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**Original Research Article**

# An inventory of the Coleopteran fauna of Sindhudurg district, Maharashtra, India

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**A B S T R A C T**

The present preliminary study is on Coleopteran of Sindhudurg district, in which five major localities were selected *viz*. Sawantwadi, Amboli, Malvan, Kudal and Kankavli. The present study, includes 59 beetle species (Cicindellidae, Carabidae, Dytiscidae, Gyrinidae, Hydrophilidae, Histeridae, Lampyridae, Elateridae, Coccinellidae, Meloidae, Tenebrionidae, Bostrichidae, Scarabaeidae, Cerambycidae, Chrysomelidae, Curculionidae and Bruchidae) belonging to 48 genera and 17 families recorded from Sindhudurg district.

## Introduction

Coleopteran are one of the largest and most diverse group of insects. They are functionally important, being the dominant above ground invertebrate in pastures and natural grassland when judged by biomass (Nicholsa, 2008). Beetles are important components of the forest fauna due to their high abundance, diversity and involvement in many ecological processes (Lawrence *et al.,* 2000). This group of insects contain some 3, 50,000 (Mc George, 2001) described species which is the highest number of the species known within any order of animals and plants, thus form the largest order of class insects with great diversity (Mohd Feroz and Tara, 2010), amongst which about 17431 species are known from Indian region (Chandra, 2011).

The Western Ghats of India is home to a rich Coleoptera among other insects and it is also part of the mega diversity hotspot of the world (Myers *et al.,* 2000). A review of literature suggest that 89species of Scarabaeidae (Jadhav and Sharma, 2012a), 9 species of Bruchidae (Bano *et al.,* 2012), 57 species of aquatic coleopteran (Sharma and Bano, 2012), 59 species of Cerambycidae (Ghate, 2012), 20 species of Coccinellidae (Jadhav and Sharma, 2012c), 10 species of Cicindelidae (Jadhav and Sharma, 2012b), 36 species of Elateridae (Patwardhan and Athalye, 2012), 68 species of Chrysomelidae (Priyanka Dutta *et al.,* 2012) and 32 species of Curculionidae (Jadhav and Sharma, 2012d) were previously recorded from Maharashtra.

## Materials and Methods

Study area: The Sindhudurg district comes under Konkan zone and lies between 15037' North to 1640 North latitude and 73019' East to 74013' East longitude. The total area of the district is 5087.5 sq.km. The forests in the district cover an area about 409.06 sq.km under the Forest Department, out of which 285.45 sq.km in Savantvadi and Kudal talukas and 12.61 sq.km in remaining talukas (Table 1). The district is surrounded by Ratnagiri district in the north Sahyadri hills and beyond Sahyadri, Kolhapur district, the state of Goa in south and Arabian Sea towards the west. Physiographical this area is rugged and complex one. The height of the region varies from sea level up to 1300 m.

Beetles were collect from five different habitat of Sindhudurg district during 2009–2011. These different habitats were situated at different altitude and had different ecological characteristics. During study a wide variety of collecting and trapping methods were used. The beetles were collect directly by forceps from dung and soil. A white cloth sheet with 160 watt mercury vapor lamp was used as a light trap through the night. Light attracting beetles collected on the white cloth just after sunset between 6 pm to 10 pm, after that the attraction of beetle slowly declined. The collected specimens were pinned and transferred to the Department of Zoology, Shivaji University, Kolhapur for species identification and comparing them with deposited specimens.

**List of taxa**

**Order: Coleoptera**
**Family: Cicindellidae**
*1. Cicindelasexpunctata*Fabricius,1775
**Family: Carabidae**
*2. Anthiasexguttata*Fabricius, 1775
*3. Morio sp.*
**Family: Dytiscidae**
*4. Cybistertripunctatusasiaticus*Sharp
**Family: Gyrinidae**
*5. Dinutes(Protodinutes)indicus*Aube
**Family: Hydrophilidae**
*6. Hydrophilusolivaceous*Fabricius
**Family: Histeridae**
*7. HisterJavanus*Payk
*8. Histerlutarius*Er.
**Family: Lampyridae**
*9. Lamprophorustenebrosus*Walker
**Family: Elateridae**
*10. Agrypnusfuscipes*Fabricius
*11. Melanotusfissilis*Say
**Family: Coccinellidae**
*12. Coccinellaseptempunctata*Linnaeus, 1758
*13. Illieiscincta*Fabricius, 1798
*14. Menochilussexmaculatus*Fabricius
**Family: Meloidae**
*15. Mylabrispustulata*Thunberg
*16. Mylabris sp.*
**Family: Tenebrionidae**
*17. Platynotus belli*Fair
*18. Gonocephalumtuberculatum*Hope
*19. Rhytinotalaticollis*Schufuss
*20. Derosphaeruscribrum*Fairmaire
**Family: Bostrichidae**
*21. Sinoxyloncrassum*Lense
**Family: Scarabaeidae**
**Subfamily: Ruteliinae**
*22. Adoretuslobiceps* Arrow, 1931
*23. Anomalabengalensis*Blandchar, 1851
*24. Anomalabiharensis*Arrow, 1917
*25. Mimelamacleayana*Vigors, 1825
**Subfamily: Cetoniinae**
*26. Anthracophoracrucifera*Olivier, 1789
Subfamily: Aphodinae
*27. Aphodiushaafi*Petrovitz, 1961
Subfamily: Melolonthinae
*28. Apogonia sp.*
*29. Maladeracastanea,* Arrow
*30. Maladeraholosericea*, Scopoli
**Subfamily: Dynastinae**

*31. Oryctes rhinoceros* Linnaeus, 1758
*32. Phyllognathus Dionysius* Fabricius, 1792
*33. Xylotrupesgiedon*Linnaeus, 1767
**Subfamily: Scarabaeinae**
*34. Brahminacrinicollis*
35. *Brahmina sp.*
36. *Catharciusmolossus* Linnaeus, 1758
37. *Chilolobaacuta*Wiedemann, 1823
38. *Helicoprisbucephalus*Fabricius, 1775
39. *Holotrichiafissa*Brenske
40. *Holotrichiakarschi*Brenske
41. *Onitisphilemon*Fabricius 1801
42. *Onitisfalcatus*Wuifen, 1786
43. *Onthophagusagnus*Gillet, 1925
44. *Onthophaguscatta*Fabricius 1787
45. *Onthophagusdama*Fabricius 1798
**Family: Cerambycidae**
**Subfamily: Cerambycinae**
*46. Stromatiumbarbatum*Fabricius, 1775
*47. Xystoceraglobosa*Olivier, 1795
*48. Aeolesthesholosericea*Fabricius, 1787
Subfamily: Lamiinae
*49. Batoceranumitor*Newman
*50. Batocerarufomaculata*De Geer, 1775
*51. Gleneamultiguttata*Guerin-Meneville, 1843
**Family: Chrysomelidae**
*52. Aspidomorphamilliaris*Fabricius
**Family: Curculionidae**
*53. Apoderussisoo*Marshall
*54. Apoderustransquebaricus*Fabricius
*55. Cyrtotratheluslongimanus*Fabricius
*56. Rhynchophorusferrugineus*Oliver
**Subfamily: Otiorrhynchinae**
*57. Mylloceruspustulatus*Faust
**Family: Bruchidae**
**Subfamily: Bruchinae**
*58. Bruchuslentis*Froelich, 1799
*59. Callosobruchuschinensis*Linnaeus, 1758

## Results and Discussion

The study revealed that a total of 59 species distributed over 48 genera belonging to 17 families (Table 2 and Annexure 1). The beetle fauna of Maharashtra was very poorly studied and very few families like Cermbycidae, Scarabaeidae and Curculionidae are reported. The family Scarabaeidae is dominant with 24 species (40.67 %) followed by the families Cerambycidae (10.16 %) and Curculionidae (8.47 %), Tenebrionidae (6.77%), Coccinellidae(5.08%), Carabidae, Histeridae and Elateridae, Meloidae and Bruchidae (3.38%). The families Cicinedelidae, Dytisicidae, Gyrinidae, Hydrophilidae, Lamyridae, Bostrichidae and Chrysomelidae are represented 1 species each and contributed 1.69% of the total species recorded from this order.

This is the first study on the diversity of Coleoptera of Sindhudurg district. The 59 species in Sindhudurg district compares more or less favourably with the 124 species of Scarabeidae beetles found in Madhya Pradesh (Chandra and Ahirwar, 2007) whereas, Chandra and Singh (2010) reported 22 species of scarab beetles belonging to 11 genera and six subfamilies from Achanakamar Wildlife Sanctuary, Chhattisgarh. Matthews (1987) recorded about 100 species of beetles with reference to families Cerambycidae, Bostrychidae, Lyctidae, Curculionidae, Scolytidae, Brenthidae, Platypodidae and Anthribidae from Kerala. Recently, Pawara *et al.* (2014) reported 35 species of beetles belonging to 28 genera and 13 families from Jalgaon district of Maharashtra.

The finding indicated that habitat of Sindhudurg district supported high Coleopteran diversity. This study provides useful information about the status of the species for the conservation and management of biodiversity.

**Table.1** Geographic coordinates of collection localities in Sindhudurg District

| **Collection localities** | **Latitude (N)** | **Longitude (S)** | **Altitude (ft)** |
|---|---|---|---|
| Vengurla | $15^0$51'00.48" | $73^0$37'56.15" | 56 |
| Kudal | $16^0$00'29.19" | $73^0$41'13.31" | 98 |
| Sawantwadi | $15^0$54'19.32" | $73^0$49'16.65" | 374 |
| Kankavli) | $16^0$16'31.76" | $73^0$42'23.65" | 136 |
| Amboli | $15^0$57'46.62" | $73^0$59'52.14" | 2352 |

**Table.2** The diversity of Coleopteran fauna in Sindhudurg District, Maharashtra, India as recorded in the present study

| **Sr. No.** | **Family** | **Genera** | **Species** |
|---|---|---|---|
| 1. | Cicindellidae | 1 | 1 |
| 2. | Carabidae | 2 | 2 |
| 3. | Dytiscidae | 1 | 1 |
| 4. | Gyrinidae | 1 | 1 |
| 5. | Hydrophilidae | 1 | 1 |
| 6. | Histeridae | 1 | 2 |
| 7. | Lampyridae | 1 | 1 |
| 8. | Elateridae | 2 | 2 |
| 9. | Coccinellidae | 3 | 3 |
| 10. | Meloidae | 1 | 2 |
| 11. | Tenebrionidae | 4 | 4 |
| 12. | Bostrichidae | 1 | 1 |
| 13. | Scarabaeidae | 17 | 24 |
| 14. | Cerambycidae | 5 | 6 |
| 15. | Chrysomelidae | 1 | 1 |
| 16. | Curculionidae | 4 | 5 |
| 17. | Bruchidae | 2 | 2 |

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