ORTHOPTERAN FAUNA OF CHANDOLI NATIONAL PARK, MAHARASHTRA.

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ABSTRACT:

The present paper includes 62 species/ subspecies belonging to 55 genera 8 families of Orthoptera from Chandoli national park. Survey and collection was carried out from August 2008 to August 2010. The order Orthoptera is divided in to two suborder namely Caelifera and Ensifera. The suborder caelifera includes short-horned grasshopper, Locust & Grouse locust; however ensifera includes long-horned grasshopper, katydids, cricket & mole cricket.

The suborder caelifera is represented by 33 species under 32 genera and 03 families viz Acrididae (23 species and 22 genera), Tetrigidae (08 species & 08 genera) and Pyrgomorphidae (02 species & 02 genera).

The suborder Ensifera is represented by 29 species under 23 genera and 05 families Viz Tettigoniidae (12 species & 11 genera), Gryllidae (11 species & 09 genera), Oecanthidae (03 species & 01 genus), Trigonidiidae (02 species & 01 genus) and Gryllotalpidae (01 species & 01 genus).

KEYWORD: Orthoptera, fauna & Chandoli national park.

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), Day & 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. 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 & $73^0$53'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 stricture & different habitats structure *viz* cultivated area, open grassland, short bushy vegetation, ground surface and aquatic habitat were used. The collection was made at fortnight interval. Grasshoppers were collected by sweeping the net. 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 DOSCUSSION:

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 11.3% (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.

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.

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.*

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.

List of Orthoptera collected from Chandoli National Park

Family- Acrididae

Subfamily- Acridinae

1 *Acrida exaltata* Walker 1859

2 *Acrida turrita* Linnaeus 1758

3 *Truxalis indica* Dirsh 1951

Subfamily- Oedipodinae

4 *Gastrimargus africanus africanus* Saussure 1888

5 *Trilophidia annulata* Thunberg 1815

6 *Dittopternis venusta* Walker1870

7 *Aiolopus thalassinus tamulus* Fabricius 1798

8 *Heteropternis respondens* Walker1859

Subfamily- Teratodinae

9 *Teratodes monticollis* Gray 1832

Subfamily-Hemiacridinae

10 *Hieroglyphus banian* Fabricius 1798

Subfamily- Oxyinae

11 *Oxya hyla hyla* Serville 1831

Subfamily- Cyrtacanthacridinae

12 *Cyrtacanthacris tatarica* Linnaeus 1758

13 *Patanga succincta* Johansson 1763

14 *Shistocerca americana* Drury 1773

Subfamily-Catantopinae

15 *Diabolocatantops pinguis pinguis* Stal 1860

16 *Stenocatantops splendens* Thunberg 1815

17 *Xenocatantops humilis humilis* Serville 1839

Subfamily- Spathosterninae

18 *Spathosternum prasiniferum prasiniferum* Walker 1871

Subfamily-Gomphocerinae

19*Dnopherula (Aulacobothrus)* sp.

20 *Gelastrohinus laticornis* Serville 1839

Subfamily-Eyprepocnemidinae

21 *Tylotropidius varicornis* Walker 1870

Subfamily-coptacridinae

22 *Eucoptacra saturate* Walker

23 *Coptacra punctoria* Walker 1870

Family- Pyrgomorphidae

Subfamily-Pyrgomorphinae

24 *Atractomorpha crenulalg* Fabricius 1793

25 *Chrotogonus trachypteus trachpterus* Bianchard 1836

Family- Gryllotalpidae

Subfamily- Gryllotalpinae

26 *Gryllotalpa africans* Beauvois 1805

Family- Tettigoniidae

Subfamily- Phaneropterinae

27 *Liotrachela megastyla* Ingrisch 2002

28 *Letana intermedia* Ingrisch 1990

29 *Ducetia japonica* Thunberg 1815

30 *Holochlora sp.*

31 *Phaneroptera sp.*

32 *Phaneroptera gracilis* Burmeister 1838

33 *Elimaea (Elimaea) securigera* Burnner 1878

34 *Microcentum rhobifolium* Saussure 1859

Subfamily-Conocephalinae

35*Conocephalus (Anisoptera) maculatus* Le Guillou 1841

36 Euconocephalus incertus Walker 1869

Subfamily- Mecopodinae

37 *Mecopoda elongate* Linnaeus 1758

Subfamily- Pseudophyllinae

38 *Sathrophyllia rugosa* Linnaeus 1758

Family- Gryllidae

Subfamily- Gryllinae

39 *Modicogryllus confirmatus* Walker 1859

40 *Gymnogryllus minor* Chopard 1959

41 *Gryllodes sigillatus* Walker 1859

42 *Gryllus bimaculatus* De Geer 1773

43 *Callogryllus orientalis* Boliver 1900

44 *Loxoblemmus detectus* Serville 1839

45 *Teleogryllus (Macroteleogryllus) mitratus* Burmeister 1858

46 *Teleogryllus (Brachyteleogryllus) occipitalis* Serville 1838

Subfamily- Landrevinae

47 *Landreva sp.*

Subfamily- Nemobiinae

48 *Paranemobius pictus* Saussure 1877

49 *Myremecophilus sp.*

Family- Trigonidiidae

Subfamily-Trigonidiinae

50 *Trionidium (Trigonidium) cicindeloides* Rambur 1839

51 *Trigonidium humbertianum* Saussure 1878

Family- Oecanthidae

Subfamily- Oecanthinae

52 *Oecanthus indicus* Saussure 1870

53 *Oecanthus pellucens* Scopoli 1763

54 *Oecanthus bilineatus* Chopard 1937

Family- Tetrigidae

Subfamily-Tetriginae

55 *Euporatettix personatus* Boliver 1887

56 *Pratettix sp.*

57 *Hedotettix gracilis* Haon 1843

58 *Ergatettix sp.*

Subfamily-Scelimenianae

59 *Eucriotettix sp.*

60 *Euscelimena harpago* Serville 1839

61 *Criotettix sp.*

62 *Thoradonta pruthii* Gunther 1938

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