new species from Pakistan. A key to these species is also provided.

**Keywords:** New species, new record, key, *Chloebora*, Oedipodinae, Pakistan

### Introduction

The genus *Chloebora* was established by Saussure [1] for two Indian species namely *Ch. Grossa* Saussure 1884 and *Ch. Bramina* Saussure 1884. *Oedipoda crassa* was described by Walker [2]. Later this species was transferred to genus *Chloebora crassa* by Saussure [3]. Henery [4] described *Ch. Marshalli* as a new species from Sri Lanka. The checklist of species of genus *Chloebora* from Indian sub-continent including Sri Lanka was given by Shishodia [5]. From Pakistan some new and interesting orthoptera were described by Uvarov [9] from Baluchistan and several species of Acrididae were described by Wagan [10]

The genus *Chloebora* now comprises seven described species:

### Checklist of species of genus *Chloebora* of world after Cigliano [6].

1. *Chloebora crassa* Walker (1870)
2. *Ch. bramina* Saussure 1884
3. *Ch. Dimorpha* Uvarov (1930)
4. *Ch. grossa* Saussure 1884
5. *Ch. Marshalli* (Henery 1933)
6. *Ch. Sanguinipes* (Uvarov, 1938)
7. *Ch. turkanae* (Uvarov, 1938)

*Sub. sp. masaica* Kevan, 1955

*Sub. sp. turkanae* (Uvarov, 1938)

To this *Chloebora bishamensis* sp. nov. added from Pakistan. The total number of species in this genus comes to eight. Besides this *Ch. bramina* Saussure 1884. is recorded for the first time from Pakistan. The presence of previously recorded species is confirmed and their distribution has been extended to new localities. A simplified taxonomic key based on the easily recognizable characters is also provided.

### Materials and methods

The present investigations has been carried out on the material collected on different dates from Sindh, Baluchistan, Punjab and Khyber Pakhtunkhwa provinces of Pakistan. The species of genus *Chloebora* are saxicoles a sub-branch of terricoles i.e. living on rocks. The grasshoppers were collected from rocky areas and often frequent rough terrain, preferring bare or heavily eroded surfaces with the insect hand net (3.5 inches in diameter and 20 inches in length) and were chloroformed. After pinning, the specimens were stretched on stretching board and attention was paid to antennae, wings and legs in order to display important taxonomic characters. The fully dried specimens were removed from stretching boards and were stored in the insect boxes showing locality, date and collectors name.

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Identification of the specimens was carried out under the stereoscopic binocular microscope. The determination of species was made with help of works after Kirby and Uvarov [7, 8, 11].

## Results and Discussion

Key to the species of Genus *Chloebora* occurring in Pakistan.

1. Median carina of pronotum strongly raised,..... 2  
Median carina of pronotum not as above .....3
2. Wings red at base and without transverse band, hind tibia honey colored .....  
*Ch. crassa* (Walker, 1870.)  
Wings pinkish red at base, with dark brown transverse band, hind tibia bright red apically.....  
.. *Ch. grossa* Saussure, 1884.
3. Size small, slender, pronotum slightly granulated, wings sulphur- yellow basally .....*Ch. bramina* Saussure, 1884  
Size large, robust, pronotal disc with rough texture, wings basally red with dark brown transverse band.....*Ch. bishamensis* sp. nov.

### *Chloebora crassa* Saussure, 1884 (Fig.1)

Brown and stout. Antennae 25 segmented, shorter than head and pronotum together. Fastigium of vertex with a short carina; fastigial foveolae short roughly triangular. Pronotum with raised median carina moderately crossed by posterior sulcus, prozona slightly shorter than metazona. Mesosternal interspace 2.5 times wider than its length. Tegmina and wings fully developed. Tegmina extending well behind hind knee. Wings red in color towards base and without band. Hind femora broad, slightly extending sub-genital plate. Hind femur from the outside two black dots and two bands one indistinct on the upper side. Knee above with a black curve. Hind tibia honey colored or red with black tipped 10 spines on either side.

**Measurements (in mm):** 2 females & 1 male: Antennal length; 11.25; Pronotal length, 9.0-9.5, 4.5; Tegminal length, 32.0- 35.0, 24; Hind femur length, 19.5-21.0, 14.5; Total length, 31.5-34.0, 23.0.

**Material examined:** Sindh, Thatta, Jungshahi, 3-vi-1988 (M.S. Wagan) 1 female, 1 male Balochistan. Loralai, 10-vii-1994 (M.S. Wagan) 1 female

### Remarks

This species is recorded for the first time from Sindh Province and has been collected from the rocky area having bare or heavily eroded surfaces with scattered vegetation of grasses and bushes from Jung Shahi Thatta district. Earlier, this species has been reported from Bar Khan, Balochistan by Uvarov [8].

### *Chloebora grassa* Saussure, 1884 (Fig.2)

Size large, dark brown. Antennae 25 segmented, longer than head and pronotum together. Fastigium of vertex sloping forward, wide, with truncate apex, low lateral carinulae, fastigial foveolae distinct, Pronotum granulated, with strongly raised median carina slightly crossed by posterior sulcus, metazona 1.25 times longer than prozona, its posterior margin acute angular with obtuse apex. Mesosternal interspace more

than twice wider than its length. Tegmina and wings fully developed. Wings pinkish red towards base and with transverse dark brown band. Hind legs long. Hind tibia slender hairy with 12-14 black tipped spines on either side. Hind tibia basally white ring bordered with black, bright red apically Measurements (mm): 2 females: Antennal length; 14.0, 13.5; Pronotal length, 9.0, 9.5; Tegminal length, 37.0, 38.0; Hind femur length, 23.0, 24.0; Total length, 43.0, 43.5

Material examined: Islamabad: 2 females, nr. Simly Dam, 18.x.97. (M. S. Wagan)

Remarks: This species has been collected from the river beds of hilly areas, Islamabad. Earlier Uvarov [8] reported this species from Cherat Peshawar District.

### *Chloebora bramina* Saussure, 1884 (Fig, 3)

Size small, slender. Brownish red. Antennae 24 segmented, distinctly longer than head and pronotum together. Head with the front rather angulated, fastigial foveolae triangular. Pronotum punctate and slightly granulated, median carina nearly straight, its posterior margin rectangularly produced behind. Tegmina and wings well developed. Tegmina brown the basal half coarctous, the apical half tessellated with grey. Wings basally sulphur- yellow, without fascia; the apex is hyaline with dark veins and venets. Hind leg missing. Measurements (mm): 1 male: Antennal length; 11.25; Pronotal length, 7.0; Tegminal length, 28.0; Total length, 25.0  
Material examined: Rawalpindi: 1 male, Patraita (New Murree) approx: 3500' 28.vi.97, (M.S. Wagan).

**Remarks:** This species is recorded for the first time from Pakistan and has been collected from rocks, having mixed vegetation of grasses and bushes among pine forest.

### *Chloebora bishamensis* nov. sp. (Fig.4)

Diagnosis: This new species is related to *Ch. marshalli* (Henry, 1933) but smaller in size. In this new species pronotum is much more rugose, basal disc of hind wings red colored and with well-developed dark brown transverse band whereas in *Ch. marshalli* pronotum is less rugose and basal disc of hind wing is very pale yellow.

**Description of female holotype:** Size large, robust. Ocheraceous. Antennae 25 segmented, distinctly longer than head and pronotum together. Head large, rounded, very shortly carinated at the base and slightly arched at tip. Pronotum with well-developed median carina, deeply cut by the posterior sulcus behind the middle, metazona about 1.25 times longer than prozona. The pronotal disc is expanded laterally with rough texture, small tubercles and coarsely rugose. Mesosternal interspace about 2.5 times wider than its length. Tegmina and wings fully developed. Tegmina with a basal band. Hind wings basally red and with a brown transverse band almost touching the posterior end. Hind femur slightly surpassing the apex abdomen. Hind tibia  $\frac{3}{4}$  basally red with 10 inner and outer black tipped spines. Measurements (in mm): Female holotype Antennal length 17.0, Pronotal length 9.0, Tegminal length 38.0, Hind femur length 22.0; Total length 36.0

**Material examined:** Khyber Pakhtunkhwa: Bisham, 1 female holotype, Riverbed, 18.x.92 (M.S. Wagan).

Type locality: Bisham

Etymology: This new species is named after type locality.

Repository: The type material is deposited in the Museum, Department of Zoology, University of Sindh, Jamshoro, Pakistan.



**Fig 1:** *Chloebora crassa* Walker, above dorsal view, below, Lateral view



**Fig 4:** *Chloebora bishamensis* sp. nov Dorsal view



**Fig 2:** *Chloebora. Grossa* Saussure Dorsal view



**Fig 3:** *Chloebora bramina* Saussure Dorsal view

### Conclusions

The species of the genus *Chloebora* Saussure are colour full insects, live on rocks and often frequent rough terrain, preferring bare or heavily eroded surfaces. The species exhibit flash coloration in flight drawing attention to themselves by their brightly coloured hind wings (Red, Yellow or Pinkish red) and suddenly disappearing when settled. This assist in defeating predators but it may have been developed primarily as a recognition signal.

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