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Research Article

OCCURRENCE OF BUTTERFLIES FROM TILARI RESERVED FOREST, CHANDGAD, KOLHAPUR DISTRICT OF MAHARASHTRA (INDIA)

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ABSTRACT

Tilari reserved forest is a high standard habitat for biodiversity of butterflies and its geographical location is suitable as compared to other area of Chandgad tahsil. The study area falls under hilly ranges of Konkan-Western Ghats corridor. This is a first attempt made to survey and documentation of butterflies from Tilari reserved forest. The study was carried out from 2015 to 2016. Present investigation revealed that total 52 species of butterflies belonging to 36 genera and 5 families. Out of which 27 species were belonging to family Nymphalidae and remained dominant followed by the family Lycaenidae, Papilionidae, Pieridae and Hesperidae with 8, 7, 7 and 3 species respectively.

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INTRODUCTION

Approximately 90% butterfly species live in hot and humid region. They belong to order Lepidoptera. Adult butterflies have big, often shiny colored wings. Their life cycle completed within four stages viz. egg, larva, pupa and adult. They are polymorphic insects and many species make use of camouflage, mimicry for the protection from the predators. They are serious pests on agricultural field and forest but some are economically very important because they play an essential role in pollination. There are about 5-10 million insect species exist in the world, among them less than 1 million species are described (Gaston, 1991). They are generally considered as one of the best taxonomically studied group of insects (Robbins and Opler, 1997). Many of butterfly species prefer only a particular set of habitats and they are strictly seasonal (Kunte, 1997). The habitat destruction is main cause of important species extinction worldwide (Pimm and Raven, 2000). The natural habitats of butterflies have considerably decreased due to the increase of human population (Gupta and Mandal, 2005). Butterflies are the sensitive indicators of climate change and they provide economic, ecological benefits to the human society (Venkata Ramana, 2010). There are about 2, 55,000- 2, 65,000 known species of Lepidoptera worldwide out of them only 7.5% species are butterflies (Regina, 2009; Jaret and Doug, 2014). About 1504 species and subspecies of butterfly

are found in India (Gaonkar, 1996; Smetacek, 1992). There are number of Zoologist and Entomologist Sathyamurthy, (1994), Varshney, (1994 and 1997), Gaonkar, (1996), Kunte, (2000), Kehimkar, (2008), Tiple (2011) were studied on butterflies and scattered information about India and Maharashtra.

MATERIAL AND METHODS

Butterflies were observed from Tilari reserved forest for the first time during period 2015-2016 in the morning and evening time. Photographs of butterflies were taken by Canon 600 D Camera with 18-55mm and 55-250mm lenses. Identification was done with help of available literature Fauna of British India Butterflies Vol. 1 and Vol. 2 (Bingham, 1905 and 1907). Some species of butterflies are identified with the help of reference books (Indian butterflies, Isaac Kehimkar, 2008).

Study Region

Tilari reserved forest is a one of the best forest park in Maharashtra. It is located between (latitude 15° 45' to 16°3'N and longitude 74°1' to 74°27'E). This place lies in the Western Maharashtra State and bordered by Karnataka and Goa state. The average rainfall of this area is between 3000 to 4000mm/year. The area is covered with dense lush green and semi evergreen forest. Temperature of this area is hot in summer and very cool in winter. Recently diversity of grasshoppers from this forest region have been reported by More and Nikam 2016.

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RESULT AND DISCUSSION

In the present study checklist of butterflies, a total 52 species distributed 36 genera, belonging to 5 families. The family Nymphalidae, Lycaenidae, Papilionidae, Pieridae and Hesperidae were reported. The family Nymphalidae was dominant with (27 species under 18 genera), Lycaenidae (8 species under 8 genera), Papilionidae (7 species under 2 genera), Pieridae (7 species under 5 genera) and Hesperidae (3 species under 3 genera). The objective of this work was aimed towards an inventory the knowledge of biodiversity of butterflies in Tilari forest, Chandgad, Kolhapur.

Table 1 List of Butterflies recorded from Tilari Reserved Forest, Chandgad

Sr.No	Family	Species Name		
1	Nymphalidae	<i>Acraea sp</i>		
		<i>Phalanta phalantha</i>		
		<i>Athyma perius</i>		
		<i>Athyma selenophora</i>		
		<i>Lasippa sp</i>		
		<i>Neptis sp</i>		
		<i>Neptis hylas</i>		
		<i>Hypolimnas misippus</i>		
		<i>Junonia almana</i>		
		<i>Junonia atlites</i>		
		<i>Junonia hierta</i>		
		<i>Junonia iphita</i>		
		<i>Junonia lemonias</i>		
		<i>Danaus chrysippus</i>		
		<i>Danaus genutia</i>		
		<i>Tirumala limniace</i>		
		<i>Euploea core</i>		
		<i>Lethe rohria</i>		
		<i>Melanitis leda</i>		
		<i>Melanitis sp</i>		
		<i>Orsotriaena medus</i>		
		<i>Ypthima huebneri</i>		
		<i>Ypthima sp</i>		
		<i>Polyura athamas</i>		
		<i>Cyrestis thyodamas</i>		
		<i>Ariadne ariadne</i>		
		<i>Amathusia phidippus</i>		
		2	Lycaenidae	<i>Castalius rosimon</i>
				<i>Jamides celeno</i>
				<i>Megisba malaya</i>
				<i>Talicauda nyseus</i>
<i>Chrysozephyrus sp</i>				
<i>Loxura atymnus</i>				
<i>Spindasis sp</i>				
3	Papilionidae	<i>Neopitheops sp</i>		
		<i>Papilio demoleus</i>		
		<i>Papilio dravidarum</i>		
		<i>Papilio helenus</i>		
		<i>Papilio polytes</i>		
		<i>Papilio polymnestor</i>		
		<i>Graphium sp</i>		
4	Pieridae	<i>Catopsilia pyranthe</i>		
		<i>Eurema laeta</i>		
		<i>Eurema sp</i>		
		<i>Eurema sari sodalis</i>		
		<i>Delias sp</i>		
5	Hesperidae	<i>Hebomoia glaucippe</i>		
		<i>Leptosia nina</i>		
		<i>Hylephila phyleus</i>		
		<i>Iambrix salsala</i>		
		<i>Satarupa sp</i>		

species. Rane and Ranade (2004) have reported 72 species of butterfly from Tamhini area of Mulshi, Maharashtra.

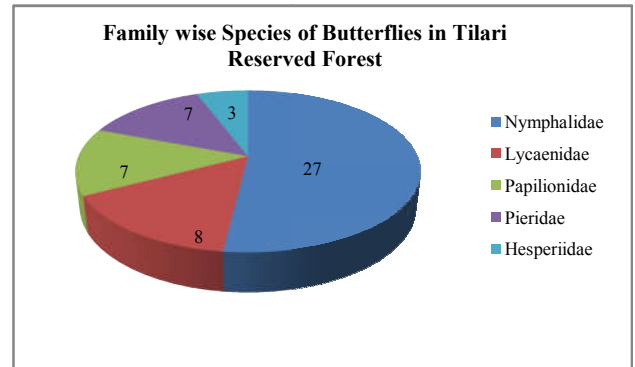
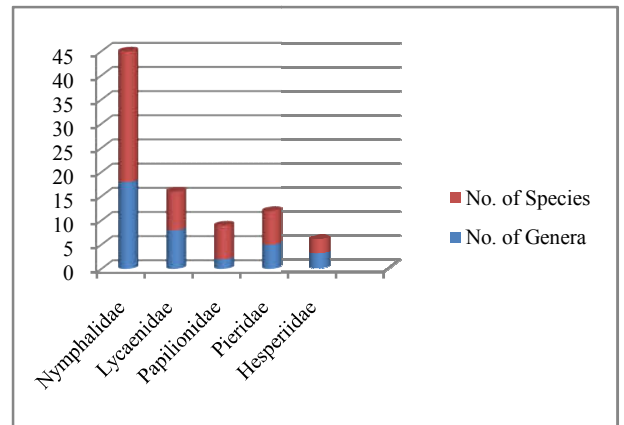


Table 2 Distribution of genera and species of Butterflies in respective families

S.N	Family	No. of Genera	No. of Species
1	Nymphalidae	18	27
2	Lycaenidae	08	08
3	Papilionidae	02	07
4	Pieridae	05	07
5	Hesperidae	03	03
	05	36	52



Borkar and Komarpant (2004) studied on butterflies from Bondla Wildlife Sanctuary, Goa and reported 91 species belonging to 66 genera. Padhye et al., (2006) recorded 69 species of butterfly belonging to 52 genera from Tamhini, Northern Western Ghats. Chandra et al., (2007) recorded 147 species of butterflies belonging to 8 families from Madhya Pradesh and Chhatisgarh. Tiple and Khurad (2009) reported 145 species of butterflies from Nagpur City. Raut and pendharkar (2010) recorded 53 species of butterflies from Maharashtra Nature Park, Mumbai. Ramesh et al., (2010) reported 55 species of butterflies belonging to 5 families from Kalpakkam, South India. Tiple et al., (2011) reported 52 species of butterfly from Sant Gadge Baba Amravati Campus. Nimbalkar et al., (2011) have reported 64 species of butterfly species from Bhor Tashil, Pune. Kunte et al., (2012) reported 298 species of butterflies from Garo Hills of Meghalaya. Smetacek et al., (2012) listed 243 species of butterflies from Jones Estate, Uttarkhand. Kumar, (2013) recorded 68 species of butterflies from Jhagadia, Ankleshwar district-Bharuch. Kumar et al., (2014) reported 64 species of butterflies belonging to 47 genera from Kudankulam Nuclear Power plant area of Tamil Nadu. Prabakaran et al., (2014) have reported 97

Earlier workers, Bhalodia et al, (2002) studied on butterflies' diversity Vansda, National park, Gujarat, and reported 62

species of butterflies belonging to 63 genera from Tiruvallur district, Tamil Nadu.

Patil *et al.*, (2014) studied on butterflies from Gorewada International Biopark, Nagpur, and reported 92 species of

Figure- 1. Checklist of Butterflies in Tiları Reserved Forest



Fig. No 1. 1. *Acraea* sp, 2. *Phalanta phalantha*, 3. *Athyma perius*, 4. *Athyma selenophora*, 5. *Lasippa* sp, 6. *Neptis* sp, 7. *Neptis hylas*, 8. *Hypolimnys misippus*, 9. *Junonia almana*, 10. *Junonia atlites*, 11. *Junonia hierta*, 12. *Junonia iphita*, 13. *Junonia lemonias*, 14. *Danaus chrysippus*, 15. *Danaus genutia*, 16. *Tirumala limniace*, 17. *Euploea core*, 18. *Lethe rohria*, 19. *Melanitis leda*, 20. *Melanitis* sp, 21. *Orsotriaena medus*, 22. *Ypthima huebneri*, 23. *Ypthima* sp, 24. *Polyura athamas*

Figure- 2. Checklist of Butterflies in Tiları Reserved Forest



Fig. No 2. 25. *Cyrestis thyodamas*, 26. *Ariadne ariadne*, 27. *Amathusia phidippus*, 28. *Castalius rosimon*, 29. *Jamides celeno*, 30. *Megisba malaya*, 31. *Talicauda nyseus*, 32. *Chrysozephyrus* sp, 33. *Loxura atymnus*, 34. *Spindasis* sp, 35. *Neopithecops* sp, 36. *Papilio demoleus*, 37. *Papilio dravidarum*, 38. *Papilio helenus*, 39. *Papilio polytes*, 40. *Papilio polymnestor*, 41. *Graphium* sp, 42. *Graphium* sp, 43. *Catopsilia pyranthe*, 44. *Eurema laeta*, 45. *Eurema* sp, 46. *Eurema sari sodalis*, 47. *Delias* sp, 48. *Hebomoia glaucippe*

Figure- 3 Checklist of Butterflies in Tilari Reserved Forest



Fig: No 3. 49 *Leptosia nina*, 50. *Hylephila phyleus*, 51. *Iambrix salsala*, 52. *Satarupa sp*

Nair *et al.*, (2014) recorded 49 species of butterflies from Sarojini Naidu College Campus, Kolkata. Charan kumar (2015) reported 54 species of butterflies belonging to 37 genera under 7 families from Sirhind Canal, Mainline in Punjab. Hajra *et al.*, (2015) have reported 46 species of butterflies from Contai and its adjoining areas Purba Medinipur, West Bengal. Recently Nikam, K. N and More, S. V (2016) have been reported 18 species of Lepidoptera from Jangamhatti area Chandgad, Maharashtra.

Distribution of genera and species of Butterflies in Tilari Reserved Forest

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