ORTHOPTERAN FAUNA OF CHANDOLI NATIONAL PARK, MAHARASHTRA

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INTRODUCTION

Grasshoppers are one of the largest and most divers group of insect. Grasshopper have several advantages for such studies, relating to its long phonological presence, great body size, relating easy catch ability determination and high dominance, so that it became a main invertebrate group for biological indication in its wider sense. They are often the main invertebrate consumer in grassland (Curry 1994) and are known to be an important food source for many groups of predator *e.g.* birds (Joern 1986, Samways 1997). These attributes and low difficulty of sampling Orthoptera make this insects monitoring.

The number of known species of Orthoptera from around the world is about 20, 000 out of which 1,750 species (nearly 8.75%) are known from India (Tandon and Hazra 1998). Majority of the species are tropical but are also well represented in temperate areas.

The major work on Orthoptera fauna of India is publishes by Kirby 1994 and Chopard (1969) but so far no comprehensive account on Orthoptera of Maharashtra is available only the scattered information on faunal diversity of Orthoptera of these states has been published by same

workers, number worker including Hancock (1915), Bhowmik (1985a,b), Shishodia & Hazra (1986), Shishodia & Tandon (1987), Vasanth (1993), Dey & Hazra (2003), Shishodia & Barman (2004) and Chandra (2010) have also worked on the fauna of other state and including the distribution of some species in Maharashtra.

A list of 62 species belonging 2 suborder and 8 families of Orthopteran insects is provide in the table I. The suborder ensifera represented by 29 species *Viz* Tettigoniidae 12 species, Gryllidae 11 species, Oecanthidae 3 species, Trigonidiidae 2 species, Gryllotalpidae 1 species. The suborder caelifera is represented by 33 species *Viz* Acrididae 23 species, Tetrigidae 8 species and Pyrgomorphidae 2 species. The present study was undertaken to record grasshopper fauna from different habitats in chosen localities of Chandoli National Park.

METHODS

Study area-

The survey of grasshopper fauna among different habitat types was conducted at different localities of Chandoli national park. Chandoli National Park is one of the largest man made dam of Maharashtra

across the river ‘Ram’ constructed on the border of four district i.e. Kolhapur, Sangli, Satara and Ratanagiri. The length of reservoir is 45 Km & the area of Chandoli national park is 317.67 sq/ km and lies between latitudes $73^0$40’ E & 73053’E and $17^0$53’ N & $17^0$30’N.

The Orthopteran insect were collected from August 2008 to August 2010.

The effectiveness and selectivity of sampling methods (Sweep net, direct search & Pit fall trap) with respect to vegetation structure & different habitats structure *viz* cultivated area (Rice ecosystem), open grassland,

short bushy vegetation (*Gnidia glauca*- Ramata, *Grewia nervosa*- Dhamna), ground surface and aquatic habitat (Stream & Dam ecosystem) were used. In each habitat within a location random sites were sampled monthly with a help of a sweeping net (25 cm diameter). Following the catch count methods, the ground dwelling cricket were collected by pitfall trap.

The collected specimen brought to the laboratory in the Department of Zoology, Shivaji University, Kolhapur. Photography of the same was done & they were preserving as per dry preservation methods. Grasshopper & cricket sample were identified with the available literature.

RESULT AND DISCUSSION

A total of 62 species of Orthoptera were collected from different host plants and habitats. All the Orthoptera insects collected are classified under 8 families *viz* Acrididae, Tettigoniidae, Gryllidae, Tetrigidae, Oecanthidae, Trigonidiidae, Pyrgomorphidae and Gryllotalpidae. Family Acrididae was the most dominant with 23 species of Acrididae grouped under 22 genera of 11 subfamilies, amounting to 37 % of total collected species. This observation is in accordance with Chitra *et. al.,* (2000), Paulraj *et.al.,* (2009).

The second largest family Tettigoniidae with 11 genera and 4 subfamilies, which contribute 19.3% (12 species) of the total collected, which the Gryllidae ranked third with 17.7% of total species collected (11 species) with 10 genera and 3 subfamilies,

Tetrigidae contribute 12.9% of total species (8 species) with 8 genera and 2 subfamilies. Oecanthidae contribute 4.8% (3 species) with only one genus & one subfamily.

Pyrgomorphidae and Trigonidiidae contribute equally as 3.2% with 2 genera & one subfamily and one genera & one subfamily, Gryllotalpidae represented only by one species 1.6% contribute.

In a study Senthilkumar *et al* (2006) have recorded 25 species Orthoptera under 4 families from Gibbon wildlife sanctuary Assam. Shishodia and Gupta (2009) have recorded 165 species under 16 families in Himachal Pradesh. Paranjape (1994) have recorded 16 species of tetrigidae in Maharashtra.

In the present study 11 subfamilies of Acrididae have been recorded and the colonized in more diverse habitats such as grasses, rice, shrubs. Among the different habitats, grasses were found to be the most common habitats for grasshoppers.

Among the habitats, maximum number of grasshopper species was collected from grass (48.3%).

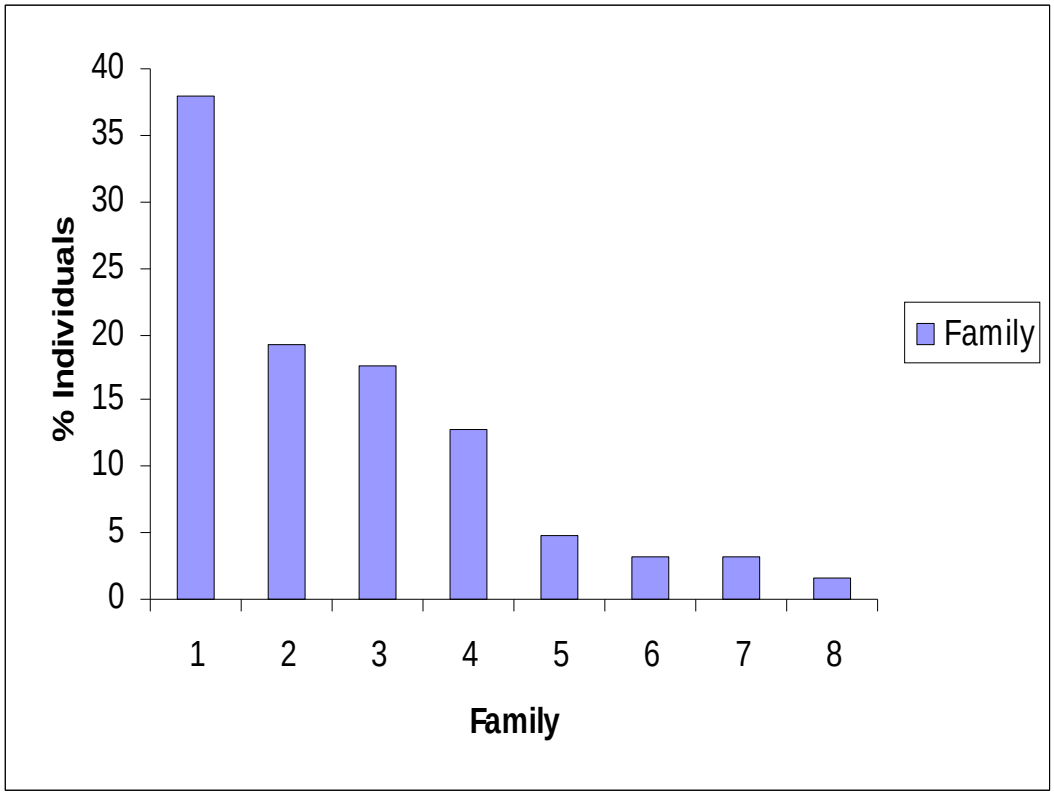
The rice ecosystem supported 6 acridid species *Gastrimargus africanus africanus, Trilophidia annulata, Hieroglyphus banian, Aiolopus thalassinus tamulus, Gelastrohinus laticornis,* and *Senocatantops splendens.*

The dam and stream ecosystem supports 8 species, *Eucriotettix sp., Euscelimena harpago, Criotettix sp., Thoradonta pruthii, Paratettix sp., Euparatettix personatus, Hedotettix gracilis* and *Ergatettix sp.* Seven species were collected from three types of habitats like ground surface, grasses and rice.

Next to rice ecosystem, more number of grasshopper was collected from ground surface (17.7%). The information on the types of food utilized by the ground grasshopper could not be gathered in this study. Aquatic ecosystem support 16.1% of grasshopper all are from Tetrigidae family. Trees and shrub support 4.8% & 1.6 respectively.

The present finding indicates variety & number of Orthopteran insect recorded from Chandoli national park. They are most diverse group of organism in Chandoli national park as in other part of state.

Figure1. Total number of grasshopper species recorded from different habitat of Chandoli national park.



1.Acrididae,

2. Tettigoniidae,

3.Gryllidae,

4.Tetrigidae,

5. Oecanthidae,

6 Pyrgomorphidae

7. Trigonidiidae,

8.Gryllotalpidae

Table 2- Percentage of grasshopper species collected from different habitat

Habitat	Number of species recorded	Percentage of species
Rice	13	20.9%
Grass	30	48.3%
Shrub	1	1.6%
Ground surface	11	17.7%
Dam & stream	10	16.1%
Semi evergreen patch	3	4.8%

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Thank you