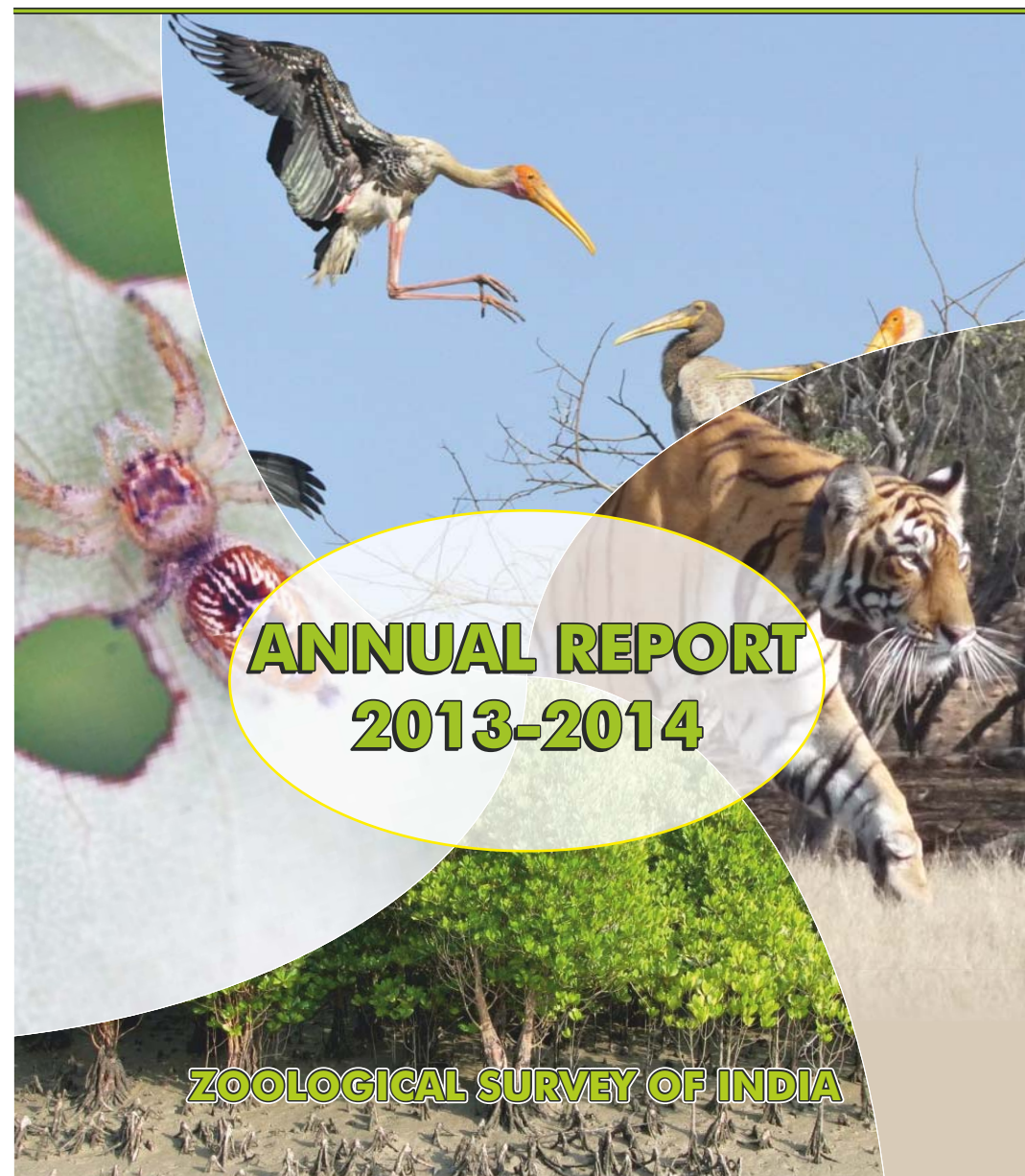
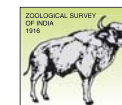
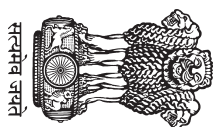






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Zoological Survey of India
Kolkata

Annual Report, 2013-2014

Published : July, 2015

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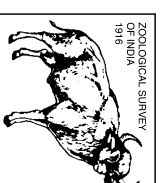
Published at the Publication Division by the Director, Zoological Survey of India, M-Block,
New Alipore, Kolkata-700 053 and printed at Calcutta Repro Graphics, Kolkata-700 006.

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INTRODUCTION

The Zoological Survey of India (ZSI), a premier institution under the Ministry of Environment and Forests and Climate Change, has been undertaking survey, exploration and research leading to the advancement of our knowledge on the exceptionally rich faunal diversity of the country since its inception in 1916. With its headquarters at Kolkata and 16 Regional Centers located at different parts of the country, ZSI in recent years re-oriented its plan of work by grouping the survey and studies under the following six major programmes:

- Fauna of States
- Fauna of Conservation Areas
- Fauna of Important Ecosystems
- Status Survey of Endangered Species
- Ecological Studies /Environment Impact Assessment Survey, and
- Computerization and Dissemination of Data

The Zoological Survey of India also acts as a custodian of the National Zoological Collections, which comprise more than four million specimens belonging to as many as 81,000 species including about 10,000 species of our neighboring countries like Myanmar, Pakistan, Bangladesh, Sri Lanka and also of Thailand.

PRIMARY OBJECTIVES OF ZSI

The current mandate of ZSI is survey, collection documentation (including the traditional knowledge associated with

animals) and *ex situ* conservation of wild animal diversity of the country.

High priority areas include:

- Digitization of present collections, preparation of fine scale distribution maps based on primary occurrence data and making it available in a searchable format.
- Publication of National and State faunas.
- Taxonomic studies, revisionary/monographic studies on selected animal groups.
- Identification of Red list species and species rich areas needing conservation and focus on data deficient species to collect more information on populations.
- Development of National database of Indian animals including Museum specimens, live specimens, paintings, illustrations etc. and maintenance of already existing collections with modern facilities and as per international standards of collection management.
- Developing and maintaining Museums and using such facilities for conservation education for people especially students.

- *Ex situ* conservation of critically threatened taxa.

- Capacity building in taxonomy, nomenclature, specimen collection,





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preservation and maintenance through training programmes.

SECONDARY OBJECTIVES

To establish a panel of experienced and active taxonomists and obtain their consent to participate in fauna project:

- ▶ To prepare annotated checklist of different groups of animals, museum collections, based on published documents giving local names if any with locality and habitat. Make available the electronic version of checklist to the general public; and circulate it among the panel of zoologists who would, in turn, check for omissions, ambiguities, localities and habitat through active consultation with other local zoologists.

- ▶ To begin with, state faunas should be published electronically giving correct names, localities, habitats, sketches and photographs of important species on an interactive Fauna of India Website. This will act as an outreach programme for all the biologists, and other interested public.

SOME IMPORTANT RESEARCH STUDIES UNDERTAKEN BY THE SCIENTIST OF ZSI HEADQUARTERS AND REGIONAL CENTERS

1. Abundance and Diversity of Soil Nematodes in Agro-ecosystems of Dehradun, Uttarakhand, India (*Sponsored by DST*)

2. Baseline Information on Faunal Inventory of Uttar Pradesh.

3. District-wise Faunal Diversity of Chhattisgarh (CAMPA project)

4. Diversity and Distribution of Corals and their Associated Fauna of Rani Jhansi Marine National Park, Andaman (*Sponsored by MoEF*).

5. Diversity and distribution of Gorgonian Octocorals in and around the Andaman and Nicobar Island – A baseline study for the management of soft corals (SERB, Department of Science and Technology, Ministry of Science and Technology, Govt. of India)

6. DNA Bar-coding on Sponges of Andaman and Nicobar Islands (Technical Collaboration with Central Agricultural Research Institute, ICAR, Port Blair)

7. Ecological study of bird hazards at Airport in Andaman (INS-Utkrosh, C/o. Navy, Ministry of Defence, Government of India)

8. Ecology and habitat modelling of wetland birds in the tsunami inundated wetlands of South Andaman (SERB, Department of Science and Technology, Ministry of Science and Technology, Government of India)

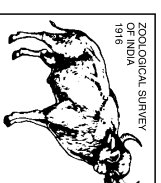
9. Faunal Diversity of Great Nicobar Biosphere Reserve (*Sponsored by MoEF*).

10. Faunal Diversity of Protected Areas of Chhattisgarh.





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11. Foraging ecology of White-bellied Heron *Ardea insignis* in Namdapha Tiger Reserve, Arunachal Pradesh.
12. Improving quality of Reefs through Transplantation/Restoration of Corals at Gulf of Kachchh (*Sponsored by World Bank*).
21. Plan for Lohabarrack Crocodile Sanctuary, South Andaman (*Sponsored by DoEF, Andaman and Nicobar Administration*).
13. Lead Institution: Great Nicobar Biosphere Reserve (*Sponsored by: Ministry of Environment and Forests, Govt. of India*).
22. Preparation of Dolphin Management plan of Vikramshila Gangetic Dolphin Sanctuary from Sultangari to Kahalgaon in Bihar (Department of Environment and Forests, Government of Bihar)
14. Marine Faunal Diversity along the Odisha Coast.
23. Rapid EIA on the alignment of road in Great Nicobar Island
15. Molecular study of *Ratufa indica* (Erxleben), *Ratufa macroura* (Pennant), *Ratufa bicolor* (Sparman), (Jerdon), *Funambulus palmarum* (Linn), *Funambulus pennanti* (Wroughton), *Peturista peturista* (Pallas), *Peturista philippensis* (Elliot), *Petionomyscus capillus* (Jerdon) (Mammalia: Rodentia: Scuridae).
24. Rapid EIA study for the construction of infrastructure facilities at Indian Coast Guard Complex at Diglipur, North Andaman. (Ministry of Defence, Government of India)
16. Molecular Systematics and Phylogeny of economically Important thrips (Thysanoptera: Insecta) of India
25. Rapid EIA study for the extension of jetty and construction of wet basin for Indian Navy, Haddo, Port Blair. (Ministry of Defence, Government of India)
17. Monitoring the Coral Reefs of Andaman and Nicobar Islands
26. Restoration of Corals at Gulf of Kachchh.
18. Optical Characterization of Corals–A collaborative project with Space Application Centre, Ahmedabad.
27. Role of Insect pollinators on the conservation of the major mangrove species in Sunderban Island.
19. Population fluxes of commercially threatened sea cucumber species in Gulf of Mannar Biosphere Reserve – for sustainable harvesting strategies to regularizing sea cucumber fishery” with reference to MAB-Young Scientist Award (UNESCO)
28. Status survey on Holothurians of A&N Islands (*Sponsored by DoEF, Andaman and Nicobar Administration*).
20. Preparation of Management Action
29. Status survey on sea cucumbers in the territorial waters of Andaman and Nicobar Islands (Department of





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- Enviornment and Forests, A and N Adminstration)
30. Studies on the Faunal Diversity of Great Nicobar Biosphere Reserve (Ministry of Enviornment and Forests, Government of India)
31. Strengthing of Marine Aquarium and Regional Centre at Digha, West Bengal (*Sponsored by World Bank*).
32. Survey and Monitoring of Coral Reefs of Andaman and Nicobar Islands (National Coral Reef Research Institute)

33. Taxonomic Revision of Indian

Pyrallinae (Pyrallidae: Lepidoptera) (Science and Engineering Research Board (SERB), DST, New Delhi)

34. Taxonomic studies on Nematodes of Rajaji National Park, Uttarakhand.

35. ZSI-GOI-UNDP-GEF project on Assessing the Current status of the Coral reef ecosystem and formulating a long term monitoring protocol for the Sindhudurg Coast, Maharashtra.

NEW SPECIES DESCRIBED BY THE ZSI SCIENTISTS

Over all 69 species of animals have been added as new to science from India by ZSI scientists (2 species of Cnidaria, 7 species of Nematoda, 2 species of Annelida, 49 species of Insecta, 4 species of Crustacea, 4 species of Pisces and 1 species of Reptilia).

NEW RECORDS TO INDIA

- 35 Species of Animals (8 species of

Cnidaria, 2 species of Nematoda, 13 species of Insecta, 1 species of Arachnida, 8 species of Mollusca, 2 species of Pisces and 1 species of Bird recorded for the first time from India.
A total of 95 Type specimens deposited in the National Zoological Collection with registration numbers.

IDENTIFICATION OF CONFISCATED MATERIALS OF GOVT. OFFICES/ LAW ENFORCING DIRECTORATES / POLICE DEPARTMENT

Confiscated materials received from Govt. Offices/ law enforcing directorates / police department by Amphibia Section, General Non-chordate Section, Mammal Section, Marine Fish Section, Mollusca Section, Reptilia Section, Andaman and Nicobar Regional Centre, Port Blair, Central Zone Regional Centre, Jabalpur, Marine Biological Research Centre, Chennai and Western Ghat Regional Centre, Calicut were identified.

1. 150 nos. of Mongoose hair brush received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, *Herpestes edwardsii*
2. 201 nos. of Mongoose hair brush received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, *Herpestes edwardsii*
3. 29 nos. of Mongoose hair brush received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, *Herpestes edwardsii*





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4.	4 nos. skeletal material received from Div. Manger, Kalimpong Forest Division, Kalimpong, identified as Asian Elephant <i>Elephas maximus</i>	9.	Animal scales received from R.K. Debendra Singh, Superintendent, Customs preventive Force, Monipur, identified as Chinese Pangolin <i>Manis pentadactyla</i>
5.	50 nos. of Mongoose hair brush received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, <i>Herpestes edwardsii</i>	10.	Animal tusk received from Dy. Director, W.C.C.B, E/R, Kolkata, identified as distorted canine tooth of Wild Boar <i>Sus scrofa</i> .
6.	626 nos. of Mongoose hair brush received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, <i>Herpestes edwardsii</i>	11.	Body part of wild animal received from Dy. Field Director, B.T.R (E), Alipurduar, identified as Tusk of Asian Elephant <i>Elephas maximus</i>
7.	A sealed packet containing Bird feather have been received from WCCB (NR) for identification, for which report was prepared and sent to the respective office on 21 st Nov, 2013.	12.	Bones of elephant received from Dy. Field Director, B.T.R (W), Alipurduar Court, identified as Cervical vertebrae and Carapal bone of Asian Elephant <i>Elephas maximus</i>
8.	Animal scales received from Div. Forest officer, Baikunthapur Division, Siliguri, identified as Chinese Pangolin <i>Manis pentadactyla</i>	13.	Broken tooth received from Reg. Dy. Director, WCCB, E/R Kolkata, identified as Premolar tooth of Tiger <i>Panthera tigris</i>
		14.	Confiscated coral fragments received from Wildlife Crime Control Bureau, Eastern Region, MOEF, Kolkata were identified by the scientist of General Non-chordata Section of ZSI HQ.
		15.	Dr. C.K. Mandal identified 1 lot of leeches (7 exs. 1 species, 1 genera 1 family) received from Debashis Talukder, Chemist, Vivekananda Pharmacy, Madhyamgram, North 24 Parganas, West Bengal and sent after identification.
		16.	Dr. Ch. Satyanarayana identified 36 examples of confiscated coral fragments as Hermatypic corals



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19. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge has identified the seized materials received from DFO, Baikunthpur Division, Office of the DFO, Rabindra Nagar, Siliguri, identified and confirmed as belongs to Leopard *Panthera pardus* (Linnaeus, 1758); Assistant Commissioner, Customs (P) Division, Araria, identified and confirmed as Fake Rhinoceros horn; from Shri. C. Behera, Reg. Dy. Director, Wildlife Crime Control Bureau, Eastern Region, Nizam Palace, Kolkata, identified and confirmed as a part of last inner premolar tooth of Upper Jaw of Tiger *Panthera tigris* (Linnaeus, 1758); from Shri Nim Tshering Bhutia, Sub Inspector, Itahar Police Station, Uter Dinajpur, identified and confirmed as distorted upper jaw bone with some teeth belongs to Cattle.
20. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge of Mammal and Osteology Section has identified the seized material received from the Deputy Field Director, Buxa Tiger Reserve (East), Alipurduar court, West Bengal and identified it as Tusk belongs to Asiatic Elephant, *Elephas maximus* Linnaeus, 1758, and another seized material received from the D.F.O., Wildlife Division (III) Cooch Behar, West Bengal and identified it the osteological articles belongs to Leopard, *Panthera pardus* (Linnaeus, 1758).
17. Dr. Ch. Satyanarayana identified 70 examples of confiscated coral fragments as Hermatypic corals belonging to 8 species, 3 genera and 3 families, 2 orders and 1 class (Anthozoa). The confiscated coral fragments were received from Wildlife Crime Control Bureau, Eastern Region, MOEF, Kolkata-20.
18. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge has identified the material received material The Divisional Forest Officer, Wildlife Head Quarter, Salt Lake City, Kolkata identified as raw hairs of Grey Mongoose *Herpestes edwardsii*.



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21. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge of Mammal and Osteology Section has identified 4 rodent specimens as *Rattus tanezumii* (Temminck) and *Rattus pyctoris* (Hodgson, 1845).
22. Dr. Gaurav Sharma, Scientist-C has examined wildlife material received from the Divisional Forest Officer, Wildlife (HQ), Bilkash Bhavan, Salt Lake City, Kolkata the musical instrument made up of Horn for its identification and it is identified as has been derived from *Bos gaurus* C.H. Smith, 1827, Gaur on 12 July, 2013.
23. Dr. Gaurav Sharma, Scientist-C has examined wildlife material received from Divisional Manager, Kalimpong Forest Division, WB Forest Development Corporation Limited, Kalimpong, Distt.-Darjeeling and identified that skull, lower jaws and pelvic girdle has been derived from sub-adult of Asian Elephant, *Elephas maximus* Linnaeus, 1758 (Mammalia: Proboscidea: Elephantidae) on 22 July, 2013.
24. Dr. Gaurav Sharma, Scientist-C has identified the material received from Deputy Field Director, Buxa Tiger Reserve (E), Alipurdwar Court, West Bengal and identified it as the cut-piece of Tusk of Asian Elephant, *Elephas maximus* Linnaeus and the material received from D.F.O. Baikunthapur Division, Rabindra Sarani, Siliguri, West Bengal and identified it as belongs to Chinese Pangolin, *Manis pentadactyla* Linnaeus
25. Dr. Gaurav Sharma, Scientist-C has on the spot examined wildlife seized material at Jalpaiguri Forest Division and identified that tusk has been derived from Asian Elephant, *Elephas maximus* Linnaeus, 1758 (Mammalia: Proboscidea: Elephantidae) as per directives of the Learned Chief Judicial Magistrate, Jalpaiguri and report submitted to The DFO, Jalpaiguri Forest Division on 24 July, 2013.
26. Elephant tusk received from Dy. Field Director, B.T.R (E), Alipurdwar, identified as Tusk of Asian Elephant *Elephas maximus*
27. Identified confiscated corals received from Shri. Rajagopal Prashant, Dy. Conservator of Forests (South) and Wildlife Officer, Office of the Wildlife Warden, Department of Forests and Wildlife, New Delhi – 02.
28. Identified confiscated items received from Shri. D.K. Gupta, Addl. Dy. Commissioner of Police
29. Identified confiscated items received from Shri. S. Saravanan, Addl. Dy. Commissioner of Police, Keshav Puram, North West Delhi (FIR no: 354/12, KPS Keshav Puram, dated 21.12.2012)



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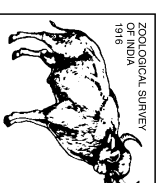


- | | |
|--|---|
| 30. Identified confiscated items received from Shri. Satya Prakash, Sub Inspector and In Charge, Police station Burari, North Delhi (FIR no: 123/13, dated 01.04.2013) | 35. Mongoose hair brushes received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, <i>Herpestes edwardsii</i> . |
| 31. Identified confiscated items received from Station House Officer, Police station, Roop Nagar, North District, Delhi (memo no: 603 dated 14.03.13, FIR no: 44/13, dated 23.02.2013) | 36. One flat skin received from Div. Forest officer, Baikunthapur Division, Siliguri, identified as Leopard <i>Panthera pardus</i> |
| 32. Identified confiscated marine mollusks received from Shri. Rajagopal Prashant, Dy. Conservator of Forests (South) and Wildlife Officer, Office of the Wildlife Warden, Department of Forests and Wildlife, New Delhi – Identification report of the case property submitted with seal (DVS) to this office: State vs Yogendra Shukla | 37. One ladies bag sent by Shri Palash Bhoyar, Assistant Commissioner of Customs, Airport Parcel Sorting Office, Vile Parle (E), Mumbai made up of the original hide (processed skin) of the snake of Python was identified by the scientists of Reptilia Section, ZSI HQ and the reply was sent. |
| 33. Identified confiscated marine mollusks received from Station House Officer, Police Station, Prasad Nagar, Central Delhi (Memo no: 3687, dated 05.09.12 (FIR no: 152/12, dated 16.07.2012) | 38. Osteological articles of wild species received from D.F.O Wildlife III Division, Cooch Behar, identified as Leopard <i>Panthera pardus</i> |
| 34. Mongoose hair brushes received from D.F.O Wildlife HQ, Bikash Bhawan, Kolkata, identified as Indian Grey Mongoose, <i>Herpestes edwardsii</i> | 39. Photographs and ramus mandible of the marine animal received from D.F.O, 24 parganas (South), Kolkata, identified as Baleen whale (Genus: <i>Balaenoptera</i>) |
| | 40. Piece of Jaw bone with some teeth received from SI of police, Itahar.PS. Utter Dinaipur, identified as Upper jaw of Cattle. |
| | 41. Piece of scarf received from Asstt. Commissioner of customs, Airport authority of India, Kolkata identified as Hairs of Tibetan antelope <i>Pantholops hodgsonii</i> |
| | 42. Police station Anand Vihar, East district, Delhi, memo no: 1170 dated 05.06.13 (FIR no: 354/12, KPS Keshav |





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47. P.S. Falakata, identified as Fake material
47. Sample of Fur-cap received from D.F.O. Wildlife HQ, Bikash Bhawan, Kolkata, identity could not determined.
48. Shri S.S. Mishra, Sci.-B appeared in the Court, Siliguri on 12th February, 2014 to confirm identity of confiscated Sea horse identified earlier.
49. Some seized wildlife materials received from D.F.O. Wildlife III Division, Cooch Behar, identified as 1) Small cut piece of tusk of Asian Elephant *Elephas maximus* 2) Two distorted limb bones of Asian Elephant *Elephas maximus*
50. Some seized wildlife materials received from D.F.O. Wildlife HQ, Bikash Bhawan, Kolkata, identified as specimen marked as A, B, C, D, E identified. Specimen marked as F, G could not identify.
51. Some wildlife derivatives Dy. Field Director, B.T.R (E), Alipurduar, identified as Wild Boar *Sus scrofa*
52. Tiger skins received from Reg. Dy. Director, WCCB, Kolkata, identified as fake materials
43. Received the wildlife material from Shri. C. Behera, IFS, Regional Deputy Director, Wildlife Crime Control Bureau, Eastern Region, Kolkata-20 for its identification and it is identified as Indian Wild Boar, *Sus scrofa* Linnaeus.
44. Rhino Hoof received from D.F.O. Jaldapara Wildlife sanctuary, Cooch behar
45. Rhino Horn received from Asstt. Commissioner, Customs (P), Araria, identified as Fake material.
46. Rhino Horn received from Dy. Commissioner of Police, Alipurduar,





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HEADQUARTERS

Zoological Survey of India Headquarters office, Kolkata, apart from scientific divisions and sections has Library, Publication, Identification and Advisory, ENVIS centre, Field Survey, Training and Extension, Museum and Taxidermy Divisions, Photography section, Artist section, Scanning Electron Microscopy Unit and Data centre. These units support research work of the scientists.

The Scientific Divisions and Sections at ZSI Headquarters undertaking scientific studies on various animal groups from Protozoa to Mammals. The largest division is Entomology followed by Protozoology, Nematelminthes, Platyhelminthes, Arachnology, Malacology, General Non-Chordata, Crustacea, Marine and Fresh water Fish, Amphibia, Reptilia, Bird, Mammals and Osteology, Animal Behaviour, Wildlife Conservation, Animal population and Antarctica Unit.

Training and Extension Division has conducted several training programmes for capacity building of scientists and researchers namely, “*Application of Scanning Electron Microscopy in Animal Taxonomy*” on 17th–18th



July, 2013 for the Scientists and Scientific Assistants held at Zoological Survey of India, Headquarters, Kolkata; “*GIS in Faunal Studies and Databasing and Digitization of Faunal Collections*” on 15th–16th January, 2013 for the Scientists and Scientific Assistants held at Zoological Survey of India, Headquarters, Kolkata; “*DSLR Macrophotography*” by Training and Extension Division, ZSI, Kolkata from 6th–7th March, 2014; “*Need based Taxonomy for Conservation of Faunal Diversity*” by ENVIS Centre from 27th–28th March, 2014 and “*Training Programme on Integrated Coastal Zone Management for the State Govt. officials at ZSI/MARC, Digha on 5th January, 2014.*”

Field Survey Division supervising overall surveys carried out by the different scientific divisions of Headquarters and Regional centers. Field Survey Division approved a total of 132 surveys during the year under report, out of these 33 surveys from headquarter and 99 from different regional centers of ZSI have been undertaken.





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Mountain Ecosystem: Two surveys were undertaken to Spiti valley, Himachal Pradesh.



Estuarine ecosystem: Five surveys were undertaken in Diamond harbor, West Bengal; Narmada and Tapi Estuary, Gujarat and Pennar estuary, Andhra Pradesh.

Marine/Island ecosystem: Six extensive surveys were undertaken in Kerala coast; Gulf of Kachchh, Gujarat; Gulf of Mannar and Palk Way, Tamil Nadu.

Biosphere Reserve/ Conservation areas: Eight surveys were undertaken in Sunderbans Biosphere Reserve, West Bengal; Southern Western Ghats Biosphere Reserve, Kerala; Gulf of Mannar Marine Biosphere Reserve, Kerala and Gulf of Kachchh Biosphere Reserve, Gujarat.

National Parks: Nine surveys were undertaken in Bhitarkanika NP, Odisha; Mahatama Gandhi Marine NP, Andaman and Nicobar Island; Nameri NP, Assam; Rajaji NP, Uttarakhand and Silent Valley NP, Kerala.



Wildlife Sanctuaries: Twenty four surveys were undertaken in Chail Wildlife Sanctuary, Himachal Pradesh; Dharanghati WLS, Himachal Pradesh; Dibrusaikhowa WLS, Assam; Kalakad Mundanthurai WLS, Tamil Nadu; Kalatop-Khajjar WLS, Himachal Pradesh; Ralamandal and Kheoni WLS, Madhya Pradesh; Malabar WLS, Kerala; Itanagar WLS, Arunachal Pradesh; Nauradehi WLS, Madhya Pradesh; Nongkhylliem WLS, Meghalaya; Malabar WLS, Kerala; Phansad WLS, Maharashtra; Sainekhali WLS, West Bengal; Singhori WLS, Madhya Pradesh; Sultanpur WLS, Haryana and Veerangana Durgavati WLS, Madhya Pradesh during the year.

States and Union territories: Under the state fauna programme forty threesurveyswere undertaken in several districts of Andaman and Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Himachal





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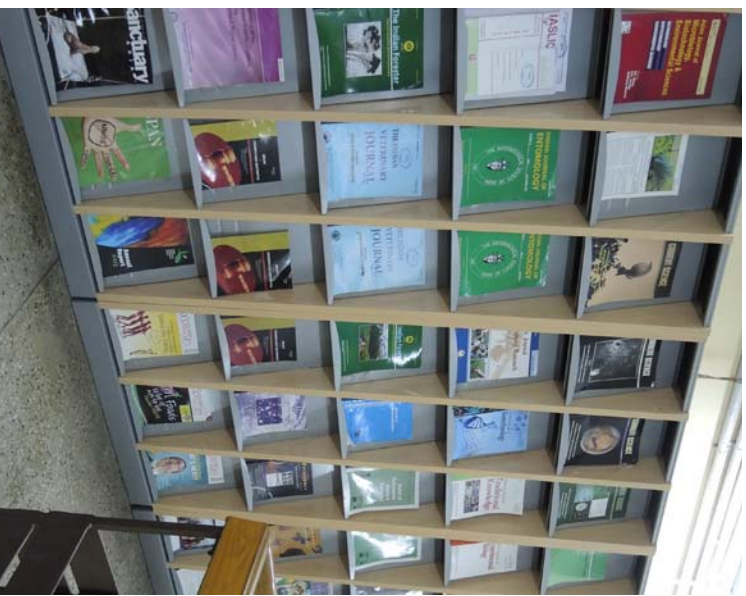


Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Status Survey: Seven surveys in Coral reefs, Coral associated Organisms, Indian Golden Gecko, Indian Horse Shoe Crabs and Golden Langur were carried out.

Library Division holding collection of Books and Journals on zoology in India and Asia. During the year about 239 books, 462 issues of Indian Journals, 276 issues of Foreign Journals were added. Cataloguing of 1782 nos. of Books/ Journals was completed, 23 titles of online foreign scientific journals uploaded in the I.P. address of Z.S.I Headquarter, Kolkata.

As per recommendations of task force constituted by MoEF for conservation of faunal diversity of India, the work of digitizing all departmental publications of ZSI are in progress and the entire archive of the above mentioned publications (contained in one searchable DVD) which allows integrated search under author, title, year and any key word with the facility of downloading the full



text as per requirement will be uploaded in the web site of ZSI for Public Distributions.



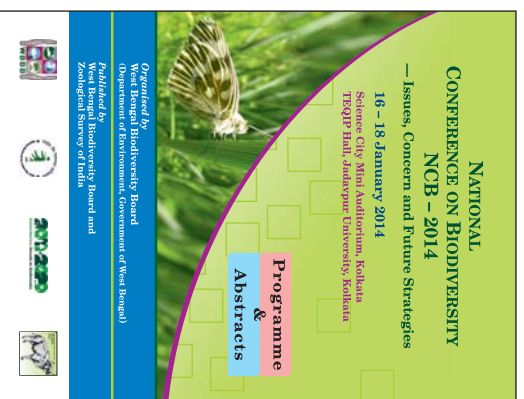
Publication Division during the year came with 32 publications (03 Records,



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Endemic Animals of India, Mangroves in India, Animal Discoveries 2012, Occ. Paper No. 336, Free Leaving Marine Nematodes of Tamil Nadu Coast, India, Occ. Paper No. 337, Animal Remains from South western Parts of West Bengal, Occ. Paper No. 338, Fossil Fauna of Nagaland, Occ. Paper No. 340, Studies on diversity and distribution of Spiders of Darjeeling Hills, Occ. Paper No. 342, Cephalopoda in NZC of the ZSI, Kolkata, Occ. Paper No. 343, Major Fauna of Rasik Beel, West Bengal, Occ. Paper No. 344, Mammal and Avi-Fauna of Kuldiha WLS, Orissa, Occ. Paper No. 346, A checklist of Trematodes from Amphibian species, Occ. Paper No. 347, Endemic Odonates of India, Occ. Paper No. 348, A review of *Bracon* species of India, Occ. Paper No. 349, Metacircular Fauna of India, Occ. Paper No. 350, Taxonomic studies on Aquatic Insects of Lakes in and around Hyderabad, Occ. Paper No. 351, Zooarchaeological studies of Animal remains of Daimabad, Occ. Paper No. 352, Diversity, Abundance and Seasonal Fluctuation of Zooplankton from few Wetlands in and around Kolkata, Wetland Ecosystem Series, 15, Faunal diversity of Khijadiya Lake and Bird Sanctuary, Wetland Ecosystem Series, 17, Faunal Diversity of Aquatic Invertebrates Deeper Beel, Assam, Estuarine Ecosystem Series, 7, Fauna of Brahmani-Baitarani Estuarine Complex w.s.r. to Crabs and Fishes, Annual Report 2011-12, Guide to common Echinoderms of A and N Islands, Pictorial Guide of Grasshoppers of Himachal Pradesh, Handbook on Major Hemipteran Predators of India, State Fauna Series, 21, Fauna of Karnataka, Conservation Area Series, 47, Kumbalgarh WLS, Conservation Area Series, 48, Kalesar NP and WLS, Fauna of India – Dermptera (Part-3), Programme and



Abstract on National Biodiversity Conference (WBBB). In addition to that 411 scientific papers were published by the ZSI Scientists

Books released: Endemic Animals of India by Prof. M.S Swaminathan, NBA, Chennai was released on the occasion of International Day of Biodiversity, 22nd May, 2013 by Prof. M.S Swaminathan, NBA, Chennai and Mangroves in India by Hon'ble Secretary, MOEF, New Delhi; on World Environment Day, 5th June, 2013 : Animal Discovery, 2012 by Hon'ble Minister Smt. Jayanthi Natarajan, MOEF, New Delhi; Handbook on Major Hemipteran Predators of India by the Forest Secretary,





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Bihar Government and Chauras of Bihar by the Forest Secretary, Bihar.



Molecular Systematics Division: With the special grant allocated from Ministry of Environment and Forests (MOEF), New Delhi, Zoological Survey of India (ZSI) has established 5 State of Art Molecular Taxonomy Laboratories at Kolkata, Dehradun, Hyderabad, Chennai, and Pune. These five labs are well equipped with facilities such as, Real Time PCR, PCR, deep freezers, centrifuges etc. involved in molecular Systematics of different animal taxa. In addition, DNA Sequencer has been installed in HQs, Kolkata. The HQs molecular taxonomy laboratory has been further strengthened by having some new equipments like new PCR machine,



Laminar Air Flow, Qubit fluorometer and safe gel imager 2.0. These molecular taxonomy labs have been established to develop DNA Barcoding data on Indian fauna for integration of sequence based information in modern taxonomy.

Identification and Advisory Division was assigned one research programme, Status Survey of Indian Golden Gecko, *Calodactylodesaurus* (Beddome, 1870) in Eastern Ghat, India: Under this, two surveys were undertaken. First survey was undertaken to Niyangiri and Khandwalmali Hills from Kalahandi District; Baplamali, Kutrimali and Sankesumali from Rayagada District and Chandragiri and Mahendragiri Hills from Gajapati district of Odisha (22 days) from where four examples of Golden Geckos were recorded and 30 examples of Mollusca, 8 examples of Insecta and 3 examples of lizards were collected. Second Survey was undertaken to Tirupati hills from Chittoor District of Andhra Pradesh and Shyed Bashamalai from Krishnagiri District of Tamil Nadu (22 days) from where 2 examples of Amphibia, 2 examples of lizards and 12 examples of Mollusca were collected.



In addition to this, twelve monthly D.O. letter (reports) were sent to Under





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Secretary, GC Section, MoEF, New Delhi for the financial year by the section and 30 lots of query materials received from various scientific organizations across the country were registered and sent to concerned sections/experts for identification and report by the section.

Wildlife Section was assigned the only programme, Present Status of Golden Langur *Trachypithecus geei* (Khajuria 1956), at Lower Assam: Under this programme one field trip was undertaken from 10th to 30th September, 2013 to Manas Wildlife Sanctuary, Chakrashila Wildlife Sanctuary and Kakojiana Proposed Wildlife Sanctuary. During the status survey about 147 Golden Langur and 126 examples of Capped Langur were observed and recorded. One research paper submitted for publication during the period.



Museum and Taxidermy Division is supervising and maintaining the Insects, Fish, Amphibia, Reptilia, Mammal and Ecological Gallery of Zoological Survey of India at Indian Museum. On the occasion of the bicentenary celebrations of Indian Museum the Hon'ble Prime Minister of India Dr. Manmohan Singh,

Mamata Banerjee (CM of West Bengal), Smt. Chandresh Kumari Katoch (Minister of Culture) and Shri KapilSibal (Minister of IT and Law) visited the Zoological Galleries of the Indian Museum on 2nd February, 2014.



Division was assigned one programme namely Status Survey of Indian Skimmer in Chambal National Park, during the said period under report about 63 examples of amphibians belonging to 14 species were identified from the unnamed collections present in the Amphibia Section. Scientists of the section attended one seminar, computerized 113 examples of exhibits of gallery, cleaned and repaired the gallery exhibits during the period.

Protozoology Section was assigned two programmes (1) Moss inhabiting Protozoa fauna of Assam: Under this programme, five districts were surveyed viz., Hailakandi, Karimgunj, Cachar, Goalpara and Kamrup from which a total of 312 samples were collected which includes 67 samples of soil moss, 88 samples of wall moss, 48 samples of tree moss and 8 samples of rock moss. 50 slides





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have been prepared from the water samples and moss samples collected from Assam from which 36 species were identified. Preparation of slides and identification of samples is under progress. (2) Studies on the diversity of protozoans from various ecosystems of Himachal Pradesh: Under this programme, four districts *viz.*, Chamba, Kangra, Mandi and Kullu districts and few protected areas *viz.*, Kalatop Wild Life sanctuary in Chamba district, Bandi WLS from Mandidistrict and Kais Wild Life sanctuary from Kullu district were surveyed from which a total of 370 samples were collected which includes 80 water samples, 47 wall moss, 83 rockmoss, 37 soil samples and 8 wood moss samples. 100 permanent slides were prepared. 17 species of protozoans belonging to 6 genera, 4 family and 2 orders were recorded and 26 slides were identified and registered during the period.

Nemathelminthes Section was assigned two programmes (1) Soil and Plant Parasitic Nematodes (Order Dorylaimida and Tylenchida): Under this programme, 7 species of nematodes under 7 genera and 6 families belonging to the order Dorylaimida and 12 species of nematodes under 7 genera and 5 families belonging to the order Tylenchida were identified. (2) Arthropod parasitic Nematodes of Maharashtra: Under this programme, 8 districts of Maharashtra *viz.*, Pune, Thane, Raigarh, Solapur, Kolhapur, Sangli, Satara and Ratnagiri were surveyed in two separate surveys from which 3 species of nematodes belonging to 2 genera were identified.

Platyhelminthes Section was assigned two programmes (1) Platyhelminthes Parasites of Fishes of Economic Importance from



Diamond Harbour, West Bengal, India: Under this programme, surveys were undertaken to Diamond Harbour, Nischintapur (Poila number Jetty), Kakdwip and Namkhana. 37 vials of specimens were collected and 16 species of Trematodes and 8 species of Acanthocephala were identified during the period. (2) Fauna of Gujarat: Trematodes of fishes: Survey not yet been done. 32 species were recorded from literature.

Four species of Platyhelminthes are new records from Himachal Pradesh and two species of Platyhelminthes *viz.*, *Zonorchisummai* Chakrabarti et al, 2012 and *Episthimum solanensis* Chakrabarti and Ghosh, 2012 are new to science. 1692 data entry has been done in this year; altogether 9406 data entry has been done by the Scientists of the Section. Three research papers were published, "State of the Art Report of Animal Resources of India: Platyhelminthes" was prepared and three outside query materials were attended by the Scientists of the Section.

Acarology Section has undertaken one programme, State Fauna of Maharashtra: Oribatid Mites (Acari: Oribatida): Under this programme, one survey was conducted in Mumbai, Thane, Raigad, Ratnagiri and





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Sindhudurg districts, from which 21 species of oribatid mites under 20 genera belonging to 15 families were identified. The identified specimens are registered in National Zoological Collection and photographed with computerization of whole data. Regn. no. 4961/17-5035/17. 21 species of soil oribatid mites were records as new from the state of Maharashtra among which 3 are newly recorded from India.



and distribution of Soil micro-arthropods fauna w.s.r. to Collenbola in Sajnakhal Wild Life Sanctuary, South 24 Pgs, W.B.: Final technical report and MSS submitted. Under this, 10 species of Collenbola under 9 genera were identified. All the species of Collenbola are first time recorded from the Sajnekhal W.L. Sanctuary, West Bengal. During the period, 9 research papers and 2 abstracts have been published and 9 research papers were communicated for publication; three outside query lots were attended by the Section. The scientists of the Section organized one workshop on “Scanning Electron Microscopy (SEM) in Animal Taxonomy”, organized at ZSI, Head Qrs. During 17th and 18th July, 2013 in collaboration with Training and Extension division and participated in one seminar and one training programme.

Apterygota Section was assigned

programme (1) Studied on the diversity of Collenbolan fauna from Jharkhand: Under this, one survey was undertaken to Sahibganj district, Godda district, Pakur district, Deoghar district, Jamtara district and Dhanbad district for 20 days from 19th August, 2013 to 9th September, 2013 from which 900 faunal examples (799 examples of Collenbola, 63 examples of Diplura, 2 examples of Thysanura, 14 examples of Orthoptera, 2 examples of Hemiptera, 15 examples of Coleoptera, 2 examples of Hymenoptera and 3 examples of Lepidoptera) were collected. 16 species of Collenbola under 10 genera of 5 families were identified, all of which are new to Jharkhand. (2) Studies on diversity



Central Entomology Laboratory is engaged in research programme, (1) Formicidae (Hymenoptera) of Andhra Pradesh; in this programme one survey was conducted for 19 days from 18th February, 2013 to 8th March, 2013 covering the districts of Krishna, E. Godawary, W. Godawary and Vishakhapatnam, collected 3194 exs. of insects, 1371 exs. of Hymenoptera; 51 species



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of Formicidae have been identified; *Podagrion moradabadicum* Narendran and Sheela (Hymenoptera: Torymidae) and *Ormyrus perseae* Girish Kumar, Sheela and Narendran (Hymenoptera: Ormyridae) were added as new to science.

440 Type specimens containing 136 species of Thysanoptera photographed, all the related data computerised and submitted for publication. In addition to that Photography and computerization of 73 specimens of Phthiraptera containing 47 species, 760 specimens of Lepidoptera containing 510 species of Lepidoptera, 49 species containing 105 specimens of Odonata were completed and another research programme (2) Formicidae (Hymenoptera) of Andhra Pradesh: Under this programme, surveys were conducted for 19 days from 18th February, 2013 to 8th March, 2013 covering the districts of Krishna, E. Godawary, W. Godawary and Vishakhapatnam, from which 3194 exs. of insects, 1371 exs. of Hymenoptera were collected; 51 species of Formicidae were identified; *Podagrion moradabadicum* Narendran and Sheela (Hymenoptera: Torymidae) and *Ormyrus perseae* Girish Kumar, Sheela and Narendran (Hymenoptera: Ormyridae) were added as new to science.



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Hymenoptera Section was assigned a programme, Studies on selected families of Hymenoptera (Apidae, Vespidae, Scoliididae and Formicidae) of Sunderbans Biosphere Reserve, West Bengal: In this programme one faunistic survey was conducted (Sunderbans Biosphere Reserve Survey from 29th July, 2013 to 8th August, 2013, in and around Canning, Jbantala, In and around Pakhirala, Sudhanyakhal, Dobanki, Gosaba, Biraj Nagar, Kakdwip and collected 517 specimens, 01 wasp nest, 01 Bottle of water sample from pond).

Three new species described: *Subancistrocerus venkataramani* Girish Kumar, 2013 (Hymenoptera: Vespidae), *Ormyrus perseae* Girish Kumar, Sheela and Narendran, 2013 (Family: Ormyridae) and *Epsilon manasicum* Girish Kumar and Carpenter, 2014 (Family: Vespidae).





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The genus *Cochlischnogaster* Dong and Otsuka and the species *Cochlischnogaster dadugangensis* Dong and Otsuka (Hymenoptera: Vespidae: Stenogastrinae) are the new record from the Indian subcontinent. The genus *Omicroides* Giordani Soika and the species *Omicroides singularis* (Smith) (Hymenoptera: Vespidae: Eumeninae) are new record to India. Identification of the specimens belongs to the families Scolidae and Vespidae at species level completed. A manuscript on the family Vespidae of Sunderbans submitted for publication.

Lepidoptera Section was assigned programmes namely (1) Lepidoptera Fauna of Maharashtra: Under this programme, one survey was undertaken during the period from which 897 examples of different faunal groups were collected, 104 examples of Lepidoptera were identified and 66 examples of Lepidoptera have been registered; (2) Insect Pests and Pollinator diversity of some major crops of North Bengal: Two surveys have been conducted during the year. Over all 1932 examples of different faunal groups were collected. 52 examples of Lepidoptera have been identified. 16 examples of Lepidoptera have been registered.

About 1000 entries have been made towards digitization of library data, specimens' card, RFD and National Zoological collection. 862 examples have been transferred from old wooden cabinets to new insect storage compacter. Scientists of the Section participated in two training programmes and organized one seminar "Need Based taxonomy" in Zoological Survey of India, Kolkata on 27-28th March, 2014.



Isoptera Section was assigned two programmes namely (1) Studies on Termite Fauna (Order: Blattaria; Infra order: Isoptera) of Assam: Ms. almost ready for publication with full taxonomic treatment of 30 species (16 genera and 3 families). Out of 30 species, 5 species being first record from the state and many new locality records were included. All the species have been dealt with regard to their synonyms, diagnostic characters, distribution and biological and taxonomical



remarks. (2) Studies on Termite Fauna (Order: Blattaria; Infra order: Isoptera) of Himachal Pradesh: Single survey completed in September, 2013 in the areas of Shimla, Mandi (In and around Mandi and Rewalsar Lake), Kullu (Kullu and Manali), Bilaspur (Bilaspur and different areas of Govind Sagar WLS), Sirmour (Renuka WLS) and Solan (Y.S.P University of Horticulture and Forestry, Naini, Kumarhati) Districts. Dharampur and Parwanoo). A total of ca. 2223 exs. of insects including ca. 2000 exs of termites in 73 vials have been collected from different localities under 6 camps and 9 field stations of Himachal Pradesh. Total 11 species under 6 genera and 2 families (ca.70 vials) were identified. Two new records and numerous new locality records were found. 70 vials were identified and computerized. Five species have been dealt with regard to their synonyms, diagnostic characters and distribution.

Diptera Section was assigned three research programmes namely (1) State fauna of Himachal Pradesh: Under this programme, one survey was undertaken to Kullu, Mandi

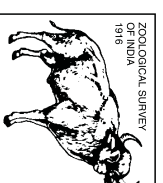


and Solan districts of Himachal Pradesh for 20 days from 8th July 2013 to 27th July, 2013 from which 726 examples of Diptera, 14 examples of Coleoptera, 6 examples of Hemiptera, 9 examples of Hymenoptera, 5 examples of Orthoptera, 7 examples of Odonata, 22 examples of miscellaneous group of insects, 2 examples of Arachnida and 1 example of Amphibia were collected. 474 species belonging to 228 genera under 37 families were identified of which 57 species are new to Himachal Pradesh and 2724 specimens were registered during the period.

(2) Diversity and Distribution of dipteran fauna from Sonamukhi Protected forest, West Bengal: Under this programme, two surveys were conducted in Hamirhati, Bandarhati, Dihipara, Panchal, Churamanpur, Sonamukhi Protected area, Nachanhati, Rampur, Kadaghata, Radhamohanpur, Kasidhi and Basa Beat area of Bankura district of West Bengal for 10 days from 12th January 2014 to 21st January, 2014 from which a total of 2564 faunal examples (94 examples of Coleoptera, 45 examples of Hemiptera, 95 examples of Hymenoptera, 2229 examples of Diptera, 24 examples of Lepidoptera, 22 examples of Orthoptera, 20 examples of Isoptera and 35 examples of Odonata) were collected. 19 species belonging to 9 genera under 4 families were identified during the period. (3) Taxonomic studies on family Tabanidae (Insecta: Diptera) of West Bengal: Under this programme, three surveys were conducted in Jalpaiguri, Midnapore, Howrah and Hooghly districts of West Bengal for 10 days from 21st March 2014 to 30th March 2014 from which a total of 779 faunal examples (Coleoptera,



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Hemiptera, Hymenoptera, 660 examples of Diptera, Lepidoptera, Orthoptera, Isoptera and Odonata) were collected. 9 species belonging to 3 genera under 1 family were identified during the period of which 2 species are new to West Bengal. During the period under report 9 research papers and 3 abstracts were published, 4 research papers were communicated and 13 query lots were identified by the scientific staffs of the Section. Scientists of the Section attended two conferences, delivered lecture in two seminars and participated in two training programmes.



Coleoptera Section was assigned scientific programme namely (1) Fauna of Himachal Pradesh: Tenebrionidae and (2) Fauna of Himachal Pradesh Carabidae: under these programmes one survey has been conducted to Himachal Pradesh from 16.09.2013 to 03.10.2013 and 1983 examples of Coleoptera were collected and about 1110 examples were identified under 160 species of 113 genera. Query material received from Swami Yugeswarananda, Ramkrishna Mission Ashram, Narendrapur, Kolkata-103. 27 exs. under the families Chrysomelidae, Coccinellidae, Lycidae, Scarabaeidae,

Hydrophilidae, Curculionidae were identified. 10 specimens were identified which were brought from Prof. R. Swaminathan, Rajasthan College of Agriculture, Maharana Pratap University of Agriculture and Technology, Udaipur, on 14th November, 2013.

Orthoptera Section was assigned programme (1) Mantodea fauna of Andaman and Nicobar Islands: Under this programme, surveys were undertaken to Wondoor, Ferrargunj, Mount Harriett NP, Nayashar, Bamboo Teri, Havlock Island, Mancharie, Rut Land Island, Bindrayan, Sonapad Madar, Shoal Bay, Mazar Pahar, Chitityatapu, Port Blair of South Andaman; Landfall Island, Saddle Peak NP, Table Island, Mud Volcano-Joltugiri, Kalpong Dam, Dighlipur, Mayabunder, Interview Island, Karmatang Beach, Webi Village, Kara Nallah, Hatti Level, Samnagar-2, Dighlipur of North Andaman and Panchwati-moricedera Beach, Gopalpohar-Yerratta, Kalsi-Bakutala, Janakpur, Rangat of Middle Andaman districts for the period of 47 days from 3rd December, 2013 to 18th January, 2014 from which a total of 400 faunal examples (Mantids -13 examples,



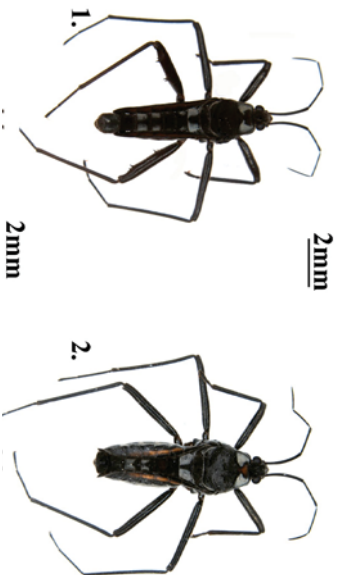


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Phasmids -12 examples, Damselflies -100 examples, Dragonflies -25 examples, Vespidae (Polistinae, Eumeninae, Stenogastrinae) –200 examples, Flies -35 examples, Longhorned Grasshoppers -15 examples, 13 examples of mantids were collected of which 6 examples were identified as belonging to 5 species under 4 genera. The species *Memantis gardeneri* Werner, 1931 is a new record to the Union Territory of A and N Islands. During the period under report 1 book and 4 research papers were published by the Section. 5 query lots were identified and disposed. The transfer of insect specimens of the family Acrididae of 25 boxes have been transferred from the old cabinets to the new insect storage system.

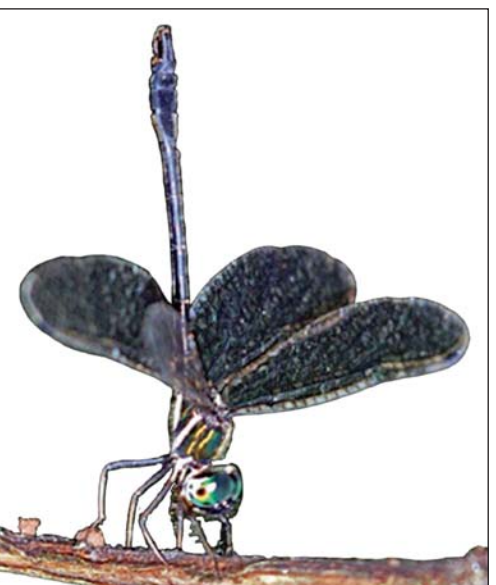
Miscellaneous Insect Order was assigned programme namely Ephemeroptera of Himachal Pradesh: Field surveys were conducted to Hamirpur, Bilaspur, Una, Kangra, Palampur and Sirmour districts of Himachal Pradesh from which over 500 specimens of Ephemeroptera, Odonata and Trichoptera were collected and 12 species under 8 of Ephemeroptera were identified.



New species discovered: Odonata (Corduliidae): *Idionyx gomantakensis* Subramanian, Rangnekar and Nayak, 2013;

Hemiptera (Veliidae): *Velia mitrai* Basu, Subramanian and Polhemus, 2013; Hemiptera (Aphelocheiridae): *Aphelocheirus thirumalaii* Basu, Subramanian and Saha, 2013; Hemiptera (Gerridae): *Amenboia mahamanda* Basu, Subramanian and Polhemus, 2013 and Hemiptera (Gerridae): *Amenboia bidentata* Basu, Subramanian and Polhemus, 2013.

During the period, 2 books, 1 book review, 1 monograph and 8 research papers were published while 10 research papers were communicated. 2 lots of query material were identified and the research work of three SRFs were supervised by the Scientists of the Section.



Hemiptera Section was assigned programme, Hemipteran Fauna of Maharashtra: under this programme one survey to Maharashtra from 31st August, 2013 to 20th September, 2013 covering the districts of Bhandara, Chandrapur, Yavatmal, Wardha, Nagpur. A total of 1724 faunal specimens were collected from the survey of which 1034 specimens belonged to Order Hemiptera.





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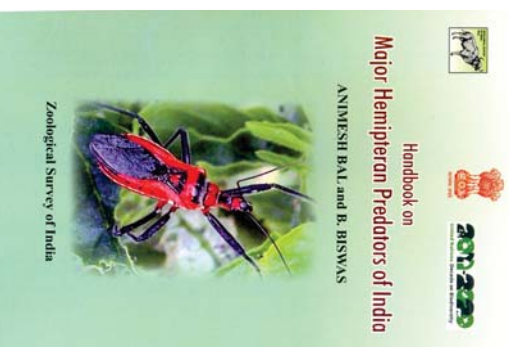


Altogether 127 species under 98 genera have been identified during the period. Sorted out 44 samples and segregated family wise for the collection made during Maharashtra survey and other surveys parties. Overall 387 spp. has been identified in 20 different families of Hemiptera, 315 examples of Hemipteran Fauna has been registered belonging to different families of Hemipteran Fauna.

Courtesius illuminates Distant (Hemiptera : Pyrrhocoridae), *Nabis tibialis* Distant and *Prostemmma carduelis* Dohrn belonging to family Nabidae, *Stenopirates collaris* Walker and *Oncyclocotis basalis* (Westwood) belonging to family Enicocephalidae and *Bardesanes signatus* of Reduviidae recorded for the first time from India. In addition to that 3 species under 3 genera were reported for the first time from the state of Maharashtra (*Eysarocoris montivagus* Distant, *Nezara graminea* Distant and *Sciocoris indicus* Dallas), Reduviidae (*Cleptocoris atronaculatus* Stal, *Oncocephalus impudicus* Reuter, *Oncocephalus schioedtei* Reuter, *Rhinocoris marginatus* (Fabricius), *Scadra annulipes* Reuter, *Scadra fuscicrus* Stal

and *Tribelocephala indica* (Walker)). During the period, one book entitled “Handbook on major Hemipteran predators of India” (ZSI, Publication), 10 reserch papers were published and 9 reserch papers were accepted for publication.

Soil Zoology Section was assigned programme namely A taxonomic and population analysis of earthworms in different habitats in IBG Howrah: One survey has been conducted every month for the population analysis of earthworms in different habitats in Indian Botanical Garden, Howrah. Over all 874 exs. of Earthworm were collected, out of which 88 exs.of earthworms were identified. Sexs.of earthworm identified (ZSI lot no (60/2) for the Deptt.of pharmacology CIPIT and AHS, 16 exs.of earthworm received from PAU, Ludhiana and 6 exs. of earthworms were identified to CAMPA project.



General Non-chordate Section was assigned research programme namely (1) Improvement of the quality of Reefs through





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Coral Transplantation/Restoration of Corals at Gulf of Kachchh – A community based Sustainable Approach (Collaborative project with Marine National Park, Gulf of Kachchh, Gujarat Forest Department. It is a world bank funded Integrated Coastal Zone Management project): Under this programme, suitable areas for deploying coral nurseries and suitable places to transplant the corals grown in the nursery were selected. All the clear water areas marked using remote sensing technology were surveyed using a GPS and the Sechi disc transparency values were noted down. A nursery area very much suitable to the prevailing conditions in the Kachchh region was selected with local species as a prelude to the introduction of Acropora and other branching species from other reef regions onto the Kachchh reefs. Different nursery methods suitable for restoration were being tried. The anthropogenic interference in the nursery site at Poshitra being sorted out. Efforts were taken to set up ex-situ coral nursery. Much of the material required was procured. Efforts are also being taken to procure diving equipment and other material. Efforts taken to ensure continuous monitoring of nursery at Pirotan by the project staff. Obtained permission for transplantation of corals brought from Donor sites and local area along with permission to collect local species.

One Logistic survey tour was taken by Dr. Ch. Satyanarayana, Scientist-B to Andhra and Orissa Coast with Dr. Jasmine, Scientist-C and PI of MoEF Project Entitled “Faunal Biodiversity of Orissa and Andhra Coasts” as a co-investigator and one Logistic survey tour was taken by Dr. Ch. Satyanarayana, Scientist-B to Sindhudurg Marine National

Park with Dr. Tripathy, Scientist-C and PI of MoEF Project on Biodiversity of Sindhudurg Marine National Park as a co-investigator.

An official trip to Gulf of Mannar and Gulf of Kachchh Marine National park from 19th December, 2013 to 31st December, 2013 along with Dr. Yogesh Kumar, Scientist deputed to work for the project after getting the permission to collect coral fragments from Gulf of Mannar and carried out for the identified locations outside Gulf of Mannar MNP, Palk Bay and Rameswaram Island for collection of coral fragments, established units for immediate aeration of coral fragments within a short distance from the collection point.

Mollusca Section was assigned research programmes namely (1) Diversity and distribution of Cephalopods along West Coast of India: Undertaken two surveys from 26th March, 2013 to 10th April, 2013 to Kerala and Karnataka coast and collected 845 exs. and from 15th November, 2013 to 6th December, 2013 to Maharashtra and Goa coast and collected 351 exs. Identified 42 species from 393 exs. (2) Species diversity and richness of mollusca fauna of Himachal Pradesh: Undertaken one survey from 24th May, 2013 to 5th June, 2013 to Himachal Pradesh and collected about 436 exs. Identified 29 species





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from 434 exs. (3) An Assessment of Taxonomic Status, Conservation and sustainable utilization of the Horseshoe crab resource along the East Coast of India: Undertaken two surveys from 23th July, 2013 to 5th August, 2013 to West Bengal and Odisha coast, collected 8 exs. and another from 11th November, 2013 to 24th November, 2013 to West Bengal and Odisha coast, collected 8 exs. Identified 2 species from 16 exs. During the period, Seven (7) new records of Mollusca from India were published in Animal Discoveries–2013.

Crustacea Section was assigned research programmes namely (1) State Fauna – Kerala: Marine Crabs, Stomatopods, Isopod: Under this, survey was conducted to Kasargod, Calicut, Thrissur, Ernakulam, Kollam and Thiruvananthapuram for 26 days from 31st March to 25th April, 2013 from which 452 faunal examples were collected of which 375 examples were crustaceans; (2) State Fauna- Freshwater Crabs of Mizoram: Under this, survey was undertaken to 4 districts of Mizoram namely, Aizawl (Bung, Sairang, Lungverh, Reiek), Champhai (Hnhlan, Zokhowathar, New Champhai, Tuipui), Serchhip (Thanzawl, Buangpui), and Lunglei (Lunglei, Pokpui, Mualthung) for 22 days



from 14th August to 4th September, 2013 from which 542 faunal examples were collected which include 343 examples of crustaceans.

14 species of crustaceans were new record to Karnataka, 1 species was new record from Kerala, 1 species was new record from Himachal Pradesh and 1 species was new record from Odisha. 11 research papers, 5 books and 1 article in a newsletter were published, 3 research papers were communicated and 1 poster was presented by the Section. Scientists of the Section participated in a training workshop and two seminars, attended 11 query lots and rendered advisory services to the visitors. *Arcania cornuta* (Mac Gilchrist, 1905) new record to West Coast India.

Marine Fish Section: One Logistic survey tour taken by Shri S.S. Mishra, Scientist B to Andhra and Odisha Coast with Dr. Ch. Satyanarayana, Scientist-B and Dr. Jasmine, Scientist-C and PI of MoEF Project titled “Faunal Biodiversity of Odisha and Andhra Coasts” as a co-investigator. A total of 386 examples of fishes examined and identified under 150 species and 131 genera in 108 families.



Two new species described (Class: Actinopterygii; Order: Perciformes; Family: Nemipteridae; Genus: *Scolopsis*; Species:





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igcarensis; Author: Mishra, Biswas, Russell, Satpathy and Selvanayagam; Year: 2013) and (Class: Actinopterygii; Order: Perciformes; Family: Gobiidae; Genus: *Awaouchthys*; Species: *menoni*; Author: Chatterjee and Mishra; Year: 2013.

Three New records from India reported (*Opistognathus macrolepis* (Perciformes: Opistognathidae), *Monodactylus kottelati* (Perciformes: Monodactylidae) and *Scorpaeniopsis ramaraoi* (Scorpaeniformes: Scorpaenidae)). 37 examples of specimens of fishes received from Platyhelminthes Section, Z.S.I., Kolkata and identified 21 species in 18 genera and 13 families and sent back. In addition to that four specimens of confiscated Guitarfish and Sting rays received from D.F.O., 24 Parganas (South) Division, Alipore, Kolkata, one piece of confiscated sting ray skin received from the Regional Deputy Director, Wildlife Crime Control Bureau, AIC Bose Road, Kolkata and a box of confiscated sea horse containing 60 examples belonging to at least 5 species received from the D.F.O., Baikunthapur Division, Siliguri, West Bengal were also identified and sent the reports. The Scientists of the Section gave lectures on three occasions and attended one seminar during the period. Shri S.S. Mishra, Scientist-B delivered 4 lectures on 'Taxonomy' at C.I.F.E., Versova, Mumbai and practical training to students on 'Identification of Fishes' during 23-27 April 2013.

Freshwater Fish Section was assigned programme namely (1) Freshwater fish fauna of North Bengal: Under this, a total of 150 species of fishes have been identified. The fish fauna of the North-Bengal consists of endemic, hill stream, flood plain waters,

and widely distributed species. (2) Revision of Indian Cyprinoid Genus *Barilius*: A total of 23 species of the genus *Barilius* have been studied. Of which *Barilius corbetti* Tilak and Huisan, 1980 is considered as junior synonym of *Raiamas bola* (Hamilton, 1822). Final technical report is under preparation and (3) Diversity and zoogeographical distribution of freshwater fishes of Kameng River, Arunachal Pradesh: Under this, one faunistic survey tour was conducted to East and West Kameng districts of Arunachal Pradesh from 11th to 21st December, 2013, under leadership of Dr. L. Kosygin Singh, Scientist-C, along with Shri. A. Das, Asstt. Zoologist, Shri. S.C. Saren, Zool. Asst. and Shri Kamal Kumar Roy, Collection Tender covering 8 localities from 3 camps. A total of 181 faunal examples were collected. A total of 52 examples of fishes have been examined and identified under 12 species belonging to 10 genera and 3 families. Interesting observations were made in respect of Zoogeographical distribution of some freshwater fishes along the course of the Kameng river. In the higher altitude (<1000m) only specimens of *Scizothorax* sp. were collected and no other form was available. In the lower stretches of the Kameng River and its tributaries, hill fishes like *Garra* spp., *Schistura* spp., *Amblyceps* spp., *Barilius* spp., *Labeo* spp., *Neolissocheilus* etc. are common. However, *Schizothorax* sp. is most widely distributed and abundant in the Kameng River and its tributaries. About 154 entries were made during the period under report.





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One new species of *Garra*, was identified from Senapati district of Manipur, India. The new species belongs to the *lissorhynchus* complex of the genus, as it is having a 'W' shaped band on the caudal fin. However, it can be distinguished from other species of the complex by the absence of rostral flap on the snout. Detail study for confirmation of the identity and description of the species is under process.

Amphibia Section was assigned (1) Amphibian Fauna of Mangroves of Orissa (Odisha): One survey has been conducted in June-July 2013 at Bhitarkanika National Park, Orissa and 29 specimens were collected belonging to 14 species, 9 genera and 5 families (Family: Bufonidae: *Duttaphrynus melanostictus* (Schneider 1799), *Duttaphrynus stomaticus* (Lutken 1862); Family: Dicroglossidae: *Euphlyctis cyanophlyctis* (Schneider, 1799), *Euphlyctis hexadactylus* (Lesson, 1834), *Fejervarya cancrivora* (Gravenhorst, 1829), *Fejervarya orissaensis* (Dutta, 1997), *Fejervarya sylhadrensis* (Annandale, 1919), *Hoplobatrachus crassus* (Jerdon, 1854), *Hoplobatrachus tigerinus* (Daudin, 1802), *Sphaerotherca rolандае* (Dubois, 1983); Family: Microhylidae: *Kaloula taprobanica* Parker, 1934, *Microhyla ornata* (Dumeril and Bibron, 1841); Family:



Ranidae: *Hylarana tyleri* Theobald, 1868; Family: Rhacophoridae: *Polypedates maculatus* (Gray, 1829).) of Order: Anura and Class Amphibia. The Mangrove Crab-eating Frog, *Fejervarya cancrivora* (Gravenhorst, 1829) was a new record to Orissa State (Earlier known from Andaman and Nicobar Islands). (2) Amphibian Fauna of Duars area of northern West Bengal: One proposed survey in September, 2013 could not be conducted due to lack of funds.

Reptilia Section was assigned programme namely Reptile State Fauna of Himachal Pradesh: Under this one survey has been conducted from 22.08.2013 to 11.09.2013 in Sirmour, Solan and Bilaspur districts of Himachal Pradesh and collected 16 examples of reptiles belonging to 11 species, 9 genera and 6 families and 2 orders (Family: Gekkonidae, *Hemidactylus brooki*, *Hemidactylus flaviviridis*, *Cyrtodactylus lawderanus*, *Cyrtodactylus fasciolatus*; Family: Scincidae, *Eutropis macularia*, Family: Varanidae, *Varanus bengalensis*; Sub-Order: Ophidia, Family: Colubridae, *Oligodon arnensis*, *Boiga trigonata*, *Orthriophis hodgsoni*; Family: Viperidae, *Daboia russelli*; Order: Chelonia, Family: Trinychiidae, *Nilssonia hurum*).



Bird Section was assigned research programme namely State Fauna of Himachal Pradesh: Aves: during the period, around 128 species of birds recorded during EIA work at Rawathbhataa, Rajasthan. Mr. Imran Alam of Bird Section along with Kamalakannan



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were communicated. Published a chapter “Ecology and conservation of endangered Hispid hare *Caprolagus hispidus* in India”. N. Singaravelan (eds). In Rare animals of India and reviewed six project proposals received from the Ministry of Environment and Forests, New Delhi during May 2013.

of Mammal Section have been deputed by Director ZSI to take photographs of 250 live birds on 28th January, 2014 at Zoological Garden, Alipore, Kolkata, seized by West Bengal Wildlife Department. In connection with Environmental Impact Studies: Officer-in-Charge of Birds Section along with a team of ZSI scientists visited Digba coast on 23 September 2013 to carry out EIA studies from H-Energy- a company deals with off-shore LNG terminal to be come up at Digba Coast. H-Energy has approached ZSI to carry out studies related to biodiversity of the area and the possible effect of such facility on the local biodiversity. During the period, one research paper was published and three research papers



Mammals and Osteology Section was attended twenty seven (27) samples of confiscated materials received from Govt. Offices/ law enforcing directorates/ police department and their identification reports have been sent to the concerned department. Mr. Simon Poulton, Ph. D Scholar, School of Biological Sciences, University of East Anglia, Norwich, NR47TJ, United Kingdom visited Section and taken photographs of various species of Murids and Scurids present in National Zoological Collections on 18.06.2013 and 19.06.2013. Mr. M. Aaron Owen, Ph.D. Scholar from City University of New York -Queens College, New York working on fellowship at Wildlife Institute of India has visited the Mammal and Osteology section for studying the Javan Mongoose *Herpestes javanicus* on 12-12-2013.





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REGIONAL CENTRES

1. ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR

(1) **Reef Associated Macrofauna fauna of Rutland Island, South Andaman:** The reef associated macrofauna identified from the present study along Rutland Island was 670 species belonging 7 groups such as scleractinian corals (327 sp.), gorgonoids (6 sp.), sponges (31 sp.), echinoderms (104 sp.), molluscs (130 sp.), opisthobranchs (62 sp.) and polyclads (10 sp.); One new species of coral *Ctenactistriangularis* sp. nov. has been described. Among them 33 species of corals, 19 species of opisthobranchs, 4 species of polyclads and 3 species of echinoderms were new records to India, out of these 327 examples were identified.



(2) **Littoral faunal diversity of Campbell Bay and Indira Point, Andaman Sea:** The littoral macrofauna identified from the present study along study area in Great Nicobar Island was 550 species belonging to 10 groups such as Scleractinian corals (172 sp.), Soft corals

(12 sp.), sponges (25 sp.), polyclads (14 sp.), molluscs (139 sp.), opisthobranchs (25 sp.), echinoderms (49 sp.), crabs (78 sp.), shrimps (30 sp.) and lobster (4 sp.) and 3 species of opisthobranchs, 9 species of polyclads and 6 species of corals were new records to India.



(3) **Faunal studies in Saddle Peak National Park and its adjoining sea, North Andaman:** During the reporting period, total of 723 exs. under 13 faunal groups were collected (Butterflies - 140 samples, Moth - 165 samples, Beetle - 50 samples, Dragon and Damselflies - 12 samples, Grasshopper





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- 15 samples, Spiders - 220 samples, Ant - 30 samples, Termite - 20 samples, Lizards - 5 samples, Snake - 1 sample, Amphibians - 19 samples, Bat - 1 sample and Birds - 45 species observed). Total of 244 species under six faunal groups were identified. A total of 219 species comprised of 98 species of corals, 5 species of polyclads, 50 species of gastropods, 17 species of bivalves, 27 species of echinoderms, 11 species of opisthobranchs and 10 species of crabs, 1 species of ascidian were identified. The endemic butterflies such as Andaman Mormon (*Papilio mayo*), Andaman Viscount (*Tanaecia cibaritis*), Andaman Crow (*Euploea andamanensis*), and Common Birdwing (*Troides helena*) were recorded during the survey of period. The endemic bird species namely Andaman Cuckoo dove (*Macropygia rufipennis*), Beach Thick-knee (*Esacus magnetrostris*), Andaman White-headed Starling (*Sturnia erythropygus*), Long-tailed Parakeet (*Pittacula longicauda*), Andaman Drongo (*Dicrurus andamensis*), Andaman Woodpecker (*Dryocopus hodgii*) and Andaman Treepie (*Dendrocitta baylei*) were recorded during the reporting period.



(4) Status of corals and its associated macrofauna in Landfall Island Sanctuary,

North Andaman: A total of 284 species including 166 species of corals, 17 species of echinoderms, 5 species of crabs, 50 species of gastropods, 17 species of bivalves, 18 species of opisthobranchs, 5 species of polyclads, 1 species of nemertean, 2 species of jellyfishes, 1 species of sea anemone, 1 species of ascidian and 1 species of whale were identified. The density of corals was 10-13 colonies/ 10m² area while it was 12-18 ind./ 10m² area. Reported the mass stranding (40 individuals) of short-finned pilot whales *Globicephalus macrorhynchus* Gray 1846 in Elizabeth Bay. Out of these, 3 species of corals and 1 species of nemertean were new records to India.

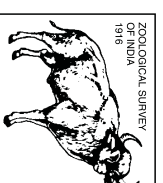


(5) Faunal studies in Saddle Peak National Park and its adjoining sea, North Andaman: A total of 244 species under six faunal groups were identified (Spiders: 18 species belongs to 8 families and 13 genera; Odonats: 25 species belongs to 5 families and 20 genera; Moths: 75 species belongs to 12 families and 66 genera; Butterflies: 52 species belongs to 5 families and 39 genera; Birds: 72 species belongs to 10 Orders and 30 families and Mammals: 2 species belongs to 2 families and 2 genera).





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(6) Status, distribution, population dynamics and habitat selection of small mammals in Andaman Islands: 83 species under three faunal groups were identified (Butterflies - 39 species belongs to 5 families and 39 genera; Birds - 42 species belongs to 10 Orders and 20 families and Mammals - 7 species belongs to 6 families and 7 genera). Observed two species of Cave Bats from Limestone Cove namely Cave Nectar Bat *Eonycteris spelaea*, Horseshoe Bat *Rhinolophus* sp. and one species of Andaman Rat *Rattus* sp. The endemic bird species namely Andaman Cuckoo dove (*Macropygia rufipennis*), Andaman White-headed Starling



(*Sturnia erythropygus*), Long-tailed Parakeet (*Psittacula longicauda*), Andaman Drongo (*Dicrurus andamensis*), Andaman Woodpecker (*Dryocopus hodgei*) and Andaman Treepie (*Dendrocitta baylei*) were recorded during the reporting period.

(7) Status, distribution, population dynamics and habitat selection of small mammals in Andaman Islands: Total of 41 species under two faunal groups were identified (Spiders - 9 species belongs to 5 families and 8 genera and Birds - 32 species belongs to 9 Orders and 19 families).

(8) Survey and Monitoring of the Fauna (Corals and Fishes, etc.) of North Bay Reef: Two local surveys have been conducted to North Bay, South Andaman to study the coral reefs. A total of 159 species under 33 genera and 10 families of which 68 species are new records to Indian waters. Data on 119 Line Intercept Transects for the period from April 2005 – August 2008 were analysed. 9 new records under 5 genera have been described for the materials examined from this reef and other Andaman Nicobar reefs.



(9) Octocorallian diversity in the coral reefs of Andaman and Nicobar waters: One survey has been conducted to Ritchies Archipelago during July 2009. Six reef areas in





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three Islands (Havelock, Henry Lawrence and Outram) were surveyed. 14 species (9 species of Soft corals, 2 Gorgonians, 1 Stolonifera, 1 Heliopora and 1 Millepora) have been identified from the underwater photographs of the specimens on these field studies.

(10) Studies on Macrobenthos – Corals and other key species, and monitoring diversity changes of coral reefs in Protected Areas of North Andaman Islands: Analyses of the previous survey results (reef areas in 11 islands in North Andaman were surveyed in the year 2006-07) are completed. LIT survey revealed that exposed area possessed high coral cover i.e., 89.8% as against the 37.92% in the unexposed/existing reef zone. The uplift caused the reef crest and part of reef slope has been permanently exposed resulting the 30% of live coral reef area.

(11) Status survey of Coral Reefs in South Andaman and Nicobar Islands: The Scleractinian species identified were 47 Nos from Havelock Island, 18 from Henry Lawrence, 22 from Outram Islands, 295 underwater photographs taken from the 9 reef areas in Mahatma Gandhi Marine National Park were examined, which



yielded 49 Species under 13 genera and 7 families of Scleractinians. Besides two non-zooxanthellate corals were identified and added into the list.

(12) Studies on Ichthyofauna and major Entomofauna of Mahatma Gandhi Marine National Park, South Andaman: A total of 283 species comprising of 160 species of fishes, 46 species of molluscs, 23 species of scleractinian corals, 18 species of echinoderms, 6 species of sponges, 3 species of octocorals, 2 species of sea anemones, one species of lobster and 24 species of entomofauna were identified till now, Three manuscripts submitted for publication.

(13) Computerization of named registered collections of ZSI/ANRC, Port Blair: A total of 13452 entries have been made. Among them 10147 belongs to marine fauna and 3305 under terrestrial animals.

(14) Status survey on sea cucumbers in the territorial waters of Andaman and Nicobar Islands (Department of Environment and Forests, A and N Administration) : The present survey encountered 30 species of holothurians belonging to 10 genera, against the 100 species reported earlier in literature. Among them maximum of 23 species reported from Ritchie's Archipelago and minimum





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of 11 species at Great Nicobar Island with the species diversity (H') of 1.21 and 0.80 at these two areas respectively. Out of 30 species reported, 14 species are commercially important. They are, *Actinopyga mauritiana*, *Actinopyga miliaris*, *Actinopyga lecanora*, *Actinopyga echinites*, *Holothuria atra*, *Holothuria (Metriatyla) scabra*, *Holothuria (Halodeima) edulis*, *Holothuria (Microthele) nobilis*, *Bohadschia marmorata*, *Bohadschia argus*, *Thelenota ananas*, *Stichopus horrens*, *Stichopus chloronotus* and *Stichopus hermami*. *Holothuria atra* was the predominant species in terms of numerical density as its occurrence varied between 60 and 280 Ind./100m² at Nancowry Islands and Ritchie's Archipelago respectively. The sub-dominant species was *Actinopyga mauritiana* and its density ranged from 60 Ind./100m² at Car Nicobar Island to 222 Ind./100m² at South Andaman. Next to these two species *Stichopus chloronotus* showed the dominance and their values were at the range of 62 to 218 Ind./100m² at Nancowry Islands and North Andaman. The density of remaining 11 species was less than 47 Ind./100m² at all the places of study. *Holothuria (Metriatyla) scabra* is presently very rare species in Andaman and Nicobar Islands though it was common in 1980s. During the survey it was found only at North Andaman and South Andaman areas. Final report submitted to the Andaman and Nicobar Administration.

(15) **Lead Institution:** Great Nicobar Biosphere Reserve (Sponsored by: Ministry of Environment and Forests, Govt. of India: Centre organized a workshop on 'Value of Biodiversity in Islands Biosphere' during 13th and 14th September 2013 for 57

higher secondary school students and 12 biology teachers as a part of celebration of the recognition of Great Nicobar Biosphere Reserve under UNESCO World Biosphere Network and Man and Biosphere Programme.

(16) **Studies on the Faunal Diversity of Great Nicobar Biosphere Reserve (Ministry of Environment and Forests, Government of India:** A total of 39 species of birds were reported from the area surveyed. Among them, a maximum number of 33 species of birds were reported from Kopen Heat (control site) and a minimum of 23 species was reported from Indira Point. Among the 39 species of birds 4 birds are local migrant and other 34 species are resident bird. The density of birds with the least quantitative value ranged from 10.5 to 25.12 Nos /km² for Oriental White-eye and 120.7 to 430.3 Nos. / km² for Green Imperial Pigeon. Altogether twenty eight species of different mammals are reported from Great Nicobar Island. Among them 13 species are endemic to Nicobar group of Islands. However, during the period of survey, troupes of Crab eating Macaque *Macaca fascicularis umbrosa* Miller were noticed in thirteen locations.





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(17) Ecology and habitat modelling of wetland birds in the tsunami inundated wetlands of South Andaman (SERB, Department of Science and Technology, Ministry of Science and Technology, Government of India: 120 surveys have been conducted from the month of October 2012 - October 2013. Garacharna, Sippighat, Whimberligunj, Soalbay, Choldari, Stewardgunj and Wandoor. Total of 72 species of birds, belongs to 17 families and 9 orders were recorded. Of the recorded species Common coot *Fulica atra* Linnaeus, Pheasant-tailed Jacana *Hydrophasianus chirugus* are the first record to Andaman and Nicobar islands.



(18) Ecological study of bird hazards at Airport in Andaman (INS-Utkrosh, C/o. Navy, Ministry of Defence, Government of India: 90 days were spent in the field during the reporting period to survey the Avifauna, Butterflies, Odonates, Beetles, Moths, reptiles and amphibians in the airport campus and 10 km radius from the aerodrome. 108 species of birds belongs to 33 families and 11 orders have been observed. Three new records of bird species were observed namely Common Coot *Fulica atra*, Pheasant-tailed Jacana *Hydrophasianus chirugus* and Scaly-breasted Munia *Lonchura punctulata*.

(18) Rapid EIA on the alignment of road in Great Nicobar Island (Border Roads Organization, Ministry of Defense, Govt. of India: One survey was conducted in Great Nicobar Biosphere Reserve under EIA study for road alignment project (Phase III) for Border Roads Organization (BRO) for the 25 km long stretch. The distribution of endemic mammals such as macaque, Nicobar tree shrew and other faunal communities along the road alignment site and its adjoining area were assessed. The final report has been submitted.

(19) DNA Bar-coding on Sponges of Andaman and Nicobar Islands (Technical Collaboration with Central Agricultural Research Institute, ICAR, Port Blair: Bar coding for 53 species of sponges were completed; A book entitled, Taxonomy of Sponges of A&N Islands submitted to ZSI headquarters for publication.

(20) Diversity and distribution of Gorgonian Octocorals in and around the Andaman and Nicobar Island - A baseline study for the management of soft corals (SERB, Department of Science and Technology, Ministry of Science and Technology, Govt. of India: The gorgonian





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octocorals were surveyed in 18 islands at South Andaman and North Andaman during May 2013 to March 2014. A total of 50 species of octocorals under 31 genera belonging to 16 families were identified from the areas surveyed. The species diversity, richness and evenness were recorded maximum at South Andaman (4.11, 0.86 and 0.92 respectively) and minimum values for these variables were reported in North Andaman (3.06, 0.88 and 0.86 respectively) during the study period.

(21) Rapid EIA study for the construction of infrastructure facilities at Indian Coast Guard Complex at Diglipur, North Andaman (Ministry of Defence, Government of India): Surveys were conducted in marine and terrestrial ecosystems of Tribay Island, Ross and Smith Island, Ariel Bay and Durgapur during November 2013 to assess the faunal components in the project area. The final report has been submitted to the Military Engineering Services, Ministry of Defence along with field observations and recommendations, report submitted.

(22) Rapid EIA study for the extension of jetty and construction of wet basin for Indian Navy, Haddo, Port Blair (Ministry of Defence, Government of India): Under sea surveys were conducted to assess the faunal communities in Haddo port area, North Bay Island, Surveys were conducted in marine and terrestrial ecosystems of Tribay Island, Ross and Smith Island, Ariel Bay and Durgapur during November 2013 to assess the faunal components in the project area. The final report has been submitted to the Military Engineering Services, Ministry of Defence along with field observations and recommendations, report submitted.



65 No. of books added during the period, 17 number of journals/periodicals subscribed by the Library section. During the reporting period the publications of Zoological Survey of India have been sold from ZSI/ANRC for the tune of Rs. 67,190/-

Insects – 440 specimens, Mollusca – 85 specimens, Corals – 155 specimens, Echinoderms – 70 specimens, Lobster – 1 specimen, Fishes – 440 specimens, Birds – 5 specimens, Bat – 2 specimens, Rat-2 specimens, Turtles – 2 specimens and Deer head and antler – 1 specimen were displayed in the museum for public viewing.

2. ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

(1) Small mammals (rodent, shrews and lagomorphs) of Arunachal Pradesh: Under this programme 25 species were recorded. Malayan Giant Squirrel *Ratufa bicolor* (Sparman, 1778) was found to be the most abundant species followed by the Hoary-bellied Himalayan Squirrel *Callosciurus pygerythrus* (L. Geoffroy Saint-Hillaire, 1831). Pellets of Indian Hare *Lepus nigricollis* Cuvier, 1823 were also collected from the Seijosa river





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banks and a few pellets of the same species were also collected from the forest roads within the Reserve.



(2) A study of Ichthyofauna of Lower Subansiri district w.s.r. to river Ranga and paddy-cum-fish cultivation: Five surveys were conducted, more than 2000 Exs. Collected, and 87 species belonging to 28 genera and 14 families were identified. 185 specimens registered, computerized and digitized. 2 new species of fish from the collections made during the surveys under the project have communicated for publication.



(3) Taxonomy and diversity of zooplankton in Lower Arunachal Pradesh in the Eastern Himalayas: Eight surveys covering 8 districts of lower Arunachal Pradesh have been undertaken. About 111 number of water samples were collected.

21 rotifers, 17 cladocerans and 15 species of copepods have been identified. 53 specimens were computerized and registered. 57 No. of books were purchased and added, 75 No. of Journals were added during the perion under report.

3. CENTRAL ZONE REGIONAL CENTRE, JABALPUR

(1) Faunal Diversity of Nauradehi Wildlife Sanctuary, Hqs., Sagar District, Madhya Pradesh: Faunistic survey of Sarra and Chheola forest range of Nauradehi WL Sanctuary undertaken w.e.f. 15.07.2013 to 26.07.2013 and collected 708 examples of various faunal groups.



(2) Taxonomic studies on the Geometrid (Lepidoptera: Geometridae) fauna of Madhya Pradesh: During the period 2013-14, four surveys were conducted from five districts of Madhya Pradesh viz, Dewas, Gwalior, Indore, Narsingpur, Rajgarh, Sehore and Shivpuri (Fig.). Faunistic surveys were





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conducted mainly from conservation areas which are falling under the above districts. The conservation areas includes Ghatigaon WLS, Gwalior, Kheoni WLS, Dewas, Narsingarh WLS, Rajgarh, Rlamandal WLS, Indore, Ratapani WLS, Sehore andNauradehi WLS. 17 species of moths of Geometridae were collected and identified. Other moths were also collected and identified which results 63 species belonging to 13 families.



(3)Taxonomic studies on the small mammals (rodents, shrews and bats) of Madhya Pradesh: During the period 2013-14, two surveys were conducted from three districts of Madhya Pradesh viz., Burhanpur, Khandwa and Shivpuri (Madhav National Park) and collected 490 examples.



(4) Faunal Diversity of Nauradehi Wildlife Sanctuary, Sagar District, Madhya Pradesh: One survey assigned and undertaken from Sarra and Chheola forest range of Nauradehi WL Sanctuary w.e.f. 15.07.2013 to 26.07.2013 and collected 708 examples of various faunal groups. 5 species of (butterflies) and 9 species of moths (Lepidoptera), 25 species (70 exs.) of Odonata, 28 species of spiders and 4 species (30 exs.) of Pisces were identified and registered from Nauradehi WL Sanctuary.



About 1691 identified Zoological specimens of various faunal groups of the centre was computerized in data sheet. 32 numbers of books and 15 numbers of journals were added by the library section during the period under report.

4. DESERT REGIONAL CENTRE, JODHPUR

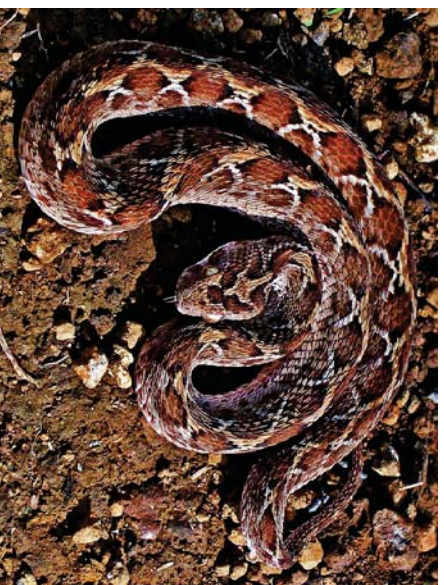
(1) Exploration of Vertebrate Diversity of Chambal River in Rajasthan State: Two surveys were conducted and collected 7 lots of specimens comprising of one amphibian and 35 fishes. A total of 54 species of fishes, 9 species of amphibians, 41 species of reptiles,



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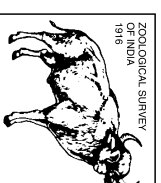
297 species of aves and 30 species of mammals identified and reported under the programme. One species of reptile and four species of aves were found to have new distributional record from Chambal River. 45 species of raptors belonging to families Accipitridae, Pandionidae, Falconidae, Tytonidae and Strigidae identified and recorded from the area. Flagship species of Chambal River *Rynchops albicollis* Swainson, 1838 (Indian Skimmer) and critically endangered species *Gavialis gangeticus* (Gmelin, 1789) - Gharial were recorded breeding in the Dholpur and Karauli region of the Chambal River respectively. 5 species of reptiles, 9 species of aves and 14 species of mammals under conservation status recorded from Chambal River wetland and its vicinity.



(2) **Studies on Vertebrate Faunal Diversity of Kachchh Biosphere Reserve (KBR), Gujarat:** Two surveys conducted 12 days each, collected 2 lots of specimens comprising of 6 fishes. 17 species of fishes, 7 species of amphibians, 29 species of reptiles, 291 species of aves and 27 species of mammals identified and reported under the programme. Fishes recorded for the first time from Khadir bet (4 species) and Tundi wetland (12 species) in Kachchh Biosphere Reserve (KBR), Gujarat. 14 species of aves and 7 species of mammals recorded under conservation status recorded from KBR, Gujarat. *Equus hemionus khur* (Indian Wild Ass) *Phoenicopterus minor* (Lesser flamingo), *Chlamydottis undulata*



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(Houbara Bustard), *Uromastix hardwicki* (Spiny tail lizard/Sandha) and *Echis carinata* (Saw scale viper) were the important species recorded under the present studies from KBR, Gujarat.



5. ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR

(1) Pictorial handbook on brackish water ornamental fishes of Odisha: Project completed and manuscript submitted. Description on 42 species and 22 photo plates were completed.



(3) Studies on Faunal Diversity of Rajasthan - Gaps in Research: Four surveys conducted, 570 lots comprising of 3482 specimens of invertebrates and vertebrates were collected, 9 species of ants, 24 species of fishes, 5 species of amphibians, 15 species of reptiles, 171 species of aves and 19 species of mammals identified so far. Eight fish species were recorded for the first time from Luni River.



(2) Malacofauna and ecology of Pennera River estuary, Andhra Pradesh: A total of 148 species under 8 order and 27 families 97 genera were recorded from the pennera estuary, of these 15 bivalve species are reported for the first time from the estuary. Out of 148 species identified only 32 species are estuarine in habitat. 16 of them were fresh water and remaining is marine in habitat. Project completed and manuscript submitted.

(3) Studies on the fauna of Narmada and Tapi Estuaries w.s.r. to Ichthyofauna, malacofauna, aquatic insects, crabs and prawn: Under this programme, 4 surveys were undertaken. 613 specimens belonging to fish, mollusks, crustaceans and insects were collected during the third survey and 478 specimens were collected during the fourth survey.



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of molluscs belonging to 17 genera and 13 families, 34 specimens of crabs belonging to 5 species, 5 genera and 4 families and 27 specimens of aquatic insects belonging to 6 species, 5 genera and 3 families were identified.

(5) Species Diversity and Richness of Mollusca fauna of Himachal Pradesh: A total of 361 examples of molluscan specimens were collected. Conducted 12 local Survey tours during July' 2013 to March' 2014 to Rushikulya, Bahuda and Subadhra Estuary, Gopalpur and collected 501 Aquatic insects. 168 specimens of Molluscs belonging to 18 species, 12 genera and 13 families were identified.



1048 specimens of which 8 fishes belonging to 8 genera and 7 families, 983 examples of mollusks belonging to 51 species and 44 examples of aquatic insects belonging to 12 species were identified.

(4) Fauna of Subhadra Estuary, w.s.r. to Benthic community: Under this programme, 5 local survey tours were conducted during May, 2013 to January, 2014 to Subadhra Estuary, Gopalpur and a total of 928 examples were collected (Crabs: 34 exs, Prawns: 12 exs, Mollusca: 650 exs, Fish: 21 exs, Insecta: 101 exs). 156 specimens of which 95 specimens



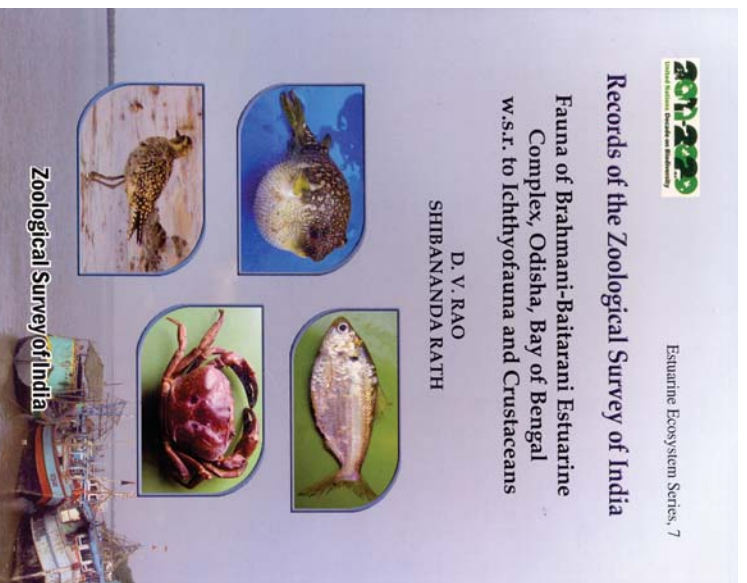
(6) Study of Aquatic Insects Fauna of Southern Coastal Odisha (Ganjam District): Under this programme, 215 specimens of aquatic insects were examined which belonged to 24 species, 16 genera, 7 families and 3 orders.

Scientists of the Regional Centre have published 5 research papers, 1 book and communicated 1 research paper for favour of publication; attended two meetings, 1 workshop and 1 training programme during the period. The Centre has added a total of 417 named specimens and 2133 unnamed specimens of faunal collections to the holdings during the period.





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6. FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD

(1) **Studies on the Hydrobiology and faunal diversity of Cumbum Lake, Prakasham Dist., AP w.s.r. to Plankton, aquatic insects, mollusks and Ichthyofauna:** The studies made for a period of two years during 2011-13, revealed the occurrence of 10 species of cladocera, 14 species of rotifers, 26 species of aquatic insects and 22 species of fishes from the Cumbumlake.

(2) **Studies on the Hydrobiology and faunal diversity of Krishnaraja Sagar, Mandya Dist., Karnataka w.s.r. to Plankton, aquatic insects, mollusks and Ichthyofauna:** The studies made for a period of two years during 2011-12 and 2012-13, revealed the occurrence of 15 species of cladocera, 23

species of rotifers, 25 species of aquatic insects of which 9 species belongs to Hemiptera and 16 species belongs to Coleoptera and 62 species of fishes from the KRS reservoir. In addition, 25 species of wetland and wetland dependent birds have been recorded during the studies.

(3) **Aquatic coleopteran of India w.s.r. to molecular characterization of Dytiscidae:** Under this programme, 12 local surveys were conducted from which 253 examples of aquatic beetles were collected. 26 species were identified and registered. DNA samples isolated from three species Dytiscidae and PCR product is sent for sequencing. All identified species are registered and labeled.

(4) **Macro-invertebrate fauna diversity of Gobind Sagar reservoir, Himachal Pradesh:** Total two surveys as assigned were completed and 22 days spent in survey. 76 lots of macro-invertebrates, aquatic-insects and zooplankton were collected. Sorting of 58 lots completed so far. 20 species were identified. Survey reports submitted to HQ.



(4) **Study of macrobenthic invertebrate fauna of major wetlands in Andhra Pradesh:** Total three surveys as assigned were completed and 26 days spent in survey. 121





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lots of macro-benthos, aquatic-insects and zooplankton were collected. Sorting of 86 lots completed so far. 38 species were identified out of which 36 species are of molluscs and 2 species of Hydracarina. Survey reports submitted to HQ.

12 local surveys were undertaken to different major man-made or reservoir lakes, viz. Shameer Peth, Bhongir tank, etc. Extensive surveys were conducted.



About 3,075 data entry of named collection made so far. During 2013-14, 260 species entries computerized.

7. GANGETIC PLAIN REGIONAL CENTRE, PATNA

(1) **Taxonomic studies on family Noctuidae from Bihar and Jharkhand:** Two surveys conducted in 1st and 3rd quarters in the state of Bihar [Banka (Mandar hill), Rohtas, Raigir] and Jharkhand [Saranda Forests, Dalma Wildlife, Sanctuary and Urwan (Koderma of, Hazaribagh)], overall 796 examples were collected, 575 examples under 82 species of Noctuidae were identified.

(2) Mollusca and zooplankton of

temporary and permanent water bodies in and around Valmiki Tiger Reserve, Kusheshwa Asthan, Sarayaman Lake and Gogabil Pakhsi Vihar (IBA-sites) in Bihar. Under this programme, three surveys were conducted (June 06-15, 2013; September 13 -22, 2013 and January 27 to February 5, 2014) in the area of North Bihar: Valmiki Tiger Reserve, Kusheshwar Asthan, Sarayaman Lake and Gogabil Pakhsi Vihar and collected 1433 examples, out of these 37 species of Mollusca, 35 species of zooplankton and 10 species of Hirudinaria were identified.



(3) **Taxonomic Revision of Indian Pyralinae (Pyralidae: Lepidoptera)** funded by Science and Engineering Research Board (SERB), DST, New Delhi, 47 localities under





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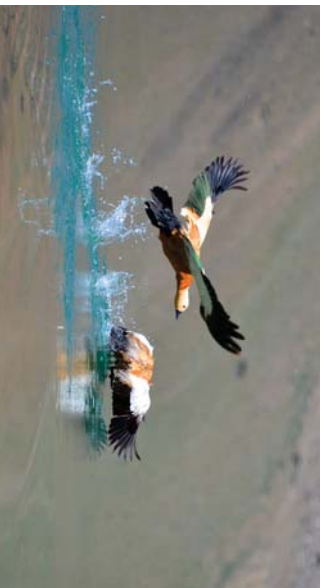


08 states have been covered, a total of more than 1500 examples of subfamily Pyralinae (Pyralidae) were collected and permanent slide preparation of fore and hind wings of 45 species has been completed. Another programme “Preparation of Dolphin Management plan of Vikramshila Gangetic Dolphin Sanctuary from Sultanganj to Kahalgaon in Bihar” funded by Department of Environment and Forests, Government of Bihar has been started. Published one book on “Pictorial Guide to aquatic macrophytes of Gangetic Plains in Bihar, India”. Library section of the centre has added 65 (Acc. no 2223 to 2288) number of books and subscribed 10 number of journals.



8. HIGH ALTITUDE REGIONAL CENTRE, SOLAN

(1) Faunal resources of Spiti Valley and Chandertal Lake, district Lahaul and Spiti, HP: Under this programme, two surveys



were undertaken and a total of 601 exs pertaining to 14 animal groups and 1537 exs pertaining to 13 animal groups were collected respectively. Sighting of some Mammals were also recorded. 7 species of Oligochaeta, 28 species of Rhopalocera (Lepidoptera) including 5 species from WLPA, 4 species of Orthoptera, 2 species of Pisces, 1 species of Amphibia, 1 species of Reptilia, 42 species of Aves (Vocalization of 07 species recorded) and 5 species of mammals were identified. Moss samples from Spiti Valley for Protozoan identification were sent to Dr Bindu, L., Scientist-C, MBRC, Chennai. Hemiptera, Diptera and Coleoptera collection from Spiti Valley survey were sent to Sh. B. Biswas, Dr. Dhriti Banerjee and Dr Hedge at ZSI HQ, Kolkata respectively for identification purposes.



(2) Chail Wildlife Sanctuary, district Solan, H.P.: Local surveys were conducted from which a total of 474 faunal examples were collected of which 6 species of Oligochaeta, 30 species of Lepidoptera: Rhopalocera; 20 species of Lepidoptera: Heterocera; 27 species of Orthoptera; 5 species of Pisces; 2 species of Amphibia; 1 species of Reptilia; 60 species





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of Aves and 5 species of Mammals were identified.



Two faunistic surveys of Cold Desert of Spiti Valley and Chandertal Lake, Distt. Lahul and Spiti were conducted under the leadership of Dr. Avtar Kaur Sidhu, Scientist-C and Dr. Anil Kumar, Scientist-C from 23-07-2013 to 07-08-2013 and from 24-05-2013 to 07-06-2013 respectively. Five local surveys of Chail WLS, Solan district were conducted on 01.05.2013, 09-05.2013, 27-20.08.13, 29.08.2013 and 17.12.13.

Scientists of the Regional Centre 19 research papers, communicated 3 research papers, attended 7 seminars and training workshops and provided identification and advisory services during the period.

Computerization of registered

Collections: Total database entries of registered collections computerized so far 1987. Digitization of identified fauna comprises 97 specimens of 44 species in the format along with digital images and metadata has been done.

9. MARINE AQUARIUM CUM REGIONAL CENTRE, DIGHA

Study of ornamental fauna along east coast of India: Under this programme 3 Surveys were undertaken, 849 examples were collected, 749 specimens (372 species) were identified. One new species, *Hapalogerys bengalensis* Mohapatra, Ray, Kumar, 2013, 4 new record for India (*Neomerinthe rotunda* Chen, 1981, *Minouspictus* Gunther, 1880,





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Ophichthus lithinus (Jordan and Richardson, 1908) and *Parapercisom matura* Jordan and Snyder, 1902). 6 species from the state of Andhra Pradesh and 4 species from West Bengal were recorded for the first time.



and Kizhakkarai group islands of Gulf of Mannar. A total of 20 species were identified and registered. Tour report was submitted.



10. MARINE BIOLOGY REGIONAL CENTRE, CHENNAI

(1) **Meio-fauna of Palk Bay with special reference to Free-living Marine Nematodes and Tardigrada:** Two field surveys were conducted to Palk Bay with special reference to free-living marine nematodes and Tardigrades. A total of 135 soil samples were collected and deposited in MBRC. Mostly collections were from Rameswaram, Thondi, S.P. Pattinam, Uppur, Mudiveeranpattinam, Pasipattinam, Mallipattinam and Nagaipattinam. Under this project 229 specimens belonging to 84 species under 49 genera have been identified, digitized and registered. Final manuscript was submitted.

(2) **Reef associated Bryozoans of Gulf of Mannar Marine Biosphere Reserve:** One survey has been undertaken to Mandapam

(3) **Faunal diversity in the mangroves of Bhitarkanika, Orissa:** Two extensive field surveys were undertaken to Bhitarkanika mangroves. Kalibhanjida Island, Dhamra, Dangmal and Bhitarkanika areas were surveyed. Three species each of Crustacean and mollusca, one species of amphibian, two species each of pisces and reptiles, thirty five species of birds and three species of mammals were identified. Tour report submitted.



(4) **Studies on the Free-living protozoan fauna of estuaries in various coastal zones of Tamil Nadu:** Two extensive surveys were





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undertaken to Ramnad, Nagapatnam, Chidambaram, Pondicherry and Thiruvallur districts. A total of 112 water samples were collected. 96 species of free-living protozoa coming under 14 genera were identified. Of these 4 species are new records from India. One new species of rhizopod was also identified.



748 examples of fishes were identified and registered into 32 species belonging to 20 genera, 12 families and 4 orders; 224 examples of aquatic hemiptera were identified into 14 species, 14 genera and 6 families; 8 examples of amphibians were identified into 4 species, 4 genera and 3 families. Besides the general faunal collections, about 732 specimens of fishes were collected.



Scientists of the Regional Centre have published 20 research papers, identified 20 confiscated items from the Police Department, and extended identification and advisory services to the visitors and also identified query materials. Scientists of the Centre also attended various seminars and conferences during the period.

Computerization of vertebrate and invertebrate data: Amphibia (21), Pisces (12), Reptilia (11), Aves (37) and Mammalia (56). 24 species of fishes, 4 species of decapods were identified from West Khasi hills. 6 species of amphibians, 8 species of decapoda, 13 species of molluscs were identified from backlog collection in the Centre.

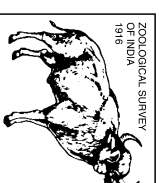
11. NORTH EASTERN REGIONAL CENTRE, SHILLONG

(1) Taxonomic study on Ichthyofauna of Nongkhyllem Wildlife Sanctuary, Meghalaya: Under this programme, 4 surveys were undertaken from which a total of 1237 faunal examples were collected (Pisces- 732 exs., Amphibia- 17 exs., Aquatic insects- 294 exs., Reptilia- 3 exs., Crabs- 81 exs., Mollusca- 59 exs., Annelida- 1 ex.).





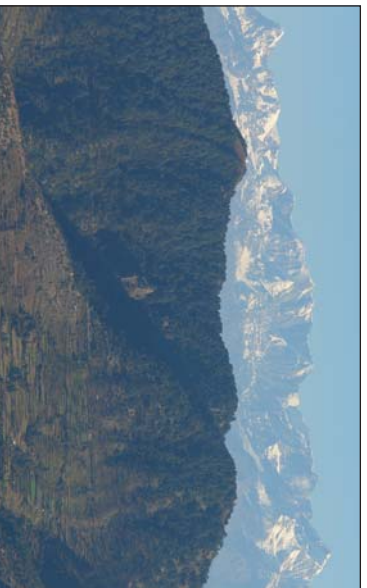
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15 journals and 30 books were added in the Departmental Library. Scientists of the Regional Centre have published 5 research papers and communicated 3 research papers for favour of publication; attended 2 seminars and 1 workshop. Two lectures on the theme *Biodiversity and Water* were delivered by the scientists of the Centre.

12. NORTHERN REGIONAL CENTRE, DEHRADUN

(1) Fauna of Dehradun District: MS submitted. The document deals with a systematic account of 2370 species (1629 invertebrates and 741 vertebrates) belonging to 63 different animal groups ranging from Protozoa to Mammalia. These 2370 species belong to 1282 genera and 342 families. This constitutes 54.5% of the known faunal diversity of Uttarakhand state. Of these, 19 species constitute new records for district Dehradun and 3 species for India.



(2) State Fauna of Punjab: Under this, three extensive surveys were conducted (11 districts of Punjab state were surveyed namely, Firozepur, Faridkot, Taran Taran, Pathankot, Hoshiarpur, Roopnagar, Ludhiana, Mansa,

Fazilka, Sangrur and Patiala). 534 permanent wax slides of nematodes were prepared for morphological studies. Sorting of specimens of Encyrtidae from collection is in progress. 12 species of mammals, above 500 species of birds, 25 exs. of reptiles belonging to 9 species (including 3 sightings), 209 exs. of amphibians belonging to 5 species, 301 exs. of Acridoidea belonging to 40 species, 172 exs. of Lepidoptera belonging to 55 species, 44 exs. of Encyrtidae belonging to 15 genera and 24 species, 8 exs. of Coleoptera belonging to 7 species, 330 exs. of soil nematodes belonging to 51 species were identified during the period. Remaining identification is process. All the identified collection have been registered.



(3) Fauna of Sultanpur NP and Bird Sanctuary, Gurgaon, Haryana: Under this, three surveys were conducted from which 1423 exs. (belonging to 20 faunal groups) were collected and 550 permanent slides of nematodes were prepared. 12 species of mammals were observed, 414 species of birds were compiled, 28 exs. of reptiles belonging to 8 species (including 4 sightings), 110 exs. of amphibians belonging to 5 species, 42 exs. of Acridoidea belonging to 12 species, 90 exs.





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of Lepidoptera belonging to 15 species, 10 species of Encyrtidae of 6 genera, 185 exs. of soil nematodes belonging to 51 species were identified during the period. Remaining identification is process. All the identified collection has been registered.

sequencing of species of *FelschhausSchreber*, Ju Publication: one abstract submitted for oral presentation and one as invitee lecture.



(4) Trichotaxonomy and molecular study (from ZSI collections) of species Lesser Cats (Mammalia: Carnivora: Felidae) listed under Wildlife (Protection) Act, 1972: One tour was conducted from 21st June to 28th June 2013 to ZSI, HQ, Kolkata for collection of samples of 8 species listed under project, ZSI, HQ, Kolkata. During tour, samples were collected from 6 species required for examination under the programme.

DNA extracted and quantified (64 samples, 7 species), PCR standardized with DNA conc < 10ng/ml. PCR done for partial amplification of 12SrRNA and Cyt b genes (mitochondrial genes) for species PCR amplicons were obtained in triplicate. 8 sequence of 12S rRNA and Cyt b gene of *Prionailurus viverrinus*, Fishing Cat and *Prionailurus bengalensis* Leopard Cat received. Amplicons of genes: Cyt b and NADH5 were purified and submitted for

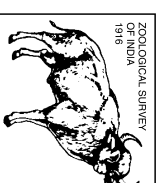


(5) Molecular Characterization of Common Butterflies of District Dehradun: Six surveys were conducted for the collection of butterflies in 2013 and 300 exs. of butterflies were collected and identified 32 species of butterflies. DNA extracted from 29 species belonging to Families: Pieridae, Nymphalidae, Lycaenidae and Hesperidae. DNA was also





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extracted and quantified from Sch-II WPA

(1972) species from old NRC collections:

1) *Erebiahyriva*, 2) *Lethe baladeva* Moore, 3) *Lethe insana insane* Kollar, 4) *Lethe jalauida* de Neuville. PCR with Universal primers: 700bp Amplicon of COI gene was obtained from 24 species, including two Sch-II species of butterflies (*Neptiszaida* and *Metaporiaagathon*). *Junoniaiphita* Cramer), *Symbrenthialiaea* (Hewitson), *Kaniskacanace* (Linnaeus); RAPD-PCR: Standardization of PCR with random primers for studying populations is in process.

(6) Diversity of Nematodes in Govind

WLS and NP, Uttarakhand: Under this, two surveys were conducted from which 174 soilsamples were collected. 42 species of nematodes belonging to 19 genera, 9 families and 4 orders were identified. 200 slideswere prepared andlabelled. 6 new records of nematode from Uttarakhand were reported and published, viz., *Aporcelainellu amylovorus* (Thorne and Swanger, 1936) Heyns, 1965, *Discolainus agricolus* Sauer and Annells, 1985, *D. silvicolus* Sauer and Annells, 1985, *Leptonchus baccatus* Siddiqi, 1970 and *Chiloplacus quadricarinatus* (Thorne, 1925) Thorne, 1937.

(7) Taxonomic studies on the Encyrtidae of Uttarakhand (India): Under this, one extensive survey was conducted and 11 species under 8 genera were identified.

(8) Taxonomic Study on Acridoidea (Orthoptera) of Rajaji National Park: Under this, one survey was conducted to Rajaji National Park from which 10 exs. of Acridoidea were collected. During the year 650 entries of identified and registered collection completed, 538 specimens digitized.



Outside funded projects: (1) Abundance and diversity of soil nematodes in Agro-ecosystems of Dehradun, Uttarakhand,

India: Under this, 10 localities were surveyed and 180 soil samples were collected around the root-zones of wheat, rice, masoor dal, potato, tomato, mustard, Jowar, sugarcane, litchi, amla and mango. GPS locations have been recorded for the areas surveyed. Permanent slides of 800 exs. of soil nematodes were prepared. 800 exs. belonging to 32 genera and 35 species of soil-inhabiting nematodes were identified. Soil analysis was done for all the soil samples. Abundance and diversity of bacterivorous and fungivorous nematodes completed from Mango orchard soils. Rest of the identification and analysis is in process.

(2) Molecular study of *Ratufa indica* (Erxleben), *Ratufa macroura* (Pennant), *Ratufa bicolor* (Sparrrman), *Petinomys fuscocapillus* (Jerdon), *Funambulus palmarrum* (Linn.), *Funambulus pennantii* Wroughton, *Petaurista petaurista* (Pallas), *Petaurista philippensis* (Elliot) (Mammalia: Rodentia: Sciuride): DNA isolation was carried out from all the species under project by kit method and phenol; chloroform (Sambrook et al 1989).DNA was quantified using Qubit II; The quantity of DNA varies



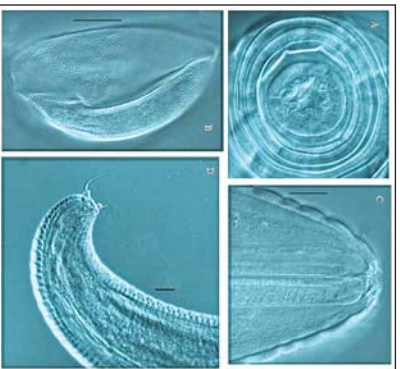
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from < 40ng/ml to 86 µg/ml depending upon the types of sample.



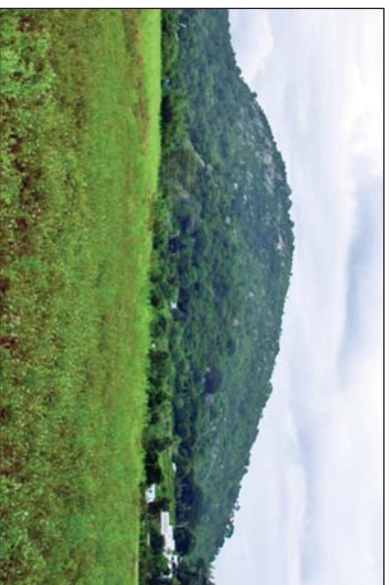
(3) **Taxonomic studies on nematodes of Rajaji National Park, Uttarakhand:** During the period under report (July, 2013 to January, 2014), one survey (in September 2013) of Rajaji National Park (RNP), Uttarakhand was conducted and 38 soil samples were collected around the roots of 13 forest tree species in Chilla, JhabarandHazra compartments/beat. 21 species of nematode belonging to 9 genera, 8 families and 4 orders have been identified. According to their feeding habits, identified species belonging to 3 categories viz., Plant parasitic (4 spp.), Free-living (7 spp.) and Predatory nematodes (10 spp.) are being identified. This is the first report of nematode from RNP.



Two new species, *Parapharyngodon jairajpurii* Rizvi and Bursey 2013 and *Cosmocercoides himalayanus* Rizvi and Bursey 2013 (Nematoda) was described by the scientist of the centre. Holotypes added to the NZI/NRC: ZSI/NRC/IV 913 and 1027 and Paratypes ZSI/NRC/IV 914, 915, 1028 and 1029 Specimens deposited in the National Zoological Collection.

13. SOUTHERN REGIONAL CENTRE, CHENNAI

(1) **Taxonomic studies on the freshwater Ostracoda from Nilgiri, Villupuram, Trichy, Tiruvannamalai and Chennai districts of Tamil Nadu, India:** Survey conducted to Trichy and Villupuram districts of Tamil Nadu, during 16th August, 2013 to 27th August, 2013 and collected 853 exs. and 81 lots of zooplankton samples.



(2) **State fauna of Andhra Pradesh:** Survey conducted in Adilabad, Karimnagar, Nizamabad and Warangal districts of Andhra Pradesh and collected overall 3641 exs. belonging to different groups. Another faunistic survey was undertaken to Nalgonda, Khammam, West Godavari and East Godavari Districts and collected 3724 exs of different



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faunal groups and 6 bottles of zooplankton samples.



(3) Non Marine Molluscs of Southern Western Ghats (Nilgiris- Anamalais- Palni hills-Travancore region): *Trachia asperella*,

Trachia crassicostata and *Corolla anax* are new records to Western Ghats. Many species were originally described from Nilgiri in 18th and 19th century was recently found again from the same locality to mention few of them as *Thysanota guerini* (Pfeiffer, 1842), *Thysanota eumita* Sykes. *Cyclophorus* (*Litostylus*) *nilagiticus* (Benson, 1852) *Cyathopoma* (*Jerdonia*) *trochela* (Benson, 1851) *Theobaldius shiplayi* (Pfeiffer, 1856) *Pterocyclus bilabiatius* Benson 1835 *Pterocyclus nanus* (Benson, 1851) *Craspedotropis cuspidate* (Benson, 1851). Though they are reported as in checklist, many species were rediscovered after their original description.



A multiparty, combined faunal surveys carried out to Western Ghats in Tamil Nadu and surveyed Sathyamangalam Tiger Reserve, Erode District., Nilgiri District including Mudumalai Tiger Reserve, Anaimalai Tiger Reserve of Coimbatore and Tirpur Districts and Reserve Forests of Kodalkanal Division of Dindugal Dist. and collected 2698 exs. of different faunal groups. Another combined faunal survey tour conducted to Western Ghats of Tamil Nadu and explored Nilgiri, Anamalai, Palani Hills and collected 1548 exs. belonging to different faunal groups.



DNA BARCODING: 23 Samples processed (*Hemidactylus frenatus* Schlegel, 1836, *Polydectes maculatus* (J.E. Gray, 1830), *Puntius dorsalis* (Jerdon, 1849), *Actaeodes tomentosus* (H. Milne Edwards, 1834) *Eriphia sebana* (Shaw and Nodder) 1803, *Thalamita admete* (Herbst, 1803), *Palapedia nitida* (Stimpson, 1858), *Uropeltis* sp., *Canis aureus* Linn, *Lycodon travancoricus* (Beddome, 1870), *Enhydryna schistose* (Daudin, 1803), *Danio rerio* (Hamilton, 1822), *Lycodon aulicus* (Linnaeus 1758), *Chamaeleo zeylanicus* Laurenti, 1768, *Puntius dorsalis* (Jerdon, 1849), *Rhamphotyphlops braminus* (Daudin,





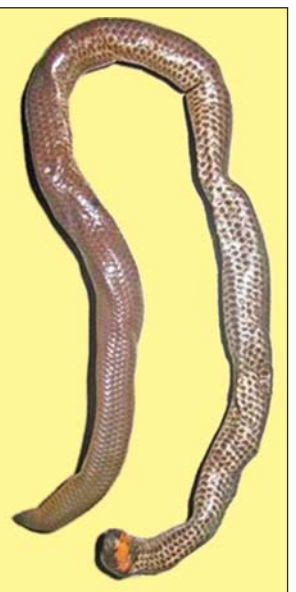
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1803), *Atretium schistosum* (Daudin, 1803), *Duttaphrynus melanostictus* (Schneider, 1799), *Enhydryna schistosus* (Daudin, 1803), *Canis aureus* Linn., *Lycodon travancoricus* (Beddome, 1870), *Chamaeleo zeylanicus* Laurenti, 1768 and *Puntius dorsalis* (Jerdon, 1849).

Type Specimens deposited: 19 Type Specimens deposited in The National Zoological Collection with Registration No. belonging to the groups Arachnida, Diptera, Ephimeroptera and Pisces.

A new species of shield tail snake from the Southern Eastern Ghats, India (*Rhinophis gowri*) belonging to family Uropeltidae was described.



The Centre organised an internship Training Programme on Animal Taxonomy to the Post Graduate students of Zoology in the month of June 2013. Labrary section has added 30 no. of books and 110 no. og journals during the period under report.

14. SUNDERBAN REGIONAL CENTRE, CANNING

Fauna of Conservation / Protected Areas:

(1) Diversity and ecology of insects with special reference to Orthoptera in and around Sunderbans: 2 surveys were



conducted covering the areas of Pakhiralaya, Kultali, Deualbari, Boney camp and Jharkhali from which a total of 1775 faunal examples were collected and 14 faunal species were observed and 8 species of faunal samples were identified. The examples collected from both the surveys belonging to different groups (Fishes 718 exs., Gastropods 30 exs., Prawns 248 exs., Crabs., 30 exs., Orthoptera 126 exs., Lepidoptera 291 exs., Coleoptera 201 exs., Odonata 44 exs., Zygoptera 30 exs., Hemiptera 28 exs., Hymenoptera 24 exs.). 72 specimens and identified, registered and computerized 44 specimens.



Data Entry of about 2063 nos. was made (Reptilia 77, Amphibia 32, Fishes 413,





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Mollusca 32, Crustacea 1133, and Insects 408). About 2063 data from Named register has been computerized.

13 species of mosquitoes identified under 3 genus and 4 species from the collection of in and around EBRC Campus gopalpur. A project proposal entitled "Diversity of Marine insects from Principal Estuaries of eastern coast of India w.s.r. Genus *Halobates*" has been submitted to AICOPTAX 2014.

15. WESTERN GHAT REGIONAL CENTRE, KOZHIKODE

(1) **Taxonomic studies on the Pteromalid fauna (Insecta: Hymenoptera) of Southern Western Ghats:** About 500 specimens collected and identified. 400 exs. registered and 50 exs. digitized. Manuscript submitted for publication Manuscript dealing with 113 species including the descriptions of 2 new species. Besides, three new species, 1 new record of a genus from India and first record of the male of a species and two new records from the Western Ghats published.



(2) **Systematic studies on Telenominae (Platygastridae: Hymenoptera: Insecta) of Southern Western Ghats:** 150 specimens were collected, 90 were registered and 36 species were identified. Manuscript submitted for publication containing description of 36 species of Telenominae from India under 5 genera.



(3) **Interactive Identification and Information System for the Indian genera of Diapriidae (Insecta: Hymenoptera: Proctotrupoidea):** Generic characters of all the 15 valid genera of Diapriinae in India have been described and a dichotomous key to all the genera has been prepared along with adequate digital images. Distribution of all the valid 15 genera in India has been plotted in maps, created using Diva GIS software. Final manuscript and Interactive CD submitted.

(4) **Fauna of Conservation Area: Faunal resources of Malabar Wildlife Sanctuary, Kerala:** Six local surveys undertaken and 457 samples of various faunal groups collected. Of these samples, 10 species of Odonata, 4 species of Mantodea, 5 species of Pteromalidae (Hymenoptera), 15 species of Diapriidae



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(Hymenoptera) including 1 new species, 3 species of Lepidoptera (butterflies), 3 species of Dermaptera, 4 species of Centipedes (Chilopoda) and 3 species of Snakes (Reptilia) were identified. Besides, a checklist was prepared of the butterfly fauna of the area and the checklist of the mammals and of birds of the area were updated by adding 11 new reports for the sanctuary.



(5) Taxonomic Studies: Taxonomic studies on the Mantid fauna (Insecta: Mantodea) of southern Western Ghats: Two extensive surveys were undertaken to Southern Western Ghats of Kerala and Karnataka. About 50 exs. of Mantodea collected of which 10 species under 7 genera were identified. Digital imaging of identified species were undertaken.



(6) Systematic studies on Scelioninae (Platygastridae: Hymenoptera: Insecta) of South Western Ghats: Two surveys conducted from which 220 specimens were collected, 30 species were identified and 50 specimens were registered. Three new species were published- *Callis celhorugosus*, *Styloteleia alpha* and *Mantibaria kerouci*. Four papers published and three papers were submitted for publication and three posters were presented at International conference on entomology.



(7) Taxonomic studies on the Dermaptera fauna (Insecta) of Southern Western Ghats: Two intensive surveys conducted and 280 exs. of Dermaptera collected of which 91 exs. were identified as belonging to 15 species under 10 genera of which two species viz., *Elanionbi partitus* (Kirby), *Eparchusin signis* (De Haan) are new records for Kerala. All specimens were registered and computerised.

(9) Biosystematic studies on the lesser-known reptilian fauna of Southern Western Ghats: Two surveys assigned were undertaken from which 162 examples of reptilian specimens were collected. 33 examples were identified of which, one snake species is new report for Kerala (*Dendrelaphis giri* Vogel and



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Van Rooijen, 2011). A specimen of Lizard (*Cnemaspis* spp.) found to be new to science, is under description. Published 11 papers on reptilian fauna of the region. Two manuscripts were submitted.



Surveys Conducted: One extensive survey to Southern Western Ghats ecosystem of Marayur sandalwood reserve forests and Mannavanshola National Park, Idukki district and Parambikulam Tiger Reserve, Palakkad district, Kerala from 3rd to 13th September, 2013 and combined survey was undertaken by the scientists of the centre, collected overall 1091 examples belonging to different groups. One extensive survey to Southern Western Ghats ecosystem of Coorg district, Karnataka, and collected about 713 examples belonging to different faunal groups (Insecta, Crustacea, Arachnida, Mollusca, Pisces, Amphibia and Reptilia. Combined survey undertaken to Southern Western Ghats ecosystem of Kollam and Pathanamthitta districts, Kerala, and collected 1915 examples belonging to the groups Insecta, Crustacea, Arachnida, Chilopoda, Mollusca, Amphibia and Reptilia.

Another combined survey was undertaken and faunal samples collected belonging to. Insecta: Crustacea, Arachnida, Chilopoda, Mollusca, Amphibia and Reptilia.

Twenty seven new species belonging to Order Hymenoptera were described (*Monacon buldanicum* Narendran and Sureshan, 2013, *Eurytoma chinmurensis* Narendran and Sureshan 2013, *Foenatopus idukkiensis* Sureshan and Narendran 2013, *Merismomorphia tamilnadensis* Sureshan, Manickavasagam and Dhanya, 2012, *Gastracanthus indicus* Sureshan and Dhanya, 2013, *Dipara nigriscuta* Sureshan, 2013, *Dipara thirumalaii* Sureshan, 2013, *Dipara debanensis* Sureshan, 2013, *Dipara hayati* Sureshan, 2013, *Dipara venkati* Sureshan, 2013, *Dipara nigra* Sureshan, 2013, *Miscogasterella bijoyi* Sureshan, 2013, *Cleonymus kanihoi* Sureshan and Dhanya, 2013, *Protelenomus areolatus* Rajmohana, 2013, *Telenomus oryzae* Rajmohana and Nisha, 2013, *Styloteleia alpha* Rajmohana, 2013, *Baeus primitius* Rajmohana, 2013, *Calotelea laminaris* Rajmohana, 2013, *Ceylonitermellus peryarensis* Amma and Rajmohana, 2013, *Conostigmus neotubifer* Bijoy and Rajmohana, 2013, *Metapelma peryaricum* Narendran and Rajmohana, 2013, *Alloxysta bhagya* Bijoy and Rajmohana, 2013, *Alloxysta indica* Bijoy and Rajmohana, 2013, *Alloxysta sholicola* Bijoy and Rajmohana, 2013, *Alloxysta ochracea* Bijoy and Rajmohana, 2013, *Telenomus cuspi* Rajmohana and Sri Kumar, 2013, *Trimorus (Neotrimorus) ferrari* Venakumari and Rajmohana, 2014) and one species of Hymenoptera (*Trigonoderus pulcher* Walker) and one species of Isoptera (*Hospitalitermes monoceros* (Konig)) recorded for the first time from India.



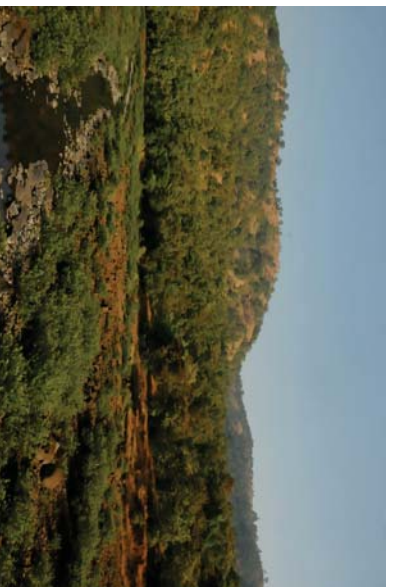


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16. WESTERN REGIONAL CENTRE, PUNE

(1) **A study of Coccinellid (Insecta: Coleoptera: Coccinellidae) fauna of Northern-Western Ghats:** Under this programme, two surveys were undertaken (Ahmednagar, Nasik and Thane districts from 23rd to 28th September, 2013 conducted by Dr. P. S. Bhatnagar, Scientist-C and Party and to Dhule and Nandurbar districts from 6th to 11th January, 2014 conducted by Dr. P.S. Bhatnagar, Scientist-C and Party). MS and Final Technical Report submitted (consisting of 16 species, 14 genera, 1500 exs). Final Reports of all the faunistic surveys have been submitted.



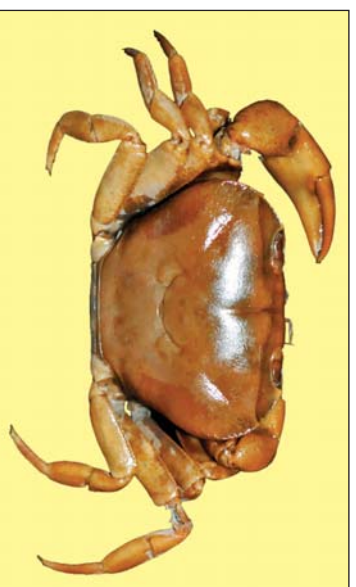
(2) **The Collembola (Arthropoda: Insecta: Collembola) of Northern Western Ghats:** Under this programme, two surveys were undertaken (Ahmednagar, Nasik and Thane districts from 18th to 29th October, 2013 conducted by Dr. R. Bano, Scientist-C and Party and to Dhule and Nandurbar districts from 23rd December 2013 to 1st January, 2014 conducted by Dr. R. Bano, Scientist-C and Party). More than 800 specimens were collected. 719 examples of 7 species belonging

to 7 genera and 5 families have been identified. Final Reports of all the faunistic surveys have been submitted.

(3) **Amphibia of Northern Western Ghats:** Under this programme, one survey was conducted (Ahmednagar, Nasik and Thane districts from 18th to 29th October, 2013 conducted by Shri. S.S. Kamble, Scientist-B, Dr. R. Bano, Scientist-C and party). Total 40 exs. of 14 species belonging to 9 genera, 5 families were identified. Final Reports of all the faunistic surveys have been submitted.

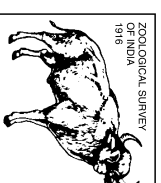
(4) **Western Ghats, Maharashtra Phase-I under Biodiversity 'Hotspots' and Tropical Rainforest Ecosystem:** Under this programme, two surveys were conducted. First survey of Ahmednagar, Nasik and Thane districts was conducted from 18th to 29th October and second faunistic survey of Dhule and Nandurbar districts was conducted, 55 Nos. of soil samples and 82 exs. of amphibians were collected. Final Reports of all the faunistic surveys have been submitted. A total of 9575 named examples and 6701 unnamed examples were registered and digitised.

A new species of freshwater crab, *Travancoriana granulata* n. sp. (Brachyura: Gecarcinucidae) from the southern Western Ghats of India; a new genus of freshwater





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crab, with two new species and a new species of *Gubernatoriana* (Crustacea: Decapoda: Brachyura: Gecarcinucidae) from the Western Ghats Mountains were added as new to science.

(5) Molecular Taxonomy of Endemic Freshwater Fishes of Western Ghats-Phase-I: Under this programme, four local surveys were undertaken to Bhimashankar Wildlife Sanctuary, Satara district, Sangli district and Paud and surrounding areas, Pune district. 381 exs. of fishes were collected. Final Reports of all the faunistic surveys have been submitted.

(6) Western Ghats, Maharashtra Phase-I under Biodiversity 'Hotspots' and Tropical Rainforest Ecosystem: Under this programme, first faunistic survey of Ahmednagar, Nasik and Thane districts was conducted from 18th to 29th October 2013 by Dr. R. Bano, Scientist-C and second survey of Dhule and Nandurbar districts was conducted from 23rd December to 1st January 2014 by Dr. R. Bano, Scientist-C. 2750 faunal examples were collected from the surveys (Decapoda [crab]-76 exs., Prawn-5 exs., Chilopoda-3 exs., Hemiptera-205 exs., Aranae- 23 exs., Diplopoda-1 ex., Scorpionida -2 exs.,

Ephemeroptera -5 exs., Thysanoptera -55 exs., Trichoptera -109 exs., Orthoptera -145 exs., Odonata -69 exs., Diptera -91 exs., Coleoptera -859 exs., Lepidoptera -322 exs., Hymenoptera -75 exs., Neuroptera -12 exs., Isoptera -22 exs., Dermoptera -15 exs., Mantodea -34 exs., Blattodea -2 exs., Grylloblattodea -5 exs., Misc. Insects -28 exs., Mollusca -91 exs., Pisces -159 exs., Amphibia -102 exs., Reptilia -2 exs., DNA samples -306 exs). Final Reports of all the faunistic surveys have been submitted.

10 confiscated items from Crima Branch and worms from Medical Superintendent, Rural Hospital were also identified. Scientists of the Regional Centre have published 21 research papers and communicated 32 research papers. The Centre has a library of 15 Indian journals, 1 Foreign Journal, 1 Hindi periodicals, 4153 books.

Fauna of Maharashtra-2012 State Fauna Series-20 (Part I and II) was released by the Hon'ble Governor of Maharashtra Shri K. Sankarnarayanan at Raj Bhavan, Malabar Hill, Mumbai on 27th May, 2013 in the presence of Director, Zoological Survey of India, Kolkata and Officer-in-Charge and some staff members of WRC, Pune.





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IDENTIFICATION AND ADVISORY SERVICES

1. 115 students of Happy Academy Jodhpur were provided with scientific information on the fauna displayed in the museum of the centre on 20th February, 2014.
2. 13 species of mosquitoes identified under 3 genus and 4 species from the collection of in and around EBRC Campus gopalpur.
3. A project proposal entitled "Diversity of Marine insects from Principal Estuaries of eastern coast of India w.s.r. Genus *Halobates*" has been submitted to AICOPTAX 2014.
4. 282 Fish specimens received for identification from Dr. S.M. Kumbhar, Assistant Professor, Department of Zoology, A.C.S. College, Palus, Sangli district, Maharashtra.
5. 4 lots of 4 fish specimens received from Shri Owais Ahmad Wani, C/O-Prof U.S. Gupta, Department of Zoology, Dr. H.S. Gou, V.V. Sagar, Madhya Pradesh. The specimens identified under 1 genera and 3 species which belonging to 1 families.
6. 7 snake specimens received for identification from R.F.O., Nashik (Territorial), Maharashtra. Identification: Three specimens of *Daboia russellii* (Shaw) of Schedule III, and 2 specimens of *Eryx johnii* (Russell), 1 specimen of *Bungarus caeruleus* (Schneider) and 1 specimen of *Argyrogena fasciolata* (Shaw) of Schedule IV of the Indian Wildlife (Protection) Act, 1972.
7. A brief report on 'Migratory shorebirds of Andaman and Nicobar Islands' has been provided to the Divisional Forest Officer, Mayabunder Division, North Andaman on request.
8. A live turtle specimen received for identification from RFO, Nasik, identified as Brown roofed turtle, *Kachuga smithi* (Gray).
9. A Rapid EIA proposal for the construction of Desalination Plant at INS Shibpur, North Andaman has been submitted to Military Engineering Services, Ministry of Defense, Government of India, Port Blair as requested.
10. A team of 37 undergraduate student with H.O.D and faculty members from Department Of Zoology, Rabindra Mahavidyalaya, Champadanga, West Bengal visited the National Zoological Collections at the Centre in course of their study tour during the month.
11. An agreement has been signed between ZSI and Military Engineering Services, Ministry of Defense, Government of India for conducting Rapid Environmental Impact Studies for the Construction of Desalination Plant at Indian Coast Guard Complex, Diglipur, North Andaman.
12. As per the communication received from the administrative Ministry, the proposal on the inclusion of Great Nicobar Biosphere Reserve (GNBR) in the world network of Biosphere





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- Reserve under the Man and Biosphere Programme (MAB) of UNESCO submitted by the ZSI, Port Blair has been approved by the International Advisory Committee meeting of UNESCO held on 11-13 March 2013 at UNESCO Headquarters, Paris.
18. Dr. A.K. Sidhu, Scientist-C, Identified 12 species referable to 20 examples of butterflies from Uttarakhand, material received from NRS, Dehradun.
19. Dr. A.K. Sidhu, Scientist-C, Identified 12 species referable to 20 examples of butterflies from Uttarakhand, material received from NRS, Dehradun.
20. Dr. A.K. Sidhu, Scientist-C, Lepidoptera services provided to Miss Deepika, Research Scholar, Punjabi University Patiala (Pb).
21. Dr. Anil Kumar, Scientist-C, identified avian species through photographs (total 60 images) to Dr. Diljit Singh, Assistant Professor, Govt. College, Indora, Himachal Pradesh.
22. Dr. Anil Kumar, Scientist-C, identified photographs of about 30 avian species dated on 17.05.2013 from Dr. Daljeet Singh, Govt College Indora, Distt Kangra (HP).
23. Dr. Avtar Kaur Sidhu, identified the butterfly from Dr. R. Babu, MBRC, Chennai on 03.01.2013.
24. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge provided information on butterflies of North-west India for IIRS project to Hon'ble Director, ZSI on 23.10.2013.
25. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge provided the methodology to assess butterfly diversity in Collaborative Project Proposal, "Biodiversity Monitoring and Assessment in India to Dr Hitendra Padalia, Scientist SE, Forestry and
13. As requested by the Deputy Conservator of Forests, Department of Environment and Forests, A and N Administration popular articles on corals, fishes, sea turtles, dugong, butterflies and birds were prepared and submitted for 59th wildlife week celebration.
14. As requested by the Wildlife Warden, Gulf of Mannar, a proposal on 'Status survey of coral reefs in Gulf of Mannar Biosphere Reserve' has been submitted.
15. Collembolan specimens received for identification from Shri P. Prabhakaran, SRF, Entomology Division, UPASI TRF TRI, Nitar DAM, PO, Valparai, Tamil Nadu.
16. Conducted the interview for the admission of Ph.D. students in ZSI for the academic year 2013-14 in which Dr. C. Raghunathan and Dr. C. Sivaperuman, are served as committee members.
17. Dr Indu Sharma, Scientist-C, Advisory services has been provided to Mr. Neeraj Sharma, Research scholar in HNBGU (Department of zoology), Sri Nagar (Uttarakhand) regarding the information about distribution of *Oreinus richardsonii* (Gray) in Himachal Pradesh.





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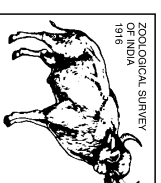


- Ecology Department, IIRS, Dehradun, Uttarakhand, India and checked and corrected the minutes of meeting on 19.10.2013
26. Dr. Avtar Kaur Sidhu, Scientist-C identified butterflies from Punjab Agriculture University, Ludhiana (Punjab) sent by Dr. Pathania.
27. Dr. B.H.C. Murthy, Scientist-C from ZSI HQ, Kolkata provided the information regarding the registered collection of Reptilia fauna of the state from 04th and 5th September, 2013.
28. Dr. Bikramjit Sinha attended the meeting of the Arunachal Pradesh Forest Research Committee for technical evaluation of research proposals for granting of research permission under the provisions of Wildlife (P) Act, 1972 on 29th January 2014 in the O/o PCCF, Itanagar. Dr. Swetapadma Dash reviewed one manuscript on Heteroptera referred by *African Journal of Agricultural Research*.
29. Dr. Bikramjit Sinha attended the meeting on review of management plan of new community reserves in the O/o PCCF, Itanagar on 29th January 2014.
30. Dr. Bikramjit Sinha participated in the 1st meeting of the 21st State Board for Wildlife, Government of Arunachal Pradesh on 28th January 2014 in the O/o PCCF, Itanagar.
31. Dr. Bikramjit Sinha participated in the meeting of the Arunachal Pradesh Forest Research Committee for
32. Dr. Bikramjit Sinha, Scientist-C and Officer-in-Charge reviewed a manuscript for Proceedings of the National Academy of Sciences, India Section B: Biological Sciences.
33. Dr. C. Raghunathan attended and made a presentation on Status of Japanese Quail and *Trochus niloticus* at Animal Committee meeting held at MoEF, New Delhi on 24th May 2013
34. Dr. C. Raghunathan attended the meeting to discuss the concept note on various projects related to island protection zone, conservation of coastal and marine resources, eco-tourism and development of marine laboratory chaired by the Chief Secretary, A and N Administration held on 1st February 2014.
35. Dr. C. Raghunathan attended the State Level Steering Committee meeting for Great Nicobar Biosphere Reserve held at Secretariat chaired by the Chief Secretary, A&N Administration on 15th July 2013.
36. Dr. C. Raghunathan chaired Biodiversity Session and also delivered a invited lecture on 'Marine Biodiversity of India with special reference to Andaman and Nicobar Islands' in National Environmental Conference 2014 held at Kerala





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- Central University, Nileswarem, Kasargod, Kerala during 17th to 19th February 2014.
43. Dr. C. Raghunathan prepared a draft proposal for organizing 'National symposium on Marine Biodiversity of India: Status, Perspectives and Conservation in conjunction with Indian Presidency of CoP II' has been prepared and submitted to ZSI headquarters for approval.
37. Dr. C. Raghunathan delivered a invited lecture on 'Faunal diversity of Andaman and Nicobar Islands with special reference to Marine Ecosystem' in the Regional Science Congress Meet at Port Blair jointly organized Indian Science Congress Association and Pondicherry University during 23rd and 24th January 2014.
44. Dr. C. Raghunathan prepared the comments on the project proposal on coral reef health received from Ministry of Earth Sciences and submitted to ZSI headquarters.
38. Dr. C. Raghunathan evaluated a Ph.D. thesis on coral diversity for Annamalai University and reviewed a manuscript on fishes for ZSI publication and report submitted to the respective organizations.
45. Dr. C. Raghunathan provided comments on the UGC documents portraying the current scenario of Indian Higher Education as required for the perusal of Hon'ble Lt. Governor, Andaman and Nicobar Islands has been prepared and submitted to Assistant Secretary (Higher Education), A&N Administration on request.
39. Dr. C. Raghunathan evaluated the Ph.D. thesis on Biotechnology for Tamil University, Tamil Nadu.
46. Dr. C. Raghunathan provided methodology for the estimation of echinoderms to Mr. Joseph, post graduate student of University of Philippines has been provided.
40. Dr. C. Raghunathan evaluated the Ph.D. thesis on estuarine pollution received from Tamil University and report submitted on request.
47. Dr. C. Raghunathan provided reply for the Lok Sabha questions pertaining to Coral Reefs of India have been submitted to ZSI headquarters as required.
41. Dr. C. Raghunathan explained about the faunal diversity of Andaman and Nicobar Islands to Dr. Fronstantin Mitto, Herpetologist, Zoological Institute, RAS, St. Petersburg, Russia during his visit to the Centre on 9th July 2013.
42. Dr. C. Raghunathan prepared a 'Proposal to recommend three species of Elasmobranchs in India to list on Appendix – II of CITES' and submitted to administrative ministry as per the letter received from the ministry.
48. Dr. C. Raghunathan provided the details of total harvestable stock available and the position of the present standing stock of schedule-IV marine gastropod *Trochus niloticus* outside





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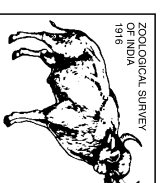


- the Protected Areas in Andaman and Nicobar Islands the as required by the Department of Environment and Forests, A&N Administration, for onward transmission to MoEF.
49. Dr. C. Raghunathan provided ZSI's view on the comments of CMFERI and WII upon the report on Status survey of sea cucumbers in territorial waters of Andaman and Nicobar Islands' and photographs of birds of Andaman and Nicobar Islands have been provided to Department of Environment and Forests, Andaman and Nicobar Administration on request.
50. Dr. C. Raghunathan received a 'Certificate of Appreciation' from Central Agricultural Research Institute (CARI), ICAR, Port Blair on 23rd June 2013 for the meritorious services to CARL.
51. Dr. C. Raghunathan refereed a manuscript on coral for *Journal of Threatened Taxa*.
52. Dr. C. Raghunathan reviewed two manuscripts and offered the comments for *Indian Journal Geo-Marine Sciences*.
53. Dr. C. Raghunathan served as a Doctoral Committee member for Ph.D. viva-voce examination in Department of Coastal Studies and Marine Biology, Pondicherry University on 2nd July 2013.
54. Dr. C. Raghunathan served as a doctoral committee member in Pondicherry University on 18th September 2013.
55. Dr. C. Raghunathan served as a member in Consultative meeting on declaration of eco-sensitive zones around protected areas held at Department of Environment and Forests, Andaman and Nicobar Administration on 20th February 2014;
56. Dr. C. Raghunathan served as a Member in Doctoral Committee for Ph.D. students held at Department of Coastal Studies and Marine Biology, Pondicherry University, Port Blair on 17th October 2013.
57. Dr. C. Raghunathan served as a Member in Research Advisory Committee meeting of Department of Environment and Forests, Andaman and Nicobar Administration on 7th October 2013.
58. Dr. C. Raghunathan served as a member in the meeting on the finalization of maximum reserve price for the fish catches of FSI vessel MFV Blue Marlin held at Fishery Survey of India, Port Blair on 27th May 2013.
59. Dr. C. Raghunathan served as a member in the selection committee for the recruitment of Net Mender in Fishery Survey of India, Port Blair on 1st and 2nd December 2013.
60. Dr. C. Raghunathan served as a member in the selection committee for the recruitment of LD Clerk at Fishery Survey of India, Port Blair on 26th March 2014 and JRFs at ZSI, Port Blair on 27th March 2014.





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61. Dr. C. Raghunathan served as a resource person and delivered a lecture on 'Coast and its importance' in the 'Training Programme on Integrated Coastal Zone Management' at ZSI/MARC, Digha on 5th January 2014.
62. Dr. C. Raghunathan served as an Expert Member in the Executive Council Meeting of Andaman Adim Janjati Vikas Samit held at Secretariat of Andaman and Nicobar Administration on 15th October 2013 chaired by the Chief Secretary.
63. Dr. C. Raghunathan served as an External Examiner for conducting Ph.D. viva-voce examination at Centre of Advanced Study in Marine Biology, Annamalai University, Tamil Nadu on 28th June 2013.
64. Dr. C. Raghunathan served as an External Member on 21st and 22nd June 2013 for the selection of 8 different categories of meritorious award winners including best scientist, best division etc. of CARL.
65. Dr. C. Raghunathan served as an interview committee member for the recruitment Jr. and Sr. Deckhands in Fishery Survey of India, Port Blair on 1st July 2013, recruitment of JRF in Department of Disaster Management, Pondicherry University on 11th July 2013, and recruitment of JRF in Department of Coastal Studies and Marine Biology, Pondicherry University on 19th July 2013.
66. Dr. C. Raghunathan served as Research Advisory Committee member at Department of Environment and Forests, A and N Administration on 27th September 2013.
67. Dr. C. Raghunathan submitted a proposal for organizing two days 'Workshop on the value of Biodiversity in Island Biosphere Reserve' in collaboration with UNESCO, Paris to ZSI headquarters.
68. Dr. C. Raghunathan submitted four Rapid EIA proposals for the construction of Deficient single living accommodation, Workshop facilities for CASU (Fleet Maintenance Unit), Road, and Special repairs to the existing boundary and extension of boundary wall at CG DHQ-09, Ariel Bay, Diglipur, North Andaman to the Garrison Engineer, Indian Coast Guard, Ministry of Defence, Port Blair on request.
69. Dr. C. Raghunathan submitted the Final report on the 'Rapid Environmental Impact Assessment Studies on the Road Alignment from Shastri Nagar to Indira Point, Great Nicobar Island, Phase III and IV (Km 43.45 to Km 61.45)' to the Border Roads Organization, Ministry of Defense, Port Blair.
70. Dr. C. Raghunathan submitted the REIA proposal entitled, 'Studies on the biotic components of proposed area for installation of Radar Stations at East Island, Little Andaman and Car Nicobar' to the Commander, Indian





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Coast Guard (AandN), Headquarters,
Port Blair on request.

71. Dr. C. Raghunathan, delivered a lecture on 'Faunal diversity of Andaman and Nicobar Islands with special reference to Great Nicobar Island' in the workshop on 'Value of Biodiversity in Islands Biosphere' on 14th September 2013.

72. Dr. C. Raghunathan, provided the methodology for the estimation of echinoderms to Mr. Joseph, post graduate student of University of Philippines.

73. Dr. C. Raghunathan, refereed manuscripts for the journals *Records of Zoological Survey of India*, *Indian Journal of Geo-Marine Sciences*, and *Journal of Microbiology, Biotechnology and Food Sciences*.

74. Dr. C. Raghunathan, reviewed a manuscript on Opisthobranchs for the *Journal of Threatened Taxa*, and a manuscript on Mangrove brachyuran crab diversity for *International Journal of Biodiversity and Conservation* and comments offered on request.

75. Dr. C. Raghunathan, reviewed the manuscript and offered the comments for Journal of Threatened Taxa, and prepared the review report for the project proposal on coastal zone studies received from Ministry of Earth Sciences, Government of India and submitted the same to ZSI headquarters for further action.

76. Dr. C. Raghunathan, Scientist-C and Officer-in-Charge served as a

Mentor in the INSPIRE programme of Department of Science and Technology, Government of India organized for Senior Secondary School students held at Department of Coastal Studies and Marine Biology, Pondicherry University, Port Blair on 27th October 2013 and delivered a lecture on 'Coastal and Marine Ecosystems of India with special reference to Coral Reef Ecosystem of Andaman and Nicobar Islands.

77. Dr. C. Raghunathan, Scientist-D and Officer-in-Charge, provided the work plan to study the diversity of echinoderms to Ms. Maryjune Cabiguin, MS Student of Xaviers University, Cagayan, Philippines.

78. Dr. C. Raghunathan, served as a Member in the selection committee for the recruitment of LDC and Hind Typist at Fishery Survey of India Port Blair on 15th May 2013

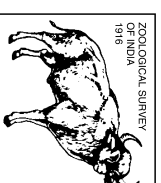
79. Dr. C. Sivaperuman and Mr. P.T. Rajan, Sr. Zoological Assistant delivered the lectures on Crocodile Census Techniques and Faunal diversity of A&N Islands respectively on 13th and 14th July 2013 for Forest Guard at Forest Training Institute, Wimberligunj, Port Blair.

80. Dr. C. Sivaperuman delivered talks on 'Wildlife Census Techniques' in Forest Training School at South Andaman on 13th March 2014, 'Ecosystem services of birds with special reference to avifauna of A&N Islands' on 14th and 20th March 2014 for CPREEC, Port Blair.





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81. Dr. C. Sivaperuman edited 12 manuscripts for the *Journal of Andaman Science Association* while one manuscript for the *World Journal of Agricultural Sciences*.
82. Dr. C. Sivaperuman served as a member in the selection committee for the recruitment of Technical Assistant in BSL, Port Blair on 8th March 2014 and member in purchase committee of RMRC-ICMR, Port Blair on the same date.
83. Dr. C. Sivaperuman, Scientist-C delivered a lecture on 'Avifauna of Andaman and Nicobar Islands with special reference to Great Nicobar Island' in the aforesaid ZSI workshop on 14th September 2013 and served as a doctoral committee member in Pondicherry University on 18th and 24th September 2013.
84. Dr. C. Sivaperuman, Scientist-C delivered a lecture on 'Wildlife census technique' at Forest Training School, Wimberligunj, South Andaman on 2nd December 2013, 'Bird census techniques' in Navy Office, Port Blair on 19th December 2013 and attended training course on 'Role of scientists in natural resources and environment management' at Indian Institute of Forest Management, Bhopal, Madhya Pradesh during 9th to 13th December 2013.
85. Dr. C. Sivaperuman, Scientist-C delivered a talk on 'Wildlife census technique and bird watching' at Divisional Forest Office, Middle Andaman on 6th January 2014.
86. Dr. C. Sivaperuman, Scientist-C made a presentation on 'Ecosystem service of birds with special reference to A&N Islands' in the workshop on People, Forests and Wildlife Conservation organized by Department of Environment and Forests, A and N Administration on 7th October 2013; delivered a talk on 'Faunal diversity of A&N Islands with special reference to avifauna' at CPREEC, Port Blair on 8th October 2013; served as a member in selection committee for Research Assistant at RMRC, Port Blair on 17th October 2013; served as a member in Doctoral Committee for Ph.D. on 18th October 2013 at Department of Coastal Studies and Marine Biology, Pondicherry University, Port Blair.
87. Dr. C. Sivaperuman, Scientist-C reviewed the manuscript for *African Journal of Agricultural Research*.
88. Dr. C.K. Mandal identified 1 lot of earthworms (7 ex. 3 species, 2 genera 1 family) from Ujjal Das, Research scholar Vidyasagar University, Midnapur, West Bengal.
89. Dr. C.K. Mandal identified 1 lot of earthworms (9 ex. 2 species, 2 genera 1 family) received from Ujjal Das, Research scholar Vidyasagar University, Midnapur, West Bengal and sent after identification.
90. Dr. C.K. Mandal identified 1 lot of leeches (7 exs. 1 species, 1 genera 1 family) received from Debashis Talukder, Chemist, Vivekananda Pharmacy, Madhyamgram, North 24





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100. Dr. Ch. Satyanarayana identified 36 examples of confiscated coral fragments as Hermatypic corals belonging to 8 species, 3 genera and 3 families, 2 orders and 1 class (Anthozoa). The confiscated coral fragments were received from Wildlife Crime Control Bureau, Eastern Region, MoEF, Kolkata-20.
91. Dr. C.K. Mandal identified 13 exs of earthworms from Ujjal Das, Research scholar, Vidya Sagar University.
92. Dr. C.K. Mandal identified 17 examples of earthworms received from Dr. P. Bhattacharyya, Asst. Director of Agriculture, Siliguri, Naxalbari Block.
93. Dr. C.K. Mandal identified 17 exs of earth worms from Narendrapur Ram Krishna Mission Baruiapur. South 24 Parganas, W.B.
94. Dr. C.K. Mandal identified 2 ex. of earthworms sent by Dr. Sheela Roy, Associate Professor, Vidya Sagar College, Midnapur West Bengal.
102. Dr. Ch. Satyanarayana identified 70 examples of confiscated coral fragments as Hermatypic corals belonging to 8 species, 3 genera and 3 families, 2 orders and 1 class (Anthozoa). The confiscated coral fragments were received from Wildlife Crime Control Bureau, Eastern Region, MoEF, Kolkata-20.
95. Dr. C.K. Mandal identified 2 exs of earthworms from Dr. K.R. Rao, Associate professor, Sholapur, Maharashtra.
96. Dr. C.K. Mandal identified 3 exs of leeches received from Amritava Majumder Research scholar Chhatishgarh Project ZSI, Kolkata.
103. Dr. Ch. Satyanarayana, Scientist 'B' Reviewed a paper entitled "Neogene fossils from Kathiawar, Gujarat, India with special emphasis on taxonomic description of Corals by Director, Palaeontology Division, GSI prepared by Dr. R.L. Jain, the Incharge-Director of Paleontology division of Geological Survey of India and submitted comments.
97. Dr. C.K. Mandal identified 5 exs. of earthworms sent by Professor P.K. Bandyopadhy University of Kalyani, W.B.
104. Dr. Girish Kumar, P., Sr. Zool. Assistant is reviewed one manuscript for Journal of Threatened Taxa.
98. Dr. C.K. Mandal identified 52 examples of earthworms received from Dr. P. Bhattacharyya, Asst. Director of Agriculture, Siliguri, Naxalbari Block.
105. Dr. C.K. Mandal identified 7 exs of earthworms and 1 exs of leech from Ujjal Das, Howrah.
99. Dr. C.K. Mandal identified 7 exs of earthworms and 1 exs of leech from Ujjal Das, Howrah.





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- research programme (ECRP) held on 27th and 28th February, 2014 at Goa University, Goa.
111. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of the Bird Section has reviewed six project proposals received from the Ministry of Environment and Forests, New Delhi during May 2013.
112. Dr. Gopinathan Maheswaran, Scientist-C and officer-in-Charge of the Bird Section had attended three different meetings one on 10 May 2013 at The Ministry of Environment and Forests, New Delhi regarding 3rd meeting of the expert committee for declaration of eco sensitive zones with regard to Mount Abu, Rajasthan and another two meetings on 24 May 2013 at MoEF one each regarding 4th meeting of the expert committee for declaration of eco-sensitive zones around protected areas in Goa and other meeting on Japanese Quail, Edible-nest swiftlet and Trochus species to discuss with experts whether to delist these species from the Schedule of various Wildlife (Protection) Act, 1972.
113. Dr. Gopinathan Maheswaran, Scientist-C has visited La Martiniere for Boys school on 8th October, 2013, on the request of school authority to assess and identify the skeletons of birds that came out while making renovations to a portion of the school wall. Out of 22 skeletons recovered from within the walls 20 belong to crow and one of pigeon and other of bat.
114. Dr. H. S. Banyal and Mrs. Neena Tak, Assistant Zoologist have Provided
106. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge along with Director, ZSI visited ZSI's Estuarine Biology Regional Centre, Berhampur, Orissa from 18-20th October, 2013 to assess the damages inflicted by the cyclone Phailin.
107. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge has attended 5th Meeting of the Advisory Committee for Ecosystem Research Programme at the Ministry of Environment and Forests, Government of India, New Delhi on 22 and 23 July, 2013.
108. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge has reviewed three project proposal for Ministry of Environment and Forests, New Delhi.
109. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge has reviewed three project proposal for Ministry of Environment and Forests, New Delhi.
110. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Bird Section has attended the 16th meeting of the Appraisal Committee (Nuclear) to examine nuclear projects-Consideration of the setting up of a Fuel Complex at Rawatbhatta Atomic Power Station and for which ZSI is preparing Conservation Action Plan on the Schedule-I animals.





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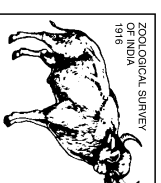


- scientific information on the fauna displayed in the museum of the centre to the Pre-Foundation and Pre-Medical Division of Career Point Infosystems Ltd. Jodhpur on 16 and 17-07-2013 during their visit to the centre.
115. Dr. H.S. Banyal, Scientist C has provided scientific information on the fauna displayed in the museum of the centre to 75 students of Sri Aurobindo Centre of New Education, Jodhpur on 20th January, 2014.
116. Dr. H.S. Banyal, Scientist-C and Mrs. Neena Tak, Assistant Zoologist have provided information on the fauna displayed in the museum of the centre to a group of 30 students from a English Academy, Jodhpur on 27-08-2013.
117. Dr. H.S. Banyal, Scientist-C has provided information on the fauna displayed in centre's museum to 205 students and teachers of Sanskriti Vidya Bhawan Jodhpur on 2-05-2013.
118. Dr. H.S. Banyal, Scientist-C provided scientific information regarding fauna of the jurisdiction area as well as fauna displayed in centre's museum to two M. Sc. students from School of Planning and Architecture, New Delhi on 27-08-2013.
119. Dr. H.S. Banyal, Scientist-C provided scientific information on the fauna displayed in the museum of the centre to 300 students of St. Anne's school, Jodhpur on 04-12-2013 and to 49 students of XI and XII of Central Academy, CHB, Senior Secondary School, Jodhpur on 10th and 11th December, 2013.
120. Dr. Indu Sharma Provided the advisory services to Dr. V.G. Hegde regarding the Nomenclature, original reference and all for 33 fishes of Pisces fauna of Uttar Pradesh and also provided the photos of fishes.
121. Dr. Indu Sharma undertook the survey of Pong Dam Wild Life sanctuary from 21st to 23rd March, 2014 for the limnological studies of the dam as per the request of DFO, Wildlife Division, Hamirpur (H.P.).
122. Dr. Indu Sharma, Scientist-C, literature services (Pisces) on the Diversity and Status of Fish Fauna of the River Drainage Systems of Himachal Pradesh in Western Himalaya, India is provided to NRC, ZSI, Dehradun
123. Dr. Indu Sharma, Scientist-C, the identification and literature services provided to Dr. N. Shiva Kumar from Delhi regarding mammals of the Ladakh.
124. Dr. Jayasree Thilak, Scientist 'C' rendered identification services on fish specimens *Puntius filamentosus* (Valenciennes) and also provided literature on fish identification to Sr. Mary Queen, Research Scholar, Nandanam Arts College, Chennai on 15-4-2013.
125. Dr. Jayasree Thilak, Scientist 'C' rendered identification services on fish specimens *Clarias gariepinus* (Burchell,





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- 1822) to Mr. Sumit Rose, Research Scholar, Dept of Zoology, Loyola College, Chennai on 25-9-2013.
126. Dr. Jayasree Thilak, Scientist 'C' rendered identification services on fish specimens collected from Mettur Reservoir to Mr. P. Kumaresan, S/O K. Porappan, Eratai Puliya Maram 5/1-8, Raman Nagar (PO), Mariamman Kovil (Opp), Mettur Dam- 636403, Salem on 8-11-2013.
127. Dr. Johnson, Scientist-D, Department of Habitat Ecology , WII, Dehradun, were provided Identified material of Pisces and to check a character in *Psilorhynchus rudithoracicus* types.
128. Dr. K. Rajmohana, Scientist-C identified a termite species *Heterotermes indicola* Wasmann (Isoptera : Rhinotermitidae) on request from Devaki Ammal College of Pharmacy, Chelembra, Malappuram, Kerala.
129. Dr. K. Rajmohana, Scientist-C reviewed a manuscript for International Journal Entomological News, Columbus Ohio.
130. Dr. K. Rajmohana, Scientist-C served as external examiner and conducted Practical examination on the subject 'Systematics and Entomology' for M. Sc students, at Dept. of Zoology, University of Calicut.
131. Dr. K. Rajmohana, Scientist-C, identified 4 species of *Telenomus* (Platygastridae: Hymenoptera) for Mr. Ranjith Raveendran, Dept. of Zoology, University of Calicut, for his doctoral work.
132. Dr. K. Rajmohana, Scientist-C, reviewed a manuscript for a foreign journal, Agricultural Science Research Journal.
133. Dr. K. Rajmohana, Scientist-C, served as a supervisor of a dissertation of an Msc. student at the Dept. of Zoology, Govt. Madappally, Calicut, Kerala.
134. Dr. K. Rajmohana, Scientist-C, served as a supervisor of a dissertation of a Msc. student at the Dept. of Zoology, Govt. Madappally, Calicut, Kerala.
135. Dr. K. Rajmohana, Scientist-C, functioned as an examiner for Ph.D Course work examination-2013, at Dept of Zoology, University of Calicut on 18/12/2013.
136. Dr. K. Rajmohana, Scientist-C, has been nominated by the Indian Academy of Sciences, Bangalore, as a Supervisor for the Summer School Research Programme.
137. Dr. K. Rajmohana, Scientist-C, has been supervising two M.Sc Dissertations, students of Dept. of Zoology, Kannur University from 1/6/2013 onwards.
138. Dr. K. Rajmohana, Scientist-C, identified 11 species of Isoptera for the students at Dept of Zoology, Mananthvady Campus, Kannur, Calicut University.
139. Dr. K. Rajmohana, Scientist-C, reviewed a paper for The Journal of African Entomology.





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140. Dr. K. Rajmohana, Scientist-C, served as an external examiner for Msc. Semester Examination, Dept of Zoology, University of Calicut, Kerala on 10/10/2013.
141. Dr. L.K. Singh, Scientist-C, H.Q. ZSL, Kolkata provided all the collection material for identification of *Barilius* sp., Holotype, Paratype and Allotype and other *barilius* sps collection present at NRC.
142. Dr. M. E. Hassan, Scientist-C provided Research paper on *Trichogramma* on the request of Dr. Prashanth, Head, Division of Insect Systematics at the National Bureau of Agriculturally Important Insects, Bangalore.
143. Dr. M. E. Hassan, Scientist-C, reviewed manuscript entitled “Four New Records of *Acanthaspis* Anyot and Serville, (Heteroptera: Reduviidae) from Chhatisgarh, India submitted by Kailash Chandra *et al.* for the publication in online journal *PROMMALLA* and sent the report.
144. Dr. Md. Jafer Palot, Asstt. Zool, guided four M.Sc. (Zoology) Students and one M.Phil (Zoology) Student for their Project work.
145. Dr. Md. Jafer Palot, Asstt. Zool. performed as a Judge in district ‘Inspire Science Exhibition’ for School Students at Government Higher Secondary School on 20.07. 201 organized by Kerala State Education Department and Department of Science and Technology, New Delhi.
146. Dr. Md. Jafer Palot, Asstt. Zool., reviewed a research paper on “A note on the occurrence of *Bindahara phocides* (Fabricius) (Lepidoptera: Lycaenidae) as a fruit borer of *Salacia fruticosa* Heyne ex Lawson at Peechi, Kerala, India” for the *Journal of the Bombay Natural History Society*.
147. Dr. Md. Jafer Palot, Asstt. Zool., reviewed the ms on “Threatened Reptiles of Kerala” for Kerala State Biodiversity Board, Thiruvananthapuram.
148. Dr. Md. Jafer Palot, Asstt. Zoologist rendered Id and advisory services rendered to 4 M.Sc. (Zoology) Students of Kannur University Centre, Mananthavady, Wayanad and an M. Sc (Landscape Architecture) student of CEPT University, Ahmedabad, Gujarat.
149. Dr. Md. Jafer Palot, Asstt. Zoologist reviewed a research paper on “Further additions to the Odonata fauna of Goa State” for the Journal of Threatened Taxa
150. Dr. Md. Jafer Palot, Asstt. Zoologist, guided four M.Sc.(Zoology) Students and one M.Phil (Zoology) Student for their dissertation work.
151. Dr. Md. Jafer Palot, Asstt. Zoologist, identification and advisory services rendered to Mr. Sachin K. Aravind, M.Sc. (Wildlife Biology) student of Centre for Wildlife studies, Kerala Agricultural University, Thrissur on the analysis of faecal samples of insectivorous bats for his M. Sc dissertation work.





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152. Dr. Md. Jafer Palot, Asstt. Zoologist, performed as a judge at the Wildlife Photography competition (Bioblitz) conducted at Aralam WLS by the Kerala Forests and Wildlife Department and Malabar natural History Society on 5th Oct. 2013.
153. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered advisory service to Mr. Sachin K. Aravind, M.Sc. (Wildlife Biology) student of Centre for Wildlife studies, Kerala Agricultural University, Thrissur on the analysis of faecal samples of insectivorous bats for his M.Sc dissertation work.
154. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered advisory services to Smt. Bismi, L.S., Research Fellow, P.G. Department of Zoology and Research Centre, Mahatma Gandhi College, Trivandrum on Aquatic insects specimens deposited at the Centre.
155. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered advisory services on reptiles to Mr. Zeeshan Ali Mirza, Research Fellow, National Centre for Biological Sciences, Bangalore.
156. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered advisory services to Ms. E. Reshma, M.Sc. Final semester Wildlife Science students, Farook College, Kozhikode on the wetland birds of north Kerala.
157. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered advisory services to Dr. M. Magesh, Research Associate, Department of Aquatic Biology, University of Kerala
158. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered Id and advisory services to 4 M.Sc. (Zoology) Students of Kannur University Centre, Mananthavady and a M.Sc (Wildlife Studies) student of Veterinary University, Pookote, Waynad.
159. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered services to Ms. Aparna D. Anand, 10th Semester B. Arch. Student, School of Architecture, Govt. Engineering College, Thrissur on the 'Water Front Development and biodiversity at Muzhappilangad Beach, Kannur district, Kerala'
160. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered services to Shri. Vineesh N. Research Scholar, National Bureau of Fish Genetic Resources, CMFRI Campus, Cochin on the Marine fishes of the Centre.
161. Dr. Md. Jafer Palot, Asstt. Zoologist, rendered services to the Research Fellows of Centre for Environmental Sciences, Monomanium Sundaranar University, Alwarkurichi, Thirunelveli, Tamil Nadu on fish type specimens deposited at our Centre.
162. Dr. Md. Jafer Palot, Asstt. Zoologist, reviewed a scientific paper on 'Diversity of Odonates in Chinnar WLS, Southern Western Ghats, India' for the *Journal of Threatened Taxa*.
163. Dr. Md. Jafer Palot, Asstt. Zoologist, reviewed a scientific paper on 'Identity,





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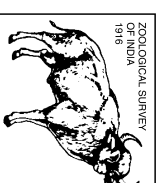


- Biology and Bionomics of the Common Mime, *Chilasa chylsia* Linnaeus (Lepidoptera: Papilionidae)' for the *Journal of Threatened Taxa*.
164. Dr. Md. Jafer Palot, Asstt. Zoologist, valued the M.Sc. dissertation of Shri. Roshnath, R, M.Sc. Wildlife Sciences, College of Veterinary and Animal Sciences, Kerala Veterinary Animal Sciences University, Pookode, Wayanad.
165. Dr. Muhammed Jafer Palot, AZ, rendered advisory services to Smt. Binu, C, Research Fellow, Bharathiar University, Coimbatore for her Ph.D. topic on 'Ecological Studies on three species of Kingfishers in north Kerala'
166. Dr. Muhammed Jafer Palot, AZ, rendered advisory services to Smt. Preetha Karnaver, Asst. Professor, Dept. of Zoology, Christian College, Chengannur for the research project on 'Coastal marine biodiversity of Kerala'.
167. Dr. Muhammed Jafer Palot, AZ, rendered identification and advisory services to Mr. K. Abhiram, Nannanda Govt. Higher Secondary School, Nannadanda, Kozhikode dt for his project on "Biodiversity and present situation of water resources in and around Ponkunnunmla, Kackur, Kozhikode district".
168. Dr. Muhammed Jafer Palot, AZ, reviewed a research paper entitled, "*Vepris bilocularis* (Wt. and Arn.) Engl. (Rutaceae) as a new larval host plant for the Lime Butterfly *Papilio demoleus*
- Linnaeus (Lepidoptera: Papilionidae) for the *Journal of Threatened Taxa* .
169. Dr. Muhammed Jafer Palot, AZ, reviewed a research paper entitled, "Biology of *Metanasatiria hyrtaca* Cramer (Lepidoptera: Lasiocampidae) on *Terminalia catappa* in Solapur, Maharashtra "for the *Bugs R All Newsletter* of the Invertebrate Conservation and Information Network of South Asia.
170. Dr. Murthy, from HQ visited the Centre for Reptiles collection and provided laboratory Services.
171. Dr. Navneet Singh, Scientist - C guided Mr Anand Kumar Thakur, Assistant Professor, S.S Memorial College, Ranchi University, Ranchi for identification of his moths collections.
172. Dr. P.M. Sureshan, Scientist-C identified 12 examples of Pteromalidae belonging to 6 species under 5 genera for Dr. Ankita Gupta, Sr. Scientist, NBAIL, Bangalore.
173. Dr. P.M. Sureshan, Scientist-C reviewed one manuscript on Hymenoptera for the journal Prommalia.
174. Dr. P.M. Sureshan, Scientist-C, reviewed one research manuscript for the journal threatened taxa.
175. Dr. P.M. Sureshan, Scientist-C, reviewed six manuscripts on Hymenoptera (4), Mantodea (1) and Scorpiones (1) for Records of Zoological Survey of India.
176. Dr. P.C. Tak, Scientist-D Prepared one list of common mammals (40





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- species) and one list of common birds (130 species) for the Collaborative Project proposal on Biodiversity Monitoring and Assessment and submitted the same the PI, IIRS, and DZSI. Dr. S.I. Kazmi, Scientist-C and Dr. Narinder Sharma, Scientist-C delivered a lecture-cum-demo on collection, preservation, registration and maintenance of Hymenoptera (Insecta) to 8 Students of Dolphin (PG) Institute of Biomedical and Natural Sciences, Manduwala, Dehradun at NRC Laboratory on Collection on 28th November, 2013.
177. Dr. P.C. Tak, Scientist-D, and O/C, NRC gave an introduction of the ZSI particularly of Northern Regional Centre, Museum, Library etc, to 26 Students of Dolphin (PG) Institute of Biomedical and Natural Sciences, Manduwala, Dehradun on 28th November, 2013.
178. Dr. P.M. Sureshan, Scientist-C reviewed two manuscripts on Hymenoptera for Records of Zoological Survey of India.
179. Dr. P.M. Sureshan, Scientist-C reviewed two manuscripts on Hymenoptera one each for Journal PROMMALIA and Journal of Threatened Taxa, Coimbatore and offered the comments.
180. Dr. P.M. Sureshan, Scientist-C, reviewed one research manuscript for Journal of threatened Taxa, Coimbatore.
181. Dr. Pawan Rana, Scientist-C, Himalayan Forest Research Institute, Shimla. were provided identification and services on the Rhopalocera (Lepidoptera) specimens which were collected from the Alpine zone of Himachal Pradesh.
182. Dr. Prasanna Yennawar, Scientist C, participated in '9th Meeting of State Board for Wildlife' chaired by Hon'ble Chief Minister AP on 11th February, 2014 at Chief Minister's Camp office in Hyderabad.
183. Dr. R. Aengals, scientist C' rendered identification services on two toad specimens as Asian common toad *Dutaphrymus melanosticus* (Schneider, 1799) to a Research Scholar, Department of Zoology, Annamalai University, Chidambaram.
184. Dr. R. Babu, Scientist 'C' Identified around forty eight Odonata photographs taken by two M.Sc. Zoology students of St. Queen Mary's College, Chennai and also identified two Odonata photographs received from Dr. Richard, Madras Christian College, Chennai.
185. Dr. R. Babu, Scientist 'C' rendered identification and advisory services to Dr. Ashish Tiple, Head, Department of Zoology, Vidyabharati, College, Wardha, Maharashtra.
186. Dr. R. Babu, Scientist 'C' rendered identification and advisory services to Dr. Ashish Tiple, Head, Department of Zoology, Vidyabharati, College, Wardha, Maharashtra.
187. Dr. R. Babu, Scientist 'C' rendered identification services to two M.Sc students of Queen Mary's





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- College, Chennai. He also rendered identification services on 38 species of Odonates received from Department of Zoology and Environmental Sciences, Punjabi University, Patiala.
188. Dr. R. Venkitesan, *Scientist 'C'* rendered identification services to U. Selvakumari of VEL Tech University, Pallavaram on 8 species of Molluscs which were identified as 5 freshwater, 2 Land mollusca and one marine mollusca.
189. Dr. R. Venkitesan, *Scientist 'C'* rendered identification services to 51 species of Gastropods and 24 species of Bivalves were identified and advisory service rendered to Mr. Radhakrishnan, II MSc of pachaiyappas college, Chennai 30.
190. Dr. R. Venkitesan, *Scientist 'C'* rendered identification services to Mr. Disnesh, II M.Sc. of Pachaiyappa's college, Chennai 30 on 116 examples Mollusca under 21 species of Gastropods and 27 species of Bivalves.
191. Dr. R.Aengals, *Scientist 'C'* rendered identification services on 15 Reptile and Amphibian specimens to Research Scholar, Dept. of Zoology, Loyola college, Chennai. He also rendered identification services to Shri. Surjit Bhujabal, IRS, Additional Director General, Ministry of Finance, Govt. of India on photographs of Kerala Shieldtail Snake *Uropehtis ceylonica*.
192. Dr. S. Prabhakaran, *Scientist 'C'* rendered identification services to Lepidoptera specimens received from
- Ethiraj College for Women Chennai belonging to 10 species, 5 families under 8 genera.
193. Dr. S. Prabhakaran, *Scientist 'C'* identified 20 examples of Lepidoptera species received from Queen Mary's College for Women, Chennai belonging to 5 families, 12 genera and 20 species.
194. Dr. S. Prabhakaran, *Scientist 'C'* rendered identification services on Membracid specimens for Indian Institute of Science Education and Research, Thiruvananthapuram on the month of August 2013.
195. Dr. Sanjeev Kumar, *Scientist 'C'* and Officer-in-charge has attended as special invitee the 9th Meeting of the Rajasthan State Biodiversity Board, Jaipur on 21st March, 2014 at Jaipur.
196. Dr. Sanjeev Kumar, *Scientist-C* and Officer-in-charge attended as special Guest, the closing and prize distribution ceremony of 59th Wildlife Week – 2013 organized by State Forest Department, Rajasthan (SFD) at Umaid Garden, Jodhpur on 8th October, 2013 and distributed awards to the winners of the various competitions organized during the wildlife week.
197. Dr. Sanjeev Kumar, *Scientist-C* and Officer-in-charge identified a live specimen of snake as red spotted royal snake or red-spotted diadem snake *Spalerosophis arenarius* (Boulenger, 1890) sent by the Range Forest Officer, Raniwara Forest Range, State Forest Dept., Rajasthan from Jalor and





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- cleared the popular myth about the locally called *Peervana* snake.
198. Dr. Sanjeev Kumar, Scientist-C and Officer-in-charge organized one day programme during Wildlife Week 2013 and delivered a talk on Importance of Wildlife and role of ZSI to create awareness and update information of the employees at the centre on 8th October, 2013. All the officers and staff members participated in the programme.
204. Edible nest of Swiftlet has been identified for Crime Police Station, Port Blair on request for Department of Environment and Forests, A&N Islands.
199. Dr. V.M. Sathish Kumar, Assistant Zoologist provided DNA Barcoding protocol on Squillids to Ms. Nandini, M.Sc Student from Madras Christian College, Chennai. He also briefed DNA Barcoding techniques to M.Sc students from Presidency College, Chennai.
205. Eleven species of bio-fouling organisms were identified for National Institute of Ocean Technology, Port Blair on request.
200. Dr. A.K. Sidhu, Scientist-C and Officer-in-Charge reviewed a paper for Pakistan Entomologist Journal, Pakistan Entomological Society, Department of Agricultural Entomology, University of Agriculture, Faisalabad, Pakistan on 6th January, 2014.
206. Fish Images received by email for identification from Dr. Ashish Tiple, Asst. Professor and Head, Dept. of Zoology, Vidyabharathi College, Seloo, Wardha, Maharashtra.
201. Dr. A.K. Sidhu, Scientist-C cum Officer-in-Charge supervised the research work of two Ph.D. scholars.
207. Fish images received by email for identification from Prof. D. V. Muley, Professor, Dept. of Zoology, Shivaji University, Kolhapur-416 004.
202. Dr. Kailash Chandra, Scientist-F and Additional Director, Gopinathan Maheswara, Scientist-C and Basudev Thirpathy, Scientist-C have attended the 27th Regional Council Meeting (JCM) held at Marine Aquarium-cum-Research Centre, Zoological Survey of India, Dighe on 9 December, 2013 under the Chairmanship of Director, Zoological Survey of India.
203. Duly verified, two copies, of each write-up on the Fauna of Jhajjar district and Fauna of Rohtak district, as required by the Govt. of Haryana were sent to them.
204. Edible nest of Swiftlet has been identified for Crime Police Station, Port Blair on request for Department of Environment and Forests, A&N Islands.
205. Eleven species of bio-fouling organisms were identified for National Institute of Ocean Technology, Port Blair on request.
206. Fish Images received by email for identification from Dr. Ashish Tiple, Asst. Professor and Head, Dept. of Zoology, Vidyabharathi College, Seloo, Wardha, Maharashtra.
207. Fish images received by email for identification from Prof. D. V. Muley, Professor, Dept. of Zoology, Shivaji University, Kolhapur-416 004.
208. Fish Images received for identification from Shri. Sanjay Khodake, Asst. Professor A.M.P. College, Pimpalner, Dist. Dhule.
209. Fish photographs received for identification from Mrs. Sarika Mohite, Shivaji University, Kolhapur.
210. Fish specimens (31 examples) belonging to 7 species received from Mrs. Mithila Das, Lecturer in Zoology, S.N. College, Rajkanika, Odisha.





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211. Fish specimens received for identification from Dr. D.S. Dabhadre, Dept. of Zoology, R.A. Arts, Shri M.K. Commerce and Shri S.R. Rath Science College, Washim-444 505.
212. Fish specimens received for identification from Dr. D.S. Dabhadre, Dept. of Zoology, R.A. Arts, Shri M.K. Commerce and Shri S.R. Rath Science College, Washim-444 505.
213. Fish specimens received for identification from Mr. M.M. Deshmukh, N.E.S. Science College, Nanded, Maharashtra.
214. Fish specimens received for identification from Mrs. K.P.Jagtap, Study Scientist, Intox, Pvt. Ltd., Urawade, Tal. Mulshi, Dist. Pune.
215. Fish specimens received for identification from Mrs. Sarika Mohite, Shivaji University, Kolhapur, Maharashtra.
216. Five freshwater crab specimens received for identification from Miss Seema Shrishailappa Sakhare, At/P.O. Nool, Gadhinglaj Taluka, Kolhapur district.
217. Five REIA reports on the biotic components in the project areas for the construction of Desalination Plant, CASU, Deficient single living accommodation, Extension of boundary wall and Laying road in the Indian Coast Guard Complex at Diglipur, North Andaman have been submitted to the Military Engineering Services, Ministry of Defence, Government of India.
218. Five skin samples received for identification from Crime Branch, Thane, Maharashtra.
219. Four lot of fishes containing 21 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 12 genera and 14 species which belonging to 10 families.
220. Four lot of fishes containing 8 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 7 genera and 8 species which belonging to 3 families.
221. Freshwater bivalve specimens received for identification from The Principal, Kisan Arts, Commerce and Science College, Parola-425 111.
222. Freshwater crab remnants in owl pallets received for identification from Dr. V.S. Zade, Associate Professor, Amravati, Maharashtra.
223. Freshwater crab specimens received for identification from Mrs. S.S. Sakhare, Department of Zoology, Shivaji University, Kolhapur-416 004.
224. Freshwater Mollusca specimens received for identification from The Principal, Ahmednagar College, Ahmednagar, Maharashtra.
225. Freshwater molluscan and crab specimens received for identification from Mrs. A.B. Sarwade, Department





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- of Zoology, Shivaji University, 231. K.G. Emiliyamma, Scientist-C Kolhapur-416 004. Provided Odonata literature to Mr. Aneesh, Agricultural University, Trichur for his project study.
226. Hemiptera, Diptera and Coleoptera collection from Spiti Valley survey were sent to respective expert of group at ZSI, HQ Kolkata for identification purposes. 232. K.G. Emiliyamma, Scientist-C supervised the projects of two M. Sc. students of Kannur University, Manantavady campus, Wayanad. Also, identified 4 species under 3 genera and 8 species under 5 genera for Rabiya and Rasmi respectively.
227. Interactive lectures on Biodiversity delivered to Group of graduate students of St. Ann's College for Women, Hyderabad visited Centre on 27th November, 2013 as part of their curriculum Dr. Prasanna Yennawar and Dr. Deepa Jaiswal. 233. K.G. Emiliyamma, Scientist-C, identified 33 species under 25 genera and 16 species under 9 genera for Rabiya and Rasmi, M.Sc. Zoology, Kannur University, Manantavady Camp, Wayanad for their project work.
228. Interactive lectures on Biodiversity delivered to Group of village biodiversity members of Andhra Pradesh visited the Centre under Foundation for Revitalization of Local Health Tradition organized by AP Forest Biodiversity Institute on 13th November, 2013 by Dr. Prasanna Yennawar and Dr. Deepa Jaiswal. 234. K.G. Emiliyamma, Scientist-C, supervising the projects of two M.Sc. students for their projects on Dragonflies and Damselflies, Kannur University, Manantavady campus, Wayanad. Identified 22 exs. of Odonata belonging to 15 species under 13 genera for them.
229. K.G. Emiliyamma, Scientist-C identified 7 species of Odonata to K. Abhiram, Nanmanda Govt.Hr.Sec. School, Kozhikode for his project on "Biodiversity and present situation of water resources in and around Ponkunnamla, Kackur, Kozhikode district". 235. K.G. Emiliyamma, Scientist-C, identified 23 exs. of Odonata belonging to 12 species for Dr. Sebastian C.D, Asstt. Professor, Dept. of Zoology, University of Calicut, Calicut for his project on the molecular aspects of Odonata in Northern Kerala.
230. K.G. Emiliyamma, Scientist-C made preliminary discussions on 'Odonata of Riparian forest ecosystem of Wayanad district, Kerala' to Ms. Rabiya, M.Sc. Zoology student, Kannur University (Manantavady campus), Wayanad for her dissertation work. 236. List of publications of ZSI/ANIRC and 90 reprints of publications pertaining to wildlife of A & N Islands have been given to the Chief Conservator of Forests, Department of Environment





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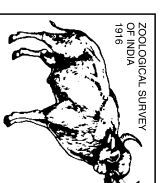


- and Forests, A and N Administration on request for the preparation of management plan.
237. Moss samples from Spiti Valley for Protozoan identification had sent to Dr Bindu, I., Scientist-C, Marine Biological regional Centre, Chennai.
238. Mr. Imran Alam of Bird Section along with Kamalakannan of Mammal Section have been deputed by Director ZSI to take photographs of 250 live birds on 28th January, 2014 at Zoological Garden, Alipore, Kolkata, seized by West Bengal Wildlife Department.
239. Mr. Imran Alam, Jr. Zoological Assistant of Bird Section has prepared one report on Peafowl of India and World as a reply to RTI and sent it to respective department, through proper channel.
240. Mr. P.T. Rajan deputed to serve as member of the committee constituted by Department of Tourism, A & N Administration to inspect Scuba dive centres at Havelock and Neil Islands during March 2014.
241. Mr. P.T. Rajan, Senior Zoological Assistant delivered a lecture on 'Faunal diversity of Andaman and Nicobar Islands' on 3rd December 2013 at Forest Training School, Wimberligunj, South Andaman.
242. Mr. P.T. Rajan, Senior Zoological Assistant delivered lectures on 'Faunal diversity of A&N Islands' at Forest Training College, South Andaman on 12th March 2014 and 'Scheduled animal species of A & N Islands' for CPREEC, Port Blair on 14th and 20th March 2014.
243. Mr. P.T. Rajan, Senior Zoological Assistant served as a judge in 'Science, Arts and Commerce Exhibition' organized by South Andaman Education Zone of Department of Education, A & N Administration on 19th November 2013.
244. Mr. P.T. Rajan, Sr. Zoological Assistant and Mr. Tamal Mondal, SRF delivered the lectures on 'Marine Biodiversity of Andaman and Nicobar Islands with special reference to Fishes' and 'Coral Reef Ecosystem of Andaman and Nicobar Islands' respectively on the occasion of World Environment Day observed at Anthropological Survey of India on 5th June 2013.
245. Mr. P.T. Rajan, Sr. Zoological Assistant has been deputed to serve as member of the committee constituted by Department of Tourism, A & N Administration to inspect Scuba dive centres at Havelock Island and Chidyatapu.
246. Mr. Tamal Mondal, SRF delivered a lecture on 'Diversity of corals and its importance in Andaman and Nicobar Islands' in the workshop on People, Forests and Wildlife Conservation organized by Department of Environment and Forests, A and N Administration on 7th October 2013.
247. Mrs. Kamla Devi, Assistant Zoologist and Mr. Tamal Mondal, Senior Research Fellow attended a seminar





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- on 'Educational dimension of A and N Islands: Present scenario and future challenges' organized by Department of Education, Andaman and Nicobar Administration and made a presentation on 'ZSI's perspectives on education system' on 11th November 2013. Mrs. Kamla Devi also attended Evaluation Committee Meeting held at Department of Environment and Forests, Andaman and Nicobar Administration on 26th November 2013.
253. Punjabi University, Patiala working on Systematic of family Nymphalidae of North-west India.
254. One skin of Leopard (*Panthera pardus*) which is in Schedule I of Wildlife Protection Act, 1972.
255. One Skin of Leopard (*Panthera pardus*) which is in Schedule I of Wildlife Protection Act, 1972 received for identification from Police department, Karveer Police Station, Maharashtra.
256. One skin which is not that of Tiger (*Panthera tigris*) received for identification from Police department, Antop Hill Police Station Mumbai.
257. One specimen of fish received from Dr. Dipti Raut, Asstt. Prof., Ravenshaw University, Cuttack, Odisha.
258. One specimen of migratory bird *Fregata minor* (Gmelin, 1789) identified for the Forest Range Officer of Mangultan Range, South Andaman, and a lot containing 9 species of corals and 23 species of molluscs were identified for the Forest Range Officer of Protection Range, Port Blair on request.
259. One specimen of migratory bird *Fregata minor* (Gmelin, 1789) identified for the Forest Range Officer of Mangultan Range, South Andaman, and a lot containing 9 species of corals and 23 species of molluscs were identified for the Forest Range Officer of Protection Range, Port Blair on request.
250. Ninety four molluscan specimens received for identification from Officer-in-Charge, WGRC, ZSI, Kozhikode.
251. One Ph.D. thesis in Environmental Science from Dr. Babasahab Ambedkar Marathwada University, Aurangabad evaluated by Dr. Prasanna Yennawar, Scientist C.
252. One Research Scholar got registered under Dr. Avtar Kaur Sidhu, Scientist-C for Ph.D. Degree in





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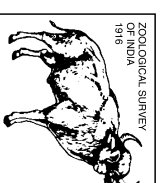


- identification from RFO, Karad, Satara, Maharashtra. Identification: *Lissemys punctata granosa*, which is in Schedule IV of Indian Wildlife Protection Act, 1972.
260. Pictures of interesting faunal elements of Andaman and Nicobar Islands have been provided to Deputy Conservator of Forests (WL), Andaman and Nicobar Administration on request.
261. Provided identification services to the M.Sc. students of Dolphin (PG) Institute of Biomedical and Natural Sciences, Manduwala, Dehradun for Lepidoptera collection.
262. Provided identification services to the M.Sc. students of Doon Paramedical, Dehradun for Lepidoptera collection.
263. REIA study proposal entitled 'Studies on the biotic components of proposed extension of the existing jetty and construction of wet basin for Indian Navy at Haddo, Port Blair' has been submitted to Military Engineering Services, Ministry of Defence on request.
264. REIA study proposal entitled 'Studies on the biotic components of proposed extension of existing jetty, construction of wet basin, LST loading ramp and jetty augmentation for Indian Navy at Haddo, Port Blair' has been submitted to Indian Navy, Ministry of Defence on request.
265. Seaweed associated fauna collected from Gulf of Mannar has been identified for Central Salt and Marine
266. Chemical Research Institute, Marine Algal Research Station, Mandapam, Tamil Nadu has been identified on request.
266. Seven freshwater crab specimens received for identification from Officer-in-Charge, WGRC, ZSI, Kozhikode.
267. Shri Parmod Kumar, Asst. Zoologist, delivered a lecture –cum- demo on collection, preservation, registration and maintenance of Pisces given to 18 Students of Dolphin (PG) Institute of Biomedical and Natural Sciences, Manduwala, Dehradun at NRC Laboratory on Collection on 28th November, 2013.
268. *Shri. D Prabakar, Assistant Zoologist* identified photographs of the Orthoptera specimens were received from Ms. D. Nithya and Ms. Saranya, 2nd year M. Sc. Students of the Department of Zoology, Queen Mary's college, Chennai 600 004 on 23rd December 2013 through the O/C, ZSI/SRC/Chennai. They were identified into 8 species under 8 genera 6 subfamilies, 2 families and 2 Super families.
269. Six molluscan specimens received for identification from Mrs. Anju Yogesh Mundhe, Department of Zoology, University of Pune, Pune.
270. Skin of *Panthera tigris* (Tiger) received for identification from Police Department, Karveer, Kolhapur, Maharashtra.





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271. Spider specimens and photographs received from The Head, Department of Hort. Entomology, College of Horticulture, Bagalkot-587 103.
272. Ten fish specimens received from Shri. Sooryanarayan S. Bhat, Principal Investigator, Department of zoology, M.E.S.M.M. Arts and Science College, SIRSU, Dist-Uttara Kannada, Karnataka. The specimens identified under 8 genera and 10 species which belonging to 4 families.
273. Thesis entitled “Biological Diversity of Cerambycid Beetles infesting forest plants in Andaman and Nicobar Islands” received from Vishva Bharti, Shantiniketan was reviewed and report was sent on 23rd December 2013 by Dr. Kailash Chandra, Scientist-F.
274. Three land slug specimens received for identification from Miss Pooja V. Vaishya, Durga Mata Ward, Ghatanji, Yavatnal district.
275. Three lot of fishes containing 8 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 5 genera and 5 species which belonging to 5 families.
276. Two lot of 25 Specimens of fishes received from Dr. Angsuman Chanda, Assistant Professor, P.G. Department of Zoology, Raja N.I. Khan Womens College, Paschim Mednipur. The specimens identified under 6 genera and 7 species which belonging to 2 families.
277. Two lot of fishes containing 10 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 5 genera and 5 species which belonging to 3 families.
278. Two lot of fishes containing 7 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 6 genera and 6 species which belonging to 6 families.
279. Two lot of fishes containing 8 specimens received from Dr. Sheela Roy, Associate Professor, Department of Zoology, Vidyasagar College. The specimens identified under 7 genera and 6 species which belonging to 5 families.
280. Two skin samples received for identification from Forest department, Satara, Maharashtra. Skins of Leopard (*Panthera pardus*), which is in Schedule I of Indian Wildlife Protection Act, 1972.
281. Walk-in-interview for the recruitment of JRFs in the grant-in-aid project of the Centre was conducted on 19th June 2013 in which Dr. C. Raghunathan, and Dr. C. Sivaperuman, Scientist-C served as members of selection committee.
282. Worm in water sample received from Chief Officer, City Council, Darwha, Yawatnal, Maharashtra.





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283. Worm in water sample received from Medical Officer, Primary Health Centre, Fungus, Tal. Sangameshwar, Ratnagiri (MS).
 284. Worm in water sample received from Medical Superintendent, Rural Hospital, Karanja (Gha), Tal. Karanja, (Gha), District: Wardha (MS)
 285. Worm in water sample received from Medical Superintendent, Rural Hospital, Karanja (Gha), Tal. Karanja (Gha), District: Wardha (MS).
4. All the officers and staff members of ZSI/ANRC participated in the Workshop on Value of Biodiversity in Island Biosphere Reserve organized by ZSI, Port Blair on 13th and 14th September 2013.
 5. Chitra J and Malini E. 2013. A preliminary investigation on water quality and plankton of Kossasthalai river, Tamilnadu. at National conference on “Challenges of Basic Research in Innovating Technologies” will be held on 4th May 2013 at B.P.Poddar Institute of Management and Technology, Kolkata sponsored by DRDO and DST.
 6. Chitra J. 2013. A case study on Rhizopoda (Protozoa) fauna of Temple premises from Kancheepuram District, Tamilnadu. National Seminar on “Natural resources and heritage conservation issues in India” held on September 8, 2013 at West Bengal Pollution Control Board, Paribesh Bhavan, Salt Lake, Kolkata.
 7. Chitra J. 2013. presented poster entitled “A preliminary account on Free living Protozoa and other microinvertebrates of fresh water bodies from Tarakeswar, West Bengal “in National conference on Challenges in Biodiversity conservation and resource Management on February 26 – 27, 2013, held at Department of Zoology, University of Kalyani.
 8. Dr Anil Kumar Scientist-C participated in 2nd International Conference on Indian Ornithology from 19-23 Nov.

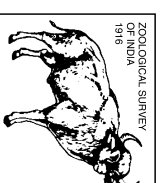
CONFERENCE/SYMPOSIUM/ SEMINAR/TRAINING COURSES ATTENDED BY THE ZSI SCIENTISTS

1. A paper entitled ‘New record of *Bothynogeria ruficollis* (Coleoptera: Tenebrionidae) from India’ received for publication in *Rec. zool. Surv. India*, was reviewed on 10th June, 2013 by Dr. Kailash Chandra, Scientist-F.
 2. A paper entitled ‘Two new species of the genus *Ypthima* Hubner (Lepidoptera: Papilionoidea: Satyridae) from India and Myanmar’ received for the publication in *Rec. zool. Surv. India*, was reviewed on 17th June, 2013 by Dr. Kailash Chandra, Scientist-F.
 3. A.N. Rizvi, Scientist-C and Dr. Archana Bahuguna, Scientist-C, Dr. Vinita Sharma, Scientist-C, attended workshop organized by UCCOST and NASI on “Science and Technology and Sustainable Bio- Economy for Women’s Welfare” on 17 and 18th May’13 at Dehradun.
8. Dr Anil Kumar Scientist-C participated in 2nd International Conference on Indian Ornithology from 19-23 Nov.





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- 2013 at SACON, Coimbatore and and co-chaired the session titled, 'Birds in Agro-ecosystems' with Dr. Ian Barber (Chairman of the session), Royal Society for the Protection of Birds, UK, on 21st November, 2013.
9. Dr. Anil Kumar Scientist-C participated in DST sponsored one week training programme namely, "*Climate change and Carbon Mitigation*" organized by ICFRE, Dehradun from 21st to 25th October 2013.
10. Dr. Anil Kumar, Scientist-C participated and presented a research paper, titled "Acoustic characteristics of vocalizations in owls: Implications for species identification and conservation awareness" during the 8th ARRCN Symposium, 6-9 Feb. 2014, Pune acted as chairperson for the scientific session titled, "Status and Distribution" on 7th Feb. 2014.
11. Dr. Gopal Sharma Scientist C and Dr Navneet Singh, Scientist C attended PAC meeting held at ZSI, Kolkata from February 13-14, 2014.
12. Dr. Gopal Sharma Scientist C and Officer in Charge Participated in the group of experts for finalization of Photos of Birds of Bihar received from the amateur photographers for publication as BIRDS OF BIHAR by the Department of Environment and Forests, Govt. of Bihar.
13. Dr. Gopal Sharne delivered a lecture on Promoting Bird Tourism in Ganga river from Patna to Kahalgaon w.s.r. to Vikramshila Gangetic Dolphin Sanctuary (IBA-IN-BR-11) in Bihar, India in the 5th Bihar Science Conference from 16-18 November 2013 at Sri Arvind Mahila Mahavidyalaya, Patna.
14. Dr. Indu Sharma attended the district level training/ sensitization workshop for the law forces (COPTA-2003) under the Chairmanship of the Deputy Commissioner, distt. Solan (Himachal Pradesh) on dated 7th March, 2013 at D.C. Office, Solan.
15. Dr. K. Ilango, Scientist-D and O/C delivered invited guest lecturers (i) Biology of true flies (Diptera) with special reference to public health importance, (ii) Phlebotomine sand flies (Psychodidae: Diptera) in Biology and Medicine were presented to M.Sc. students of Public Health Entomology at Vector Control Research Centre (ICMR), Pondicherry on 19-11-2013; (iii) a plenary lecture on 'Wetlands and Vector Borne Diseases' at the 3rd International Congress on Global Warming on Insect diversity: Management and Conservation Strategies organized by the Dept of Zoology, Bharathiar University, Coimbatore from 26-28, November 2013; (iv) Chaired technical sessions and invited lecture on 'Forest Ecosystem and Vector Borne Diseases' and chaired technical sessions at the International Conference of Entomology organized by the Dept. of Zoology, Panjab University, Patiala during 20-24, February 2014; (v) invited talk on 'Human Health in Natural Forests Management on 3rd





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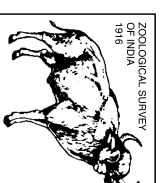


- March 2014 at “National Workshop on Forestry Research” organized by the Tamil Nadu State Forestry Research Institute, Chennai.
16. Dr. Navneet Singh, Scientist C made a research visit from July 12 – 24, 2013 to the Department of Zoology and Environmental Sciences, Punjabi University, Patiala (Punjab) for the study of Indian Arctidae housed there.
 17. Dr. Shantabala Gurmumayum, Scientist-C of the Centre attended a training programme on *Biodiversity Conservation*, Wildlife Institute of India, Dehradun, w.e.f.11-15th November 2013.
 18. Dr. Swetapadma Dash, Scientist-C and Officer-in Charge of the Centre attended the meeting of Similpal Biosphere Reserve Management Council (SBRMC) on 27th June 2013.
 19. Dr. V.M. Sathish Kumar, Sr. Zoological Assistant delivered an invited lecture on “*Plagiarism in Science research and reporting*” at Central Institute of Brackishwater Aquaculture (ICAR), Chennai on 7th Sept 2013. He delivered a lecture on Cybertaxonomy and Molecular Markers to Post graduate students as part of Internship Training Programme organized by the centre and also delivered an invited lead presentation on “Application of E-Taxonomy and Biodiversity research in India with special emphasis to faunal diversity and DNA barcoding” at the Science Club’s 11th
 20. meeting organized jointly by CLRI, Adayar/IMSc, Taramani/ IIT Madras and University of Madras on 11th May, 2013.
 21. Dr. A.N. Rizvi, reviewed three mss on insect nematodes for the Journal of Parasitic Diseases.
 22. Dr. A.K. Sidhu Scientist-C and Officer-in-Charge attended registration seminar as co-guide of her student for Ph.D. degree at Department of Zoology and Environmental Sciences, Punjabi University, Patiala dated on 12th September, 2013.
 23. Dr. A.K. Sidhu Scientist-C cum Officer-in-Charge and Dr. Indu Sharma, Scientist-C participated in “Brain Storming Workshop on Snow and Glaciers and the Himalayan River Systems organized by state centre on climate change (State Council for Science technology and Environment, H.P.) held at Shimla on 29 may, 2013.
 24. Dr. A.N.Rizvi, Scientist-C and Dr. Archana Bahuguna, Scientist-C attended monitoring Workshop of ongoing DST Project held at Bangalore on 16th Feb, 2014.
 25. Dr. Archana Bahuguna, Scientist-C, Dr. S.I.Kazmi, Scientist-C and Dr. Narendra Sharma, Scientist-C attended two days workshop on





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- USERS MEET, organized by Indian Institute of Remote Sensing Dehradun on 20th and 21st Feb. 2014.
26. Dr. Archana Bahuguna, Scientist-C attended one meeting on 18th at Survey of India,, Bharat Mantralaya, Raj Bhasha Vibhag, Nagar rajbhasha, karyavan Samiti, Chamahi Baithak.
 27. Dr. Archana Bahuguna, Scientist-C attended technical committee meeting of ASI, Dehradun for establishing *Gharat*, traditional flour mill at campus on 28th February 2014.
 28. Dr. Archana Bahuguna, Scientist-C Evaluate the work done by NGOs and GOs for PBR of Uttarakhand by attending the meeting at office of Uttarakhand Biodiversity Board on 23rd Sep13, and also discussed final document *Uttarakhand Biodiversity Strategy and Action Plan*.
 29. Dr. Archana Bahuguna, Scientist-C was Chief Guest in Hindi Pakhwara organized by BSNL for Vav-vivid Pratiyogita and distribution of awards.
 30. Dr. Archana Bahuguna, Scientist-C worked on Scanning Electron Microscopy (30 scanning) of samples of species of Lagomorpha at Wadia Institute of Himalayan Geology (18-20th Dec 13).
 31. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge attended 2nd Meeting on the Collaborative Project Proposal, "Biodiversity Monitoring and Assessment in India" at IIRS, Dehradun under Chairmanship of Dr.
 32. S. P. S. Khushwaha on 14th October 2013.
 33. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge attended the 2nd Meeting on the Collaborative Project Proposal, "Biodiversity Monitoring and Assessment in India" at IIRS, Dehradun under Chairmanship of Dr. S. P. S. Khushwaha on 14th October 2013.
 34. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge attended the Himachal Pradesh Wildlife board meeting Chaired by Honorable Chief Minister of Himachal Pradesh, Sri Vir Bhadara Singh at Shimla on 5th December 2013 as nominated member.
 35. Dr. Avtar Kaur Sidhu, Scientist-C and Officer-in-Charge attended Town Official language implementation committee meeting on 28th November 2013 at Micro, Small and Medium





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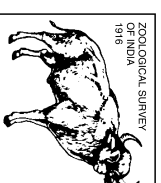


- Enterprise-Development Institute, Solan.
36. Dr. B. Tripathy, Scientist-C visited this WRC, ZSI, Pune for identification of Mollusca (Cephalopoda) collection in NZC on 23rd January 2014.
42. Dr. Chitra J, Assistant Zoologist attended a National seminar on “Natural Resources and Heritage Conservation Issues in India” at Paribesh Bhavan, Salt Lake, on 8th September, 2013 and participated in poster presentation.
37. Dr. C. Raghunathan participated in ‘International Conference on Advanced Technologies for Management of Ballast water and Biofouling from 4th to 7th March 2014’ held at NIOT, Chennai and presented a paper on ‘Bio-invasion of snowflake coral *Cartija riisei* in Indian Seas’.
43. Dr. Chitra J, Assistant Zoologist has attended one day conference on “Challenges of Basic Research in Innovating Technologies” held on 4th May, 2013 organized by The Departments of Applied Sciences and Humanities, B.P. Poddar Institute of Management and Technology, Kolkata sponsored by DST and DRDO.
38. Dr. C. Sivaperuman attended training course on ‘Role of scientists in natural resources and environment management’ at Indian Institute of Forest Management, Bhopal, Madhya Pradesh during 9th to 13th December 2013.
44. Dr. Dhriti Banerjee delivered a lecture on 7th February, 2014 on “Faunal Diversity of Sunderbans at the integrated Coastal Zone management programme funded by the World Bank and held at MARC, Digba.
39. Dr. C. Sivaperuman participated and presented a paper in National Conference on Modern Trends in Zoological Research held at St. Aloysius College, Trissur, Kerala during 25th and 26th March 2014.
45. Dr. G. P. Mandal, Scientist-C, as an official delegate attended in “10th National Symposium on Soil Biology and Ecology” held at GKVK, Bangalore from 19th to 21st December, 2013 and presented two research papers.
40. Dr. C. Sivaperuman, Scientist-C participated in the 8th Asian raptors research symposium network conference 2014 held at IISER, Pune during 6th to 9th February 2014.
46. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section along with Director, ZSI have attended meeting held at chamber of The Director, Indian Museum, Kolkata and
41. Dr. Ch. Satyanarayana, Scientist-B, and Mr. Chandrakantha Mandal, Assistant Zoologist, delivered lectures on activities of ZSI and Importance





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- discussed on modernization of ZSI Fauna Galleries in Indian Museum on 27th September, 2013.
47. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has invited as judge for evaluation of "Natural Resources and Conservation" of 75 exhibits in "KVS National 40th Jawaharlal Nehru Science and Environment Exhibition 2012-13" held at Kendriya Vidyalaya, Ballygunge and honored with trophy.
48. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has attended meeting on "Brainstorming session on Taxonomy Congress" under the chairmanship of Sh. Hem Pande, Additional Secretary, MoEF at Paravaran Bhavan, Ministry of Environment and Forests, New Delhi on 2 May, 2013.
49. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has participated in the "Meeting of Liaison Officers (Hindi) for Hindi Training Programmes and Schemes" organized by the Department of Official Language, Ministry of Home Affairs, Nizam Palace, Kolkata at Seminar hall of Bhartiya Bhasha Parishad, Shakespeare Sarani, Kolkata on 27 June, 2013.
50. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has reviewed one paper received from the Chief Editor, Biological Forum-An International Journal.
51. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has attended meeting on celebration of Taxonomy Congress to be held from 10-12 March, 2014 at New Delhi under Chairmanship of Director, ZSI on 10 December, 2013.
52. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has attended meeting with Sh. S.S. Mohanty (AS andFA), MoEF, New Delhi on progress of ZSI at Annadale Hall, ZSI, Kolkata on 11 December, 2013.
53. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has attended meeting with Dr. S.P.S. Kushwaha, Head, Forestry and Ecology Department, IIRS (ISRO), Dehra Dun on project proposal on 'Biodiversity Monitoring and Assessment in India' at Director, ZSI on 17 December, 2013.
54. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has organized 'Quarterly Meeting on progress of Hindi' under chairmanship of Director, ZSI on 17 December, 2013.
55. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section has participated in 'International conference on Entomology' organized by Department of Zoology and Environmental Sciences held at Punjabi University, Patiala from 21 to 23 February, 2014.
56. Dr. Gaurav Sharma, Scientist-C and O/C Mammal and Osteology Section





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has delivered lecture to students from Bangobase College, Kolkata on diversity of Mammals in India visited to the Mammal and Osteology Section on 19th March, 2014.

57. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge of Mammal and Osteology Section has attended meeting on celebration of Taxonomy Congress to be held from 10-12 March, 2014 at New Delhi under Chairmanship of Director, ZSI on 10th December, 2013.

58. Dr. Gaurav Sharma, Scientist-C and Officer-in-Charge of Mammal and Osteology Section has attended meeting with Dr. S.P.S. Kushwaha, Head, Forestry and Ecology Department, IIRS (ISRO), Dehra Dun on project proposal on "Biodiversity Monitoring and Assessment in India" at Director, ZSI Chamber on 13th December, 2013.

59. Dr. Gaurav Sharma, Scientist-C has attended meeting on "Brainstorming session on Taxonomy Congress" under the Chairmanship of Sh. Hem Pande, Additional Secretary, MoEF at Paryavaran Bhavan, Ministry of Environment and Forests, New Delhi on 2nd May, 2013.

60. Dr. Gaurav Sharma, Scientist-C has invited by the Deputy Registrar (Post Exams and Ph. D. Cell), Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, Maharashtra as Examiner for Ph.D. viva-voce for award of

Ph.D. of Mrs. Minatai B. Madankar, Research Scholar on thesis entitled "Eri Sericulture, (*Philosamia ricini*) in Vidarbha Climate: Biology, Rearing, Performance, Economic Characters, Disease Incidence and Management" at Dept. of Zoology, RTM Nagpur University held on 5 July, 2013.

61. Dr. Gaurav Sharma, Scientist-C has participated in "International Conference on Entomology" organized by Department of Zoology and Environmental Sciences held at Punjabi University, Patiala from 21st to 23rd February, 2014.

62. Dr. Gaurav Sharma, Scientist-C has participated in training program on "Current Requirements in Environmental Impact Assessment (EIA) Process and Procedures as per MoEF guidelines" at Engineering Staff College of India, Hyderabad from 12-14 August, 2013.

63. Dr. Gopal Sharma, Scientist C delivered a lecture on Conservation of Natural Resources in Notre dame Academy, Patna on 6th Aug 2013.

64. Dr. Gopal Sharma, Scientist C was felicitated on 23rd August 2013 by the Hon'ble CM of Bihar Sri Nitish Kumar for his conservation efforts on rescue and release of two live stranded dolphins in Bihar.

65. Dr. Gopinathan Maheswaran, Scientist- C, attended 7th meeting of the advisory committee for ecosystem research programme (ECRP) held on





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- 27th and 28th February, 2014 at Goa University, Goa.
66. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge along with scientists of HQ office visited Digha on 07 October 2013 with regard to ongoing biodiversity assessment study for H-Energy Company that has taken a project to set up an off-shore LNG platform near Digha coast.
67. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge along with Director, ZSI visited ZSI's Estuarine Biology Regional Centre, Berhampur, Orissa from 18-20th October, 2013 to assess the damages inflicted by the cyclone Phailin.
68. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge has attended 5th Meeting of the Advisory Committee for Ecosystem Research Programme at the Ministry of Environment and Forests, Government of India, New Delhi on 22nd and 23rd July, 2013.
69. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Birds Section along with a team of ZSI scientists visited Digha coast on 23 September 2013 to carry out EIA studies from H-Energy- a company deals with off-shore LNG terminal to be come up at Digha Coast. H-Energy has approached ZSI to carry out studies related to biodiversity of the area and the possible effect of such facility on the local biodiversity.
70. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Bird Section along with fellow scientists of HQ has carried out an EIA study to prepare conservation action plan for Scheduled Animals of three protected areas situated in and around proposed Nuclear Fuel Complex site at Rawathbhatta.
71. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Bird Section has attended the 16th meeting of the Appraisal Committee (Nuclear) to examine nuclear projects--Consideration of the setting up of a Fuel Complex at Rawathbhatta Atomic Power Station and for which ZSI is preparing Conservation Action Plan on the Schedule-I animals.
72. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Birds Section along with a team of ZSI scientists visited Digha coast on 23 September 2013 to carry out EIA studies from H-Energy- a company deals with off-shore LNG terminal to be come up at Digha Coast. H-Energy has approached ZSI to carry out studies related to biodiversity of the area and the possible effect of such facility on the local biodiversity.
73. Dr. Gopinathan Maheswaran, Scientist-C and Officer-in-Charge of Bird Section has attended the RCM in Digha on 9th and 10th of December, 2013.
74. Dr. Gopinathan Maheswaran, Scientist-C and officer-in-Charge





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- of the Bird Section had attend three different meeting one on 10 May 2013 at The Ministry of Environment and Forests, New Delhi regarding 3rd meeting of the expert committee for declaration of eco sensitive zones with regard to Mount Abu, Rajasthan and another two meetings on 24 May 2013 at MoEF one each regarding 4th meeting of the expert committee for declaration of eco sensitive zones around protected area in Goa and other meeting on Japanese Quail, Edible nest swiftlet and Trochus species to discuss with experts whether to delist these species from the Schedule of various Wildlife (Protection) Act, 1972.
78. Dr. Jasmine, P, Scientist C, has attended the One day seminar on Prevention and Redress of Sexual harassment at work place on 18th January, 2014, at telegraph room Kolkata, organized by Calcutta Management Association.
79. Dr. Jayasree Thilak, Scientist-C, participated in the training programme on Scientific and Technical Terminology and implementation of the Official Language Policy conducted by CENTAD from 26th May, 2013 to 28th May, 2013 at Thirupathi, Andhra Pradesh.
80. Dr. K. A. Subramanian, Scientist-C has delivered an invited lecture a on "Spatial Distribution of Odonata in Indian Subcontinent" in the "Frontiers in Modern Biology Symposium", at Indian Institute of Science Education and Research, Kolkata and on "Biodiversity in Space and Time" in a Refresher Course at Lifesciences, Department of Zoology, Calcutta University, Kolkata.
81. Dr. K. Rajmohana, Scientist-C, delivered a talk on Biodiversity and Climate Change to the students of Special Project for Gifted students at our Centre on 27th December, 2013 organized by Department of General Education, Govt. of Kerala.
82. Dr. K. Venkataraman, Director along with Dr. K.C. Gopi, Scientist-E, Dr. Gaurav Sharma, Scientist-C and Dr. Basudev Tripathy, Scientist-C has attended meeting held at chamber of The Director, Indian Museum, Kolkata and discussed on modernization of
75. Dr. Gopinathan Maheswaran, Scientist-C has visited La Martiniere for Boys school on 8th October, 2013, on the request of school authority to assess and identify the skeletons of birds that came out while making renovations to a portion of the school wall. Out of 22 skeletons recovered from within the walls 20 belong to crow and one of pigeon and other of bat.
76. Dr. H. S. Banyal, Scientist-C attended a T.D.S. Seminar for Government deductors at Aayakar Bhawan, Jodhpur on 5th September, 2013.
77. Dr. Indu Sharma, Scientist-C actively participated in one week training workshop on "Biodiversity Conservation" at the Wildlife Institute of India, Dehradun from 11th to 15th November, 2013.





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- ZSI Fauna Galleries in Indian Museum on 27th September, 2013.
83. Dr. K. Venkataraman, Director along with Dr. K.C. Gopi, Scientist-E, Dr. Gaurav Sharma, Scientist-C and Dr. Basudev Tripathy, Scientist-C has attended meeting held at chamber of The Director, Indian Museum, Kolkata and discussed on modernization of ZSI Fauna Galleries in Indian Museum on 27th September, 2013.
84. Dr. K. Venkataraman, Director has attended a Book release programme on “Fauna of Maharashtra” in the presence of Governor of Maharashtra, organized by Govt. of Maharashtra, Mumbai on 27th May, 2013.
85. Dr. K. Venkataraman, Director has attended as a Chairman of Interview Board for the temporary Project staff for the post of Field Collector cum Assistant for the Project entitled “Golf of Kachchh Coral Transplantation/ Restoration” at Jamnagar, Gujarat on 16th August, 2013.
86. Dr. K. Venkataraman, Director has attended as a Chairman of Interview Board for the temporary Project staff for the post of Field Collector cum Assistant for the Project entitled “Golf of Kachchh Coral Transplantation/ Restoration” at Jamnagar, Gujarat on 16th August, 2013.
87. Dr. K. Venkataraman, Director has attended as a panelist the panel discussion on “GAP Analysis on policy issue and awareness for implementation of ABS provisions
88. with the BD Act” organised by West Bengal Biodiversity Board, Kolkata on 29th July, 2013 at the Sonnet Hotel, Kolkata.
89. Dr. K. Venkataraman, Director has attended departmental Council Meeting of Ministry of Environment and Forests (MoEF), New Delhi between 24th and 26th July, 2013.
90. Dr. K. Venkataraman, Director has attended International Workshop on Mangrove Conservation in India during 26th and 27th July, 2013 at Gandhinagar, Gujarat.
91. Dr. K. Venkataraman, Director has attended meeting at Gangtokreregarding exciting project idea that would documents Sikkim's Biodiversity and natural resources organised by Ashok Trust for research in Ecology and the Environment (ATREE), Annex building Forest Secretariat, Deorali, Gangtok between 10th and 12th July, 2013.
92. Dr. K. Venkataraman, Director has attended meeting at Institute of Environment Studies on Wetland Management, Salt Lake, Kolkata on 15th May, 2013.
93. Dr. K. Venkataraman, Director has attended meeting at National Biodiversity Authority, Taramani, Chennai on 9th and 10th May, 2013.
94. Dr. K. Venkataraman, Director has attended meeting at National Biodiversity Authority, Chennai and official visit to MBRC and SRC, ZSI,





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- Chennai between 1st and 11th August, 2013.
94. Dr. K. Venkataraman, Director has attended meeting at National Biodiversity Authority, Chennai and official visit to MBRC and SRC, ZSI, Chennai between 1st and 11th August, 2013.
95. Dr. K. Venkataraman, Director has attended meeting of MoEF, New Delhi on 21st and 24th May, 2013.
96. Dr. K. Venkataraman, Director has attended National Taxonomy Congress on 02.05.2013 at MoEF, New Delhi.
97. Dr. K. Venkataraman, Director has attended Phase-II interview and selection of scientific staff for Scientist – 'E' and 'F' on 7th and 8th July, 2013 at National Centre for Sustainable Coastal Management, Chennai.
98. Dr. K. Venkataraman, Director has attended the meeting to finalise the road map and organizing committee for the National Taxonomy Congress between 20th and 24th August, 2013 at Ministry of Environment and Forests (MoEF), New Delhi and Chennai respectively.
99. Dr. K. Venkataraman, Director has attended the meeting to finalise the road map and organizing committee for the National Taxonomy Congress between 20th and 24th August, 2013 at Ministry of Environment and Forests (MoEF), New Delhi and Chennai respectively.
100. Dr. K. Venkataraman, Director has attended workshop on "Biodiversity Informatics and Ecological Sciences in India" at French Institute of Pondicherry on 6th August, 2013.
101. Dr. K. Venkataraman, Director has delivered a lecture on "Importance of Marine Biology for Biodiversity Conservation and Livelihood" on the Foundation Day of IBRAD, Kolkata on 7th May, 2013.
102. Dr. K. Venkataraman, Director, ZSI has attended 6th meeting of the Advisory Committee for Ecosystem Research Programme held on 1st – 3rd December, 2013 at New Delhi.
103. Dr. K. Venkataraman, Director, ZSI has attended Executive meeting of Zoological Society, Kolkata on 20th December, 2013.
104. Dr. K. Venkataraman, Director, ZSI has attended RAMC meeting at Ministry of Environment and Forests (MoEF), New Delhi on 20th November, 2013.
105. Dr. K. Venkataraman, Director, ZSI has attended Re-union meeting of ZSI Ex-Employees on 6th December, 2013 at ZSI, Headquarters and also presided over the function.
106. Dr. K. Venkataraman, Director, ZSI has attended the 27th Meeting of the Expert Committee on Access and Benefit Sharing held on 21st and 22nd November, 2013 at National Biodiversity Authority (NBA), Taramani, Chennai.





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107. Dr. K. Venkataraman, Director, ZSI has attended the celebration of Annual Spots programmes on 18th December, 2013 organised by ZSI Recreation Club.
108. Dr. K. Venkataraman, Director, ZSI has attended urgent meeting on 13th November, 2013 at Ministry of Environment and Forests (MoEF), New Delhi.
109. Dr. K. Venkataraman, Director, ZSI hold meeting with Shri S. S. Mohanty, Additional Secretary (FA), Ministry of Environment and Forests (MoEF), New Delhi on 11th December, 2013 at ZSI, Headquarters and given presentation on the overall activities including financial programmes of ZSI.
110. Dr. K. Venkataraman, Director, ZSI visited to Barrackpore Air force Centre for watching Bird hazard and also hold a meeting with Air Squadron Leader on 15th November, 2013.
111. Dr. K. Venkataraman, Director, ZSI, attended D.P.C. meeting on 28th January, 2014 at MoEF, New Delhi.
112. Dr. K. Venkataraman, Director, ZSI, attended Departmental Promotion Committee Meeting (DPC) on 25th October, 2013 at Ministry of Environment and Forests (MoEF), New Delhi.
113. Dr. K. Venkataraman, Director, ZSI, attended Inter-Ministerial meeting under the Chairmanship of Secretary, Planning Commission to review progress work on renovation and upgradation work of the Indian Museum, Kolkata on 3rd January, 2014 at Yojana Bhawan, New Delhi.
114. Dr. K. Venkataraman, Director, ZSI, attended meeting at Integrated Coastal Zone Management (ICZM), Mangalore from 28th to 31st October, 2013.
115. Dr. K. Venkataraman, Director, ZSI, attended meeting at National Biodiversity Authority and also visited to MBRC and SRC, ZSI, Chennai between 8th and 17th January, 2014.
116. Dr. K. Venkataraman, Director, ZSI, attended meeting at National Centre for Sustainable Development, Chennai on 9th and 10th October, 2013.
117. Dr. K. Venkataraman, Director, ZSI, attended meeting of National Biodiversity Authority, Chennai on 27th October, 2013.
118. Dr. K. Venkataraman, Director, ZSI, attended study tour to Keoladeo Ghana National Park, Bharatpur, Rajasthan from 28th to 31st January, 2014.
119. Dr. K. Venkataraman, Director, ZSI, attended symposium at Madurai Kamraj University, Madurai on 26th and 27th February, 2014.
120. Dr. K. Venkataraman, Director, ZSI, attended symposium on 22nd and 23rd January, 2014 at Coimbatore, Tamil Nadu.





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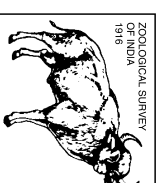


121. Dr. K. Venkataraman, Director, ZSI, attended workshop at Punjab University, Patiala and PMC meeting at H.A.R.C., ZSI, Solan from 18th to 23rd February, 2014.
122. Dr. K. Rajmohana, Scientist-C delivered an invited lecture entitled ‘The Fascinating World of Insects’ at Dept of Zoology, Malabar Christian College, Calicut, on 10th February, 2014.
123. Dr. K. Rajmohana, Scientist-C Delivered an invited Lecture on ‘Exploring the Lesser known’ at Academic Staff College, sponsored by UGC, on 11th June, 2013.
124. Dr. K. Rajmohana, Scientist-C, delivered a Lecture on ‘Biodiversity Act and international treaties towards conservation of Wildlife in India, at the workshop on Wildlife and Illegal Trade, organized by WGRC, in collaboration with Kerala State Forest Department on 4th October, 2013, as a part of Wildlife week celebration.
125. Dr. K. Rajmohana, Scientist-C, delivered a talk on “Role of ZSI in animal studies and also on General Insect Classification”, on 15th April, 2013, to the PG and Research students of Central University Kasargode, Kerala.
126. Dr. K. Rajmohana, Scientist-C, delivered an invited lecture on ‘Ants Bees and Wasps: A Taxonomic overview, at a National Seminar on ‘Changing Perspectives in Taxonomy and Systematics’, at Kodanchery Gov. College, on 8th October, 2013.
127. Dr. K. Rajmohana, Scientist-C, delivered an invited lecture on ‘Parasitic Hymenoptera as Natural enemies, at a National Seminar on ‘Changing Perspectives in Entomology, at Madappally Gov. College, on 22nd November, 2013.
128. Dr. Kailash Chandra, Scientist-F, attended the ‘National Conference on Insect Diversity and Systematics: Special Emphasis on Molecular Approaches (NCIDS) at Aligarh Muslim University, Aligarh organised by the department of Zoology (Entomology Section) from 28th to 30th October, 2013 and presented a invited lecture on ‘State of Information on Insect Diversity of States and Union Territories in India and Challenges Ahead’ during the conference.
129. Dr. Kailash Chandra, Scientist-F, attended the ‘National Conference on Biodiversity : Issues, Concern and Future Strategies’ held at Kolkata from 16th to 18th January 2014 organised by West Bengal Biodiversity Board and also chaired the Technical Session on Bio-resources, Ethno-biodiversity and Livelihood Generations, Climate Change and Biodiversity on 18th January 2014.
130. Dr. Kailash Chandra, Scientist-F, attended the Inaugural Session of ‘Third Training Programme for State Government Officials on Integrated Coastal Zone Management’ organised by Marine Aquarium and Regional Centre, on 3rd January 2014 at Digha





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- and delivered the inaugural address during the occasion.
131. Dr. Kailash Chandra, Scientist-F, attended the International Conference on Entomology, held at Department of Zoology and Environmental Sciences, Punjabi University, Patiala from 21st to 23rd February, 2014 and presented a plenary lecture during Plenary Session X on 22nd February 2014. Also chaired the scientific session II of International Conference on Entomology (Agricultural Entomology) on 22nd February 2014.
135. Dr. Kamal Saini Assistant Zoologist and Ms. Saveena, Research Scholar also actively participated in the International Conference of Entomology held at Punjabi University, Patiala from 21-23 February, 2013 and presented papers.
136. Dr. M. E. Hassan, Scientist-C, attended 25th meeting of the West Bengal Biodiversity Board on 26th September, 2013 (A/N) at the Conference Room of Department of Environment, Govt. of West Bengal, Poura Bhawan, Salt Lake City, Kolkata-700 106.
137. Dr. M. E. Hassan, Scientist-C, attended National Conference on Insect Diversity and Systematics from 28th to 30th October, 2013 to be organized by Section of Entomology, Department of Zoology, A.M. U., Aligarh and given oral presentation on "Record on some Stink bugs (Hemiptera: Pentatomidae) from Maharashtra.
138. Dr. M.K. Dev Roy Attended Inaugural Session of National Conference on Biodiversity Organized by West Bengal Biodiversity Board held at Science city, Kolkata on 16th January 2014.
139. Dr. Md. Jafer Palot, Asstt. Zool. delivered a talk on "Importance of Mangroves" to the journalism students of Kerala Press Academy, Calicut on
133. Dr. Kailash Chandra, Scientist-F attended the 'National Conference on Biodiversity : Issues, Concern and Future Strategies' held at Kolkata from 16th to 18th January 2014 organised by West Bengal Biodiversity Board and also chaired the Technical Session on Bio-resources, Ethno-biodiversity and Livelihood Generations, Climate Change and Biodiversity on 18th January 2014.
134. Dr. Kailash Chandra, Scientist-F has attended the Inaugural Session of 'Third Training Programme for State Government Officials on Integrated Coastal Zone Management' organised





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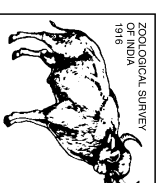


- 17th July 2013 organised by Kerala Forests and Wildlife Department.
140. Dr. Md. Jafer Palot, Asstt. Zool., attended a one day workshop on “Forensic Lab for Wildlife Studies” at Sulthan Bathery, Wayanad WLS on 20.08.2013 organized by Kerala Forests and Wildlife Department.
141. Dr. Md. Jafer Palot, Asstt. Zoologist delivered a lecture on “Pictorial presentation on Scheduled Animals of Indian Wildlife (Protection) Act” at the workshop on “The Wildlife (Protection) Act and illegal wildlife scenario in India”, organized by WGRC, in collaboration with Kerala State Forest Department on 4th October 2013, in connection with Wildlife week celebration.
142. Dr. Md. Jafer Palot, Asstt. Zoologist Delivered a talk on ‘Faunal diversity of Kattampally- Kavvayi wetlands’ at the one day workshop on the Conservation and Management of Kattampally- Kavvayi Wetlands of North Kerala on 29th March 2014 at the Conference Hall, Forest Complex, Kannothumchal, Kannur organized by Kerala Forests and Wildlife Department and Malabar Natural History Society.
143. Dr. Md. Jafer Palot, Asstt. Zoologist delivered a talk on “Biodiversity of Kerala’ to the students of Govt. Arts and Science College, Meeenchanda on 12th February 2014, in connection with the UGC sponsored Programme- ‘Walk with a Scholar’ conducted at our Centre.
144. Dr. Md. Jafer Palot, Asstt. Zoologist delivered an invited talk on “Herpetofauna – population estimation and monitoring” at the two day training programme on Wildlife Population monitoring for the field staff of Kerala Forests and Wildlife Department 6th March 2014 at the Extension and Training Centre, Kerala Forest Research Institute, Peechi, Thrissur.
145. Dr. Md. Jafer Palot, Asstt. Zoologist, delivered a talk on ‘Biodiversity of Kerala’ at the one day Seminar organized in connection with Wildlife Week Celebration on 7th October 2013 at the Post graduate Department of Wildlife Sciences, Farook. College, Kozhikode.
146. Dr. Md. Jafer Palot, Asstt. Zoologist, delivered a talk on ‘Environmental Importance of Kadalundi – Vallikunnu Community Reserve’ at the nature camp “ Haritha theethadanam” organized by Kerala Forests and Wildlife Department at Kadalundi on 23rd November 2013.
147. Dr. Md. Jafer Palot, Asstt. Zoologist, delivered a talk on ‘Importance of Kottooli Wetlands’ at the nature camp organized by Providence Women’s College, Calicut on 24th December 2013 at Sarovaram Biopark, Calicut.
148. Dr. Md. Jafer Palot, Asstt. Zoologist, delivered a talk on ‘Importance of Kottooli Wetlands’ for the eco club students of National Green Crops of





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- the Kozhikode district on 29th January 2014 at Sarovaram Biopark, Calicut.
149. Dr. Md. Jafer Palot, Asstt. Zoologist, participated in the one day State level Strategic Planning and Capacity Building Workshop on 'Bird Conservation initiatives in Kerala' organized jointly by Kerala Forests and Wildlife Department, Kerala Forest Research Institute and Salim Ali Centre for Ornithology and Natural History Society, Coimbatore at Government Guest House, Cochin on 25th November 2013.
150. Dr. Md. Jafer Palot, Asstt. Zoologist, participated in the UGC sponsored National Seminar on "Insect diversity of Western Ghats- an approach towards modern conservation strategies" and presented a talk on "Butterfly diversity of Western Ghats" on 7th January 2014 at the Department of Zoology, Sir Syed College, Taliparamaba, Kannur district.
151. Dr. Md. Jafer Palot, Asstt. Zoologist, delivered a talk on "Mangrove biodiversity of Kerala" to the students of Special Project for Gifted students at our Centre on 27th December 2013 organized by Department of General Education, Govt. of Kerala.
152. Dr. Md. Jafer Palot, Delivered a talk on 'Biodiversity of Kerala' at the inaugural function of Biodiversity club at MES Ponnani College, Malappuram district, Kerala on 27th August 2013.
153. Dr. Muhammed Jafer Palot, Asstt. Zoologist attended the meeting of
154. Dr. Muhammed Jafer Palot, Asstt. Zoologist, attended at the First National Mission Meeting on the Conservation of Shark Species at the Animation Centre, Kovalam Trivandrum on 25th March 2014 organized jointly by South Indian Federation of Fishermen Societies (SIFFS), Humane Society International and C.P.R. Environmental Education Centre (CPREEC), Chennai as a representative of Zoological Survey of India.
155. Dr. Muhammed Jafer Palot, AZ, delivered a talk on "Biodiversity of Kerala" to a training programme for forest watchers and guides at Kuruva Islands, Chedlath, Range, South Wayanad Forest Division on 23rd April 2013.
156. Dr. Muhammed Jafer Palot, AZ, delivered a talk on "Faunal diversity of Western Ghats" at State level Residential Vacation Training programme for School students at Agrobiodiversity Centre, MS Swaminathan Research Foundation (MSSRF), Kalpetta, Wayanad on 16th May 2013 organised jointly by MSSRF and Department of Biotechnology (DBT), New Delhi.
157. Dr. Muhammed Jafer Palot, AZ, delivered a talk on a talk on 'Biodiversity of





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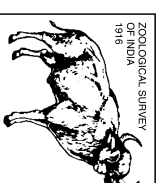


- Kerala” to the students of TIME Institute, Calicut at our Centre on 7th May 2013.
158. Dr. Narinder Sharma, Scientist-C visited Entomology Department FRI Dehradun on 17-18th July, 2013 to study the male genitalia of new species of Butterfly.
159. Dr. Navneet Singh, Scientist C and Dr. Gopal Sharma, Scientist C and participated in the World Bio-diversity day, organized by Department of Environment and Forests Government of Bihar on 22nd May 2013 at Indira Gandhi Planetarium, Patna. Dr. Gopal Sharma presented a slide show on conservation of Gangetic Dolphin
160. Dr. P. M. Sureshan, Scientist-C, delivered a talk on the topic Tiger our National Animal to students and public on the occasion of International Tiger Day on 29th July 2013.
161. Dr. P.C.Tak, Scientist-D and Dr. A. Bahuguna, Scientist-C, attended the second meeting on Collaborative Project Work on Biodiversity Monitoring and Assessment at IIRS, Dehradun on 14th October 2013, as directed by the DZSL.
162. Dr. P.C.Tak, Scientist-D and Dr. Narender Sharma, Scientist-C attended WD West Lecture “The Tectonic framework of the Indian Subcontinent and its multi stage evolution” by Dr SV Srikantha, Former Director, GSI at Wadia Institute of Himalayan Geology, Dehradun on 29th November 2013.
163. Dr. P.C. Tak, Scientist-D attended International Biodiversity Day (Water and Biodiversity) 22nd May 2013 organized by Uttarakhand Biodiversity Board Chief Guest: Padam Shri Dr. Anil Prakash Joshi, Hotel Madhuban, Rajpur Road, Dehradun. Dr. P.C.Tak, Scientist-D was invited as chief guest along with Dr. Archana Bahuguna by the ASI for delivering talks on the occasion of the celebration of on The World Environment Day 5th June 2013.
164. Dr. P.C. Tak, Scientist-D attended PAC (Programme Advisory Committee) meeting of North Zone (NZ) of Zoological Survey of India, Dehradun on 19th Feb, 2014.
165. Dr. P.C.Tak, Scientist-D attended the Inaugural Function of the Seminar on “Prospective Research Areas in Plant Taxonomy and Ethno biology in the next ten years” at BSL, NRC, Dehradun on 01st August 2013.
166. Dr. P.C. Tak, Scientist-D attended the National Workshop-cum-Discussion Meeting on Himalayan Environment and Development-Issues and the Way Forward at GB Pant Institute of Himalayan Environment and Development, Almora on 8-9 September 2013, as I was nominated by the DZSL.
167. Dr. P.C. Tak, Scientist-D attended the Review of agenda items of 2nd meeting of core Committee of Forest Biodiversity Cell at IGNFA, FRI, Dehradun on 23rd September 2013.





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168. Dr. P.C. Tak, Scientist-D attended XXXI meeting of TRAC (Training, Research and academic Council) on 17th February 2014 at WII (Wildlife Institute of India), Dehradun, as directed by the DZSI, Kolkata.
169. Dr. P.C. Tak, Scientist-D nominated by the DZSI to attend the workshop on “Mountain Specific Research in the context of Himalaya held at Indian National Science Academy, New Delhi, organized by GBPIHED, MOEF, and ICIMOD on 19th and 20th November 2013.
170. Dr. P.C. Tak, Scientist-D was attended XXVII- TRAC meeting at Wildlife Institute of India, Dehradun on 1st October 2013.
171. Dr. P.C. Tak, Scientist-D was deputed by the H.Q. to Staff Selection Commission, Delhi on 3rd July 2013.
172. Dr. P.C. Tak, Scientist-D was invited by the WIGH to attend the inaugural address of the “Workshop on Modern Perspective in Himalayan Geosciences” and the Golden Jubilee of Indian Geophysical Union on 11th June 2013 at 10:00 AM.
173. Dr. P.C. Tak, Scientist-D was on official tour to SSC (NWR), Chandigarh on 17th September 2013.
174. Dr. P.C. Tak, Scientist-D, A.N.Rizvi and Archana Bahuguna, attended the meeting at IIRS, Dehradun on Collaborative Project Work on Biodiversity Assessment and Monitoring on 26th September 2013.
175. Dr. P.C. Tak, Scientist-D, Dr. A.N. Rizvi, Scientist-C, Dr. Archana Bahuguna, Scientist-C were invited as an expert for Brain Storming Session on “*Ecosystem Services*” and attended the same during 8th USSTC 2013 in the afternoon on 26th December 2013.
176. Dr. P.M. Sureshan, Scientist-C and Dr. Md. Jafer Palot, Asstt. Zoologist participated in the “International Symposium on Ecosystem approaches to the management and Conservation of fisheries and marine biodiversity in the Asia region” organised by MOEF, New Delhi, MFF (IUCN) and CMFRI, Kochi on 27th and 28th Oct. 2013.
177. Dr. P.M. Sureshan, Scientist-C and Dr. Muhammed Jafer Palot, Asstt. zoologist, attended the training on “Science communication through print media” conducted by National Institution of Science Communication and Information Resources NISCAIR, CSIR, New Delhi from 16th December 2013 to 20th December 2013 at New Delhi.
178. Dr. P.M. Sureshan, Scientist-C delivered a lecture on the on the Role and functions of ZSI to the students of Science Foundation Forum of TIME Institute, Kozhikode at WGRC/ZSI on 7th May, 2013.
179. Dr. P.M. Sureshan, Scientist-C delivered a lecture on the topic “Environmental issues in India” to the students of Kendriya Vidyalaya, II Kozhikode during the earth day functions on 23rd April, 13.





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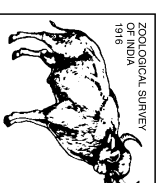


180. Dr. P.M. Sureshan, Scientist-C, and OIC, attended the meeting of Animal Ethics committee of Malabar Institute of Medical Science Calicut, as member on 5th April, 2013.
181. Dr. P.M. Sureshan, Scientist-C, delivered a lecture on “Biodiversity of India and the role and functions of Zoological Survey of India” delivered to the Higher secondary school students of Govt. Higher secondary school, Kunnammangalam, Calicut on 31st October, 2013.
182. Dr. P.M. Sureshan, Scientist-C, delivered a lecture on “Wild life wealth of India” during the seminar on “The Wildlife (Protection) Act and illegal wildlife scenario in India” organized in connection with the wildlife week celebrations on 4th October, 2013.
183. Dr. P.M. Sureshan, Scientist-C, delivered a talk on the topic “Indian Biodiversity and environmental problems in India” to the students of Wadi Rahma English School, Kodiyathur, Calicut on 30th January 2014.
184. Dr. P.M. Sureshan, Scientist-C, delivered a talk on the topic Environmental problems of India to High school students on the occasion of World Environment day celebration on 5th June 2013.
185. Dr. P.M. Sureshan, Scientist-C, delivered a talk on the topic Role and functions of ZSI and environmental problems in India to the students of Special Project for Gifted students at our Centre on 27th December 2013 organized by Department of General Education, Govt. of Kerala.
186. Dr. P.M. Sureshan, Scientist-C, imparted training on the collection, preservation and identification of Preying mantids (Insecta: Mantodea) for two days on 21 and 22nd Nov. 2013 to Mr. Bertrand Horne, Research scholar, Dept. of Zoology, Layola college, Chennai.
187. Dr. P.S. Bhatnagar, Scientist-C and O/C attended ‘Nagar Rajhasha Karyanvayan Samiti’ Meeting at Pune on 6th September 2013.
188. Dr. P.S. Bhatnagar, Scientist-C and O/C delivered a lecture on Primate Taxonomy, Behaviour and Ecology at Department of Zoology, Fergusson College, Shivajinagar, Pune on 23rd August 2013.
189. Dr. P.S. Bhatnagar, Scientist-C and O/C delivered an invited talk entitled ‘Linking taxonomy with conservation’ at the “International Conference on Biosciences with special reference to Environmental Issues and 33rd Annual session of The Academy of Environmental Biology” from 19th to 21st December 2013 organized by Department of Zoology, Shivaji University Kolhapur, Maharashtra. He also chaired one session at the said conference.
190. Dr. P.S. Bhatnagar, Scientist-C attended Town Official Language Committee meeting at Institute of Tropical Meteorology, Pune on 17th May, 2013.





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191. Dr. Prasanna Yennawar, Scientist C attended 'All India Conference on Official Language – Special Hindi Programme' organized by CENTAD, Bangalore at Kanyakumari during 14-16th November, 2013
192. Dr. R. Babu, Scientist 'C' attended a Special Lecture on "Elephants Biology, Culture and Conservation" delivered by Prof. R. Sukumar, IISc, Bangalore at the C.P. Ramaswami Aiyar Foundation, Chennai on 26th October 2013.
193. Dr. R. Bano, Scientist-C delivered a lecture on 'Below Ground Diversity of Soil Arthropods' for M.Sc. students of Pune University at Auditorium of ZSI, WRC, Pune on 13th September 2013.
194. Dr. R. Venkatesan, Scientist 'C' delivered one invited lecture on 25th September 2013 at Foundation for Revitalisation of Local Health Traditions (FRLHT) No.74/2, Jarakabande Kaval, Post Attur, Via Yelahanka, Bangalore.
195. Dr. Rajmohana, K, Scientist-C, attended a Joint Hindi Workshop on 18th April 2013 organized by Town Official Language Implementation Committee, Kozhikode.
196. Dr. S.I. Kazmi, Scientist-C and Dr. Narinder Sharma, Scientist-C, during their General Faunistic Survey of Punjab, visited P. A. U. Ludhiana, to know the diversity of Hymenoptera and Acridoidea of Punjab.
197. Dr. S.K. Pati conducted a study tour to Zoological Survey of India, Western Ghats Regional Centre, Calicut to identify freshwater crabs/molluscs and terrestrial molluscs from 8th to 17th May 2013.
198. Dr. S.K. Pati, Senior Zoological Assistant attended CEPE/IUCN Freshwater Key Biodiversity Areas in Tamil Nadu workshop at Keystone Foundation, Kotagiri, Tamil Nadu from 7th to 9th March, 2014.
199. Dr. S.K. Pati, Sr. Zoological Assistant undergone training in 'Pragyan' course under Hindi Teaching Scheme from July to November 2013.
200. Dr. S.S. Jadhav, Asstt. Zoologist. Attended program on basic techniques and training on Molecular taxonomy work at Centre for DNA Taxonomy and Molecular Systematics Division, ZSI, HQ, Kolkata on 31st July to 7th August, 2013.
201. Dr. Sanjeev Kumar Scientist-C and Officer-in-charge and Dr. H. S. Banyal, Scientist-C attended Rajasthan Conclave organised by DMRC, ICMR at DMRC, Jodhpur on 13th July, 2013.
202. Dr. Sanjeev Kumar, Scientist C and Officer-in-charge has attended and presented research paper entitled *Challenges to faunal diversity from Modern Indian Defence Systems – A Study in the Official Language Scientific Seminar organized by Defence Laboratory, DRDO, Jodhpur from 20th and 21st February, 2014.*
- Dr. H. S. Banyal, Scientist-C has also attended aforementioned Seminar.





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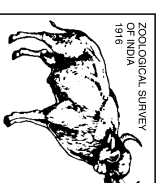


203. Dr. Sanjeev Kumar, Scientist C and Officer-in-charge has attended workshop on Managing arid Agriculture in Changing Climate under NICRA programme at CAZRI, Jodhpur on 4th February, 2014. Dr. H.S. Banyal, Scientist-C has also attended aforementioned workshop.
204. Dr. Sanjeev Kumar, Scientist-C and Officer-in-charge and Mr. Mahender Singh Choudhry, Jr. Hindi Translator attended Hindi Workshop on 10th May, 2013 at Botanical Survey of India (BSI), Jodhpur.
205. Dr. Sanjeev Kumar, Scientist-C and Officer-in-charge attended and presented research paper entitled Threats to Wetlands and its Faunal Diversity- A case study on Chambal River, Rajasthan in the Post CBD-COP 11 Seminar on Wetlands and Biodiversity Conservation and Role of Education for Sustainable Development (ESD) organized by Indian Environmental Society at New Delhi on 4th and 5th June, 2013.
206. Dr. Sanjeev Kumar, Scientist-C and Officer-in-charge attended two Workshops for Capacity Building in Research Methods and Communication on 19th November, 2013 at Sacon, Coimbatore: Workshop 1 on Recording and Analysis of Avian Vocalizations and Workshop 2 on Communicating Natural Science through Local Languages.
207. Dr. Sanjeev Kumar, Scientist-C and Officer-in-charge attended and presented a research paper entitled *Diversity and Status of wetland Birds in Kachchh Biosphere Reserve Beyond India Bridge, Gujarat* in the 2nd International Conference on Indian Ornithology: Ecosystem Services and Functions of Birds held from 19th to 23rd November, 2013 at SACON, Coimbatore.
208. Dr. Suranjana Banerjee, Senior Zoological Assistant, attended International Raptor conference Pune, 6th to 9th February, 2014 and made oral power point presentation of the paper on "Cestode (Phylum: Platyhelminthes) Parasites of Indian Raptors".
209. Dr. Suranjana Banerjee, Senior Zoological Assistant, attended Symposium on National Conference on Biodiversity, 2014 (held in Kolkata 16th to 18th January) and was awarded the third position in Poster presentation.
210. Dr. V. D. Hegde, Scientist C, attended a National seminar from 16th to 18th January organized by West Bengal Biodiversity Board, Kolkata and he has also presented a paper on "Record of Fungus-adapted darkling beetle *Cryphauspunctipennis*(Gravely,1915) (Coleoptera: Tenebrionidae: Toxicini) from Himachal Pradesh" in the National Conference on Zoology for Future Education and Research





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- held on 23rd and 24th January, 2014 at Queen Mary's College, Chennai, Tamil Nadu.
211. Dr. V.V. Gantait and Dr. D. Sen attended to the National symposium on "Nematode: a friend and foe of agri-horticultural crops" at Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh during 21st to 23rd November, 2013.
212. Dr. V.V. Gantait delivered a lead talk on "Expedition to Antarctica: A nematological perspective" to the National symposium on "Nematode: a friend and foe of agri-horticultural crops" at Dr. Y.S. Parmar University of Horticulture and Forestry, Nauni, Solan, Himachal Pradesh on 22nd November, 2013.
213. Dr. V.V. Gantait delivered a lecture on the reminiscence of 32nd Indian Scientific Expedition to Antarctica to the Future Foundation School, Regent Park, Kolkata on 31st July, 2013.
214. Dr. Varadaraju-Scientist B attended two days workshop on DSLR Macro photography on 6th and 7th March, 2014 held at ZSI/HQ, New Alipore.
215. Dr. Vinita Sharma, Scientist-C attended conference 8th Uttarakhand State Science and Technology Congress from 26th to 28th December, 2013 held at Doon University, Dehradun.
216. Dr. Vinita Sharma, Scientist-C, attended a Training Programme for Scientists and Technologists working in Government Sector on Climate Change and Carbon Mitigation held at ICFRE, Sponsored by DST (21st to 25th October, 2013).
217. Dr. A.K. Sidhu, Scientist-C and Officer-in-Charge delivered invited a lecture "An overview of some entofauna of Trans Himalaya of India with special reference to Diversity, Endemism and Conservation of Butterflies", at International Conference of Entomology held at Punjabi University, Patiala from 21st to 23rd February, 2013.
218. Drs. P.C. Tak, Scientist-D, A.N. Rizvi, Archana Bahuguna, S. I. Kazmi, and N Sharma, attended session of Annual Research Seminar at WII, Dehradun 30th September, 2013.
219. Drs. P.C. Tak, Scientist-D, Dr. Narinder Sharma and Dr. S.I. Kazmi Scientist -C Attended workshop on Mountain Meteorology and Landslides: A workshop on way forwarded with special reference to Uttarakhand held on 2nd September, 2013 at Wadia Institute of Himalayan Geology, Dehradun.
220. Jasmine. P Attended a 10 day training programme on ciliate taxonomy at Department of Zoology, Andra University, Visakapatnam from 26th March to 6th April.
221. Jasmine. P Participated in One day seminar on Prevention and Redress of Sexual harassment at work place on 18th January, 2014, at telegraph





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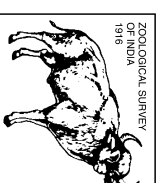


- room Kolkata, organized by Calcutta Management Association.
222. Jasmine. P presented poster entitled 'Seasonal diversity of Planktonic Ostracods in the Mixed layer Depth of Arabian Sea ' in *National Conference on Zoology for future Education and Research*, at Queen Mary's College, Chennai from 23rd and 24th January, 2014.
223. Jasmine. P presented poster entitled "Preliminary investigation into the community structure and composition of intertidal fauna along the east coast of India" in *National Conference on Zoology for future Education and Research*, at Queen Mary's College, Chennai from 23rd and 24th January, 2014.
224. K.A. Subramanian, Scientist-C has attended National Biodiversity Authority, Programme Steering Committee (PSC) meeting on 11th December, 2013 at MoEF, New Delhi.
225. K.G. Emiliyamma, Scientist-C delivered a lecture on "Illegal Trade in invertebrates" at the workshop on "The Wildlife (Protection) Act and illegal wildlife scenario in India", organized by WGRC, in collaboration with Kerala State Forest Department on 4th October 2013, in connection with Wildlife week celebration.
226. K.G. Emiliyamma, Scientist-C, delivered a talk on the 'Diversity of Dragonflies and Damselflies of Kerala' to the students of special project for gifted students at ZSI, WGRC
- auditorium on 27th December 2013, organized by the Department of General Education, Govt. of Kerala.
227. K.G. Emiliyamma, Scientist-C, delivered a talk on the "Importance of Western Ghats in faunal diversity" to the students of Science Foundation Forum of TIME Institute, Kozhikode at WGRC/ZSI on 7th May 2013.
228. K.G. Emiliyamma, Scientist-C, delivered a talk on the "Importance of Western Ghats" to the Kairali Swayam Sahaya Sangham annual meeting at Kadalundi on 29th December 2013.
229. Manuscript entitled 'Butterflies of Sanjay Gandhi National Park, Mumbai, Maharashtra, India' received for the publication in the journal '*BIOME*' by Dr. Kailash Chandra, Scientist-F
230. Mr Aniruddha Maity, JRF delivered a seminar on "Application of Magnetic Nanoparticles and Bioavailability for Cancer Therapy" for completion of Course Work, University of Calcutta, 2013-14.
231. Mr R.S. Mridha, Assistant Zoologist, Diptera Section attained the National conference on soil Biota-2013, organised by Kongunadu Arts and Science College, Coimbatore, Tamil Nadu as a Co-chairperson.
232. Mr R.S. Mridha, Assistant Zoologist, Diptera Section attained the 1st National Biodiversity Congress at Thiruvananthapuram, Kerala, organised by Kerala State Biodiversity





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- Board and Biodiversity Authority of India.
233. Mr R.S. Mridha, Assistant Zoologist, Diptera Section delivered a lecture on “A Study on the Robber Flies (Diptera: Asilidae) of North 24 Paraganas Paddy Fields and Surrounding Grassland”. Organised by Kongunadu Arts and Science College, Coimbatore, Tamil Nadu.
234. Mr. D. Deivaprakasam, Sr. Zoological Assistant underwent the training programme on ‘Tax law and office procedure’ organized by Rajiv Gandhi Cooperative Training College, Port Blair during 25th to 26th February 2014
235. Mr. Kamalakannan M, Jr. Zoological Assistant of Mammal and Osteology Section has participated and presented a poster entitled ‘Identification of Hairs of Indian Cervids’ in the International conference of ‘Student Conference on Conservation Science’ held at the Department of Zoology, University of Cambridge, Cambridge, United Kingdom on and from 25th to 27th March, 2014. The Science and Engineering Research Board, Department of Science and Technology, Govt. of India, New Delhi and the Zoological Survey of India, Kolkata have been provided financial grant to attend above mentioned programme.
236. Mr. Kumaralingam, SRF participated in ‘13th International Course on Mangrove Ecosystems’ organized by UNESCO-MAB and Annamalai
- University from 23rd September to 7th October 2013 held at CAS in Marine Biology, Parangipettai, Tamil Nadu.
237. Mr. Mahender Singh Choudhry, Jr. Hindi Translator attended 3 Day All India Residential Seminar on Official Language Policy of Govt. of India held at Tirupati from 26th to 28th May, 2013.
238. Mr. Manish Chandra Patel, Zoological Assistant attended the training on RTI from 30th to 31st May 2013 at Rajiv Gandhi Cooperative Training College, Teylarabad, South Andaman.
239. Mr. Manish Chandra Patel, Zoological Assistant attended training on Modal Code of Conduct regarding General Election 2014 at DBRAIT, Pahargaoon, Port Blair on 25th February 2014.
240. Mr. R. Raghuraman, SRF of the Centre attended the ‘Hands-on training in traditional and modern approaches on animal taxonomy’ held at University of Agricultural Sciences, Bangalore from 15th to 29th April 2013.
241. Mr. Tannal Mondal, Research Associate attended the training programme ‘GIS in faunal studies and data-basing and digitization of faunal collections’ at ZSI headquarters, Kolkata during 15th to 16th January 2014.
242. Mrs. Kamla Devi, Assistant Zoologist attended ‘All India Residential Seminar on Official Language Policy of Government of India’ held at Tirupati, Andhra Pradesh during 26th to 29th May 2013.





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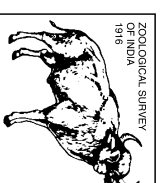


243. Mrs. Kamla Devi, Assistant Zoologist attended a training programme on Tax Laws on 18th and 19th October 2013 at Rajiv Gandhi Training Institute, Port Blair.
244. MS entitled 'Prioninae (Cerambycidae: Coleoptera) of Andaman and Nicobar Islands' was reviewed for the publication in online journal 'PROMALLA' on 18th November, 2013 by Dr. Kailash Chandra, Scientist-F.
245. One workshop on "Environment and Biodiversity" held for under privileged School children of JJ Children's Home, Gopalpur on 5th June at the Centre
246. Prbakaran K*, Rupa Pal, Chitra J. 2013. Water quality and plankton studies on some freshwater habitats of Bangur, Lake town, Patipukur and Dum Dum. at National conference on "Challenges of Basic Research in Innovating Technologies" will be held on 4th May 2013 at B.P. Poddar Institute of Management and Technology, Kolkata sponsored by DRDO and DST.
247. Shri Bulganin Mitra, Scientist- B, attended Third Training Programme on ICZM for Common people at Digha, West Bengal, India.
248. Shri Joydev Das, Office Superintendent undergone training in 'Pragyan' course under Hindi Teaching Scheme from July to November 2013.
249. Shri S. S. Mishra, Scientist-B delivered a lecture on 'Coastal fishes of West Bengal and need for conservation'
250. at ICZM Training programme for community people at MARC, Digha during 9th Feb. 2014.
250. Shri S. S. Mishra, Scientist-B delivered a lecture on 'Coastal fishes of West Bengal and need for conservation' at ICZM Training programme for community people at MARC, Digha during 9th Feb. 2014.
251. Shri S. S. Mishra, Scientist-B delivered a lecture on 'Marine Conservation - with special reference to Marine Interface of East Coast of India' at a workshop organized by Fishery Survey of India, Vishakapatnam, at Paradeep, Odisha on 24th Mar. 2014.
252. Shri S. S. Mishra, Scientist-B imparted field training to the ICZM Officer level Training programme at MARC, Digha during 7th and 8th Jan. 2014.
253. Shri S. S. Mishra, Scientist-B delivered 4 lectures on 'Taxonomy' at C.I.F.E., Versova, Mumbai and practical training to students on 'Identification of Fishes' during 23rd to 27th April 2013.
254. Shri S. S. Mishra, Scientist-B visited the onshore receiving facility locations for the offshore floating LNG terminal proposed near the Petuaghat in Contai of Purba Medinipur district West Bengal proposed by H-Energy East Coast Private Limited for marine and coastal ecological study along with other Scientists of ZSI.
255. Smt. Ava Sar, Assistant Zoologist presented a paper on "New records of





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- soilassociatedrovebeetles (Coleoptera: Staphylinidae: Paederinae) from Uttar Pradesh, India, in National Seminar at Coimbatore from 19th to 21st Dec. 2013.
256. Smt. Rehnuma Sulthana, Zool. Asst. attended training on 'GIS in Faunal studies and databasing and digitization of faunal collections' at HQ, ZSI, Kolkata during 15th and 16th January, 2014.
257. Sri A. Mohapatra Attended meeting of the Similipal Biosphere Reserve Management Council, Govt. of Odisha on 20th March 2014 at secretariat, Bhubaneswar.
258. The manuscript entitled 'Review of Entomological Research on Sweet Potato in Ethiopia' reviewed for publication in '*Journal of Agriculture and Food Science*' was reviewed on 28th May, 2013 by Dr. Kailash Chandra, Scientist-F.
259. The manuscript entitled "Morphotaxonomy of Indian species of genus *Macotasa* Moore (Arctiidae: Lithosiinae)" for the publication in *Proceedings of National Academy of Sciences-Biological Sciences* was reviewed during April, 2013 by Dr. Kailash Chandra, Scientist-F.
260. The MS entitled 'New record of *Catapiestus subrufescens* Pic, 1911 (Coleoptera: Tenebrionidae: Cnodonini)' from India' received for the publication in '*Bugs' R. All'* was reviewed and returned on 30th July, 2013 by Dr. Kailash Chandra, Scientist-F.
261. The MS entitled 'The genus *Gonocephalum* (Solier, 1834) (Tenebrionidae: Coleoptera) from Karnataka state with a new record to India" received for the publication in '*Journal of Threatened Taxa*' was reviewed and returned on 30th July, 2013 by Dr. Kailash Chandra, Scientist-F.
262. The paperentitled 'A Checklist of family Arctiidae (Noctuidae: Lepidoptera) from India' was reviewed for the publication in *Records of Zoological Survey of India* on 5th September, 2013 by Dr. Kailash Chandra, Scientist-F.
263. The paperentitled 'A Checklist of family Arctiidae (Noctuidae: Lepidoptera) from India' was reviewed for the publication in *Records of Zoological Survey of India* on 5th September, 2013 by Dr. Kailash Chandra, Scientist-F.

AWARD FOR THE IMPLEMENTATION OF OFFICIAL LANGUAGE

Western Ghat Regional Centre, Calicut was awarded with Rajbhasha shield-2013 and certificate (First Prize for Offices without Hindi Officers) for significant contribution to Official Language implementation during 2012-13, awarded by the Town Official language Implementation Committee, Kozhikode.





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PUBLICATIONS

- Acharya, S., and Bask, P. 2014. New records of soil oribatid mites (Acari: Oribatida) from Himachal Pradesh, India: Nine Genera and Thirteen species. *J. Exp. Zool. India*, **17**(1): 91-96.
- Acharya. S., and Basu, P. 2014. Diversity and species richness of soil oribatid mites (Acari: Oribatida) in Dudhwa National Park, U.P., India, *J. Exp. Zool. India*, **17**(1): 145-150.
- Angals, R. and Ganes, S.R. 2013. *Rhinophis gowri* - A new species of shieldtail snake from the Southern Eastern Ghats, India. *Russian J. Herpetology*, **20**(1): 61-65.
- Agoramoorthy, G. and C. Sivaperuman, 2014. Tourism, Tribes and Tribulations in the Andaman Islands. *Current Science*, **106**(2): 141.
- Akhillesh, K.V., Bineesh, K.K., Mishra, S.S., Ganga, U. and Pillai, N.G.K. 2014. Notes on the Indian swellshark, *Cephaloscyllium silasi* (Scyliorhinidae: Carcharhiniformes) from deep waters off the west coast of India. *Marine Biodiversity Records* Vol. 7; e25 (5 pages) doi: 10.1017/S1755267214000141.
- Amina P and Rajmohana K. 2013. First record of the genus *Ceylonitermus* Emerson (Isoptera-Termitidae-Nasutitermitinae) in southern India, based on a new mainland species from the Kerala Ghats. *Colemania*, Number **39**: 1-10.
- Amina P, Rajmohana K, Bijoy C, Radhakrishnan C and Saha N, 2013. First record of the Srilankan processional termite, *Hospitalitermes monoceros* (Konig) (Termitidae: Nasutitermitinae) from India. *Halteres*. Volume (**4**): 48-52.
- Amina Poovoli and Rajmohana K, 2012. New distribution records of the invasive termite *Cryptotermes dudleyi* Banks (Kalotermitidae) from Kerala, along with a report on its attack. *Malabar Trogon*-Vol. **10**(3): 11-15.
- AminaPoovoli and Rajmohana K 2013. First record of *Heterotermesindicola* (Isoptera: Rhinotermitidae) from south India. *Insect Environment*, Vol. **19**(3):162.
- Anil Mohapatra, Dipanjan Ray and Prasanna Yennawar, 2013. First report of *Naso reticulatus* (Perciformes: Acanthuridae) from Indian waters. *Marine Biodiversity Records*, **6**(56): 1-3.
- Anil Mohapatra, Prasad Tudu and Prasanna Yennawar, 2012. First report of a fish from family: Antennariidae (*Antennarius hispidus*) from Digba coastal waters, on the east coast of India. *Rec. zool. Surv. India*, **112**(2): 123-124.





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- Avtar Kaur Sidhu 2014. "An overview of some entomofauna of Trans Himalaya of India with special reference to Diversity, Endemism and Conservation of Butterflies", (IN-4) p 62
In Abstract of International Conference of Entomology, Punjabi University, Patiala from 21st to 23rd February, 2014: 1-310.
- Avtar Kaur Sidhu, 2013. Observations on *Lasionmmta menava* (Moore, 1865) (Lepidoptera: Nymphalidae: Satyrinae) and *Aglais caschmiriensis* (Kollar, 1844) (Lepidoptera: Nymphalidae: Nymphalinae) attracted to light at Kalatop and Chail Wildlife Sanctuaries in Himachal Pradesh, India. *Bugs R All* (20): 17-19.
- Banyal, H.S. and Kumar, Sanjeev 2013. Fish diversity of seasonal wetlands of Kachchh Biosphere Reserve (KBR), beyond India Bridge, Gujarat. *J. Env. Bio-Sci.*, 27(1): 129-130.
- Banyal, H. S. and Kumar, Sanjeev, 2013. Addition to the information on record of fish faunal diversity of some selected reservoirs of district Sirohi, Rajasthan. *J. Env. Bio-Sci.*, 27(2): 283-285.
- Banyal, H. S. and Kumar, Sanjeev, 2014. Ichthyo-faunal diversity of the Angore Dam, Sirohi City, Rajasthan. *Bionotes*, 16(1): 21-22.
- Banyal, H. S., and Kumar, S. 2013. Addition to the information on record of fish faunal diversity of some selected reservoirs of district Sirohi, Rajasthan. *J. Env. Bio-Sci.*, 27(2): 283-285.
- Banyal, H.S., and Kumar, S. 2013. Fish diversity of seasonal wetlands of Kachchh Biosphere Reserve (KBR), beyond India Bridge, Gujarat. *J. Env. Bio-Sci.*, 27(1): 129-130.
- Banyal, H. S., and Kumar, S. 2014. Studies on fish faunal diversity of Luni River in the Thar Desert of Rajasthan. In: Abstracts of *National Conference on Diversity and Physiology of Desert Fauna* (NCDPDF-2014), Publ.: Deptt. of Zoology, JNV University, Jodhpur, pp. 8.
- Barman, R.P. and Mishra, S.S. (2012) On the status of *Devario assamensis* Barman, 1984 (Pisces: Cyprinidae) with comments on distribution of *Devario regina* Fowler, 1934. *Rec. zool. Surv. India* 112(2): 53-55.
- Barman, R.P., Mishra, S.S., Kar, S. and Saren, S.C. 2013. Marine and estuarine fishes. In, *Fauna of Karnataka, State Fauna Series*, 21: 277-388.
- Basu, S., Subramanian, K.A. and Polhemus, D.A. 2013. A new species of *Velia* (Hemiptera: Heteroptera: Velidae) from West Bengal, India. *Zootaxa*, 3693(3): 344-350.
- Bhargavi Srinivasulu and Deepa J. 2013. Insecta: Odonata Faunistic and limnological studies on Wyra lake, Khammam district, Andhra Pradesh, *Wetland Ecosystem Series* 16: 59-68.
- Bhatnagar, P.S. 2014. Blue whale skeleton near Aglachevadi near Phansad Wildlife Sanctuary, Raigad district, Maharashtra. *Asian Journal of Experimental Science* 28(1): 23-24.





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- Bhupathy, S, Ramesh, C., and Bahuguna, A. 2014. Feeding habitats of Indian Rock Pythons in Keoladeo National Park, Bharatpur, India. *Herpetological Journal, British Herpetological Society*, **24**: 59-64.
- Bijoy, C. and Rajmohana, K. 2013. Descriptions of four new species of the Genus *Alloxysta* Forster (Hymenoptera: Cynipoidea: Figitidae: Charipinae) from India. *Biosystematica*, **7**(1): 59-66.
- Bijoy, C. and Rajmohana, K. 2013. First report of *Prosoplicera validispina* (Kieffer), 1910 (Hymenoptera: Figitidae) from Kerala (India), along with notes on range extension. *Journal of new biological records*, **2**(2): 127-129.
- Bijoy, C. Rajmohana, K. and Kumar, R. 2013. First report of the genus *Conostigmus* Dahlbom (Hymenoptera: Ceraphronoidea: Megaspilidae) from India with description of a new species. *Biodiversity Data Journal*, **1**: e991. doi: 10.3897/BDJ.1.e991.
- Bindu, L. 2013. Protozoa in Faunal diversity of Pangi Valley, Chamba District (Himachal Pradesh), *Himalayan Ecosystem Series*, **3**: 13-30, pls. V-VI (Published by Director, Zool. Surv. India, Kolkata).
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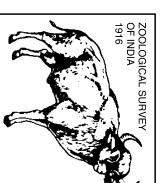


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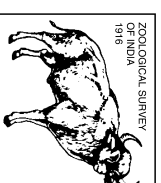


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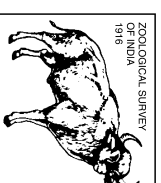


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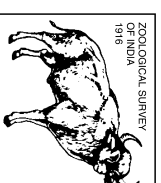


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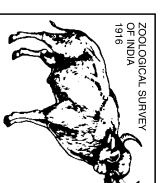


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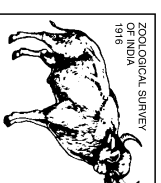


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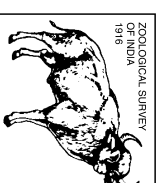


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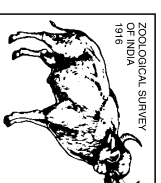


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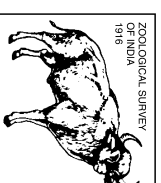
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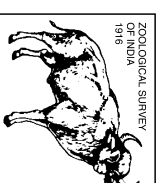


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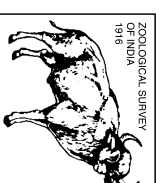
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