



# ANNUAL REPORT

## 2009-10



**ZOOLOGICAL SURVEY OF INDIA**

# ANNUAL REPORT 2009-10



Zoological Survey of India  
Kolkata

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## INTRODUCTION

Zoological Survey of India established in 1916, is pre-eminent research institution in the country under Ministry of Environment and Forests, Govt. of India. This institution is tasked with the survey and exploration of faunal resources of the country. The ultimate goal is the taxonomic identification and documentation of the country's biodiversity.

### 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, preservation and maintenance through training programmes.

### Secondary Objectives of ZSI

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

Status survey of Chinkara and Desert cat in Gujarat; Status survey of Swamp Deer *Cervus duvauceli* in Dudwa National Park (U. P.); Status survey of scheduled Mollusc, *Trochus niloticus* and *Turbo marmoratus* as per requirement of MoEF as well as Andaman and Nicobar Administration; Status survey of the Khasi Hills Rock Toad (*Bufoides meghalayana*) from Cherrapunjee, East Khasi Hills, Meghalaya; Animal Species in Convention and Act (an Ad-hoc assignment); Red-data book on the Fishes of India; Feasibility Study regarding re-introduction of Pygmy Hogs at Gorumara Wildlife Sanctuary, in Jalpaiguri district, West Bengal; All India net work programme on Blue tongue disease; Animal Fossil studies from Disang Group of rocks of Cenozoic era from Nagaland and from the Cretaceous rock beds of Narmada Valley, Madhya Pradesh; Studies on the fauna of cold desert of Ladakh; Studies on the fauna of Antarctica; Survey and monitoring the health of coral reefs of India



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(sponsored by MoEF); Diversity and distribution of coral and their associated fauna of Rani Jhansi Marine National Park (sponsored by MoEF); GIS based mapping and analysis of ecological variables of reefs around the little Andaman Island (sponsored by MoEF); Survey and Monitoring of Coral reefs of Andaman and Nicobar Islands (sponsored by Dept. of Environment and Forests, A. and N. Islands); Lead Institution: Great Nicobar Biosphere Reserve (sponsored by MoEF); Studies on the faunal diversity of Great Nicobar Reserve (sponsored by MoEF); Census of spotted deer and birds in Mount Harriet National Park in collaboration with MoEF and A. and N. Administration; Study of impact of Lignite mining on fauna in Hadla Rawaleton, Hadla Bhatiyani and Mokha Lignite Mining Blocks District Bikaner (Rajasthan); Environmental impact assessment studies in Katchal and Teressa Islands for the construction of Jetty as requested by Port Management Board, Andaman and Nicobar Administration; Monitoring of Marine mammals stranding

incidences; Study of Ecto-parasites in ornamental fishes; Study of Spawning of Horse-shoe crabs in captivity; Development of Primary Type Information System (PTIS); Computerization of Data Base on Fauna of Western Ghats; An interactive identification system on the genera of *Platygastrid* egg parasitoids (Hymenoptera : Insecta) in Paddy ecosystems has been developed; Study of DNA Material for Evolutionary Studies; Collaboration with CCMB; Bone powder from the Holotype of *Balaenoptera edeni* (a Whale species) and extinct Indian Cheetah *Acionyx jubatus* were provided to CCMB scientists. In addition to this MOU made for molecular studies on birds; A MOU between Director, ZSI and Director, Central Forensic Science Laboratory, Kolkata, has been signed for collaborative study of Reptiles and Amphibians of ZSI; A MOU between ZSI/ANRC, Port Blair and ICAR -CARI, Port Blair has been signed for the collaborative study on 'Marine Sponges Barcoding'.





## HEAD QUARTERS

### THE TRAINING AND EXTENTION DIVISION

The Training and Extention Division conducted several programme during this period, namely :

**International Day for Biological Diversity** : Celebrated on 22nd May, 2009. Dr. K.K. Vass, Director, CFRI and Dr. A.K. Sanyal, Addl. Director delivered lectures on "Invasive Alien Species".

**Training for Non-Matriculate Group-D employees** : Conducted from 18-22 May, 2009. A total of 50 staff of H. Q. and Regional Centres of ZSI participated. Dr. A.K. Ghosh, Former Director and Dr. D.K. Singh, Scientist-F attended and delivered lectures as Chief Guest and Guest of Honour respectively.

**World Environment Day** : Celebrated on 5th June, 2009. Prof. Amalendu Bandyopadhyay, Former Director, Positional Astronomy Centre attended and delivered lecture on "Century's Longest Solar Eclipse" as a Chief Guest and Shri Abhaya Kumar Padhi, Dy. Director (Genl.), Doordarshan Kendra, Eastern Region delivered lecture on "Environment & Media" as a Guest of Honour.

**Wildlife Week** : Celebrated on 5th and 6th June, 2009 at MARC, Digha by way of Film Show on wildlife, Nature Trail, Sit & Draw, Quiz Contest and Tree Plantation Programme. Altogether 50 school students of different schools of Digha and adjoining areas participated in the programme. Prof. Tanmay Bhattacharyya, Dean, Vidyasagar University delivered a lecture on "Importance and Conservation of Biodiversity" as a Chief Guest.

**XIIth Training Course on Field Ornithology** : Organised from 12th to 15th January, 2010. Altogether 41 participants

attended the programme. One field trip was conducted about 130 kms away from Kolkata at Bethuadahari Wildlife Sanctuary, Nadia, West Bengal. Shri Biswajit Roychowdhury, Secretary, Nature Environment and Wildlife Society (NEWS), Kolkata and Shri V.K. Yadav, Conservator of Forests ( Weastern Circle), Govt. of W.B. attended and delivered lectures as a Chief Guest and Guest of Honour respectively.

**IXth Refreshers Course on Collection and Preservation Techniques of Zoological Specimens** : Organised from 16th to 19th March, 2010. Altogether 45 participants attended the course. One field trip was conducted at Ramkrishna Vivekananda Ashram, Duttapukur. Dr. J.R.B. Alfred, Former Director, ZSI attended and delivered a lecture on "Importance of Collections and Preservation of Zoological Specimens" as a Chief Guest. Dr. S.K. Gupta, Former Jt. Director attended and delivered a lecture on "Pests and disease of medicinal plants and their managements" as a guest of Honour.

**Miscellaneous** : An exhibition was arranged on 24.06.2009 in connection with visit of Shri Jairam Ramesh, Hon'ble Minister, MoEF, Govt. of India. 30 media persons attended the press conference; an exhibition was arranged on 17.09.2009 in connection with visit of Prof. Kasturiranga, Former Chairman, ISRO and member, Planning Commission.

### THE FIELD SURVEY DIVISION

The Field Survey Division has been supervising the surveys undertaken by the different sections and divisions of Headquarters and regional centres. The target for Headquarters was 46 surveys out of which it



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conducted 42 and for Regional centres it was 84 out of which 61 conducted. This is tabulated as States and Union Territories, Biosphere Reserves, Conservation Areas and Status surveys as follows :

States & UTs	: 23
Biosphere Reserves	: 3
Conservation areas	: 25
Status survey	: 9

**State Survey and Union Territories :** Bihar, Jharkhand, Assam, Nagaland, Meghalaya, Arunachal Pradesh, Orissa, Himachal Pradesh, Uttar Pradesh, Punjab, Haryana, Gujarat, Rajasthan, Madhya Pradesh, Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Maharashtra, A & N Islands, West Bengal.

**Biosphere Reserves and Conservation Areas :** Nokrek, Gulf of Mannar, Sunderban, Bibhutibhushan WLS, Gahirmata WLS, Satkosia WLS, Kumbhalgarh WLS, Khajaria WLS, Kalesar WLS, Churdhar WLS, Marine N.P., Gujarat, Kuldiha & Hadgard WLS, Itanagar WLS, Twang Chu Valley, Sitamatha WLS, Dalma WLS, Kannyakumari WLS.

**Status Survey :** Black-buck, Chinkara, Desert Cat, Dolphin, Mouse Deer, Swamp Deer, Four Horned Antelope, Goral, Coral reefs.

### ZSI LIBRARY

The ZSI Library is holding the largest collection of Books and Journals on Zoology in Asia. During this year 186 Books were purchased, 199 issues of 36 journals were added to the library. Besides this 767 issues of 120 titles received under exchange program from various institutions from India and Abroad. The Library has provided Xerox copies of 1663 pages and digitized 10400 pages of old books in the holdings of library. A 1766 readers visited ZSI library for library consultation from all over the country and abroad.

**Updating of catalogue of periodicals :** Data of c. 2000 volumes got entered.

**Union Catalogue of journals :** Entered about 500 data from the Regional Centres.

**Union Catalogue of books :** About 500 entries have been made under Alphabets 'A' and 'B' completed.

### PUBLICATION DIVISION

The Publication Division of the ZSI has published 38 books viz. Records of the Zoological survey of India = 4; Occasional Papers = 15; Handbooks/Pictorial guide = 5; Special Publications = 3; State Fauna Series = 4; Fauna of Conservation Area = 4; Ecosystem Series = 3).

Sale of Departmental publications fetched up to Rs. 5,07,451/-. This unit despatched 20,000 books in exchange to partners in India and Abroad, 16 Regional Centres and different scientific Sections and Divisions of the Head Quarters, Kolkata. Books were also supplied to book sellers through out Country.

### IDENTIFICATION AND ADVISORY DIVISION

Prepared Z.S.I Monthly Reports and Summaries for Cabinet. All the 12 reports of





this Financial year were sent to the Secretary, MoEF, New Delhi. Identification and Advisory Services rendered : 13 lots of Identification materials were received and sent to different section and divisions for Identification and report.

## ANTARCTICA UNIT

Dr. A.K. Sanyal and Dr. J.K. De delivered talk on effect of climate change on Antarctica on Kolkata Doordarshan in 2010.

A publication entitled "Contributions of Zoological Survey of India in Researches on Antarctic Fauna (A Compendium) published.

## ANIMAL POPULATION SECTION

### Ongoing Project

**Status Survey of Chinkara and Desert Cat in Gujarat :** During actual field survey Chinkara were recorded from 123 locations while Desert cat were recorded from 34 locations. Apart from Chinkara and Desert Cat, data collected on presence/absence of 37 other species of medium and large mammals of Gujarat were analysed taking forest block as a



unit. For the purpose of display of results preparation of maps depicting forest blocks was completed in GIS domain. Tabulation of sighting records of animals was completed, based on GPS records collected during field survey.



**Rapid assessment of distribution of Primates of India :** Tabulation of the Distribution of Primate species in Protected Areas of country was carried out. Some Literature on Distribution of Primates outside the PA was collected. Marking of some location records on map was carried out in GIS domain

**Studies on the seasonal fluctuation of Grylloid population in Bardhaman district of West Bengal :** A total of 48 examples were collected from four localities. Identification of specimens is in progress.

**EIA Studies :** Study on Impact of Lignite Mining on Fauna in Hadla Rawaleton, Hadla Bhatiyar and Mokha Lignite Mining Blocks, Dist. Bikaner (Rajasthan). Dr. P.L. Kankane as a member of EIA team conducted two field surveys. The study of material collected/observed in the field is under compilation.

## ANIMAL BEHAVIOUR SECTION

**Status survey of Blackbuck (*Antelope cervicapra* Linn. 1758) in Orissa :** Two field surveys were undertaken and data collected on blackbuck = 852 (Male : 264; Female : 523; yearling - up to 1 year age : 65). Total number of mixed herd observed : 51; total number of bachelor herd observed : 13



**Wildlife survey of Kuldiha and Hadgarh WLS in Orissa and the following data collected :** Two field survey undertaking and collected data on 142 bird species; 42 mammal species from Hadgarh WLS and 153 bird species; 28 mammal species from B. Kuldiha Wildlife Sanctuary

### WILD LIFE AND CONSERVATION SECTION

**Wildlife Survey of Gahirmatha Wildlife sanctuary, Kendrapara Dist, Orissa, with special reference to Birds and Mammals :** One field survey was under taken to the above sanctuary during the period. A total of 94 species of Birds belonging to 45 families and 11 species of Mammals belonging to four Orders and five families were observed in the sanctuary. Some photographs were taken. In addition, few reptiles were also sighted and photographed. Out of 94 species of Birds observed in Gahirmatha Wildlife sanctuary several are very rarely seen. 11 Specimens of Four-horned Antelope were sighted in the Debrigarh Wildlife sanctuary which is a very rare species of the sanctuary and very difficult to see.

**Status survey of Four-horned Antelope (*Tetracerus quadricornis*) in Debrigarh Wildlife Sanctuary Orissa :** In connection with this project one Survey was conducted to the above sanctuary during the period. A total of 11 individuals of this species were sighted



inside the sanctuary and few photographs were taken.

### MUSEUM AND TAXIDERMY DIVISION

**Vertebrate Fauna of Satkosia Wildlife Sanctuary :** Compilation of data pertaining to Mammal-69 species (Ord.-9, Fam.-26); Bird-196 species (Ord.-15, Fam.-39); Reptiles-55 species (Ord. - 3, Fam.-16); Amphibia-9 species (Ord.-1, Fam.-4); Fish-78 species (Ord.-8, Fam.-17) is completed.

**Faunal diversity in and around the Indian Museum tank :** Compilation of vertebrate fauna has been completed comprising of Mammal-17 species, Bird-49 species, Reptile-10 species, Amphibia-5 species, Fish : 27 species, of which 44 species are either aquatic or water dependent.

An Exhibition was organized in connection with an International Seminar on the occasion of **Bicentenary of Charles Darwin** and **150 years of publication of "The Origin of Species"** in the Asiatic Society.

**Studies on Mites infesting herbs used as species and oil seeds in India with special reference to Western Ghats :** Species identified : 17 (13 genera & 9 families)



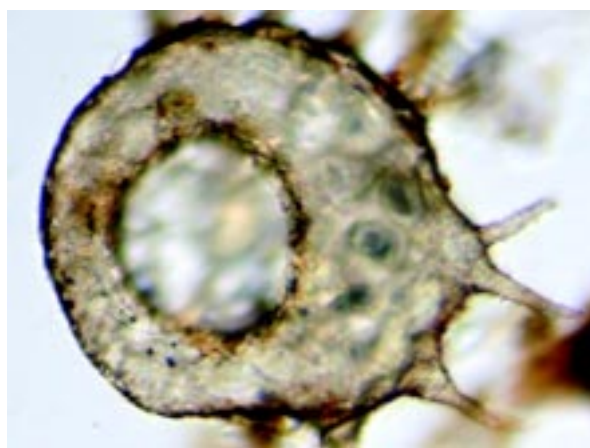
**Development of Zoological Galleries :** Specimen added - 58 insects; Specimen repaired and retouched : 446 (Mammals - 166, Bird - 103, Reptile and Amphibia - 57, Fish - 18, Insect - 102); Label changed - 209 (Mammal); Renovation work: 4 showcases in Insect Gallery.

## CYTO-TAXONOMY RESEARCH LABORATORY

**A review on Mutagenic effects of Chemicals, Drugs and Physical agents tested on chromosomes of Grasshoppers :** 208 Publications (from 1949 to 2009) on grasshoppers have been reviewed. Manuscript will be submitted in May 2010.

## PROTOZOOLOGY SECTION

**Protozoan Fauna of Uttar Pradesh :** Identified 41 species of freeliving protozoa under 16 genera 12 spp. of coccidian parasites (10 spp. of *Eimeria* and 2 spp. of *Isospora*) and two new species of the genus *Arcella*.



**Protozoan and Plankton fauna of sewage systems in Kolkata :** Identified 13 species of freeliving protozoa; Phytoplankton : 11 genera under 3 families; Zooplankton: Copepods : 1 species, 1 genus under 1 family; Cladocera : 2 species, 2 genera under 1 family; Ostracoda : 1 species 1 genus under 1 family; Rotifera :

1 species, 1 genus under 1 family; Fauna of Himalayan Ecosystem; Protozoan fauna of Pangri Valley.

Identified 41 species of moss dwelling testate amoebae under 14 genera and 7 Families.; All the species are new records from Pangri Valley; 21 species are new reports from Himachal Pradesh; 4 new species of the genus *Centropyxis*.

## NEMATOHELMINTHES SECTION

**Tylenchida (Plant parasitic nematodes) of U.P. :** Consolidated compilation of description and distribution of 140 species under 42 genera from Uttar Pradesh under progress; Dorylaimida (free living soil nematodes) of U. P. : 20 species under 12 genera identified.

**Nematodes of vertebrate hosts of U.P. :** 200 species listed; preparation of document is in final stage.

**Nematodes of Arthropod hosts of U.P. :** One survey to Himachal Pradesh Name of the programme: State Fauna of Himachal Pradesh; Material collected: 25 vials of soil-free-living & plant parasitic nematodes and 13 specimens of insect parasitic nematodes. The manuscript dealing with 23 species under 17 genera is in progress.

## PLATYHELMINTHES SECTION

**Trematodes of vertebrates of Uttar Pradesh :** 9 specimens have been identified. 67 nos. have been enlisted, altogether 281 species under 124 genera and 39 families have been reported of which 162 are first time recorded from Indian subcontinent.

**Platyhelminthes parasites of vertebrates of Himachal Pradesh :** A survey tour of 21 days have been undertaken during March-April, 2010 and collected 16 vials of Platyhelminthes parasites.





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**Check list of amphibian parasites of Indian vertebrates :** Literature consultation has been started.

**Fauna of Himachal Pradesh : Platyhelminthes of vertebrates :** A survey tour of 21 days have been undertaken and collected 16 vials of Platyhelminthes parasites from different vertebrate hosts of Himachal Pradesh. Identified Material : 21 specimens have been registered; Unidentified material : 46 vials so far have been stained and mounted, which are yet to be identified.

### ACAROLOGY SECTION

**Acarine Fauna of Uttar Pradesh (Oribatid mites ; Ixodid ticks) :** Identified 230 specimens under 11 genera, 07 families and 18 species. All are new records from the state. 5 spp. may be new to science. Consultation of literature was done. Completed sorting of specimens. Identification of 45 specimens under 02 genera and 04 species completed. All new record from the state. Consultation of literature was done.

**Acarine Fauna of Himachal Pradesh (Oribatid mites : Ixodid ticks) :** Two surveys were undertaken. Extraction of specimens from 75 samples completed and sorting of specimens were in progress. Collected 35 specimens from domestic animals and sorting of specimens were in progress. Consultation of literature was done.

**Ecological Studies (Diversity and Ecology of Plant Mites in ornamental and Garden Plants in West Bengal) :** 08 local surveys at Narendrapur R.K.M. Campus & some other places in & around Kolkata were undertaken. Collected 235 mites, sorted out & identified 48 specimens comprising 9 genera & 15 species. 04 species are recorded first from ornamental plants in W.B.

**State Fauna of Himachal Pradesh :** Himachal Pradesh survey completed during

March-April, 2010; Survey Report under preparation; 1095 exs. of mites, ticks & insects collected; Gorumara Survey- Survey Report submitted.

### ARACHNIDA SECTION

**State Fauna of Spiders from U.P. :** Sorting of collection made from survey is in process. Preliminary survey report is submitted.



**Spider fauna of Bibhuti Bhushan Wildlife Sanctuary, Parmadan, Bongaon :** Two tours to Bivuti Bhishan Wildlife Sanctuary, Parmadan, Bongaon were conducted. During the faunistic survey 342 spider specimens have been collected. 548 specimens of other fauna were also collected from the area.

### ENTOMOLOGY DIVISION

#### CENTRAL ENTOMOLOGICAL LABORATORY

**Hymenoptera Fauna of Uttar Pradesh :** 63 species under 16 genera have been identified and writing up of report is under finalization.

**Thysanura Fauna of Uttar Pradesh :** 16 species under 10 genera have been identified and writing up of report is under finalization.

**Thysanura Fauna of Maharashtra :** 30 species under 13 genera have been



identified and writing up of report is under finalization.

## HYMENOPTERA SECTION

**Fauna of Uttarakhand (Family Formicidae)** : The final report is under preparation, consisting of 25 species under 14 genera.

**Hymenoptera Fauna of Uttar Pradesh** : The study reveals 90 species under 55 genera of the family Encyrtidae; 20 species under 12 genera of the family Sphecidae and 35 species under 15 genera of the family Formicidae. One new record from Uttar Pradesh under family Encyrtidae - *Adelencyrtus quadriguttus* (Girault).

**Hymenoptera Fauna of Maharashtra** : Family Encyrtidae - 16 species under 11 genera identified; Family Scoliidae - 05 species under 03 genera identified. One new species described under family Encyrtidae - *Trechnites silvestris* Kazmi & Hayat. Three new species under family Pteromalidae i.e. *Colotrechnus melghaticus* Narendren & Girish, *Homoporus maharashtriensis* Narendren & Girish, *Chlorocytus amaravathicus* Narendren & Girish.

## LEPIDOPTERA SECTION

**Lepidoptera Fauna of Himachal Pradesh (Nymphalidae, Satyridae, Libytheidae and Acraeidae)** : One Survey to Himachal Pradesh conducted and collected 933 examples. Identified 29 species, 14 genera belongs to the family Nymphalidae; 21 species, 10 genera from the family Satyridae; 1 species, 1 genera from the family Acraeidae and 1 species and 1 genera from the family Libytheidae.



## ISOPTERA SECTION

**Termites Fauna of Uttar Pradesh** : The final report comprising of 26 species under 12 genera and 3 families. 139 vials identified. Of which 6 species are recorded for the first time from the state.



**Termites Fauna of Jharkhand** : Two surveys were conducted and collected 179 vials and identified 10 species under 7 genera and 2 families. Of which 9 species are recorded for the first time from the state.

## COLEOPTERA SECTION

**Coleoptera Fauna of Uttarakhand** : Identified 75 exs. under 30 species, 22 genera under the family Cerambycidae out of which 6 species and 6 genera is new records to State and 2 species and 2 genera is new record to India. Identified 147 exs. under 44 species, 16 genera under the family Scarabaeidae w.s.r. Cetoniinae, dynastinae & Rutellinae out of which 6 species and 4 genera is new records to State. Identified 914 exs. under 39 species, 23 genera under the family Coccinellidae out of which 32 species is new records to State and 4 species and 4 genera is new record to India. Identified 52 species, 19 genera under the family Hydrophilidae out of which 19 species and 11 genera is new records to State.



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Identified 110 species, 23 genera under the family Staphylinidae out of which 16 species and 5 genera is new records to State. Identified 12 species, 09 genera under the family Histeridae out of which 12 species and 9 genera is new records to State.

**Coleoptera Fauna of Uttar Pradesh :** Identified 86 exs. under 11 species, 7 genera under the family Hydrophilidae and identified 76 exs. under 13 species, 9 genera under the family Cerambycidae and 20 species, 10 genera. Identified 237 exs. under 12 species, 11 genera under the family Gyrinidae & Dytiscidae. Identified 67 exs. under 9 species, 3 genera under the family Staphylinidae. Identified 31 exs. under the family Scarabaeidae w.s.r. to Cetoniinae and Dynastinae. Identified 50 exs. under 2 species, 2 genera under the family Histeridae. Identified 200 exs. under 6 species, 5 genera under the family Tenebrionidae. Identified 50 exs. under 19 species, 5 genera under the family Chysomelidae. Collected Hydrophilidae 737exs.; Coleoptera 1080 ex. and 1666 ex. of other insect orders; Coleoptera 2800 ex. Of and 465 ex. of other insect orders.

### DIPTERA SECTION

**Pictorial Hand Book on the Flies of Forensic importance :** Containing 10 species of

flies of forensic Importance along with their colour illustrations is under preparation.

**Bibhutibhusahn Wildlife Sanctuary ecological & behaviorial studies :** 7 surveys have been made.

**All India Network Programme on Blue Tongue Disease :** Atogether 17 families of Diptera collected and processed for identification.

**Department of Veterinary Medicine, E & J., West Bengal University of Animal & Fishery Sciences : Identification of Culicoides :** Suspected midges (*Culicoides* spp.) were collected from different agro-climatic zones (Tatai, Coastal saline and New alluvial) of West Bengal and sent to Diptera section, Zoological Survey of India, Kolkata. Species identified as *Culicoides schultzei.*, *C.kamrupi* .

**Pollination & Reproductive Biology of the Threatened Medicinal Plant :** An attempt has been made to study the reproductive biology of *Abroma augusta* and pollination phenomenon of agromyzid flies in West Bengal. This is the first report about the pollination & pollinators of the *Abroma augusta*.

*Trigona* sp. is the only pollinator species of the *Solanum surattense* in wild. It was observed that this sting less bee coming out of the locules was profusely smeared with whitish pollen grains. (Paper published)

Pollination biology of *Hygrophila schulli*, has not yet been explored. The three hymenopteran members, *Colletis* sp., *Apis dorsata* and *Chrysis* sp., and *P. serratus*, *E.balteatus* of Diptera were found to be the effective pollinators. (Abs.Published)

**Studies on the arthropod Fauna Associated with sacred Trees :** Altogether 64 species (291 exs.) of Arthropod fauna under 9 orders reported from 3 selected sacred groves. It has been found that ground is the most supportive





habitat (89%) to carry maximum number of groups.

**Namdapha National Park :** Present expedition accounts 900 examples of Diptera belonging to 20 families from Namdapha of them 5 families reported for the first time from this Tiger Reserve.

## ORTHOPTERA SECTION

**Acridoidea Fauna of Karnataka :** Identified a total of 1300 examples belonging to 20 species of 14 genera under two families.



**Acridoidea Fauna of Himachal Pradesh :** Identified 555 examples belonging to 23 species of 21 genera under two families.

## MISCELLANEOUS INSECT ORDER SECTION

**Odonata Fauna of Himachal Pradesh :** Identified 97 species under 52 genera belonging to 11 families of two suborders. Identification work and compilation is in progress. Three genera and eighteen species are newly recorded from Himachal Pradesh.

**Odonata State Fauna of Jharkhand :** Two surveys were conducted so far and approx. 2200 Odonata examples have been collected. Identified 17 species under 10 genera belonging to four families of two suborders. Identification work is in progress.



**Identification of unnamed Odonata :** Anisoptera of Tamil Nadu present in the NZC, Kolkata : Studied and identified 99 examples so far. It consists of 7 species under 5 genera of Family Libellulidae. Identification work is in progress.

## HEMIPTERA SECTION

**Hemiptera Fauna of Uttar Pradesh :** During this period 480 examples of water bugs have been identified, it consists of 30 spp. under 18 genera. A total of 225 examples of Cicadellid specimens have been identified, it consists of 33 spp. under 17 genera of 9 families. During the period under report a total of 100 examples of Fulgoroidea & Cicadoidea specimens have been identified consisting of 18 spp. under 10 genera of 5 families. 56 examples of Reduviid specimens have been identified consisting of 25 spp. under 20 genera. A total of 68 examples of Pentatomid specimens have been identified. It consists of 26 spp. under 23 genera. During the period under report a total of 80 examples of Pyrrhocoridae & Lygaeidae specimens have been identified. It consists of 36 spp. under 23 genera.

**Fauna of Conservation/Protected area: Kanyakumari Wild Life Sactuary, Tamil Nadu :** Collected specimens received from SRC, ZSI, Chennai. During this period a total no. of



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493 Hemipteran examples were received from SRC ZSI, Chennai. The materials were sorted out familiwise, which belong to 10 families.

**Pictorial Handbook of Indian Biodiversity : Major Hemipteran predators of India :** A manuscript containing 35 spp. under 25 genera of common Hemipteran bugs under preparation. Photographs of all the species are also incorporated.

### APTERYGOTA SECTION

**Apterygota Fauna (Collembola & Thysanura) of Uttar Pradesh :** Among Collembola, 35 species under 25 genera of 6 families were recorded from different districts of Uttar Pradesh. Out of 35 species, 26 species were first time recorded from this state. The genus-*Anuorophorus* has been first time recorded from India. Among Thysanura, 4 species under 4 genera of 2 families were recorded from the state.



26 species of Collembola are newly recorded from the state of U.P., namely *Xenylla obscura*, *Ceratophysella indovaria*, *Pronura indiana*, *Isotomodes dagamae*, *Anuorophorus* sp, *Folsomides exiguus*, *Folsomina onychiurina*, *Lepidocyrtus magnificus*, *L. medius*, *Seira indica*, *Sinella curviseta*, *Entomobrya cingula*, *Dicranocentrus indicus*, *Orchesellides crassa*, *Salina indica*, *S. biformis*, *Dicranocentroides indica*, *D. flavescens*, *D. fasciculatus*, *D. salmoni*,

*Callyntrura variabilis*, *Sminthurides parvulus*, *Arrhopalites spadica*, *Sminthurinus trinotatus*, *Sphyrotheca gangetica* and *Dicyrtomina pallida*.

Among Thysanura, out of 4 species 3 species are first time recorded from the state of U.P. These are *Lepisma saccharina*, *Acrotelsa collaris* and *Atelura typhloponis*.

**Studies on diversity and distribution of Collembola in the man made forest ecosystem at B.B.W.L. Sanctuary, Parmadan, West Bengal :** Survey completed (altogether 07 survey made); total 72 nos. of soil core and 48 nos. of soil samples were drawn during the period from Sept, 2007 to February, 2010; altogether 16 species under 14 genera over 7 families of Collembola were recorded from this sanctuary; soil parameters like soil temperature, moisture, pH and Organic carbon were analysed.

**Collembola fauna from Himachal Pradesh :** Two survey completed, 6203 of Collembola were collected during this survey. Sorting out of collection is going on, total 10 species of collembola were known from earlier collection.

**Seasonal Survey to B.B.W.L Sanctuary, Parmadan :** Two Suvey undertaken and collected-Collembola-216ex; Soil cores drawn: 24 nos.; Soil samples: 16 nos. 216 ex. identified & entered in the register.

### SOIL ZOOLOGY SECTION

**Diversity of soil fauna in Balasore and Bhadrak district of Orissa :** One survey undertaken and total collection is as follows

#### Balasore Bhadrak

Total number of soil sample collected	13	14
Total number of earthworm collected	09	44
Total number of soil insects collected	175	248



**Diversity of soil fauna in Balasore and Bhadrak district of Orissa :** Material collected as soil sample 27, Earthworm 53 and Soil insects 423.

## PALAEOZOOLOGY DIVISION

### INVERTEBRATE PALAEOZOOLOGY SECTION

**Exploration of animal fossils in Nagaland :** 59 spp. of Mollusca and 37 spp of microfossils worked out; MS under preparation.

### VERTEBRATE PALAEOZOOLOGY SECTION

**Study of Cenozoic animal fossils of southern coast of India :** Collected about 400 rock samples containing fossils. Identified 32 species of mollusca and 3 species of Echinodermata.

**Animal fossils of Narmada Valley, M.P. :** Collected about 700 rock samples containing fossils. Identified 15 species of mollusca, 2 species of Brachiopoda, 2 species of Echinodermata. One survey to Narmada Valley, M.P. Material collected- 405 (Invertebrates).

### GENERAL NON-CHORDATA SECTION

**State Fauna of Karnataka :** One survey undertaken; fauna collected (examples) : 586; Porifera-33; Cnidaria-98; Annelida-43; Crustacea-22; Insecta-2; Mollusca-263; Echinodermata-101; Bryozoa-10; Echiura-6 and Pisces-8.

Marine sponges of Karnataka; 206 ex. of sponges were identified under 24 species, 12 genera and 9 families from the coasts which includes new locality records for 7 species; one survey was undertaken .

**Rotifer diversity of Wetlands in around Kolkata :** Surveys conducted : 3; Collected : 56 vials of Plankton samples; identified :

Rotifera (25 spp; 7 genera and 3 families); Cladocera (7 spp; 6 genera and 5 families); Copepoda (7 spp; 5 genera and 3 families); Ostracoda (2 spp; 2 genera and 2 families); Phytoplankton (11 spp; 10 genera 3 families).

**Studies on the endemic annelids of Darjeeling District, West Bengal :** One survey conducted total collection made : 1401 ex. + 5 lots; Earthworms: 1137 ex.; Aquatic Oligochaetes : 263 ex.; Leech : 1 ex.; Plankton Lots : 5 lots.

**Annelida fauna of Jharkhand :** One survey undertaken and total fauna collected : 939 ex.; Earthworm : 624 ex.; Aquatic Oligochaetes : 82 ex.; Leeches : 250 ex.; Plankton: 8 lots; Mollusca: 1 ex.; Pisces : 1 ex.; Amphibia : 3 ex.; Identified 354 ex. of earthworms into 13 spp. under 9 genera and 6 families from earlier survey collections.

**Scleractinian diversity in the coast of Orissa and Andhra :** One Survey conducted. Fauna Collected (examples) : 416; Porifera: 24; Cnidaria-137; Polychaeta-11; Crustacea-15; Mollusca-29; Echinodermata-28 & Pisces-172. Ridge reef communities along Andhra & Orissa coasts studied. New reef regions along east coast marked. Underwater photographs taken and 8 species of hard corals collected off Andhra coast are new records from that region.

**Other studies :** Dr. Ch. Satyanarayan participated in a EIA study carried out by A & N Regional Centre, Port Blair to carry out an EIA study for Andaman & Nicobar Administration. Survey was undertaken from 02.04.09-12.04.09

Sri S. Mitra participated in Sunderban Tiger Census from 4-8 march 2010.

### MOLLUSCA SECTION

**Marine Molluscs (Family : Naticidae) of Indian Coast :** The report submitted. 5 species are new records to India.





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**Marine Molluscs of Goa coast :** Identification of 102 spp. under 46 genera of 35 families completed.

**Marine Mollusca (Gastropoda & Bivalvia) of Karnataka coast :** A total of 187 spp. under 72 genera of 52 families identified.

**Molluscs of Uttar pradesh :** One survey undertaken and collected 575 exs.; Status of entry made in the register : Identified : 157 Exs. 37 spp. 17 genera; Unidentified: 418 exs to be identified; Identified 83 spp. 26 genera of 19 families.

**Identification of unnamed Marine gastropods from NZC of ZSI, Kolkata. Family : Conidae Turridae :** Manuscript dealing 27 species under two subfamilies of Turridae completed, photography is in progress.

**Identification of unnamed Marine Gastropods of Tamil Nadu present in NZC/ ZSI, Kolkata :** 16 sp. under 4 genera of 3 families identified.

### CRUSTACEA SECTION

**Crabs and Prawns of Coastal Karnataka :** Marine crabs-45 species under 28 genera and 16 families; Prawns-9 species under 3 genera and 1 family; Highlights-3 species of prawns



& 15 species of crabs recorded for the first time from the state including one new record of crab from the west coast.

**Mangrove associated fauna of Orissa coast :** One survey conducted and collected Nemertina-2 exs.; Polychaeta-52 exs.; Cnidaria -21 exs.; Crustacea - 181 exs.; Arachnida-2 exs.; Mollusca-67 exs.; Fish-90 exs; Identified 5 species of brachyuran crabs were and all are new rerecords from Mangrove areas of Orissa; 2 species of polychaetes and three species of cnidaria are also recorded for the first time from Mangrove areas of Orissa.

### MARINE FISH SECTION

**Marine and Estuarine Fish Fauna of Karnataka :** Recorded 570 species under 301 genera, 128 families & 30 orders; Identified 11 species as new state record.

**Study on the endemic & threatened Freshwater fish species occurring in North Bengal :** One survey undertaken 255 specimens were collected. 97 out of 225 specimens identified comprising of 38 species under 27 genera, 16 families and 7 orders. Important Findings : 3 endemic species, *Aborichthys elongatus*, *Hara horai* & *Erethistoides montana* and 25 threatened and near threatened species collected.

**Red Data Book on the Fishes of India :** Data sheet for 233 out of 332 species of marine and freshwater threatened fishes have been prepared.

**Studies on the cardinal Fishes (Perciformes : Apogonidae) of East coast of India :** Literature related to Apogonid fishes of India collected. 30 species available in the NZC of the Division of Fishes have been studied.

### FRESHWATER FISH SECTION

**Diversity and Status of Fish Fauna Jharkhand and Bihar States :** One faunistic



survey undertaken and collected Fishes-234 exs; Prawns-6 exs.

595 exs belonging to 61 spp. and 35 genera were studied and identified from the previous survey collection present in Z.S.I, H.Q., Kolkata. In addition, 2605 exs. belonging to 75 spp. and 56 genera were identified and registered from the unnamed collection present in the G.P.R.C., Z.S.I, Patna during recent Field Survey cum Study Tour to Bihar State.

**Red Data Book on Fishes of India :** Out of 332 threatened fish species, Systematic Account of 270 species has been prepared so far. (Joint project with Marine Fish Section)

## AMPHIBIA SECTION

**Amphibia State Fauna of Punjab and Haryana :** Punjab (211 specimens of 5 families, 11 genera and 13 species collected) and Haryana (197 specimens of 4 families, 10 genera and 13 species collected). Highlights of the work : 1 species (*Bufo olivaceous*-Olivaceous Toad from Sultanpur, Haryana) was reported for the first time from India. Earlier known from Baluchistan, Pakistan.

**Amphibian Fauna of Karnataka :** 603 specimens collected and identified to 8 families, 15 genera and 42 species.

**Amphibian Fauna of Eastern Ghats :** One survey was conducted in Araku Valley of



Andhra Pradesh and Koraput district of Orissa; 47 anurans of 9 species including a yet to be described new species of *Philautus* collected; Highlights of the work : 1 new species of anuran and 2 Reptiles (like Golden Gecko) collected from Araku.

## REPTILIA SECTION

**Reptile Fauna of Maharashtra :** The study comprising of 117 species belonging to 65 genera under 22 families completed and report submitted. Highlights of the work : Dumeril/Black Head Snake collected first time from Maharashtra and added to the National Zoological Collection.



## BIRD SECTION

**Aves Fauna of Assam :** All together three field trips in different areas of Assam were already completed. Till to-day, approx. 700





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species and sub-species were recorded in Assam. The photographs of all bird species taken during the last two trips were identified. Preparation of MS is in progress; highlights of the work : During the survey, interesting findings are Kaleej Pheasant, Bengal Florican, Swamp Francolin, Spot-billed Pelican, Bar Headed Goose, Pied Hornbill at different areas viz., Mathanguri, Barpeta district; Nameri National Park, Sonitpur district; Jorhat, Gibbon Wildlife Sanctuary; Sibsagar, Lakhimpur, Karbi Anglong.

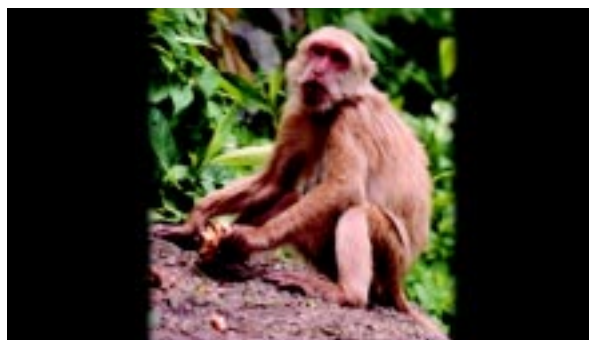
**Studies on the Water Birds Communities of d'ering memorial Wildlife Sanctuary, Arunachal Pradesh :** 16 species of water birds and 20 species water dependant birds in six localities were recorded.



### MAMMAL AND OSTEOLOGY SECTION

**Mammals of Assam :** 100 species & sub-species of mammals have been completed and compilation of rest of the species is continued.

**Tricho-taxonomic studies of Indian Mammals (Order : Primate) :** One research paper entitled "Identification of dorsal guard



hairs of seven species of the family Cercopithecidae" was submitted for publication. Hair samples of the remaining eight species are being processed for study.

**Taxonomic revision of the Indian species and sub-species of bats of the genus *Cynopterus* (Chiroptera : Pteropodidae) :** The manuscript is under preparation and will be submitted within a very short time.

**Status Survey of Swamp Deer, *Cervus duvauceli* in and around Dudwa National Park, Uttar Pradesh :** The project was completed and the report has already been submitted.







## Status of projects funded by outside agencies

**Name of scheme : "Feasibility Study Regarding Re-introduction of Pygmy Hog, Jalpaiguri, West Bengal"** : Work done so far : Altogether three surveys were conducted in different compartments and blocks of Gorumara National Park including fringe villages during monsoon, winter and post-winter months/seasons. Studies of different grassland habitat, availability of food and shelter have been made. At the same time other groups of animals have also been recorded. Soil

samples have been collected for analysis of physico-chemical parameters, as well as for presence of soil-fauna. Different botanical specimens were collected and herbariums were prepared and identified by the Botanical Survey of India. All the survey reports have been submitted to the West Bengal Forest Department, as well as in the office.

**Namdapha Expedition** : Specimens of mammals collected during the Namdapha Expedition, 2009 were examined, identified and registered.



## REGIONAL CENTRES

### 1. NORTH EASTERN REGIONAL CENTRE

#### Shillong

**Taxonomic studies of the unidentified Ephimeroptera (Nymph) collection of Meghalaya present in ERS/ZSI, holdings Shillong :** Tentatively identified 21 ex up to 2 families and 1 genus level.



**Faunal inventory of Nokrek Biosphere Reserve :** Identification made during the year as Fishes-37 spp.; Amphibian-22 spp.; Butterflies-87 spp. (4 new additions); Hemiptera-11 spp.; Rotifera-27 spp. (71 slides); Cladocera 28 spp. (90 slides).

**Micro-faunal diversity and Limnology of Deepor beel (A Ramsar site) Assam :** Monthly surveys conducted & survey tour reports submitted. A total of 325 tubes of plankton were collected from the surveys. 355 nos. of slides entered in the identified register.

**Pictorial Handbook on Fishes of North East India :** 397 species of fishes have been listed. Literatures on new species descriptions are

being consulted. Fishes present at NERC/ZSI holdings are being photographed.

**Taxonomic study on Nemacheiline loaches of North East India present in the Collections of ERS/ZSI Shillong :** 198 examples identified into 6 species under 4 genera, 1 family and 1 order.

**Taxonomic and ecological studies on the Earthworms (Annelida : Oligochaeta) of West Khasi Hills and South Garo Hills districts of Meghalaya :** Relevant literature collected.

**Taxonomic studies of the family Cerambycidae under the order Coleoptera in East Khasi Hills District, Meghalaya :** Surveys conducted. Besides, the general collections of 493 ex. of various faunal elements 12 ex. of coleoptera were collected. Identified and registered 4 ex. of coleoptera as *Aristobia testudo* Voet.

**Studies on the Reptilian and Amphibian fauna of Loktak Lake and Keibul Lamjao National Park and its adjoining areas, Manipur :** Surveys conducted. Besides 466 ex and 16 tubes of various faunal elements, 106 ex. of amphibian & 40 ex. of reptiles were collected. Identified and registered 17 ex of reptiles into 11 species under 10 genera 5 families and 2 orders.





## 2. WESTERN REGIONAL CENTRE

### Pune

**Faunistic Survey of Radhanagari Wildlife Sanctuary, Kolhapur and Chandoli National Park, Sangli :** Collected invertebrates 1214 exs. as Class : Gastropoda-85 exs.; Order : Decapoda : Crabs-11 exs.; Order : Decapoda : Prawns-181 exs.; Class : Myriapoda-2 exs.; Class : Arachnida-17 exs.; Order : Araneae-24 exs.; Order : Scorpionida-1 ex.; Class : Insecta; Order : Lepidoptera-83 exs.; Order : Coleoptera (Aquatic)-259 exs.; Order : Odonata-76 exs.; Order : Hemiptera-178 exs.; Order : Hymenoptera-10 exs.; Order : Orthoptera-93



exs.; Order : Phasmida-7 exs.; Order : Diptera-162 exs.; Order : Isoptera-10 exs.; Order : Neuroptera-1 ex.; Misc. Insects-3 exs.; Order : Mantoidea-2 ex.; Plankton Samples-9 Nos. and vertebrates 471 exs. as Class : Mammalia, Order : Chiroptera-4exs.; Order : Rodentia-1 ex.; Class : Aves-1 ex.; Class : Pisces-420 exs.; Class : Amphibia-17 exs.; Order : Anura-27 exs.; Class : Reptilia; Order : Lacertilia-1 ex. Total : 1685 exs.

**Riverine Fauna of Northern Western Ghats (Maharashtra State) :** Collected invertebrates 257 exs. as Order : Orthoptera-2 exs.; Order : Hemiptera (Aquatic)-16 exs.; Order : Odonata-90 exs.; Order : Coleoptera (Aquatic)-31 exs.;

Order : Ephemeroptera-30 exs.; Order : Trichoptera-40 exs.; Order : Plecoptera-6 exs.; Order : Mantodea-3 exs.; Phylum : Mollusca-38 exs. Total : 257 exs.

## 3. NORTHERN REGIONAL CENTRE

### Dehradun

**Fauna of Haryana State :** Two extensive survey of two weeks were undertaken (in Bhiwani, Mahendergarh, Rewari and Mewat districts) and (Hisar, Sirsa, Fatehabad and Jind distts) of Haryana State) and a total collection of 5206 exs. of fauna, belonging to 17 animal groups, have been made besides, observing 91 species of birds and 14 species of Mammals.

In addition, collected 1200 exs of soil nematodes. Collected 124 exs of Helminths from amphibian hosts. Birds Observed 91 species; 68 genera; 40 families. Soil Nematodes 200 exs belonging to 10 species. Soil Mites : 40 exs of mites and 39 exs



of Collembolans were extracted from the soil samples. Centipedes : Scolopendridae 3 exs. Lepidoptera : 49 exs. Reptilia: 27 examples examined, identified 14 species-9 genera-7 families.

**Studies on Helminth parasites of Vertebrates in and around Doon Valley :** Conducted 7 intensive surveys in and around Dehradun and dissected frogs, toads & fishes for investigation of Helminth parasites Collected 100 exs of Helminth. Identified 50 exs of parasites belonging to 5 species.

Identified Nematodes collected from the intestine and gut of frogs : *Camallanus ranae*



Khera; *Camallanus cynophlectis* Sahay; *Oxysomatium machintosh* (Stewart).

Identified Trematodes collected from intestine, stomach and lungs of frogs. *Ganeo tigrinum* 30 exs; *Pleurogenoides gastroporus* 10 exs; *Diplodiscus amphichorus* 8 exs; *Haematoloechus almorai* 3 exs.

**Taxonomic Studies on the Nematode parasite of insect pests of Teak (*Tectona grandis*) and Sal (*Shorea robusta*) :** A total of 81 species have been recorded from the teak and Sal Forest of Dehradun; 71 species are recorded for the first time from teak and Sal forests of India. The soil around teak and Sal forms new host/habitat for 57 species and 14 species are found to be associated with Insect pests; 16 species are new records from the state Uttarakhand, of which 14 species are new records from India. Out of these 81 species, two species were recovered from insect pest belonging to two different orders. Potential of these insect nematodes for the biological control of insect pests is being discussed. Twelve species were found to be associated with termites, termite hills and beetles and found to belong to 3 orders, 6 families and 10 genera. Rests of the species (67) were found to be associated with the soil around teak and Sal trees. They were found to occur in 11 orders, 26 families and 49 genera. Out of which 57 species are recorded for the first time from teak and Sal forests of Dehradun

**Trichotaxonomy of Indian species of Herpestidae, Viverridae, Sciuridae, Mustelidae (Mammalia) :** Analysis completed : Light microscopic (medulla type, cubicular, cross sections and statistical measurements) and Scanning Electron Microscopic studies completed of hair of 40 species.

**Ecological and molecular studies of freshwater turtles at a stretch of 80 kms Ganga River (Haridwar to Hamirpur) :** Collected 440



(other aquatic sympatric groups) including three turtles : *Morenia petersi* (1), *Pangshura tecta* (2) + sighting of turtles; Ecological study of habitat in Haridwar



and around completed; gene sequence H4 of *Morenia petersi* and *Melanochelys trijuga* submitted to Gene bank and obtained accession numbers; Amplicon of gene cyt b, 12s r-DNA, 16s r-DNA, H4 obtained for *Morenia petersi*, *Melanochelys trijuga*, *Pangshura tecta*.

Studies on the sequencing of the gene Histone 4 was completed for the species turtle *Morenia petersi* and *Melanochelys trijuga* under the project Ecological and Molecular study of freshwater turtle and the sequence was submitted to Gene Bank (US) for the [www.genebank.com](http://www.genebank.com). The same gene has been sequenced for species *Laudakia tuberculata*.

**Trichotaxonomy of the species of Logomorpha (Mammalia : Rodentia) :** Literature consulted, Slide preparation started; analysis of Angora rabbit and collected hair samples, in progress.

**Fauna of Kalesar Wildlife Sanctuary, Yamuna Nagar, Haryana :** Collected 1191 exs of the fauna; new distribution records of reptiles of *Laudakia tuberculata* (Hardwicke and Gray),





Indian Rock lizard and *Laudakia agroensis* (Stoliczka). Collected 25 exs. of Helminths from amphibian hosts and Identified two species. Nematodes : Collected 100 exs of soil nematodes and 20 exs. of vertebrate nematodes; Identified 50 exs belonging to 4 species *Acrobelloides buetschlii* (de Man); *Acrobeles timmi* Chaturvedi & Khera; *Paramylonchulus mulveyi* Jairajpuri & Khan; *Ironus longicaudatus* de Mann, 1884. Centipedes : 6 spp. identified. Butterflies : *Leptosia nina nina* (Fabr.) 6 exs.; *Eurema hecabeae* (Wallace) 4 exs.; *Pieris canidia indica* Evans 2exs.; *Valeria valeria* (Fabr.) 10 exs.; *Anaphaesis aurota aurota* 6 exs.; *Catopsilia pyranthe* (Linn.) 2 exs.; *Danaus chrysippus* Linn. 6 exs.; *Euploea core core* (Cramer) 6exs.; *Junonia lemonias* Linn. 2 exs.; *Cupha erymanthis* (Drury) 2 exs.; *Junonia lemonias* Linn. 1ex.; *Euthalia nais* (Forester) 1 ex.; *Cyrestis thyodamas* (Boisduval) 1ex.; *Pseudozizeeria maha* (Kollar) 6 exs. Reptilia : 7 spp. Under 6 genera. A total of 94 species; 72 genera; 39 families of birds and 17 mammals were observed and identified.

#### 4. CENTRAL ZONE REGIONAL CENTRE

##### Jabalpur

**Faunistic survey of Veerangna Durgavati Wildlife Sanctuary, Damoh District, Madhya Pradesh :** Collected 2881 examples of different faunal groups and 23 bottles Zooplankton samples from 5 surveys as (Arachnida) Araneae-65 exs.; Scorpionida-5 exs.; Chilopoda-5 exs.; (Crustacea)-6 exs.; (Insecta) Odonata-84 exs.; Ephemeroptera-5 exs.; Orthoptera-201 exs.; Dermaptera-57 exs.; Dictyoptera-30 exs.; Hemiptera-171 exs.; Neuroptera-39 exs.; Coleoptera-627 exs.; Isoptera-24 exs.; Mecoptera-3 exs.; Diptera- 156 exs.; Lepidoptera-969 exs.; Trichoptera-65 exs.; Hymenoptera-143 exs.; Mollusca-80 exs.; (Chordata) Pisces-127 exs.; Amphibia-10 exs.; Reptilia-2. 55 specimens of Coleoptera belonging to 15 species under three families,14

genera; 97 specimens of Rotifers belonging to 14 species under 2 orders, 3 families, 4 genera; 49 specimens of Cladocera belonging to 23 species under 6 families, 16 genera; 168 specimens of fishes belonging to 17 species of 7 orders, 10 families,13 genera and 36specimens of moths belonging to 24 species, 22 genera, 9 families were identified.

##### **Faunistic survey of Singhori Wildlife Sanctuary, Raisen District, Madhya Pradesh :**

Collected 3403 examples of different faunal groups and 21 bottles Zooplankton samples from 2 surveys as (Arachnida) Araneae-102 exs.; Scorpionida-6 exs.; (Crustacea) 4 exs.; Diplopoda-2 exs.; Chilopoda-4 exs.; (Myriapoda) Chilopoda-11 exs.; (Insecta) Thysanura-6 exs.; Ephemeroptera-6 exs.; Odonata-63 exs.; Orthoptera-293 exs.; Dermaptera-17 exs. Dictyoptera-11 exs.; Isoptera-22 exs.; Hemiptera-197 exs.; Neuroptera-26 exs.; Mecoptera-5 exs.; Coleoptera-606 exs.; Diptera-273 exs.;



Lepidoptera (Butterflies) - 801 exs.; Lepidoptera (Moths)-587 exs.; Trichoptera-100 exs.; Hymenoptera-145 exs.; Mollusca-20 exs.; (Chordata) Pisces-49 exs.; Amphibia-10 exs.; Reptilia-19 exs., and thirteen specimens of Coleoptera belonging to seven species, three families and six genera were identified.



## 5. DESERT REGIONAL CENTRE

### Jodhpur

**Diversity of Helminth Fauna of Rajasthan** : Total three surveys were conducted during 2005-2007 and 178 soil samples were collected. 105 nematode species identified. In that 33 species of nematodes new records from India and 13 species new records from Rajasthan. Three papers submitted.

**Studies on Tridactylid (Orthoptera) Fauna of Rajasthan** : Number of examples examined: 500. Identified the following tridactylids : 2 species (i). *Tridactylus fasciatus* Guerin, 1844 (Males), (ii). *Xya pfaendleri* (Harz, 1970) (Males)

**Rutelinae (Coleoptera : Scarabaeidae) of Rajasthan** : Survey conducted : One survey of Tonk, Karauli, Dhaulpur, Dausa and Bharatpur districts of Rajasthan had been conducted from 18-08-09 to 31-08-2009 (Fourteen days). Survey



Report: Submitted. Collection : Total 2249 specimens (423 Lots) of 18 faunal groups and collection sorted, labeled and registered from Reg. No. 8731/A to 8764/A. Total 1501 specimens of Coleoptera were collected in that 122 specimens were of Rutelinae beetles. Progress of Research : Number of examples examined: 258, Number of species identified:

26 (Rutelinae-10 species; Coprinae-16 species), Total species of Rutelinae identified so far : 29 species.

**Vertebrate faunal diversity w.r.s. to avian and mammalian fauna of the Sardar-samand Reservoir, Rajasthan** : 90 lots comprising 2249 examples of various insect orders and freshwater faunal groups belonging to fishes, reptiles and small mammals were collected and registered from Reg. No. 4746/6 to 4794/6 and 5407/6 to 5447/6. 10 wetland within the radius of the study area have also been surveyed under the project. Identified 178 species of Aves, 19 species of Mammals and 16 species of Reptiles. Five species of reptiles registered from Reg. No. V/2706 to V/2710. 11 species of threatened and near threatened avian species recorded including four species of raptors.



**Plant and Soil Nematodes associated with forests areas of Gujarat** : Two field surveys were conducted and First Survey report submitted and Second Survey report not yet submitted. During First Survey 3257 examples of the different groups and 157 soil samples collected from Valsad, Navsari, The Dangs and Narmada and registered. Second Survey 321 examples of different groups and 122 soil samples collected from four districts of Gujarat i.e. Banaskantha, Sabarkantha, Panchmahal and Dahod and registered. Identified 34 species of nematodes belonging to 21 genera, 12 families





and 5 orders and registered from registration no. IV/2284-IV/2311.

**Studies on Odonata and Lepidoptera fauna of foothills of Aravalli Range, Rajasthan :** During First survey collected 924 examples (46 lots) of different faunal groups collection registered in unidentified collection register from Registration no. 5281/6 to 5328/6. During Second survey collected 403 examples (61 lots) of different faunal groups and collection registered in unidentified collection register from Registration no. 5448/6 to 5497/6. Identified 38 species of order Odonata and 33 species of Lepidoptera registered from Registration no. 8681/A to 8730/A. So far total 41 species of order Odonata and 109 species of Lepidoptera identified.

Five New records from Aravalli Range : *Neurothemis fulvia* (Drury) *Anax immaculifrons* Rambur, *Rhyothemis v. variegata* (Linnaeus), *Trithemis kirbyi* Selys and *Tramea basilaris burmeisteri* Kirby.

**Pictorial Hand Book on Diversity of Nematodes :** In all 168 species of plant and soil nematodes from Rajasthan have been included in the book. Photographs of above mentioned species were also taken with the help of Digital Camera attached with Nikon-600 Microscope.

**Faunal Exploration of Kumbhalgarh WLS, Udaipur (Rajasthan) :** During the period under report five field surveys have been conducted. Total 277 species of Vertebrate and Invertebrate recorded.

**Faunal Survey of important congregative bird areas (Khijadia Wildlife Sanctuary and Marine National Park and Wildlife Sanctuary) in Gujarat :** 206 species of aves identified and described from KBS, Gujarat. 3 species of amphibians, 12 species of reptiles and 14 species of mammals also identified and reported. First part of the project report on KBS, Gujarat

submitted. Out of 196 species of aves identified under the II part of the project on Marine National Park & Sanctuary, Gujarat, descriptions of 111 species have been prepared. Three species of amphibian and 14 species of aves new records from the KBS, Gujarat.

**Faunal Exploration of Sitamata Wildlife Sanctuary, Udaipur :** Two field surveys conducted from 22-07-09 to 27-07-2009 & 30-11-09 to 4-12-2009 and reports submitted.. During First survey 263 examples of different faunal groups and 23 soil samples collected and registered. During second survey 180 examples of different faunal groups and 38 soil samples collected and registered. Identified 28 species of Nematoda, 12 species of Odonata, 24 species of Lepidoptera, 11 species of Coleoptera in the laboratory and 11 species of Reptiles, 77 species of Aves and 14 species of Mammals during field survey and Registered. Two New records of Nematodes from India: *Sclerostylus karri* Goseco, Ferris & Ferris, 1971; *Tylencholaimus fuscus* (Sauer, 1969) Jairajpuri & Ahmad, 1992. Two New records of Nematodes from Rajasthan : *Oriverutus impar* (Khan & Khan, 1960) Siddiqi, 1971; *Mylonchulus nainitalensis* Jairajpuri, 1970.

**Taxonomical studies on aquatic nematodes of lakes of Udaipur :** Two field surveys conducted and reports submitted. About 70 Wet/sediment samples were collected. Identified 62 nematode species belonging to 44 genera, 24 family under 6 orders Tylenchida, Dorylaimida, Mononchida, Rhabditida, Araeolaimida and Enoplida and registered. Seven New Records from India: *Helicotylenchus densibulatus* Siddiqi, 1972; *Helicotylechus willmottae* Siddiqi, 1972; *Mesodorylaimus subtiloides* (Paetzold, 1958) Andr ssy, 1959; *Amphidorylaimus infecundus* (Cobb in Thorne & Swanger, 1936) Andr ssy, 1960; *Aporcelaimellus*



*adoxus* Tjepkema, Ferris & Ferris, 1971; *Mylonchulus bulbiferous* Jenses & Mulvey, 1968; *Mulveyillus monhystera* (Cobb, 1917) Jairajpuri, 1970.

**Taxonomical studies on aquatic nematodes of lakes of Udaipur :** Seven New Records of Nematodes from India: *Helicotylenchus densibulatus* Siddiqi, 1972; *Helicotylechus willmottae* Siddiqi, 1972; *Mesodorylaimus subtiloides* (Paetzold, 1958) Andrassy, 1959; *Amphidorylaimus infecundus* (Cobb in Thorne & Swanger, 1936) Andrassy, 1960; *Aporcelaimellus adoxus* Tjepkema, Ferris & Ferris, 1971; *Mylonchulus bulbiferous* Jenses & Mulvey, 1968; *Mulveyillus monhystera* (Cobb, 1917) Jairajpuri, 1970.

**All India Coordinated Project on Nematode Taxonomy :** Two survey conducted and reports submitted. About 126 wet/sediment samples were collected from Rajsamand, Sirohi and Udaipur. Identified 54 nematode species belonging to 34 genera, 23 family under 6 orders and Registered. Four New Records from India: *Heterocephalobus pulcher* (Loof, 1964) Andrassy, 1967; *Diploscapter coronatus* (Cobb, 1893) Cobb, 1913; *Geomonhystera australis* (Cobb, 1893) Andrassy, 1981 and *Cephalobus cubaensis* Steiner, 1935.5. Five New Records from Rajasthan: *Acrobeles chelatus* Thomas & Allen, 1965; *Panagrolaimus peruensis* (Steiner, 1939) Goodey, 1963; *Rhabdolaimus sclerorectum* Tahseen *et al.*, 2005; *Geomonhystera australis* (Cobb, 1893) Andrassy, 1981 and *Trischistoma pellucidum* Cobb, 1913.

**ENVIRONMENTAL IMPACT STUDIES :**  
**Hadla Lignite Mining Project Bikaner, Rajasthan :** Three Field Surveys were conducted in Hadla Rawaleton, Hadla Bhatiyar and Mokha Lignite Block, District Bikaner (Rajasthan) to study faunal diversity and EIA studies from 26.09.09 to 31.09.09; 16.12.09 to 20-12-09 and 9.03.10 to 12.03.10. GPS data of localities recorded. Field data compilation is

under progress.

## 6. SOUTHERN REGIONAL CENTRE

### Chennai

#### 1. On going Programmes

Dr K. Ilango, Scientist 'C' and party under took a survey tour to Kalrayon Hills and Shevroy Hills in Salem District (ii) Bodamalai Hills and Kolli Hills in Namakkal District Southern Eastern Ghats in Tamilnadu. A total of 2150 specimens were collected.

#### Local Survey

Periodic local surveys have been conducted by Dr. S. Krishnan, Scientist 'E' in Idaikazhinadu Ecosystems Complex. Representative collection and observations have been made from localities.

**Fauna of Southern Eastern Ghats in Tamil Nadu :** One faunistic survey has been undertaken Dr K. Ilango, Scientist 'C' Kalrayon Hills and Shevroy Hills in Salem District (ii) Bodamalai Hills and Kolli Hills in Namakkal District Southern Eastern Ghats in Tamilnadu from 21.10. 2009 to 10.11.2009.

About 2150 specimens of various groups were collected. Collections are being sorted and studied. 3 exs of sandflies belonging to 1 genus and 2 species; 105 exs. of Scorpions belonging to 3 genera, 5 species under two families; 224 fish specimens belonging to 10 species under 9 genera; 4 examples of reptiles belonging to 4 species under 4 genera and 3 families.

**Kanyakumari Wild Life Sanctuary, Tamil Nadu :** Total identified as 58 examples of Blattodea under 5 species under 4 genera and 4 subfamilies. 5 species of mantids belonging to 3 genera and 2 families; 139 fish specimens as belonging to 19 species under 9 families and 4 orders; 8 exs reptiles into 4 species under 3 genera.



**Fauna of Idaikazhinadu Ecosystem Complex :** Idaikazhinadu, located 100 kilometers south of the Chennai city on the East Coast Road, Tamilnadu- Puducherry bordering nearby Kazhuveli Bird Sanctuary. The following groups has been identified so



far : Birds- 66 species; Amphibians- 5 species; Pisces-4 species; Reptilia-20 species. Centipedes-1 Sp.; (Other groups identification is in progress)

## Other Studies

Field study on the impact of solar eclipse on the birds of Vedanthangal Bird Sanctuary of Tamilnadu, before, during and after the solar eclipse on 22nd July 2009. The solar eclipse in Tamilnadu started at 05:29 am and ended at

07:18 am with maximal eclipse phase of 63% at 06:21 am. The entire phase of eclipse (Progressive and regressive) has been covered during the observation period. There have been no visible changes in the behaviour aspects of birds in the sanctuary.



Record of the presence of the following birds were made at Vedanthangal Bird Sanctuary of Tamilnadu, Before, during and after the solar eclipse on 22nd July 2009.

**Insecta : Hemiptera (Aquatic & Semi Aquatic) of Cold Desert of Ladakh :** 176 examples of aquatic and semi-aquatic hemipterans collected from Ladakh were identified belonging to 3 species under 3 genera and 2 families.

This report is the record of *Gerris (Gerris) sahlbergi* Distant from India after its description in 1879. *Monticorixa kesar* (Hutchinson) has been collected again after a gap of almost 68 years from a locality, very close to the type locality (Chushul) in the cold desert of Ladakh. It is an interesting point out here that the collection of *Callicorixa gebleri* (Fieber) at an altitude of 4580 mts., from Pangle by Hutchinson in 1940 is the record of any Aquatic Heteroptera occurring in the highest altitude in India.



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S.No.	Scientific Name	Common Name	Numbers
1.	<i>Tachybaptus ruficollis</i>	Little Grebe	a few
2.	<i>Amaurornis phoenicurus</i>	White breasted Water-hen	a few
3.	<i>Porphyrio porphyrio</i>	Purple Moorhen	a few
4.	<i>Gallinula chloropus</i>	Common Moorhen	a few
5.	<i>Phalacrocorax niger</i>	Little Cormorant	in flocks
6.	<i>Anhinga melanogaster</i>	Darter	a few
7.	<i>Ardea cinerea</i>	Grey Heron	in flocks
8.	<i>Ardeola grayi</i>	Indian Pond Heron	in flocks
9.	<i>Nycticorax nycticorax</i>	Night Heron	in flocks
10.	<i>Casmerodius albus</i>	Large Egret	a few
11.	<i>Bubulcus ibis</i>	Cattle Egret	in flocks
12.	<i>Anas acuta</i>	Northern Pintail	a few
13.	<i>Mycteria leucocephala</i>	Painted Stork	a few
14.	<i>Anastomus oscitans</i>	Asian Openbill	a few
15.	<i>Pelecanus philippensis</i>	Spot-billed Pelican (Stragler)	a few

### 7. GANGETIC PLAINS REGIONAL CENTRE

#### Patna

**Study of Aquatic Faunal Diversity (Zooplankton, Mollusca, Fishes, Amphibians & Reptiles) in River Subernarekha, Jharkhand** : Altogether 4018 exs. of specimens (Fishes, Mollusca, Amphibia) and 66 vials of zooplankton collected. 3994 exs. of specimens were identified which includes 93 species of fishes, 03 species of amphibia, 32 species of mollusca and 41 species of zooplankton.

**Study of insect diversity in Dalma W.L.S. Jharkhand w.s.r. to Lepidoptera** : Altogether 3801 exs. Belonging to 14 Insect orders (mainly Lepidoptera) collected. 2000 exx. of Lepidoptera (Rhopalocera and Heterocera) belonging to 225 species under 150 genera under 24 families and another 25 species of other insect orders Odonata, Mantodea, Heteroptera, Coleoptera, Orthoptera and Neuroptera identified.

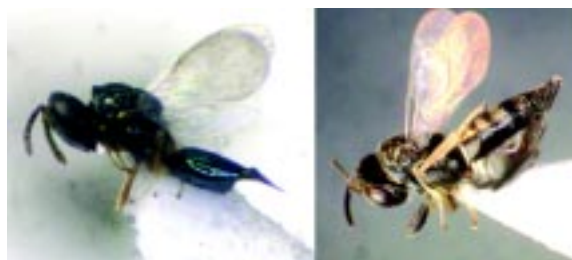


**Diversity and abundance of Pteromalidae (Hymenoptera : Insecta) in the agro-ecosystems of Patna and nearby districts** : Local On going Programmes to the agro-ecosystems of districts Patna, Gaya, Chapra, Saran, Nalanda, Muzaffarpur, Vaishali, Smasthipur, Jahanabad and near by localities. 450 exx. of specimens collected (mainly Hymenoptera : Chalcidoidea) 300 exx. of





Pteromalidae (Hymenoptera) belonging to 34 species under 25 genera and 7 subfamilies identified. Two species new to science have been described. 16 species under 14 genera reported for the first time from Bihar.



**Status, Habits and habitat preference of Mouse deer (*Moschiola memina* (Erx.): Artiodactyla : Tragulidae in Dalma Wildlife Sanctuary :** Three animals sighted during the surveys. Three habitats of the animal in the Dalma wildlife sanctuary, identified during the surveys. Observations made on the food plants, habitat conditions and other parameters related to the survival of the animal.



**Current status of Susu (*Platanista gangetica gangetica*) in the entire stretch of river Gandak, in Bihar by rapid survey :** Altogether 280 dolphins were recorded in 302 km stretch of river Gandak from Patna to Warba in (West Champaran). Further analysis of data on dolphin population density is in progress. Other aquatic fauna from river Gandak collected and observed.



**Rengnewale jeevo ki sachitra Pustika".**  
**Reptiles of Bihar and Jharkhand :** Descriptions of 77 species of reptiles known from Bihar & Jharkhand made in Hindi with photographs.

**Expedition to Namdapha Tiger Reserve :** Surveyed the South east part of the Tiger Reserve by camping at Debang, Hornbill camp, Firm base camp and collected about 2500 exs. of fauna mainly invertebrates. Observations made on the habitat conditions. 10 species under 10 genera collected 3 species reported for the first time from Arunachal Pradesh one species reported for the first time from India.

**Expedition to Tawang Dist. Arunachal Pradesh :** Surveyed the Whole Tawang dist. Arunachal Pradesh by camping at Lumla and Zimithang, Collected about 2700 exs. of fauna Observations made on the habitat conditions. 6 species under 6 genera reported. 3 species reported for the first time from Arunachal Pradesh and one species reported from India second time after 1951.

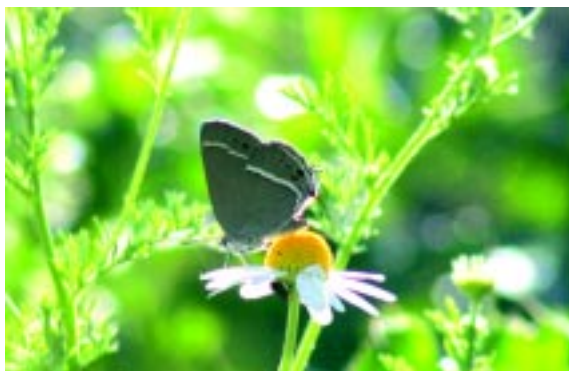
## 8. HIGH ALTITUDE REGIONAL CENTRE Solan

**Faunal Resources of Pangti Valley, Chamba Dist, HP. :** A total of Insects comprising with 87 exs. Lepidoptera comprising of 16 species; 28 exs. of Orthoptera comprising of 8 species were collected and identified.

**Conservation Area : Fauna of Churdhar Wildlife Sanctuary :** A total of Insects comprising with 56 exs. Lepidoptera



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comprising of 15 species; 30 exs. of Orthoptera comprising of 3 species; 7 exs. Pisces comprising of one species; 16 exs. Amphibia comprising of 3 species were collected and identified.

**Simbalbara Wildlife Sanctuary :** A total of Insects comprising with 93 exs. of Orthoptera comprising of 14 species were collected and identified.

**Fishes of Himachal Pradesh :** A total of 77 exs. of pisces were collected from Beas river, Haridwar, Bann Ganga , Sukhana Catchments Area (Chandigarh) and identified to 19 species.

### Local surveys

**Sadhu Pul :** A total of Insects comprising with 7 exs. of Lepidoptera comprising of 5 species were collected and identified.

**Nalagarh Baddi :** A total of Insects comprising with 7 exs. of Orthoptera comprising of one genera were collected and identified up to generic level.

## 9. MARINE BIOLOGY REGIONAL CENTRE Chennai

**Fishes of Southern Eastern Ghats :** The following 2798 fish specimens were identified belonging to 13 species under 6 families and 4 orders comprising with *Amblypharyngodon microlepis* (Bleeker)-9 exs.; *Barilius bendelisis* Day -84 exs.; *Esomus thermoicos* (Val.)-74 exs.; *Rasbora caverii* (Jerdon)-185 exs.; *Puntius*

*bimaculatus* (Bleeker)-318 exs.; *Puntius dorsalis* (Jerdon)-1 ex.; *Garra mullya* (Sykes)-124 exs.; *Lepidocephalus thermalis* (Val.)-102 exs. *Gambusia affinis* (Baird & Girard)-1562 exs. *Poecilia reticulata* (Peters)-273 exs.; *Oryzias carnaticus* (Jerdon)-4 exs.; *Oreochromis mossambicus* (Peters)-55 exs.; *Channa gachua* (Ham.)-7 exs.



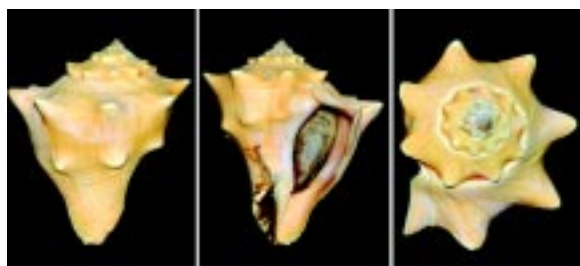
**Studies on the Echinoderms of Gulf of Mannar of Palk Bay :** In first survey a total of 1092 specimens comprising 7 groups were collected : Gorgonids-9 exs.; Corals-58 exs.; Sponges-87 exs.; Soft corals-02 Exs.; Crustaceans-54 exs.; Molluscs-642 exs.; Echinoderms-110 exs.; Fishes-130 exs., and During the period 155 specimens were identified as belonging to 19 species under 13 families. Some rare 6 & 7 armed starfishes were collected. Identification work is in progress.







**Marine Alcyonacean fauna of Gulf of Mannar :** From the 1st survey of GOMBR, 917 representative samples belonging to 9 groups were collected by G. Sivaleela as Sponges-92 exs.; Soft Coral-33 exs.; Fish-74; Mollusca-449 exs.; Echinoderms-46 exs.; Gorgonids-49 exs.; Crabs-19 exs.; Polychaeta-1 ex.; Seaweed and seagrass-1 ex. and identified the 59 examples of sponge specimens as belonging to 32 species under 19 families and 13 orders, and identified the following 6 examples of soft corals under 3 genus and three exs of gorgonids under 1 species.



**Local Surveys to study the Impact of Solar Eclipse on Marine Fauna :** A local field survey was conducted to Pulicat Bird Sanctuary (Andhra Pradesh part) during 21st -23rd July 2009 to study the impact of total eclipse on the animals. There was no diurnal behavioural change in the avian population before, during and after the eclipse.

**Physico-chemical parameters observation of sea water samples of adjoining coasts of Adyar river in relation to local faunal diversity :** Sea water samples from three points (one each on either side of the river and the other near our office location) are being collected periodically (once a week). These samples are being observed/analyzed for Physicochemical parameters namely: temperature, pH, Density, total dissolved solids, total suspended solids and the Chemical parameters namely: Free carbon dioxide, alkalinity, salinity, hardness, DO other chemical parameters like BOD, COD,

Nitrate, Phosphate, Oxylate, Sulfate will also be carried out after the remaining chemicals and equipments are procured. Data on related biodiversity (abundance of catch fishes etc in the area) are also being arranged through other research groups engaged in studying fish & other commercial species landing on the coast. These data will be utilized for writing research paper on physicochemical aspects of Chennai coastal water.

## 10. ANDAMAN AND NICOBAR REGIONAL CENTRE

### Port Blair

**Survey and Monitoring of the Fauna (Corals and Fishes, etc.) of North Bay Reef :** A total of 159 species, under 23 genera, 10 families were recorded. Of which 11 species are new records to Indian waters. *Montipora samii* sp. nov., (Scleractinia: Acroporidae): a new species from Andaman Islands.



**Octocorallian diversity in the Coral Reefs of Andaman and Nicobar Waters :** One survey has been conducted to Ritchie's Archipelago (Havelock, Henry Lawrence and Outram Islands). 14 species of Octocorals were identified, of which, Soft Corals-9 sp., Gorgonians-2 sp., Stolonifera-1 sp., Heliopora-1 sp. and Millepora-1 sp. have been recorded.



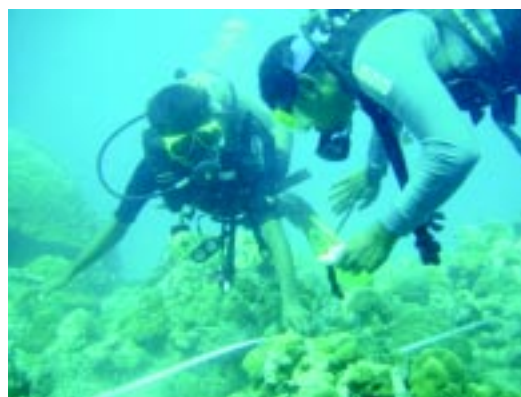
**Studies on Macrobenthos-Corals and other key species and monitoring diversity changes of coral reefs in Protected Areas of North Andaman Islands :** One survey has been conducted to Landfall Island, Smith and Ross Islands, Table and Reef Islands and Paget Island in North Andaman. LIT survey has revealed that exposed area due to earthquake resulting the devastation of 30% of live coral reef . Data and samples collected during the survey are being analyzed.

**Status survey of Coral Reefs in South Andaman and Nicobar Islands :** One survey has been conducted to Ritchie's Archipelago. Scleractinian species identified were 47 sp. 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.

**Studies on the Marine Ecosystem of Inglis Island Sanctuary, South Andaman, with special reference to marine fishes, molluscs and aquatic avifauna :** One survey has been conducted to Inglis Island. 3 species of Alcyonacea, 61 species of Mollusca, 76 species of Fishes, 24 species of corals and 9 species of sponges have been identified.



**Littoral Faunal Diversity of Campbell Bay and Indira Point, Andaman Sea :** Two surveys have been conducted to Campbell Bay, Great Nicobar Island. Diversity and density of Corals, Echinoderms and Molluscs were assessed by employing LIT on the infra littoral region at 8 selected localities. The littoral macrofauna identified from the present study along



Campbell Bay and its adjoining area was 161 species belonging to 5 groups (Corals, soft corals, sponges, Echinoderms and Molluscs). A total of 74 species of corals under 23 genera and 11 families were recorded; the density of corals was assessed as 9-16 colonies/10 sq.; the mean live coral cover in Great Nicobar Island was estimated as 57.8%; the species diversity ( $H'$ ) of corals was calculated as 1.91-2.36; 4 species of corals are new record to Indian waters. A total of 40 species of Echinoderms under 25 genera were recorded; the density of Echinoderms were assessed as 9-20 individuals /10 sq. m.; the species diversity ( $H'$ ) of Echinoderms was calculated as 1.72-2.65. A total of 36 species of Gastropods under 17 genera; 5 species of Bivalves under 4 genera and 2 species of polyplacophorans under 2 genera were recorded; The density of Gastropods ranged from 12-38 individuals/10 sq. m while Bivalves varied from 6-20 individuals/10 sq. m.; the species diversity ( $H'$ ) of Gastropods calculated as 1.68-2.66 and Bivalves as 0.73-1.36.



**Reef associated Macrobenthic fauna of Rutland Island, South Andaman :** Five local surveys have been conducted. Diversity and density of Corals, Echinoderms and Molluscs were assessed by employing LIT on the infra littoral region at 5 selected localities; the reef associated macrofauna identified from the present study along Rutland Island was 166 species belonging 73 genera to 3 groups (Corals, Echinoderms and Molluscs). A total of 79 species of corals under 20 genera and 10 families were recorded; live coral cover was estimated as 65.21%; the density of corals were assessed as 12-23 colonies/10 sq. m.; the species diversity ( $H'$ ) of corals was calculated as 1.73–2.62; 5 species of corals are newly reported to Indian waters. A total of 51 species of



Echinoderms under 37 genera were recorded; the density of Echinoderms were assessed as 14–25 individuals/10 sq. m.; the species diversity ( $H'$ ) of Echinoderms was calculated as 2.57–3.28. A total of 30 species of Gastropods under 15 genera, 4 species of Bivalves under 4 genera and 2 species of Nudibranchs under 2 genera were recorded; the density of Gastropods ranged from 10-18 individuals/10 sq. m while Bivalves varied from 6–10 individuals/10 sq. m.; the species diversity ( $H'$ ) of Gastropods calculated as 1.45–2.32 and Bivalves as 0.62–1.46.

**Survey and faunal resources in the Dugong Sanctuary :** Two surveys have been conducted to Havelock (Dugong Sanctuary) and collected 25 species of spider belonging 9 families and 16 genera; 53 species of Butterflies belonging 6 families and 39 genera; 19 species belonging 9 families and 13 genera; 2 species of amphibians belonging 2 families and 2 genera; 116 species of birds belonging 39 families under 13 orders and 8 species of mammals.



**Status survey of wetland birds in the Rutland Island, Andaman :** Seven local surveys have been conducted during June to October 2008 to Rutland Island and collected 116 species belonging 39 families under 13 orders of Birds, 25 Species, 16, genera, 9 families of spiders; 53 Species, 39 genera and 6 families of butterflies; 19 Species, 13 genera and 9 families of reptilia; 2 species and 4 genera and 2 families of amphibians

## 11. FRESHWATER BIOLOGY REGIONAL CENTRE

### Hyderabad

**Faunistic and Limnological studies on Wyra lake, Khammam District, Andhra Pradesh :** The study completed comprising of Introduction & Limnology of Wyra lake, Rotifera & Cladocera (20 species of Rotifer, 16





species of Cladocera); Aquatic insects : Hemiptera & Coleoptera (25 species under 20 genera in 7 families of 2 orders); Odonates (14 spp under 13 genera & 4 families); Ichthyofauna (26 spp under 19 genera & 6 orders); Crustacean fauna (2 spp of Prawns and 2 spp. of Crabs); Fresh Water Molluscs (24 species under 13 genera and 10 families); Herpetofauna (20 spp under 4 orders, 12 families and 17 genera ); Birds (160 spp under 17 orders, 48 families and 113 genera).

**Taxonomic and Ecological studies of Aquatic Insects of lakes in and around Hyderabad, Andhra Pradesh :** 14 Local surveys were conducted. From 950 exx of total aquatic insect collections 14 spp. of Hemiptera & 31 spp. of Coleoptera were identified

**Faunistic studies on Polychaetous annelids of medium estuaries viz., Mahendra, Janjihavathi, Sarada and Pennar rivers of Andhra Pradesh :** Identified 150 exs. belonging to 6 families, 6 genera, & 7 spp. of Polychaetes viz. *Lumbrinereis inpatiens*, *Lumbrinereis heteropoda*, *Scoloplas marsupialis*, *Paraheteromastus tenuis*, *Glycera alba*, *Isolda pulchella* and *Heteromastus similis*.

**Limnological & Faunal diversity of Kolleru lake, Andhra Pradesh, post dismantling of aquaculture ponds :** Field studies initiated in late 2007, spread over three years, include replicate surveys/sampling over the major seasons-winters, summers, and southwest monsoons, covering over 150 odd sampling/ collection sites spread over various *mandals*( *bed/ belt villages*) in 02 revenue districts-West Godavari/Krishna including parts of Kolleru Wild Life Sanctuaries. Samples of littoral/ limnetic waters analysed for various basic physicochemical and conservative nutrient ions (various forms of P&N) besides wet collections of zooplankton, littoral faunae, *neuston* and other major invertebrate *nekton*-decapod crustaceans, fishes, amphibians and wetland



birds. Reestablishment of good population of grey pelican (*Pelecanus phillipensis*) to their long deserted pelicanry (Komitilanka, Kaikukur, Krishna district) in KLWS, observed in winters (Nov. 2008), augurs well for the conservation efforts in progress. Further, the relatively less explored *macrophyte-based faunae* were also investigated for making a near complete inventory of freshwater invertebrates associated with littoral regions.



**Biological collections :** Net Zooplankton samples-102 containers, miscellaneous Invertebrates faunae/nekton-decapod crustaceans, fishes, amphibians *etc.* 1476 exx. Brief species-wise breakup of major groups of wetland faunae identified, based up field collections/observations (sightings) are as under :

I. Littoral faunal communities : 40 spp. Misc Invertebrates 40 spp. including worms, mites, periphytic bugs/beetles, spiders and malacofauna.





II. Net zooplankton community : 39 spp. Freshwater *rotifers*-22 spp and *cladocerans* (09 spp) *Copeopods* (calanoid)-04 spp) and *Ostrocods* -04 spp.

III. Associated entomofauna : 14-17 spp. Dragonflies-6-8 spp. and Butterflies 8-9 spp.

IV. Invertebrate/Vertebrate nekton communities : 62-65 spp. Predominant decapods crustaceans (04-05 spp) and fishes (11-13 spp) of 63 species. Traditional capture/culture fisheries predominant with exotic catfish *Pangasius* or *Pungus* farming on aggressive scale-72,000 tons (Mohan Rao, 2009) [*Pangasiandon hypothalamus* = *Pangasius sutchi*]; Amphibians-05 spp, mostly reported earlier; Associated wetland birds-39-42 spp, including Bank myna-*Acridotheres gingianus*, rare record and grey pelican *Pelecanthus phillipensis* in encouraging numbers (Komatilanka, Kaikalur, Krishna district); Wild mammals-Mongoose.



V. Aquatic macrophytes : 19 spp. Rampant, blanketing in all otherwise open water/limnetic, 19 spp were reported, *Ipomea aquatic* & *Eichornia crassipes* predominant.

**Limnological & Faunistic studies on Palair lake, Khammam Dist., Andhra Pradesh :** Two surveys were undertaken to Palair Lake. 08 net zooplankton and corresponding water samples were collected for analysis of physico-chemical

parameters (18 parameters). The various major freshwater faunal collections were made, sorted group-wise-Decapod crustaceans, malaco fauna, fishes, etc., taken up for taxonomic identification. (Total Collections : 332 exx). Zooplankton : Rotifera : 4 genera-11 species; Cladocera : 3 genera - 3 species. Aquatic Insects : 14 spp. of Hemiptera from 58 exs Coleoptera : 05 spp. from 22 exs.

**Hydrobiological studies of few Urban/semi urban lakes in around Hyderabad :** Few unexplored small to medium sized 'unmanaged' and 'managed' lake ecosystems, one waste water ecosystem, besides three temporary water stone quarry ponds located at Attapur/Rajendernager, were taken up for hydrobiological evaluation vis-a-vis lake water quality and their respective limno faunae. The various lake ecosystem studied differ marginally in the nutrient or trophic status along the *oligo-meso* and *eutrophic* series. Interestingly one artificial lake studied (Noor Mohd. Khan Kunta), is a waste water ecosystem where biological recovery led to occurrence of three to five species of bird nekton. Further one significant addition to the temporary fauna for view point of geographic distribution is the occurrence of large, wild, natural population of Indian fairy tail shrimp-*Streptocephalus dichotomus*. Baird in temporary stone quarry pond close to open undulating rocky terrain around office premises. Preliminary physico chemical analysis of various littoral water random samples revealed, deteriorating lake water quality form aesthetic/ water chemistry view point and relatively *depaurate* zooplankton and littoral

## Local Surveys

Twelve daylong field trips to different, often contrasting lake water ecosystems-natural, managed, waste water, temporary ponds etc were undertaken for evaluation of aquatic ecological/hydro biological profile.



### 12. WESTERN GHAT REGIONAL CENTRE

#### Calicut

##### **Faunal Resources of Bhadra Wildlife Sanctuary and Tiger Reserve, Karnataka :**

Identification of all faunal groups was completed. The document deals with 23 species of fresh water fishes, 18 species of Amphibia, 17 species of Reptilia, 168 species of Aves, 29 species of Mammals, 32 species of Odonata and 110 species of butterflies and 5 species of Diapriidae, 15 species of Platygastriidae (Hymenoptera).

##### **Fish fauna of the river systems of Kerala :**

Faunal samples of various groups collected during survey consisted of 1641 ex., predominantly of fish fauna. During the period, 1006 ex. of fishes belonging to 38 species under 28 genera and 14 families were identified and registered. Fish collections made from the ecologically rich habitat areas revealed, the presence of two new species. A new species as *Glyptothorax malabarensis* sp. nov. has been identified. Notable findings in the fish collection from the prime forest habitats (streams) include some rare and endangered fish species, including local endemics like *Lepidopygopsis typus* Raj, *Puntius ophicephalus* (Raj), *Garra periyarensis* Gopi, etc. (distribution confined to the upstreams of Periyar River in Periyar Tiger Reserve, Kerala). Besides, curious fish specimens, inclusive of both marine and freshwater forms.

**Telenominae (Scelionidae : Hymenoptera : Insecta) of Southern Western Ghats :** 31 species of *Telenomus* Haliday (Platygastriidae) of Indian subcontinent is under finalization. Description and illustration works are under progress. A paper describing one new species of *Trissolcus* Ashmead has been submitted for publication. A manuscript detailing with another 4 new species is under preparation. In addition to these, 2 manuscripts associated with the above project are in final stages.

Morphological details of *Telenomus* spp. parasitizing hosts under 3 different insect orders (Lepidoptera, Neuroptera and Heteroptera) is under finalization.

##### **Systematic studies on adult and larval stage of Odonata of Southern Western Ghats :**

Identification of species involved has been completed, deal with 162 species under 78 genera and 11 families.

**Taxonomic studies: Status, diversity and abundance of Scelionidae (Hymenoptera: Insecta) in an agro ecosystem at Calicut, Kerala :** Conducted 4 local field surveys to Nilambur (Malappuram dist.) and 2 surveys to Peruvayal (Kozhikode dist.) to set up malaise traps. Studied about 90 specimens and identified 19 genera of Scelionidae from the collections. Generic level diagnosis is complete. Species identification is under progress. 20 species have been identified so far. 5 species are considered to be new.



**Survey, Exploration & Studies of Faunal Resources of India: Atlas of Odonata of the Western Ghats :** About 900 distribution data entries for 12 species of Odonata from Western Ghats were prepared. At present finalized the data entries and coordinates of all 67 species of endemic Odonata of Western Ghats.



**Atlas of Amphibians of the Western Ghats**  
: Finalized around 1000 distribution data entries for 132 endemic species of amphibians from Western Ghats including the collections of ZSI, SRS and latest new species reports from literature. Entry of co-ordinates (latitude and longitude) for the above 1000 entries are being initiated for endemic amphibian Atlas.



**Interactive identification and information system for the Indian genera of Diapriidae (Insecta : Hymenoptera : Proctotrupoidea) :** Work has been initiated. Data compilation and digital imaging are progressing. A dummy fact sheet for one genus has been prepared.

### 13. SUNDERBAN REGIONAL CENTRE

#### Canning

**Present status of reptiles (*Varanus bengalensis*, *V. flavescens* and *V. salvator*) in Sunderbans :** Total Two surveys conducted. 125 specimens collected and identified Amphibians 6 exs belonging to 3 species; Reptiles 6 exs belonging to 4 species. The traces of foot marks (freshly out), was also observed.

Total 6 examples of *Varanus bengalensis* were observed.

**Preliminary studies on the Faunal Diversity in the Fish Landing Centers of Sundarbans :** Total three local surveys



conducted, 96 specimens collected. Materials Identified-3 species from 4 specimens as 25 species of Fishes from 157 examples; 1 species of Crab from 235 examples; 12 species of Prawns from 543 examples; 7 species of Molluscs from 57 examples were identified in field through observation.

**Vertebrate fauna of Sagar, Bakkhali and Halliday Islands of Sunderbans :** Total one survey conducted and 20 specimens were collected. Materials Identified in field through observation. 13 species of fishes; 3 species of Amphibians; 7 species of Reptiles; 32 species of Birds and 2 species of Mammals. 20 permanent labels were prepared on identified specimens.

**Taxonomy and Ecology of Brachyuran Crabs of Sundarbans :** Total four seasonal







surveys were conducted. 494 specimens were collected; Materials identified and registered 4 Phylum; 6 Class; 16 Order; 47 Family; 57; Genera; 62 species from 258 specimens.

## 14. ESTUARINE BIOLOGY REGIONAL CENTRE

### Gopalpur-on-Sea, Odisha

**Fauna of Brahmani-Baitarani Estuarine Complex, Orissa :** Collected 830 exs. as Coelenterata-18 exs.; Polychaeta-01 ex.; Nudibranch/Slug -17 exs.; Gastropoda-20 exs.; Bivalvia-11 exs.; Cephalopoda-12 exs.; Echinodermata-07 exs.; King Crab-04 exs.;



Crustaceans-436 exs.; Squilla-41 exs.; Isopoda-20 exs.; Fish-226 exs.; Sea Snake-01 ex. Total 293 examples studied as Ichthyofauna : 32 species belonging to 18 genera and 16 families



from 96 examples; Crustaceans : Crabs-9 species belonging to 6 genera of 4 families from 48 examples; Prawns-12 species belonging to 7 genera of 3 families from 71 examples; Shoreline Insects : 8 species belonging to 8 genera of 8 families from 78 examples.

**Studies on Nuanai Estuary, Puri District, Orissa :** Collected 290 exs as Fish-186 exs.; Crabs-23 exs.; Prawns-9 exs.; Molluscsa-68 exs.; Cephalopods-2 exs.; Coelenterates (Jellyfish)-2 exs.



Total 203 exs. studied as Ichthyofauna : 24 species belonging to 13 genera of 16 families from 78 examples; Crustaceans : Crabs-13 species belonging to 6 genera of 3 families from 42 examples; Prawns-05 species belonging to 2 genera of 2 family from 83 examples

**Ichthyofauna of Cauvery Estuary, w.s.r. to their Ecology, Diversity, and Distribution pattern :** Collected 520 specimens of various groups as Fishes : 265 exs.; Crabs: 90 exs.; Prawns : 75 exs.; Aquatic Insects : 6 exs.; Echinodermata: 3 exs.; Coelenterates : 1 ex.; Bivalves : 25 exs.; Gastropods : 46 exs.

Collected 511 specimens of different faunal components. A total of 213 examples studied as Ichthyofauna : 21 species belonging to 8 genera of 7 families from 66 examples;





Crustaceans : Crabs-17 species belonging to 11 genera of 5 families from 60 examples; Prawns-07 species belonging to 5 genera of 2 family from 87 examples.

**Morphological and molecular characterization of Genus Anopheles (Diptera : Culicidae) of Ganjam District Orissa, India** : Two surveys conducted : collected 589 specimens as Insecta: Culicidae: 500 exs.; Aquatic Hemiptera: 40 exs.; Aquatic Coleoptera: 30 exs.; Mollusca : 10 exs.; Fishes : 08 exs.

Total Identification : 10 species of Mosquitoes belonging to 5 genera from 83 examples. Molecular studies is initiated in collaboration with ICMR, Bhubaneswar, Orissa

## Other Studies

**Expedition to Namdapha National Park and Tiger Reserve, Arunachal Pradesh** : Collected over 325 freshwater fish samples.

## 15. ARUNACHAL PRADESH REGIONAL CENTRE

### Itanagar

**Bio-acoustic studies on Avifauna of Arunachal Pradesh** : Twelve species of cuckoos, seven species of laughing thrushes and six species of sunbirds were short listed for further bioacoustics analysis. So far more than 180 species (including few unidentified species) have been short listed for bioacoustics and final report preparation work.



**Taxonomic studies on the mammals of Arunachal Pradesh** : More than 70 species have been identified based on direct/indirect evidence

**Studies on Pisces & Amphibians of Arunachal Pradesh** : 1220 examples of fish were studied and identified as 99 species. An updated list of 229 species fishes was reported from Arunachal Pradesh. One new species; one new sub species; one new state record; 1 endangered species; 16 more species were added to the available checklist of 213 species reported from Arunachal Pradesh.





**Small mammals (rodents, shrews and lagomorphs) of Arunachal Pradesh :** 10 exs. comprising of 2 species of rodents and 1 species of lagomorph were sighted from five different localities. Malayan Giant Squirrel *Ratufa bicolor* (Sparrman, 1778) was the most abundant species followed by the Hoary-bellied



Himalayan Squirrel *Callosciurus pygerythrus* (I. Geoffroy Saint-Hillaire, 1831). Pellets of Indian Hare *Lepus nigricollis* Cuvier, 1823 were also collected from the Seijosa river banks and a few pellets of the same species were also collected from the forest roads within the Reserve.

**Water birds of Arunachal Pradesh w.r.t. to high altitude lakes and wetlands :** In total 43 species of birds (including waterbirds) were sighted and photographed.

### Local surveys

A local tour was conducted by Dr. D. Suresh Chand, Scientist-C of the station along with the supporting staff on 19 June 2009 in and around the Karsingsa area of Papumpare district of Arunachal Pradesh. Vertebrate and invertebrate fauna were collected from the sites.

Among the vertebrates, three species of fishes namely *Lepidocephalus guntea* (Hamilton); *Badis badis* (Hamilton), and *Channa orientalis* were collected from the Karsingsa Nallah. Among the invertebrates, insects belonging to four Orders were collected. Twelve species of



Orthoptera, 5 species of Lepidoptera, 3 species of Odonata and 3 species of Coleopteras were collected namely *Atractomorpha himalayica*, *Spathosternum prasiniferum*, *Gesonula punctiformis*, and *Eyprepocnemis* sp. Among the Lepidoptera, three species namely *Papilio acturus* Westwood; *Papilio demoleus*, and *Junonia lemonias* (Linnaeus) were identified.

### Tawang Expedition

More than 2500 examples of invertebrate and vertebrate specimens were collected and majority of the specimens belonging to *Lepidoptera*, especially moths. 6 species under 6 genera of Mantodea (preying mantis) were reported from the area for the first time. *Odontomantis micans* is one of those from the area and also first record in India. Around 117 species of birds and 17 species of mammals were recorded and photographed. Ten species of herpetofauna were also collected; besides four species of snakes, four species of amphibians and two species of lizards.

### Namdapha Expedition

More than 2500 examples of invertebrate and vertebrate specimens were collected and majority of the specimens belonging to *Diptera* followed by *Lepidoptera*, especially moths. Even though the team had covered only a fraction of the total area of the Park, it managed to collect specimens belonging to 21 Orders of



both vertebrate and invertebrate groups. Among vertebrates, 340 examples of fresh water fishes (of about 40 species) were collected from three major rivers of the Park namely Namdapha river, Deban river and Noa-Dihing river. More than 20 species of herpetofauna were also collected; besides two species of snakes, 15 species of amphibians and three species of lizards. More than 200 species of birds were recorded during this trip. The significant bird records include sighting of three species of hornbills such as Great Hornbill *Buceros bicornis*, Wreathed Hornbill *Aceros undulatus* and Rufous-necked Hornbill *Aceros nipalensis*. 06 species reported for the first time from Namdapha National Park. 17 species under 11 genera are now known to occur in Namdapha N.P. Some species were collected after gap of about 25 years from the Area.

## 16. MARINE AQUARIUM AND REGIONAL CENTRE

### Digha, West Bengal

**Settlement & population studies of benthic fauna around Digha :** Monthly local surveys were made in and around 5 locations of Digha for 26 days. No. of examples collected : 1018. All examples were processed for identification. 2 manuscripts were prepared so far. The data is being compiled for finalization of report.



**Study of macro-benthic fauna (invertebrates) from some coastal areas of India (Gujarat State) :** Only one survey was conducted so far. Identification of earlier surveys is being carried out. One paper on macro-benthic fauna of South Gujarat has been prepared.

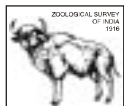


**Database on Coastal Fauna :** No. of entries added this year : 597. This year's survey, aquarium & some old collection entered. Altogether 1873 examples have been identified this year.

**Pictorial handbook for aquarium animals :** The report is under revision, new photographs of aquarium animals have been taken.





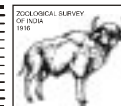


## IDENTIFICATION AND ADVISORY SERVICES

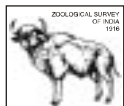
39 nos. of seized wildlife and its derivatives pertaining to different court cases were identified and report sent to the competent authority.

1. Mrs. R. Mondal, Teacher-in-Charge, Sree Sarada Ashram Balika Bidyalaya, P-615 Block, 'O' New Alipore, Kolkata-700053, visited the Wild life section along with the other teachers & students of class-IX on 11.12.2009.
2. 25 nos. of PG students of NEHU visited the Wild life Section on 07.01.10.
3. P.J. Dilip Kumar, D.G. of Forests, MoEF, New Delhi, visited the Wild life section on 25.01.10.
4. Ms. R. Nandoni, National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore visited the Wild life section on 28-01-10.
5. Identification of feather sample (Six feather ear-ring) sent by Mr. Tejaswini A. Patil, IFS, Regional Dy. Directeor, Wildlife Crime Control Bureau, Western Region, Mumbai.
6. Identification of one neck hackles of *Gallus sonneratii* Temminck, Grey Jungle Fowl sent by Mr. V.K. Diksit, Asstt. Director, Wildlife Crime Control Bureau, Northern Region, MoEF, New Delhi.
7. Nine students with their three teachers from D.M. College of Science, Imphal visited bird section on 27-04-2009.
8. 58 non-matric Group-D trainees of ZSI visited the Bird section on 21.05.2009.
9. Debal Ray, Member Secretary, W.B. Bio-diversity Board visited Bird section on 11.09.2009.
10. Dr. K. Kasturirangan, Hon'ble Member, Planning Commission, visited the bird section on 17.09.2009.
11. Six students with their teacher from Barbetta College, Barbetta District, Assam visited the bird section on 23.10.2009.
12. Twenty five students with their two teachers from A.B.N Sil College, Coochbihar, West Bengal visited the bird section on 18.11.2009.
13. 120 students of class IX from Sree Sarada Ashram, Balika Vidyalaya, P-615 Block-O, New Alipore, Kolkata-53 visited the bird section on 11.12.2009.
14. M.Sc., III Semester Students, Department of Zoology, N.E.W.H.U. Shillong with their teachers-in-charge Dr. B. Das & Arun Kumar Yadav visited the bird section on 07.01.2010.
15. I.G. Forest Department visited the bird section on 11.02.2010.
16. 20 P.G. students with their three teachers from Sree Rampur College, Hoogly district, West Bengal visited the bird section on 08.04.2010.
17. The Trainees of the XIIth Training Course on Field Ornithology visited the bird section on 12 & 15th January 2010.
18. 1500 references on Animal Cytogenetics sent to 3 scientists on request and reprints were sent to 14 scientists. Research guidance provided to 6 M.Phil./M.Sc./Ph.D. Students.
19. Identification of two semi-digested venomous snakes from the stomach of dead tiger at Nethiodhopani of Sunderbans, the identification report has been sent to Field Director of Sunderban Tiger Reserve on 23.07.2009.



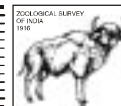


20. Identification of Two species of Python  
Skins seized from the imported parcels and which was sent by the Regional Deputy Director of Wildlife Crime Control Bureau (NR). The identification report has been sent to the officer concerned on 05.08.2009.
21. Identification of Confiscated Crocodile Skin which was sent by Assistant Commissioner of Customs (Preventive) to reptilia section, the identification report has been sent to the officer concerned on 10.07.2009.
22. As per the court order of the Siliguri and Directives of the DZSI I had been to Sukna for the identification of Seized Fresh water turtles, animals were identified and tentative identification report has been handed over to the ADFO on the Same day on 15.07.2009.
23. Identification of two Road killed Snakes which were brought to the Reptilia Section by Research Scholar of Central Forensic Science Laboratory, Kolkata and identification report has been sent on 16.07.2009.
24. Identification of Leather Shoe which was sent by Regional Deputy Director, Wildlife Crime Control Bureau (NR), and it was identified and the report has been sent on 22.2.2010.
25. Prof. Chandrashekher Viraktamath Scientist Emeritus, Agriculture University, Bangaluru has visited the section on 18.02.2010.
26. Prof. Mullick and party, Agriculture University, Bangaluru has visited the section on 12.4.2010.
27. M.Sc. Student of Srirampur College, district Hooghly, visited the section on 8.4.2010.
28. Students of Manipur University visited Reptilia Section on Educational tour on 06.04.2009, sectional staff was debuted who imparted information on Reptiles.
29. 37 students and 4 teachers from Tilakdhari College, Jaunpur, Uttar Pradesh visited the Section on 23rd December, 2009 to see amphibian collections.
30. Thasun amarasinghe, Taprobanica Nature Conservation Society, Srilanka visited to study the population of *Sitana ponticeriana* to compare with the population of Srilanka on 30-12-2009, and they were rendered the necessary facilities.
31. 8 outside lots consisting of 136 exs, of 17 species of have been identified and report was sent.
32. Dr. Gopinathan Maheswaran, Scientist-C & Officer-in-Charge was one of the experts to select Project Co-coordinator/ JRF/SRF and other scientific staff for an UNDP project of GBPANT Institute, Itanagar Unit on an invitation from the Scientist-in-Charge of the Unit. The interview was held on 10 June 2009.
33. Dr. Gopinathan Maheswaran, Scientist-C & Officer-in-Charge was one of the experts of the committee which evaluated the draft Rules of Aruanchal Pradesh Biological Diversity Rules 2009, which was prepared by the Director, State Forest Research Institute, Itanagar. Dr. Maheswaran had given his suggestions to the Forest Officials to be included in the final Rules.
34. Dr. Gopinathan Maheswaran, Scientist-C & Officer-in-Charge had evaluated a project proposal on "Species diversity and habitat status of birds in Dihang-Dibang Biosphere Reserve with special emphasis



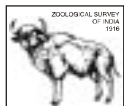
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- on habitat ecology of certain selected species” received from MoEF through HQ office. Comments were sent to HQ office to be forwarded to MoEF.
35. A scientist of the Centre also evaluated a project report titled “Population status, habitat utilization, distribution and conservation threats of Hispid hare (*Caprolagus hispidus*) in Bardia National Park of western Nepal” sent to him by WWF-Nepal. Revisions on two scientific papers are underway.
36. Dr. Gopinathan Maheswaran, Scientist-C of the Centre has been selected by Aligarh Muslim University to set question paper for their M.Phil paper on Wildlife Sciences. After that he also evaluated the answer book sent to him by the University authorities.
37. Dr. Gaurav Sharma, Scientist-C has rendered advisory services, informations on Wild Animals and their identification, field photographs provided to Sh. 59. 59. Lakshman Parmar (IFS), DWLW, Rajasthan Forest Department, Mount Abu on 22nd September, 2009.
38. Dr. Gaurav Sharma, Scientist-C has rendered information on Wild Boar, literature and provided field photograph to Sh. R. Jugtawat, In-Charge, Jodhpur Zoo on 28th October, 2009.
39. Dr. Gaurav Sharma, Scientist-C has rendered advisory service on Classification of Fauna, on request from Sh. Shamsher Singh, Rajasthan Administrative Service candidate, District-Pali on 5th November, 2009.’
40. Dr. Gaurav Sharma, Scientist-C has rendered identification and advisory services on identification of Odonata and Lepidoptera to Miss Subhi Bishnoi (Student of M.Phil. Zoology) Zoology Department, Govt. College, Ajmer from 18-20 May, 2009.
41. Dr. Gaurav Sharma, Scientist-C has rendered advisory services on identification of Fauna to the B.Sc. students of K.V. Pendharkar College of Arts, Science & Commerce (Sr. & Jr.) Dombivli (East), Thane, Maharashtra on 16-09-09.
42. Dr. Gaurav Sharma, Scientist-C has rendered advisory services on identification of Fauna, delivered lecture and presentation shown on issues of wildlife conservation on 7th Oct., 09 during Celebration of Wildlife Week (1-7th Oct., 2009) at DRC, ZSI, Jodhpur to students from different Schools.
43. Dr. Gaurav Sharma, Scientist-C has rendered information of ZSI and DRC work to Ten Senior Press Reporters from Press Information Bureau (Ministry of Information & Broadcasting), Varanasi (Uttar Pradesh) during their visit on 6-01-2010.
44. Dr. Sanjeev Kumar, Scientist-C has provided Information on wild and domesticated species of Hares and Rabbits in India on 15th May, 2009.
45. Dr. Sanjeev Kumar, Scientist-C has delivered lecture in Hindi on Research activities in ZSI under the awareness campaign programme organised by Giants International Group of Jodhana, Saheli, Jodhpur Chapter at Geeta Bhawan, Jodhpur on 28th May, 2009 and distributed a two page write up in Hindi to some two hundred women participants and also organized quiz competition and distributed 25 prizes to the winners sponsored by ZSI, DRC, Jodhpur.



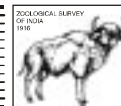
46. Dr. Sanjeev Kumar, Scientist-C has conducted training on identification of reptiles and delivered lecture with the help of presentation and video films on identification of poisonous and non-poisonous snakes to 150 Commandos of the 10th Battalion of Parachute Regiment (Special Force) of the Southern Command (Specializes in Desert Combat Warfare) of the Indian Army at Jodhpur on 25th June, 2009.
47. Dr. Sanjeev Kumar, Scientist-C has addressed the school children on issues of wildlife conservation on 7th Oct., 09 during Celebration of Wildlife Week (1-7th Oct., 2009) at DRC, ZSI, Jodhpur.
48. Dr. Sanjeev Kumar, Scientist-C has provided information on fauna of Rajasthan and Gujarat to 16 School students of class IX and XI from Outreach Mission Senior Secondary School, Pali, Rajasthan who visited the Museum of DRC, ZSI, Jodhpur on 4th December, 2009.
49. Dr. Sanjeev Kumar, Scientist-C has provided information through lecture and video film on Roll of wetlands in Climate change and faunal diversity of Rajasthan & Gujarat to 45 meritorious senior secondary school students of Marwar Region during their visit to the museum of DRC, ZSI, Jodhpur on 29th December, 2009 sponsored by Shri Maheshwari Sr. Sec. School (Shri Mahesh Shikshan Sansthan), Jodhpur.
50. Dr. Sanjeev Kumar, Scientist-C has provided information on fauna of Rajasthan & Gujarat to 100 secondary school students of St Columbus School, New Delhi during their visit to the museum of DRC, ZSI, Jodhpur on 29th December, 2009.
51. Ph.D. Thesis examined: Dr. Gaurav Sharma, Scientist-C has examined Ph.D. thesis received from Controller of Examinations i/c, University of Madras, Chennai-600 005 Tamil Nadu (India) on topic entitled "Some aspects on the biology of the dragonfly *Pantala flavescens* (Fabricius) with special reference to its local habitat at Vellore, a suburban district of Tamil Nadu" and report submitted on 10-12-2009.
52. Dr. K. Venkataraman, Scientist "F" Directorate of Revenue Intelligence, Ludhiana Regional Unit, Government of India, Report on the seizure of 4.795 MT of Organ Pipe Coral (*Tubipora musica*) and *Cyprea annulus* (sea shells) on 13.14.12.2009.
53. Dr. K. Venkataraman, Scientist "F" Three students of B. Tech Degree course, Kumaraguru College of Technology, Coimbatore visited for discussion on identification of Tardigrades on 4.1.2010.
54. Dr. K. Venkataraman, Scientist "F" A student of B. Arch, Department of Architecture Anna University visited for discussion on the preparation of a thesis on Marine Park (Aquarium) at Chennai.
55. Dr. K. Venkataraman, Scientist "F" Valuation of the thesis submitted by Smt. V. Sasikala of Centre of Advanced Study in Marine Biology, Annamalai University, Parangipettai-608502 on "Studies on the macro benthos of Point Calimere (South East Coast of India).
56. Dr. K. Venkataraman, Scientist "F" Remarks on the details of Fauna for Udangudi Power Corporation Limited - 2X800 MW Super Critical Thermal Power Project to the President & CEO vide Lr No. 346/DGM/C&G/2009-10 dated 15.02.2010.



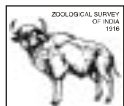


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57. Dr. K. Venkataraman, Scientist "F" Organised a meeting on the visit of Mr. Anuar Kasman Consul General of Malaysia and his wife Mrs. Maryani Majeed accompanied by ten officials of the Consulate General of Malaysia to Marine Biology Regional Centre on 27th Feb, 2010.
58. Dr. K. Rema Devi, Scientist-E Five lots containing 235 fish specimens were identified as belonging to 51 species for Mr Eric Ramanujam, Pitchandikulam Forest Consultant, Pondicherry. (Work done in collaboration with Dr T.J. Indra, A.Z., SRC).
59. Dr. K. Rema Devi, Scientist-E Six fish specimens from Kumbhalgarh Wildlife Sanctuary, Rajasthan, received from Dr Padma Bohra, Sci.D and O/C, Desert Regional Station, ZSI, Jodhpur, Rajasthan were identified as belonging to one species viz. *Rasbora daniconius* (Ham.)-6 exs.
60. Dr. K. Rema Devi, Scientist-E 50 exs of fishes from Desert Regional Centre, Jodhpur were identified as belonging to 12 species. Identification work is in progress by Dr K. Rema Devi (Work done along with Dr. T.J. Indra).
61. Dr. K. Rema Devi, Scientist-E 1 fish specimen was identified from East Coast for a Ph.D. student, as the following species : *Ilisha megalopectera*.
62. Dr. K. Rema Devi, Scientist-E 11 specimens were identified as belonging to 11 species for Dr. Mary N. Mohan Kumar, Scientific Officer 'E', Biodiversity Lab, Radiological Safety Division (R&D), Indira Gandhi centre for Atomic Research, Kalpakkam.
63. Dr. K. Rema Devi, Scientist-E Two fish specimens were identified as two species for two M. Phil students of SIET College, Chennai.
64. Dr. K. Rema Devi, Scientist-E Three fish species were identified from photographs for Dr Biju Kumar of the Dept. of Zoology, University of Kerala, Trivandrum.
65. Dr. K. Rema Devi, Scientist-E Five freshwater fish species from Chembarambakkam were identified for a Ph.D, student of the University of Madras.
66. Dr. K. Rema Devi, Scientist-E Three fish species were identified for Dr Meenakshi of Eucare Pharmaceutical Pvt. Ltd. and the identification report given.
67. Dr. K. Rema Devi, Scientist-E Marine fish and crustacean species from the Kasimedu fishing Harbour, Chennai, have been identified tentatively along with the assistance of Ms. G. Sivaleela, Asstt. Zoologist, from the photographs received from an M. Phil student Mr. M. Balachandar of Loyola College.
68. Five Marine sponges were identified by Ms. G. Sivaleela, Asstt. Zoologist for Mr. Inbakandan, Lecturer, Sathyabhama University, Chennai.
69. Five examples of echinoderms belonging to 3 species under 3 families were identified by Dr. C. Venkatraman, Scientist-B, for Ms. Parvadhavardhini, project fellow, Bharathi women's college, Chennai- 108.
70. Dr. K. Rema Devi and Ms. G. Sivaleela identified 3 species of confiscated shells for the Wildlife Warden of the GOMBR.
71. Identified a gecko (Lizard) species as termite - hill gecko *Hemidactylus triedrus* for Dr. V.V. Bala Subramaniam, Department of Zoology, Sri. Krishnadevaraya University, Anantapur



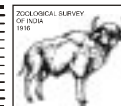
- by Dr. C. Venkatraman. Reptiles : 8 species for St. Peter College, Shillong. Fishes : 11 species for Zoology Deptt. NEHU, Shilling. 5 species for Forensic Science Lab., Govt. of Meghalaya, Shillong. 1 species for the Deptt. of Environmental studies NEHU, Shillong. 1 species for Shillong College, Shillong.
72. Dr. K. Rema Devi, Scientist 'E' and Dr. T.J. Indra, Assistant Zoologist identified 124 fish specimens as belonging to 21 species for Shri Eric Ramanujam of Adayar Poonga of Govt. of Tamilnadu and provided biometric data of two specimens of *Amblypharyngodon* species were measured and data provided.
73. Dr. K. Rema Devi, Scientist 'E' identified one marine fish as *Acanthurus xanthopterus Valenciennes* from photograph for an aquarium hobbyist Beta Mahatvaraj.
74. Dr. K. Rema Devi, Scientist 'E' identified 17 freshwater fishes from Nagarjunasagar reservoir as belonging to 11 species under 5 families and 4 orders for Shri A. Adiyaman of SRM University, Kattankulathur.
75. Dr. S. Krishnan, Scientist 'E' identified two fish specimens for students of Sri Ramachandra Medical University.
76. Dr. G. Thirumalai, Scientist 'F' Identified 96 specimens that comprise 15 species of aquatic and semi aquatic hemiptera for Dr. Anisa B. Khan Professor and Head, Dept. Ecology & Environmental Science, Pondicherry University, Kalapet, Puducherry-605 014, India.
77. Dr. T.J. Indra, Asstt. Zoologist identified 2 fish specimens as 2 species for Mr. Eric Ramanujam, Pitchandikulam, Forest Consultant, Puducherry, (work done in collaboration with Dr K. Rema Devi, Scientist 'E', M.B.S.).
78. T.J. Indra, Asstt. Zoologist identified 11 specimens of fishes belonging to 11 species for Dr Mary N. Mohankumar, Scientific Officer 'E' Biodiversity Lab., Radiological safety Division (R & D), IGCAR, Kalpakam.
79. Dr. T.J. Indra, Asstt. Zoologist identified 87 fish specimens as belonging to 21 species for Mr. Eric Ramanujam, Pitchandikulam, Forest Consultant, Puducherry, (work done in collaboration with Dr K. Rema Devi, Scientist 'E', M.B.S.).
80. Dr. V.R. Punithavelu rendered identification services to a Ph.D. research Scholar of Madurai Kamaraj University on 124 examples of gastropods.
81. Dr. S. Krishnan Scientist 'E' provided identification services to a research scholar of University of Chittagong, Bangladesh on fiddler crabs of Bangladesh.
82. Dr. T.J. Indra identified 50 exs of fish specimens as belonging to 12 species received from Desert Regional Centre, Jodhpur. Identification work is in progress.(Work done along with Dr. K. Rema Devi).
83. Dr T.J. Indra identified two fish specimens belonging to two species for two M.Phil students of SIET College, Chennai.
84. The scientists of the SRC, Chennai gave a lecture on taxonomy and the activities of Zoological Survey of India for a batch of 20 postgraduate students in zoology from the Loyola College (Autonomous), Chennai.
85. A batch of 172 students, 10 teachers and 5 scientific officials from Madhya Pradesh



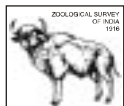
## Annual Report 2009-10

- Council of Science and Technology, Bhopal visited the SRC, Chennai on 23rd December and they were introduced to the activities of the Centre. An interaction session with the scientists was also arranged.
86. The identification of 10 images of *Apus affinis* (House or Little Swift) for Dr. Renu Maheshwari, Professor, Department of Zoology and Biotechnology, Govt. Nagarjuna Post Graduate Science College, Raipur, (C.G), was carried out.
  87. The identification of 15-images of *Hirundo flavicola* (Indian Cliff Swallow) for Dr Arati Singh of the same College was carried out by Dr. P.C. Tak
  88. Identification of centipede *Scolopendra hardwickei* through images sent by Mr.Utpal Smart, from Pondicherry University. was carried out by Dr. Vinod Khanna
  89. Dr. Archana Bahuguna prepared slides of 37 hair samples from Python faecal matter for Trichotaxonomy study for prey predator relationship for Dr. S. Bhupathy, Scientist G of SACON, Coimbatore.
  90. Rendered service to FRI scientist : NRC, dehradun prepared slides for chromosome study for Dr. Gindwal, Sc-E of FRI (Genetics Deptt).
  91. Identified by Dr. V. Khanna and sent back centipede collection of Namdapha Survey 2009 collected by the O/C, ZSI Patna.
  92. Dr. Archana Bahuguna provided guidance to more than 100 staff members of forest of Pench Tiger Reserve and Kanha Tiger reserve, M.P. on wildlife forensic, as invited resource person.
  93. Services of Identification of insects and various other animals provided to Institutions, Universities, Colleges, Students, NGOs of Madhya Pradesh & Chhattisgarh. Six
  94. More than 10 Graduate and Post Graduate students of various colleges visited the CZRC, Jabalpur. The information on Biodiversity was provided to them, required in fulfillment of their project reports.
  95. Dr. C. Raghunathan has identified 37 species of seaweed epiphytic fauna including Holothurians (Echinoderms), sponges, crustaceans, alcyonaceans, nudibranchs, polychaets, gastropods, fishes and ascidian, for the scientists of Central Salt and Marine Chemicals Research Institute (CSIR), Marine Algae Research Station, Mandapam, Tamil Nadu.
  96. Mrs. Kamla Devi, provided information about the fish fauna of Andaman & Nicobar to Shri Amit Dutta Banik, Ishan Institute of Management & Technology
  97. Dr. C. Raghunathan has provided the data on the faunal diversity Saddle Peak National Park to Divisional Forest Officer, Mayabunder, North Andaman for the preparation of Management Action Plan as requested.
  98. Dr. C. Raghunathan has sent the identification report on one amphibian species to Conservator of Forests (WL), Dept. of Environment and Forests, A&N Administration with the help of expert from WGFRS/ZSI, Calicut.
  99. Dr. C. Raghunathan has provided the information on scheduled and endangered species of Sharks of Indian waters to Research Fellow of Madras Veterinary College, Chennai through MBRC/ZSI, Chennai.

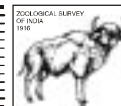




100. Mr. P.T. Rajan, briefed about the fauna of A&N Islands for the 40th batch of Forest Guard Trainees comprising 24 trainees and faculty members of Port Blair on their visit to ZSI museum.
101. Dr. C. Raghunathan provided the data on nudibranchs of Indian waters as well as Gulf of Mannar Biosphere Reserve has been provided to Suganthi Devadason Marine Research Institute, Tuticorin, Tamil Nadu on request.
102. Dr. C. Raghunathan identified 3 species of sponges for Lecturer, Dept. of Biotechnology, Alagappa University
103. Dr. C. Raghunathan provided the distributional record of gorgonid *Corralium* to the Assistant Commissioner of Customs, Air Cargo Complex, Jaipur, Rajasthan through the Director, ZSI as required.
104. Dr. C. Raghunathan reviewed the three project proposals on Great Nicobar Biosphere Reserve received from the Ministry of Environment and Forests, New Delhi and the comments have been sent.
105. Dr. C. Raghunathan served as a Member in the research advisory committee meeting of Dept. of Environment and Forests, A&N Administration on 8th July 2009.
106. Dr. C. Raghunathan served as a Executive Member in the Executive Council Meeting of Department of Science and Technology, A&N Administration on 15th July 2009.
107. As required by the United States Fish and Wildlife Service, Arlington, USA the pertinent information on family Coralliidae in India for the inclusion in Appendix II of CITES has been submitted to ZSI headquarters for necessary action by Dr. C. Raghunathan.
108. Comments on the research proposal entitled 'Assessment of biophysical environment and status of coral reefs in selected reefs in Andaman and Nicobar Islands' received from the Ministry has been prepared and submitted to the Director, ZSI for consideration, by Dr. C. Raghunathan.
109. Dr. C. Raghunathan identified 4 species of sponges for National Institute of Ocean Technology, Port Blair on request.
110. Dr. C. Raghunathan provided an information on the diversity of Sea pens (Coelenterate) in Indian waters to the Central Marine Fisheries Research Institute, Vishakapatnam.
111. In response to the proposal of Wildlife Trust of India, the recommendations for the inclusion of all species of family Nautilidae under the Appendix-2 of CITES has been submitted to headquarters for onward transmission to the Ministry, by Dr. C. Raghunathan.
112. As per the requirement of Indian Institute of Science, Bangalore and upon their proposal 'Tectonics of Andaman-Nicobar Arc: Constraints from Coral Proxies,' suitable areas to undertake collaborative studies with ZSI has been submitted to headquarters for further course of action.
113. Identification of 51 species of corals and information about the coral reef ecosystem, molluscs, reef fishes and butterflies have been rendered to the Naval Marine Museum, Port Blair on request.
114. The seized specimens of top shell *Trochus nitoticus* have been identified and the report submitted to Wildlife Division of Dept. of Environment and Forests, Port Blair as required.

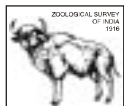


115. As per the request of Wildlife Crime Control Bureau, Southern Region, Chennai, the photographs on various corals, sea shells and other marine protected fauna of Andaman and Nicobar Islands have been provided for the preparation of publicity material/manual on Marine Wildlife.
116. Dr .C. Raghunathan served as a Member in Research Advisory Committee of Department of Environment and Forests, A&N Administration on 12th October 2009, to scrutinize the 7 research proposals and the recommendations have been provided.
117. Dr. C. Sivaperuman nominated as CPCSEA Nominee to the Institutional Animal Ethics Committee (IAEC) of Central Agricultural Institute (CARI), Port Blair by Ministry of Environment and Forest, Government of India, New Delhi.
118. Dr. C. Sivaperuman served as a selection committee member at Regional Research Medical Centre, ICMR, Port Blair for selection of Laboratory Technician on 14.05.2009.
119. Dr. C. Sivaperuman served as a selection committee member for the recruitment of RAs, JRFs, and TAs under various projects of ANRC/ZSI held at Port Blair on 3rd June 2009.
120. Dr. C. Sivaperuman served as a member in the interview board for selection of Lab Assistant at Regional Medical Research Centre (ICMR), Port Blair on 27th October 2009.
121. Dr. C. Sivaperuman imparted training on the 'Census of Crocodiles' for the forest officials of Dept. of Environment and Forests, A&N Administration on 26th November 2009.
122. Dr. C. Sivaperuman reviewed the manuscript entitled "Histological and Histomorphometric study of Gametogenesis in breeders and helpers of Sub-Tropical, co-operative breeder Jungle Babbler, *Turdoides striatus* - *Journal of Cell and Animal Biology*.
123. Mr. P.T. Rajan rendered the advisory services to Naval Mairne Museum about the corals, molluscs, reef fishes and butterflies of Andaman and Nicobar Islands
124. Dr. C. Raghunathan identified 12 species of gastropods, 4 species of echinoderms, 4 species of fishes, 1 species of jelly fish and 1 species of sea anemone have been identified to the scientist of MBRC/ZSI, Chennai on request.
125. Dr. C. Raghunathan and Mr. J. Selvam analysed the gut content of male and female Lobster *Linuparus somniosus*.
126. Dr. C. Raghunathan has reviewed and submitted the comments to the Dept. of Environment of Forests, Port Blair on the research proposal 'Taxonomic revision of Indian Arctiidae (Lepidoptera)' as required.
127. Dr. C. Raghunathan provided information pertaining to the biodiversity of Andaman and Nicobar Islands to the village biodiversity conservator at Pollachi, Tamil Nadu on request.
128. Dr. C. Raghunathan provided information on stranding records for sea cow *Dugong dugon* in A&N Islands to the Freelance Wildlife Conservator, Bengaluru on request.
129. Dr. C. Raghunathan provided information on species diversity of Gastrotricha in India to the Lecturer of Cochin University of Science and Technology.



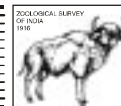
130. Dr. R. Rajkumar evaluated the Ph.D thesis titled 'Studies on the impact of plant transgenicity on multitrophic level interactions' from Manonmaniyam Sundaranar University, Tirunelveli, has been evaluated and the report has been forwarded on 15 February 2010
131. Dr. C. Raghunathan has reviewed and submitted the comments to the Dept. of Environment of Forests, Port Blair on the research proposal 'Taxonomic revision of Indian Arctiidae (Lepidoptera)' as required.
132. The Director (Development), EPTRI, Gachi Bowli, Hyderabad 500 032 (AP) provided information on fauna of Andhra Pradesh, for a multi-sectoral report under 'State of Environment' following written request (Lr. No. EPTRI/ Mngr./P & P/ SOE 2009/2140, dt. June, 2009).
133. Few amphibians (frogs) received from Dr. Y. Ranga Reddy, Emeritus Prof., Acharya Nagarjuna University, Guntur, have been taken up for taxonomic identification.
134. Prof. Y. Ranga Reddy, Acharya Nagarjuna, University, Guntur, was provided reprographic facilities on fishes (Fauna of India : Cobitidae).
135. Dr. Kshitish Majumdar, Scientist-G, CCMB, Hyderabad and Dr. Madhu, Research Associate, extended taxonomic identification service for freshwater Crab (*Paratelphusa* sp.) in connection with their molecular biological studies.
136. Dr. Ms. Purna Sai, Scientist, Biopolymer division Central Leather Research Institute (CLRI) Chennai was provided identification report of amphibians (Frog 3exx.).
137. Md. Javed, Progame Officer, WWF, Nature India, Hyderabad was provided photomicrographic facilities for spiders/ lizards of geographic interest.
138. M/S Green Gold Vermicompost, Raipur, Chattishgarh were provided taxonomic identification facilities for 2 samples of commercial species of earthworm-*Eudrilus eugeniae* (Eudrilidae), through reference to H.Q office.
139. Dr. Priyamvada and Mrs. Usha Rani, Teaching faculty, Zoology Department, St. Ann's P.G. Degreee College, Mehdipatnam, Hyderabad were provided literature/reprographic facilities in connection with their studies in Aquacultural ponds.
140. Md. Javed, Progame Officer, WWF, Nature India, Hyderabad was provided reprographic/literature and scientific mate Dr. Sivaramakrishna, Research Associate, All India Coordinator Project on Economic Ornithology, APAU, Rajendernagar was provided advisory services on field collection methodology on various wetland faunal groups for their proposed project on Agri-biodiversity.
141. Dr. Priyamvada, Teaching faculty, Zoology Department, St. Ann's P.G. Degreee College, Mehdipatnam, Hyderabad provided taxonomic identification of major zooplankton species from aquacultural ponds.
142. Mrs. Tasneem Jahan, Ph.D scholar under Dr. (Mrs). Sujita Mathur, Prof. of Zoology, University College for women, Osmania University, Kothi, Hyderabad, extended guidance/library facilities for her PhD studies on freshwater crab (*Paratelphusa* spp).
143. Dr. Vasu Deva Rao, Prl. Scientist & Coordinator, All India Coordinator Project on Economic Ornithology, Acharya Ranga



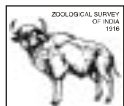


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- Agricultural University, Rajendranagar, Hyderabad 500 032 was provided advisory services on Field Methodology/preservation and identification protocols (ZSI published works) for his proposed project studies (faunal diversity).
144. 26 endemic amphibians (frogs and caecilians) of Western Ghats belonging to 17 species, 11 genera and 8 families were received from Dr. Anil Zachariah, Veterinary Surgeon, Kalpetta, Wayanad.
145. A snake specimen of *Calliophis bibroni* from Indira Gandhi NP and WLS, Tamil Nadu was deposited by V. Deepak, Research Fellow, WII, Dehradun.
146. Type specimens of shrimps were received from Dr. Jayachandran, Head Department of Fishery Biology, Kerala Agricultural University, College of Fisheries, Cochin.
147. Thirty six examples of Odonata received from Dr. D.K. Tamili, Egra SSB College, Egra, Medinipur were studied and identified. Identification report and materials sent to O/C, CEL Section.
148. Three examples of Odonata received from Dr. G.K. Saha, DST Project, Calcutta University, Kolkata, were studied and identified. Report along with material has been sent to O/C, CEL Section.
149. One example of Odonata received from Dr. Debnath, Department of Entomology, Vidyasagar College, Kolkata, were studied and identified. Identification report and materials were sent to O/C, CEL Section.
150. Three examples of Odonata received from Dr. G.K. Saha, Department of Zoology, Calcutta University, Kolkata, were studied and identified. Identification report and materials were sent to O/C, CEL Section.
151. Five examples of Odonata received from Dr. S. Sinha, Entomology Section, Bethune College, Kolkata, were studied and identified. Report along with material has been sent to the party.
152. Five examples of Odonata received from Dr. P. Mukhopadhyay, Scientist-E, Coleoptera Section, ZSI, Kolkata, were studied and identified. Report along with material has been sent to the concerned person.
153. Dr. S.K. Das, Reader, Aquaculture, Faculty of Fishery, West Bengal identified 1 spp.; 1 exs.
154. Tanmoy Chaudhuri, G.P. Pant Institute of the Himalayan Environ. Dev., Itanagar identified 12 specimen, 1 ex.
155. Dr. K.K. Jha, Head of department of Zool. J.N. College, Arunachal Pradesh identified 40 spp, of 42 exs.
156. Dr. W.V. Vishwanath, Dept. of Life Sc., Manipur University provided 21 type material for study.
157. Dr. B.K. Chanda, Tarai T.A. Vidyalaya, Siliguri town, Darjeling, W.B. identified 6 spp., of 7 exs.
158. Identified 50 lots of earthworms received from Prof. Ch. Sommaiah (Principal) University College, Kakatiyya University, Warangal- 506009 (AP).
159. Twenty lots of earthworms received from Mr. H. Lalthanzara, Lecturer, Deptt. of Zoology, Pachunga University College, Aizawl-796001 (Mizoram) were identified.
160. Identified 9 lots of earthworms received from Dr. N.C. Talukdar, Head, Microbial Resource Division, Institute of Bioresources and Sustainable Development, Dept. of Biotechnology, Takyealpat, Imphal-795001.



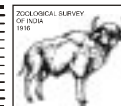
161. Fourteen samples of marine invertebrate fauna were identified for Dr. Abhijit Misra, of Dept. of Marine Science, Calcutta University, Kolkata.
162. Mr. U.J. Sharma, Jr. Scientist (Soil), Regional Agric. Res. Station., Gossaigaon -783360 (Assam) was provided with information on preservation of earthworms.
163. Nine lots of earthworms were determined for Dr. Km. Shweta, Associate Professor/Project Directoress, Vermiculture Res. Stn., Dept. of Zoology, D.S. College Aligarh-202001 (UP).
164. Dr.(Mrs.) Pushpanjali Parida, P.G. Dept. of Zoology, North Orissa University, Takatpur, Baripada, Mayurbhanj -757039 (Orissa) was provided identification of 10 lots of earthworms.
165. Identification of confiscated specimens (8 nos.) was rendered to Regional Deputy Director, Wildlife Crime Control Bureau, Nizam Palace, 234/4, AJC Bose Road, Kolkata (WB).
166. M/s Green Gold Vermicompost, Sector 5, Tagore Nagar Bagichha, Raipur (Chhatisgarh) were provided identification and confirmation of the earthworms species from the live collection of earthworms.
167. Two samples of earthworms received from O/C, FBRC, ZSI, Hyderabad were identified for outside Agency( M/S Greengold Vermicompost, Raipur).
168. One lot of earthworm was identified for Jai Research Foundation, P Box No. 30, GIDC, Vapi, Dist. Valsad, Gujarat.
169. One lot (4ex.) of leeches were determined for Mr. Hariharan, G. Madha nagar, Moulivakkan Porur, Chennai-600116.
170. The Coleoptera section has provided the identification and advisory services to Dr. Deepak Kumar Tamili, Midnapore, 7 dry examples; Dr. D.K. Bhattacharya, Kalyani University, Kolkata, 30 examples; Dr. G.K. Saha, Calcutta University, Kolkata, 09 examples; Dr. Nirmal Debnath, Vidyasagar College, Kolkata, 13 examples; Dr. G.C. Sadhukhan, Vidyasagar College, Kolkata, 07 examples; Sri Sundrika Pal, M.Sc. Student, Bethun College, Kolkata, 2 dry examples; Sri M.R. Khan, B.C.K.V. Nadia, W. Bengal, 02 vials; Dr. G.K. Saha, Calcutta University, Kolkata, 03 vials; Prof. B.S. Mahapatro. Central Research Institute for Jute & Allied fibres, 03 vials; Dr. G.K. Saha, Calcutta University, Kolkata 12 vials; Dr. S. Sinha, Bethun College, Kolkata, 03 vials, Dr. S. Sinha, Bethun College, Kolkata, 03 vials; Sri Sundrika Pal, M.Sc. Student, Bethun College, Kolkata 03 vials; Dr. S. Sinha, Bethun College, Kolkata, 02 envelope, 2+3 examples.
171. 100 spider specimens of 25 species belong to 47 genera under 17 families have been identified received from SRF, Wild Life Institute Dehradun and institutes of Kolkata.
172. 15 spider specimens of 4 species belonging to 3 genera under 2 families received from Vidyasagar College, Kolkata.
173. Two scientific papers on Taxonomy of Spider have been edited and extended comments as Referee.
174. The Hemiptera section provided the identification and advisory services to Dr. L.K Ghosh; Retd. Deputy Director; ZSI, Kolkata; Dr. Sumita Gupta; Dept. of Ecology & Environmental Sciences; Assam University; Silchar. Assam; Dr. Nirmal Debnath; Incharge Entomology



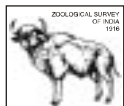
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- Dept.; P.G. Dept. of Zoology; Vidyasagar College, Kolkata; Dr. Gobinda Chandra Sadukhan; Head Post Graduate Dept. of Zoology; Vidyasagar College; Dr. D.K. Bhattacharyya; Prof. of Zoology; Faculty of Sciences; University of Kalyani; Dr. Saswati Singha; In Charge Entomology Dept.; Bethun College; 181 Bidhan Sarani; Kolkata 700 006; Ms. Sarmistha Roy; Bethun College; 181, Bidhan Sarani; Kolkata 700 006; Samudrika Pal; M.sc student, Bethun College; 181, Bidhan Sarani, Kolkata 700 006; Prof. & Head of the Dept of Entomology; CCSHAU, Hisar, Haryana-125004; Dr. Saswati Sinha; In Charge Entomology Dept.; Bethun College, Kolkata 700 006; S.K. Mukherjee; Principal Bankura Sammilani College; Kendurdihi, Dist-Bankura 722102; Rimpa Debnath; Dept. of Zoology (P.G); Vidyasagar College; Kolkata 700 006.
175. Information provided to Prof K.C. Pande, Lucknow University, Lucknow (Ref. No. Platy/Enq/09-10/01 dt. 07.04.09 on Platyhelminthes.
176. Information provided to Prof R. Madhavi, Andhra University, Vishakhapatnam (Ref. No. Platy/Enq/09-10/02 dt. 26.6.2009 on Platyhelminthes.
177. Information provided to Shri Debabrata Mondal, Bandh Pukur, Kandi Murshidabad (Ref. No. Platy/ Enq/09-10/03 dt 26.06.09); Enquiry for : Identification of material; Remarks : Specimens were not provided. Only a photograph was provided and the specimen was not of Platyhelminth, photograph returned. (Ref. No. Platy/ Enquiry reply/09-10/03/8111 dt.26.6.09).
178. Information provided to Dr. (Mrs.) Veena Tandon, Prof, NEHU, Guwahati (Ref. No. Platy/Enq/09-10/04 dt 20.7.09); Enquiry for : Deposition of type specimens; Remarks : Provisional Reg. Nos. provided (w9247/1 – w9252/1).
179. Information provided to Prof. K.C. Pande, University of Lucknow, Lucknow (Ref. no. Platy/Enq/09-10/06 dt.15.09.01); Enquiry for : Seeking of literature; Remarks : Literature provided on Platyhelminthes.
180. Information provided to Prof. Veena Tandon, NEHU, Guwahati (Ref. No. Platy/Enq/09-10/06 dt.15.09.2009); Enquiry for : Deposition of type specimens; Remarks : Provisional Reg Nos. provided (w9258/1-w9261) on Platyhelminthes.
181. Information provided to Dr. (Mrs.) Sucharita Datta, Victoria Instt, (College) (Ref. No. Platy/09-10/07 dt.0302.10; Enquiry for : Identification of material; Remarks : Identified and provided on Platyhelminthes.
182. Advisory services rendered to Mrs. P. Dutta Roy and Ms. S. Mondal, Research Fellow, Dept. of Zoology, University of Calcutta on Nematohelminth.
183. The insect specimens sent by Dr. Nikhil Srivastava, 'Principal Scientist' Entomology Section, JNKV, Jabalpur were identified on 6th April, 2009.
184. Dr. Sanjeev Gupta, Head of Zoology, Kurukshetra University College, was given the information on termites publications from India on 6th April, 2009.
185. Mr. Tara Chandra Gupta, Correspondent of HARIBHUMI newspaper was given the information on a new record of fish from Central India on 8th April, 2009.
186. Mr. Sunil Kushwaha, Teacher in Betul College was given the information on 'Collection and preservation techniques of moths' on 15th April, 2009.



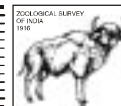


187. Dr. Gonalzo Halfter, Scientist of Mexico was sent the reprints of Scarabaeidae on 15th April, 2009.
188. Dr. Maniram Burra, Professor of Zoology from G.M.N. College, Ambala was sent the reprints of Scarabaeidae on 15th April, 2009.
189. Dr. G. Thirumalai, Scientist 'F' was sent the Zoorecords information on Membracidae from 1978 to 2006 on 16th April, 2009.
190. Mr. Raja Raj Thilak, M. Sc. Zoology, Student of Govt. Autonomous College, Jabalpur was given the information on Fish Fauna of Jabalpur on 20th April, 2009.
191. Sri S.S. Mishra, Fish Section, Fire Proof Sprit Building, ZSI, Kolkata was sent the references on Fishes from 1978 to 2006 on 6th May, 2009.
192. Mr. Chengbin Wang, Key Laboratory of Insect Resources Utilization and Sustainable Pest Management of Hubei Province, P.R. China was sent the reprints of Scarabaeidae on 7th May, 2009.
193. Ms. Durgesh Nandini, Research Scholar, Bhopal was given the information on Butterflies of Madhya Pradesh on 11th May, 2009.
194. Ms. Shushila S. Marawi, B.Sc. student of Howbagh Womens College, Jabalpur was given the guidance for the project on Biodiversity on 11th May, 2009.
195. Dr. Kailash Chandra, Scientist 'F' sent the report of identification to Entomology Section, J.N.K.V. Jabalpur.
196. Dr. Kailash Chandra, Scientist 'F' guided two M.Sc. students viz. Mr. Mohan Lal (on Aquatic insects) and Mr. Akhilesh Patel, (on Dung Beetles) of Environmental Sciences, Govt. Science College, Jabalpur for writing their Dissertation for the partial fulfillment of the degree during the May 2009.
197. Dr. Kailash Chandra, Scientist 'F' undertook the M.Sc. Zoology (II Semester) practical exam of Govt. J.S.T.P.S. College, Balaghat on 20th May, 2009.
198. Ms. Bhawna Dubey, Central Forensic Laboratory, Kolkata was supplied the information on genus *Natrix* (Reptilia) on 24th May, 2009.
199. Dr. Kailash Chandra, Scientist 'F' furnished the information on 'Dung beetles of India' to Dr. I.C. Mittal, Professor (Ret.), Kurukshetra University, Kurukshetra on 06-06-2009.
200. A daily newspaper 'Nai Duniya' was given the information on threatened butterflies during the observation of ; Butterfly Day' on 19th June 2009.
201. Dr. J.L. Srivastava, Senior Scientist of State Forest Research Institute, Jabalpur was provided the literature on Faunal Inventory of various groups of animals of Madhya Pradesh and Chhattisgarh on 16th July, 2009.
202. Dr. Ruquaeya Bano, Research Fellow of NBPGR, New Delhi visited the CZRC, Jabalpur on 28th to 31st July, 2009. She was also provided the current literature on Bruchids (Coleoptera) of India along with the identification of specimens.
203. As per the direction of DZSI, a brief report of 'Impact of Solar Eclipse (July, 22nd 2009) on Fauna' was sent to "AjtaK" for the information on 26th August, 2009.
204. Dr. R.M. Sharma, Scientist 'D' rendered advisory services to Shri. Mukesh Ingle, Director, Reptile Conservation & Research Centre, Ujjain (M.P).



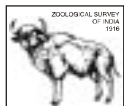
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205. Dr. R.M. Sharma, Scientist 'D' rendered advisory services online pertaining to Cotton gall midge to Dr. Shashikant Udikeri, Entomologist (Cotton), Agricultural Research Station, Dharward (Karnataka).
206. Mr. Sujeet Kushwaha, student of B.Sc. IIIrd Semester, Govt. Model Science College, Jabalpur was given the information on Mollusca of Jabalpur for his project work on 9th November, 2009.
207. Miss Pushpa Kirar, Miss Roli Jhariya and Miss Sushila Singh Maravi, Students of B.Sc Ist Semester, Howabagh College, Jabalpur were given the facility to complete their projects on Birds, Mammals & Reptilia respectively on 16th November, 2009.
208. Miss Rupali Singh, Student of M.Sc. Ist Semester, Govt. Autonomous Science College, Jabalpur, completed the Internship of two months training programme at the Centre from August to October, 2009. She completed the project on the Biodiversity of Moths in VDWLS, Damoh during the above period.
209. Dr. Kailash Chandra, Scientist 'F' rendered the identification services to Dr. V.S. Zade, Department of Zoology Govt. Vidharbha Institute of Science & Humanities, Amravati-444604. Maharashtra on 18th November 2009 & 24 species were identified.
210. Professor Sandeep K. Malhotra D.Sc, Principal Investigator, DBT & UGC Research Project, Post Box No. 2010, Parasitology Laboratory, Department of Zoology, Allahabad Central University, Allahabad- 211002, U.P., India, was sent the information on AICOPTAX on 14th Dec. 2009.
211. Member Secretary, Madhya Pradesh Biodiversity Board, Bhopal visited the Regional centre, and he was given the information regarding the activities of Zoological Survey of India, on 14th December, 2009 and two recent publications on Pachamarhi and Bandhavgarh Biosphere Reserve were also provided.
212. Ms. Ollinia Pal, Dainik Bhaskar, Jabalpur was provided the information on 'Migratory Birds visiting to the Jabalpur areas' on 15th December 2009.
213. Shri S.L. Vengidu Subramaniam, 5/570-South Valavu, Amaravathi Palayam, Pollikali Palayam (P.O.), Tirupur, 641665, Tamil Nadu was sent the information on activities and achievements of Zoological Survey of India on 13th January, 2010.
214. Dr. Kailash Chandra, Scientist 'F' reviewed and returned a manuscript entitled "Diversity and Seasonal fluctuations in dung beetle (Coleoptera) community in Kurukshetra, India" for Entomological Research.
215. Mr. Pramod Mishra, corespondent of 'Patrika' newspaper was given the information on 'Endangered species of Vultures in Madhya Pradesh' and their recent sightings in Veerangana Durgavati WLS, Damoh, which appeared in 'Patrika' on 16th January, 2010.
216. Dr. Rajesh Kumar, Division of Entomology, I.A.R.I. Pusa, New Delhi-110012 was sent the reprint on 'Geometridae' (Lepidoptera) of Sikkim, on 29th January, 2010.
217. An interview with Dr. R.M. Sharma, Scientist 'D' was telecasted (live) on TV Sahara Samay Channel (MP & CG) regarding faunal diversity and status of



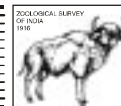
- near threatened species of Narmada Basin in MP on 14th February 2010.
218. Shri Jaydeep Singh Chauhan, A-15, Avadhपुरi Colony, BHEL, Piplani; Bhopal was given the information on various aspect of faunal diversity in M.P., and the activities of Zoological Survey of India.
219. Ms Poornima khare, Reporter of Peoples Samachar and Sunil khare, Reporter of Raj Express, Jabalpur were provided the literature and information on Butterflies of Madhya Pradesh and Chhattisgarh on 29th March, 2010.
220. Scientific guidance rendered to the Research Scholars of different institutes of Patna and outside for the identification of Molluscs, Insects and Zooplankton for preparation of their dissertation. (Dr. P.M. Sureshan, Sci. C, Dr. Gopal Sharma, Sci. B, & Dr. S. Sambath, Sci. B.)
221. Identification service rendered on collections of Parasitic Hymenoptera and Mantodea received from other regional stations of ZSI and outside departments (Dr. P.M. Sureshan, Sci. C)
222. Library and literature facilities were rendered to research scholars and M.Sc. students of Universities and other educational institutions.
223. Delivered lectures on current status of Gangetic dolphin in Indian subcontinent on river cruise from Sultanganj to Kahalgaon (Dolphin sanctuary) (Dr. Gopal Sharma)
224. Guidance extended on dissection and gut content studies of river dolphin to M.Sc. Zool students of Patna University (Dr. Gopal Sharma)
225. Some insect photographs received for identification from Freshwater Biology Centre, ZSI, Hyderabad were identified by the scientists of WRC, Pune.
226. Some fish specimens received for identification from Principal, New Arts, Commerce & Science College Parner, Dist. Ahmadnagar-414302 (Maharashtra).
227. Some seized material of birds was received for identification from Dy. Conservator of forests, Ahmadnagar.
228. Three bird photograph received for identification from Dr. R. D. Chowdhari, Dept. of Zoology, S.S.C. College, Junnar, Dist. Pune.
229. Some aquatic beetles were received for identification from Dr. V.S. Zade, Head, Dept. of Zoology, Govt. Institute of Science and Technology, Amravati.
230. Some fish specimens received for identification from Dr. S.S. Patole, Lecturer, Dr. S.G. Patil Arts, Science & Commerce College, Sakri, Dist. Dhule.
231. 39 samples of aquatic insects received for identification from Wetland and Energy Research Group, Centre for Ecological Sciences, Indian Institute of Science, Bangalore.
232. Some pellet samples were received for identification from Shri.Kiran Purandare, Director, Nisargvedh, Pune.
233. Fish specimens received for identification from Dr. J.D. Vasait, Lecturer, M.G. Vidya Mandir's college, Manmad, Nasik Dist.
234. Some feathers and skin of legs received for identification from Forest Dept., Wildlife, Paud, Pune.
235. Fish specimens received for identification from Dr. J.D. Vasait, Lecturer, M.G. Vidya Mandir's college, Manmad, Nasik Dist.
236. Some bird photograph received for identification from RFO, Thane Forest Dept.



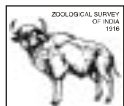


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237. Fish collection were received for identification from Dr. Deore, Principal, S.G. Patil Arts, Commerce and Science college, Sakri, Dist. Dhule.
238. Fish photograph were received through Dr. S.G. Patil e-mail from Shri. M.G. Mahajan, Lecturer, SVS College, Dondaicha, Dist. Dhule.
239. Fish specimens received for identification from Dr. J.D. Vasait, Lecturer, M.G. Vidya Mandir's college, Manmad, Nasik Dist. (Kadwa River)
240. Pellet material of Mottled wood Owl (*Strix ocellata* Lesson) received for identification from Dr. Satish Pande, Ela foundation, Pune.
241. 10 specimens of Cladocera received for identification from Dr. T.G. Marvania, Jai Research Foundation, Valsad, Gujarat.
242. Fish specimens received for identification from Jay Research Foundation, Valsad, Gujarat.
243. Fish specimens received for identification from Shri. Sunil Bhoite, Satatra, Maharashtra.
244. Pellet material of Mottled wood Owl (*Strix ocellata* Lesson) received for identification from Dr. Satish Pande, Ela foundation, Pune.
245. Fish specimens were received for identification from Shri. Sunil Bhoite, Satara.
246. Fish collection were received for identification from Principal, Vidya Pratishthan's, Arts, Science & Commerce College, Baramati.
247. Plankton samples were received for identification from Dr. M.P. Dore, Director, Intox Pvt. Ltd., Urmade, Mulshi, Pune dist.
248. Mr. Firoz Ahmed, Division of Herpetology, Aaranyak, Guwahati visited the Section from 15-19th June, 2009 to study amphibian specimens from North-Eastern India.
249. Mr. Stephen Mahony, Research Scholar, School of Environmental Studies, University of Delhi visited the Amphibia Section from 4-12th January, 2010 to study type specimens.
250. 37 students and 4 teachers from Tilakdhari College, Jaunpur, Uttar Pradesh visited the Amphibia Section on 23rd December, 2009 to see amphibian collections.
251. Principal, A.V. Baliga College of Arts and Science, Kumta, Karnataka, identified 10 specimens of amphibians sent by him.
252. Dr. M.R. Khan, Principal Investigator, Horticultural Crop Pests Mapping and Advisory Services in West Bengal Directorate of Research, BCKV, Kalyani, Nodia, (West Bengal) on molluscs.
253. Dr R.K. Jauhari, Reader, Parasitology Laboratory, D.A.V College (PG)', Deharadun-248001, (Uttaranchal) Dr Swapan Kumar Brahma, Joint Co-ordinator, P.G Department of Environmental Sciences, Asutosh College, 92, S.P. Mukherjee Road, Kolkata-26 were provided advisory services on mollusca.
254. Dr. B.J. Gogoi, Co-ordinator & Head, Phytochemistry Division, Defence Research Laboratory, Post Bag No. 2, Tezpur-784001, (Assam) provided advisory services on mollusca.
255. Dr A.S. Mondal, Dr. R.S. Magare, C.H Choudhry Arts, S.G. Patel Commerce & B.J. Patel Science College, Talada-425413, (Maharashtra) provided advisory services on mollusca.

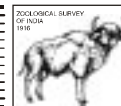


256. Mr Sunil N. Khade, Research Scholar, Centre For Coastal and Marine Biodiversity, Bhatye, Ratnagiri, (Maharashtra) provided advisory services on mollusca.
257. Dr Asim Nath, Reader, Dept. of Zoology, Srirampur College, Srirampur, Dist. Hooghly (West Bengal) provided advisory services on mollusca.
258. Mr. R.K. Samal, Regional Deputy Director, Wildlife Crime Control Bureau, Eastern Region, Nizam Palace, 2nd MSO Building, 6th Floor, Kolkata-20 provided advisory services on mollusca.
259. Identification & Advisory Services by Hymenoptera Section to Dr. S.R. Hajong, Dept. of Zoology, Northeastern Hills University, Shillong; 29 vials.
260. Identification & Advisory Services by Hymenoptera Section to Dr. D.K. Khan, Dept. of Environmental Sciences, Univ. of Kalyani, West Bengal, 9 vial.
261. Identification & Advisory Services by Hymenoptera Section to Dr. O.K. Remadevi, Institute of Wood Science & Technology, Malleswaram, Karnataka 6 specimens.
262. Identification & Advisory Services by Hymenoptera Section to Dr. D.K. Bhattacharya, Dept. Zoology, Univ. of Kalyani, West Bengal 7 vials.
263. Identification & Advisory Services by Hymenoptera Section to Dr. Nirmal Debnath, PG Dept. of Zoology, Vidyasagar College, Kolkata 19 examples.
264. Identification & Advisory Services by Hymenoptera Section to Dr. Saswati Sinha, Dept. of Zoology, Bethune College, Kolkata 4 vials.
265. Identification & Advisory Services by Hymenoptera Section to Dr. Saswati Sinha, Dept. of Zoology, Bethune College, Kolkata 50 specimens.
266. Identification & Advisory Services by Hymenoptera Section to Prof. H.S. Banyal, Dept. of Biosciences, Himachal Pradesh University, Summer Hills, Shimla, 22 specimens.
267. Dr. R.K. Sinha from Dept. of Zoology, Patna University and three scientists from Japan visited the Mammal Gallery in The Indian Museum for taking measurements and taking photographs of the Holotype specimen *Balaenoptera edeni* and collected bone powder from the same for genetic determination.
268. Officials of Central Biodiversity Board under Ministry of Environment and Forests visited the Zoological Galleries.
269. C. Radhakrishnan, Sci. F. : Reviewed 2 research documents (Fauna of Chandigarh and Snakes of Western Ghats), 2 pictorial handbooks (Butterflies of Himachal Pradesh and Amphibia of Northeastern India) and 5 research papers and comments offered.
270. K.C. Gopi, Scientist-E : Reviewed 10 research papers on fish taxonomy and comments offered.
271. K.C. Gopi, Scientist-E : Extended the identification services to the postgraduate students of Zoology of Farooq College by identifying 41 fish species; 6 species for Aquatic biology division of the Zoology Dept., Kerala University.
272. Dr. K. Rajmohana, Scientist-C : Reviewed a research paper on parasitic hymenoptera for a reputed journal.
273. Dr. K. Rajmohana, Scientist-C : Identified 2 specimens of a Hymenopteran parasitoid of a gall making



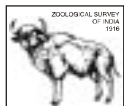
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- microlepidoptera as *Elasmus* sp. (Eulophidae : Chalcidoidea), in response to a request by the scientists at Rubber Board, Kerala.
274. Dr. K. Rajmohana, Scientist-C : Rendered advisory services to a group of higher secondary students from GHSS Thamarassery, for their project at The Sub district Science fair, on Biodiversity of Western Ghats.
275. K.G. Emiliyamma, Scientist-C : Identified 18 exs. of Odonata belonging to 13 species under 11 genera and also provided literature for B.Sc. Zoology students of Providence College, Kozhikode.
276. K.G. Emiliyamma, Scientist-C : Identified 22 exs. of Odonata belonging to 11 species under 9 genera for Ms. Shalini, B.Sc. Zoology, Malabar Christian College, Kozhikode and also provided literature pertaining to Odonata, for her project work.
277. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Reviewed a paper on Butterflies of Indira Gandhi NP & WLS, Tamil Nadu.
278. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Identified the images of Antlers and Wildlife trophies confiscated at Cochin Port by the Wildlife Crime Control Bureau, Sub regional Office, Kochi.
279. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered advisory services to the M.Sc. Zoology (Wildlife) students of Farooq College, Kozhikode on the subjects : (Avian diversity of Mavoor wetlands, Kozhikode; Behaviour and activity pattern of selected wetland birds; Study on the avian diversity at Purathur estuary, Malappuram; Comparative study of Avian diversity of wetlands of Kadalundi and Mavoor)
280. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered advisory services on Butterflies of Sacred Groves of North Kerala to the M.Sc. Entomology students of Madappally College, Kozhikode
281. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered identification and advisory service to the Kerala Forest Dept. officials (Thamarassery range) on the identification of confiscated owl species (Barn owl) to be submitted before the Magistrate court, Thamarassery.
282. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Identification and advisory service rendered to B.Sc. Zoology student of Govt. Arts & Science College, on the breeding of birds of Kozhikode district.
283. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered identification and advisory service to the Kerala State Forest Dept. officials of Thamarassery range on the confiscated body parts of snake specimens.
284. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered identification and advisory service to the B.Sc. Zoology students of Providence College, Kozhikode on "flower-insect relationship"
285. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered identification & advisory service to forest officials of Kozhikode division on the confiscated feather samples of birds to submit before the Magistrate Court of Thamarassery.



286. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Identified various types of bird nests collected from Kozhikode district to the B.Sc.Zoology students of Govt.Arts & Science College, Kozhikode.
287. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Identified 22 exs. of butterflies pertaining to 5 species to the B.Sc. Zoology students, Providence College, Kozhikode.
288. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Rendered identification & advisory service to Forest officials on the identification of a dead specimen of Small Indian Civet for the Postmortem report
289. Dr. Muhamed Jafer Palot, Senior Zoological Assistant : Appeared before the First Class Magistrate Court as an expert witness on the identification of confiscated bird species.
290. Dr. K.P. Dinesh, Zoological Assistant : Extended identification & advisory services to Mr. Sujeeth of Rajiv Gandhi Centre for Biotechnology, Trivandrum for identifying few of the anurans and to view the identified collections of the depository for his study.
291. Dr. K.P. Dinesh, Zoological Assistant : Identified 5 amphibians belonging to 4 species from ZSI, FBRC, Hyderabad for Prof Rangareddy and deposited into the national depository.
292. A group of 121 students of Ramkrishna Sarada Mission Girls High School, New Alipore visited the Section along with some teachers during December, 2009
293. A group of 25 students of North Eastern Hill University, Shillong along with teachers visited the section on 07.01.2010
294. Shri P.J. Dilip Kumar, D.G. of Forests, MoEF, New Delhi visited the section on 25.01.2010
295. Dr.(MS) R. Nandini , Research Associate, National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore visited the section on 28.01.2010 for collection of samples of Civats.
296. Dr. A.U. Choudhury, Honorary Chief Executive, The Rhino Foundation for Nature in NE India visited the section during February, 2010
297. Dr.(MS) R. Nandini , Research Associate, National Institute of Advanced Studies, Indian Institute of Science Campus, Bangalore visited the section during March, 2010.
298. Dr.(MS) Joanne H. Cooper, Curator, The Natural History Museum, London visited the section during February, 2010



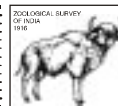


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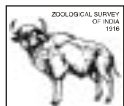
### Details of seized wildlife materials identified at Mammal and Osteology Section

Sl. No.	Date	Received from	Article received	Identified as
1	16.04.2009	Regional Dy. Director WCCB, Kolkata	6 small hides	Could not be identified due to lack of comparative materials
2	17.04.2009	DFO, Raipur Forest Division Chhatishgargh	Animal parts	Confirmed as Sotted Deer parts, ( <i>Axis axis</i> )
3	17.04.2009	Range Officer, Basirhat Rnge Sundarban Tiger Reserve West Bengal	Animal meat	Samples were identified as meat of Spotted Deer, <i>Axix axix</i> .
4	20.04.2009	DFO, Jalpaiguri Division West Bengal	Flat skins	Identified one as flat skin of Sambar, <i>Cervus unicolor</i> and another as skin of domestic cattle.
5	010502009	DFO, 24 Parganas (South) Division, Alipore	Flat skin	Identified as flat skin of Tiger, <i>Panthera tigris</i>
6	01.05.2009	Shri Krishnendu Ghosh S.I, D.R.B.T., CID, Kolkata	Limb Bones	Identified as limb bones of Tiger, <i>Panthera tigris</i>
7	18.05.2009	Romesh K. Pandey, Dy. Director WCCB, New Delhi	Fur Skins	Could not be done since they are extralimital species
8	18.05.2009	Regional Dy. Director WCCB, Kolkata	Fur Skins	Confirmed as fur skin of Black Buck, <i>Antelope cervicapra</i>
9	18.05.2009	DFO, Raipur Forest Division Chhatishgargh	Different animal organs	One sample was identified as parts of Sambar, <i>Cervus unicolor</i>
10	28.05.2009	Shri Dilip Kr. Adak, IPS Dy. Commisioner of Police, Lalbazar, Det. Deptt., Kolkata	Wildlife articles	Sample marked as A. Identified as Leopard, <i>Panthera pardus</i> , Sample marked as B. Identified as Himalayan Black Bear, <i>Ursus thibetanus</i> Sample marked as C. Identified as Nilgai, <i>Boselaphus tragocamelus</i> Sample marked as D. Could not be identified as taxonomic characters are lost

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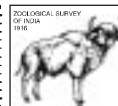
Sl. No.	Date	Received from	Article received	Identified as
				<p>Sample marked as E. Identified as distorted skull of Indian Bison, <i>Bos frontalis</i></p> <p>Sample marked as F. Identified as flat skin of Leopard, <i>Panthera pardus</i></p> <p>Sample marked as G. Identified one as skull of Sambar, <i>Cervus unicolor</i> and another one is a skull of sub-adult specimen of the order Artiodactyle mounted on a piece of wood.</p> <p>Sample marked as H. Identified as antler of Kashmir Stag, <i>Cervus elaphus</i></p> <p>Sample marked as I. Identified as six pieces of antlers of Black Buck <i>Antelope cervicapra</i></p> <p>Sample marked as J. Four pieces Antlers of Sambar, <i>Cervus unicolor</i></p>
11	07.07.2009	DFO, Raipur Forest Division Chhatishgargh	Most mortem report of Bison	Could not be provided due to lack of infrastructure
12	07.07.2009	DFO, Raipur Forest Division Chhatishgargh	Most mortem report of Sambar	Could not be provided due to lack of infrastructure
13	07.07.2009	DFO, Raipur Forest Division Chhatishgargh	Most mortem report of Cheetal	Could not be provided due to lack of infrastructure
14	08.07.2009	Shri Jimut Biswas Asst. Commissioner of Custom (Preventive) P & I Branch C.C.(P), Strand Road, Kolkata	Flat skin	Confirmed as flat skin of Tiger, <i>Panthera tigris</i>
15	09.07.2009	Shri N. M. Kamthe Police Sub-Inspector M.F.C. Police Station, Kalyan Thane, Maharastra	Flat skin	Confirmed as flat skin of leopard, <i>Panthera pardus</i>



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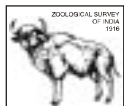
Sl. No.	Date	Received from	Article received	Identified as
16	20.07.2009	DFO, Buxa Tiger Reserve Alipur Dwar, Jalpaiguri, W.B.	Flat skin	Confirmed as flat skin of leopard, <i>Panthera pardus</i>
17	20.07.2009	DFO, Buxa Tiger Reserve Alipur Dwar, Jalpaiguri, W.B.	Horn	Identified as fake Rhino Horn
18	27.07.2009	DFO, Raipur Forest Division Chhatishgarh	Most mortem report of Cheetal	Could not be provided due to lack of infrastructure.
19	05.08.2009	Regional Dy. Director WCCB, Kolkata	One skull	Identified as skull of Green Turtle, <i>Chelone midus</i>
20	01.09.2009	DFO, Buxa Tiger Reserve Alipur Dwar, Jalpaiguri, W.B.	Wildlife articles	Identified as small samples of, one pair of hooves and one tail of Indian Bison, <i>Bos frontalis</i>
21	04.09.2009	Regional Dy. Director WCCB, Kolkata	Wildlife articles	Identified as bones of leopard, <i>Panthera pardus</i>
22	22.09.2009	DFO, Wildlife-II, Cooch Behar West Bengal	Wildlife articles	Identified one as skin of Barking Deer, <i>Muntiacus muntjak</i> another as four raw piece of limb bone with flesh and skin of Barking Deer, <i>Muntiacus muntjak</i>
23	06.10.2009	DFO, Jalpaiguri Division West Bengal	Wildlife articles	Identified as flat skin of Leopard Cat, <i>Prionailurus bengalensis</i> and another as flat skin of leopard, <i>Panthera pardus</i>
24	07.10.2009	Deputy Fiel Director Sundarban Tiger Reserve, Canning, W.B.	Same samples of meat	Identified as meat of Spotted Deer, <i>Axis axis</i>
25	21.10.2009	Deputy Fiel Director Sundarban Tiger Reserve, Canning, W.B.	Same samples of meat	Identified as meat of Barking Deer, <i>Muntiacus muntjack</i>
26	22.10.2009	DFO, 24 Parganas (South) Division, Alipore	Wildlife skulls	Two skulls were confirmed as skull of Spotted Deer, <i>Axis axis</i>
27	27.10.2009	DFO, Malda Division Mokdampur, W.B.	Deer Musk	Identified as fake musk
28	1.12.2009	Shri Giridhar Gore Asstt. Police Inspector Detection Crime Branch Navi Mumbai, Maharastra	Flat Skin	Identified as flat skin of leopard, <i>Panthera pardus</i>

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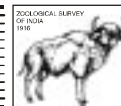
Sl. No.	Date	Received from	Article received	Identified as
29	11.12.2009	Deputy Field Director, Sundarban Tiger Reserve, Canning, 24Parganas (South)	Meat and cut head	Could not be identified due to lack of morpho-taxonomic character
30	14.12.2009	Deputy Field Director, Sundrban Tiger Reserve, Canning, 24 Parganas (South)	Four skulls with antlers	Antlers of Spotted Deer, <i>Axis axis</i> (Erxleben)
31	23.12.2009	Deputy Field Director, Sundrban Tiger Reserve, Canning, 24Parganas (South)	Two Skulls	Skulls of Spotted Deer, <i>Axis axis</i> (Erxleben)
32	23.12.2009	Shri R. M. Mangale, S.I. of Police, Vashi P.S., Navi Mumbai, Maharastra	Two wildlife skins	Skins of Leopard, <i>Panthera pardus</i> (Linnaeus)
33	11.01.2010	Shri K.W. Tejare, Police Inspector, Local Crime Branch, Chandrapore, Maharastra	One wildlife skin along with skull in situ	Skins of Leopard, <i>Panthera pardus</i> (Linnaeus)
34	06.02.2010	Shri S.K. Nath, S.I. of Police, Kultali P. S., 24pgs (S), W.B.	Two flat skin	One skin is of Spotted Deer, <i>Axis axis</i> (Erxleben) & another skin could not be due to lack of morpho-taxonomic character
35	06.02.2010	Range Officer, Chapra Forest Division, Uttar Dinajpur, W.B.	Six nos. of Horn(Assorted)	Horn of Wild buffalo, <i>Bubalus bubalis</i>
36	13.02.2010	Shri V.M. Ghag, CID, Kalyan, Unit-III, Thane, Maharastra	One flat skin	Skin of Leopard, <i>Panthera pardus</i> (Linnaeus)
37	08.03.2010	Shri K.C. Pasalkar, Sr. Police Inspector, Crime Branch, Railways, Mumbai, STF, Dadar (W), Maharastra	One piece of tusk	Tusk of Elephant, <i>Elephas maximus</i>
38	15.03.2010	D.F.O., Baikunthapur Division, Hakimpara, Siliguri, W.B.	Wildlife horn	Fake Rhino Horn
39	29.03.2010	Asstt. Police Inspector, Talwara Tahshil, Dist:Beed, Maharashtra	A pair of nail	Fake tiger nail
40	31.03.2010	Addl. PCCF (WL), Directorate of Forests, W.B.	Cut piece of tusk	Tusk of Elephant <i>Elephas maximus</i>



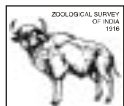


## SYMPOSIA/SEMINARS/WORKSHOPS/TRAINING ATTENDED

1. Shri. Santanu Mitra attended the 97th Indian Science Congress at Thiruvananthapuram Kerala from 3 to 7 January 2010.
2. Kaushik Deuti was invited as a guest lecturer at DST sponsored 3rd SERC School of Herpetology, Guwahati from November 1-15, 2009.
3. K. Deuti attended GIS training course on "Current Trends in Faunal Diversity Studies" at ZSI, WGRC, Kozhikode from March 17-19, 2010.
4. P.C. Majumder attended computer training organized by CMC from 03.08.09 to 07.08.09.
5. Dr. G.P. Mandal attended a Training course on "Current Trends in Faunal Diversity Studies" held at Western Ghats Regional Centre, Z.S.I, Kozhikode from 17th March to 19th March, 2010.
6. Dr. G.P. Mandal visited as an official delegate on "Parivesh Mela and exhibition pavilion", displayed Scientific exhibits of Z.S.I (Museum & Taxidermy Section) organised by Madhyamgram Municipality, at Madhyamgram, North 24pgs district, West Bengal from 18.12.2009 to 21.12.2009.
7. D.V.D. Hegde, Dr. O.P. Srivastava, Smt. Ava Hazra, Sri S.K. Ghosh & Sri S.K. Chakraborty attended Training Programme on IT awareness & E-Governance.
8. Dr. O.P. Srivastava attended XII Training Course on "Field Ornithology from 12th to 15th Jan 2010.
9. Sri B. Jessora & Smt. Phulomoni Mondal Lab. Attendants attended Training Programme of Non-Matric Group-D Employees from 18th to 22nd May 2009.
10. Shri S.S. Ghatak, Asst. Zoologist was deputed to the training programme on 17th Awareness & E-Governance held at CMC Academy from 22.02.2010 to 26.02.2010.
11. Sri S. Talukdar, Asstt. Zoologist & Smt. K. Biswas, Sr. Zool Asstt. attended training courses on it awareness & e-governance held at C.M.C. Academi, Kolkata in separate batches in January & February, 2010
12. Sri S. Talukdar, Asstt. Zoologist organized an observation program on July 22, 2009 at Taregna near Patna in collaboration with GPRS, ZSI, Patna & Shri A. Mahapatra, Mollusca Section, Hq's ZSI, Kolkata related to the effect of total solar eclipse on animal behaviour in captivity and nature with special reference to spiders
13. Dr. A.K. Karmakar, Scientist-B, Shri A. Das, Sr. Zool. Asstt., Shri P.K. Banerjee, Zool. Asstt. And Shri A. Kulshrestha, Jr. Zool. Asstt. participated in the Training Programme on I.T. Awareness & E-Governance at C.M.C Academy, Kolkata during February-March, 2010.
14. R.P. Barman attended the Research Advisory & Monitoring Committee Meeting of BSI and ZSI at the Ministry of Environment and Forests, New Delhi on 9th November, 2009.
15. R.P. Barman delivered a lecture on the "Collection and preservation of Fishes" in connection with the training programme on the Collection of preservation of the Zoological specimens on 17th March, 2010 at ZSI, Kolkata.

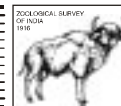


16. R.P. Barman delivered a talk on "Fish Biodiversity of India, its threats and conservation" at the Central Institute of Fisheries Education (Deemed University), Mumbai on 31st March and 1st April, 2010
17. Dr. R. Babu, Scientist-B, Smt. Supriya Nandy, Asst. Zoologist, and Biswajit Saha, Lab. Attendant, attended the Training on "IT Awareness and E-Governance" under the Information Technology Programme of the Administrative Ministry, at CMC, Kolkata.
18. Dr. R. Babu, Scientist-B participated in the "IUCN Eastern Himalayas Freshwater Biodiversity Assessment and High ARCS Evaluation Workshop" from 22nd to 26th March, 2010, at Kolkata.
19. Dr. R. Venkitesan Scientist-C has attended Departmental Training Programme on GIS approach to Biodiversity studies held at Calicut.
20. Mr. A. Mahapatra, Asstt. Zoologists attended seminar "Biological thought: Micro to Macro" organized by Dept. of Zoology, Kolkata Univ.
21. Mr. A. Mahapatra, Asstt. Zoologists attended "International Seminar on 'Datwin & Human Evolution from 10-02-10 to 12-02-10 organized by Asiatic Society, Kolkata.
22. B. Mitra as chair person, As Resource person (ix th Refresher Course on Collection, and preservation techniques of Zoological specimens)
23. Sri Santanu Ghosh, Asstt. Zoologists; Sipra Basu Roy, Sr. Zool. Asstt.; A.K. Singh, Collection. Tender. & Sri. B.B. Dutta, Asstt. Zoologists (Rtd.) attended the XIIth Training Course on Field Ornithology as faculty member at Bethua Dahari, Nadia District, W. Bengal.
24. Shri P.C. Soren, Sr. Zoo. Asstt. and Shri Dipankar. Basu, Zool. Asstt. attended the training Course on Computer.
25. Three sectional staff attended computer training courses organised by CMC Sri Debdulal Saha, Zool. Assistant, Sri K.K. Suman, Zool Assistant, Sri Gopal Chandra Dey, Lab. Assistant.
26. Dr. Gopinathan Maheswaran, Scientist-C & Officer-in-Charge had attended a lecture of Prof. R. Uma Shaanker, Dept. of Crop Physiology and School of Ecology & Conservation, University of Agricultural Sciences, Bangalore at NERIST, Itanagar on 07 May 2009.
27. Dr. Maheswaran had participated in the Regional Seminar on 'Intellectual Property and Innovation Management in Knowledge Era' held at Aizawl, Mizoram from 14-15 May 2009.
28. Dr. Maheswaran also delivered a lecture on 'Biodiversity of Birds' at ERS, ZSI, Shillong on 22 May 2009 (International Day for Biological Diversity) as a part of the Golden Jubilee Year.
29. Dr. D. Suresh Chand, Scientist-C of the Centre had participated in a two-day training programme 'Compact CDDO 2 PAO' meant for DDOs being conducted by the Regional Training Centre of Institute of Government Accounts & Finance, Kolkata from 27-28 January 2010.
30. Dr. C.A. N. Rao, Ex Scientist-E, attended the Annual O/C's Meeting held at ZSI, Kolkata in April. 2009.
31. Dr. S.Z. Siddiqi, Scientist-D & Officer-in-charge, visited Indian Fish Festival - In Fish, 2009 organised by the National Fisheries Development Board, Hyderabad and the Department of Fisheries, Government of Andhra Pradesh,



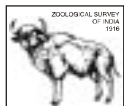
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- Hyderabad from 11-13th July, 2009 for procuring technical specifications/ Financial bids for setting up office aquaria for indigenous/exotic fishes.
32. Dr. S.Z. Siddiqi, participated in a day long *State Level Workshop on Invasive species-threats and opportunities*, organized by Acharya N.G. Ranga Agricultural University, Rajendranagar and A.P. Biodiversity Board on 19-5-2009 at APAU Auditorium, Rajendernagar, Hyderabad.
  33. Dr. S.Z. Siddiqi, attended Third Meeting of the *State Board for Wildlife*, Andhra Pradesh, held on 11th Sept, 2009, A.P. Secretariat, Hyderabad.
  34. Dr. Deepa Jaiswal delivered an invited talk, '*Faunal Diversity in Freshwater Ecosystems*' at a two days symposium "Women in Science and Entrepreneurship" (WISE) organized by Indian Women Scientist Association/CSIR at S't Pious P.G. College, Hyderabad from 11-12 Sept, 2009.
  35. Dr. Deepa Jaiswal, Scientist-B attended Two day work shop on *Right to Information* for CPIO's, 29-30 March, 2010, at ISTM, New Delhi.
  36. One joint workshop in Hindi conducted for Officers/staff of ZSI/BSI. Deccan circle and Forest Research Centre, Dullapally, Secunderabad at FBRC Premises on 28th of January, 2010 by Shri. Narender Sigh, Assistant Director (official languages), MoEF, New Delhi following request faxed on 25-01-2010.
  37. One joint workshop in for Vishesh Pragya (Hindi) was undertaken for officials/staff of ZSI/BSI. Deccan circle at the Centre, from 08 Feb., to 26th Feb., 2010 on written request from Official language division, Ministry of Home, Hindi teaching Scheme, Koti, and Hyderabad, conducted by Shri. Jayashankar Prasad Tiwari, Assistant Director All officers/staff appeared for examination (02 papers) for Vishesh Pragya (Hindi) was conducted by Official Language Department, Central Hindi Teaching Scheme, Hyderabad on 01st March, 2010 for officials/staff of ZSI/BSI
  38. Dr. A.K. Sidhu Attended and presented a paper titled, "Fauna of Pangi Valley (District Chamba, Himachal Pradesh)-an assessment of diversity, distribution and current status" in an International Conference on Mountain Biodiversity : Conservation and Sustainable Utilization held at Doon University, Dehradun, Uttarakhand on 13.03.2010.
  39. Dr. A.K. Sidhu, Dr. Indu Sharma and Dr. Kamal Saini participated in the 13th Punjab Science Congress held at Punjab University, Chandigarh from 7th-9th, Feb, 2010.
  40. Dr. A.K. Sidhu attended seminar on Right to Information Act, 2005 at Jawahar Lal Nehru University, New Delhi on 01.05.2008.
  41. Dr. A.K. Sidhu, Scientist-C attended a training course on "Current trends in Faunal diversity studies" held at Western Ghat Regional Centre, ZSI, Calicut from 17-19 March, 2010.
  42. Dr. Indu Sharma, Scientist-B participated in two days workshop on RTI at ISTM, (Old JNU) New Delhi from 29-30th March, 2010.
  43. Dr. Varadaraju, Scientist-B, Dr. A. Gokul, Senior Zoological Assistant Shri. J.K. Seth, Zoological Assistant Attended the training on IT awareness & e-Governance under information and Technology programmes



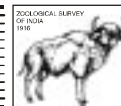
- of the administrative ministry at CMC, Ltd., Kolkata.
44. Dr. A. Gokul, Senior Zoological Assistant Shri. J.K. Seth, Zoological Assistant Participated in the Sundarban Tiger Census under the guidance of Sundarban Tiger Reserve, Govt of West Bengal for monitoring/estimation of tigers, co-predators, prey and habitat from 4-8 March 2010 at Sundarbans.
  45. Dr. A.N. Rizvi and Dr. A. Bahuguna attended monitoring meeting held at DRS, Jodhpur From 9th-12th Sept'09
  46. Dr. A.N. Rizvi and Dr. A. Bahuguna attended-training program on Current Trends in Faunal Diversity held at Calicut, ZSI from 17-19th March'10.
  47. Dr. P.C. Tak and Dr. A.N. Rizvi of the station were deputed to Botanic Garden of India.
  48. Dr. A. Bahuguna was nominated for one Week Training Workshop for Women Scientists on Wildlife Conservation: Issues and Challenges from 8-12th March 2010 at Wildlife Institute of India, Dehra dun and two scientists were nominated for a training Programme
  49. Dr. Vinod Khanna and Dr. A. Bahuguna attended a "National Seminar on Response of Eco biological components to the phenomenon of Global Warming" at Kumaon University Nainital on 26/27th September 2009 and presented papers on the Impact on Soil fauna and; Impact of global warming on sex determination in Reptiles.
  50. Dr. A.N. Rizvi. attended a National Seminar on Bioresources and its Management for Food, Livelihood and Environmental security and National helminthological Congress held at Mumbai from 29-31st Dec' 09 and was awarded for best presentation.
  51. Sh. R.K. Sood, Librarian attended a National Conference of CGLA "Library Vision 2020 and presented a paper on "Application of ICTs for Information and Management to help developmental process and Issues in 21st century" He also was the editor of the proceedings of the Conference, published and released during the Conference.
  52. Dr. Archana Bahuguna, Scientist C attended "The Easter Conference and Annual General Meeting" of the Mammal Society, London U.K. at University of Winchester, from 17-19th April, 2009, as a candidate sponsored jointly by Uttaranchal Council of Science and Technology, Dehra Dun and an NGO-Wildlife, We and Protection, Dadar, Nagar-Haveli, and presented a paper (both oral and poster presentation) on the topic, "Identification through primary guard hair of species from Asia (India) of the Sciuridae family."
  53. Dr. Padma Bohra, Scientist-D has attended "*Training Programme on Environmental Issues in Mining Sector-Legal and Statutory Requirements (as per MoEF Guidelines)*" organised at Engineering Staff College of India, Hyderabad from 19-21 August, 2009. Certificate has been awarded by Organizing Secretary, ESCI, Hyderabad.
  54. Dr. Padma Bohra, Scientist-D has attended one day seminar on "*Right to Information Act, 2005*" at ISTM, New Delhi on 22nd February, 2010.
  55. Dr. Padma Bohra, Scientist-D, Dr. Gaurav Sharma, Scientist-C, Dr. Vinita Sharma, Scientist-B and Dr. Ram Sewak, Scientist-B has presented papers in "*International Conference on Nurturing Arid Zone for people*



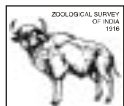


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- and the Environment issues and Agenda for 21st Century” held at CAZRI, Jodhpur from 24-28th Nov., 2009.*
56. Dr. Gaurav Sharma, Scientist-C has selected as Odonata group experts to access the status of Odonata of Eastern Himalayas and for that participated in IUCN Red Data List Assessment for “IUCN Eastern Himalayas Freshwater Biodiversity Assessment Training Workshop” held at Kathmandu, Nepal from 22-26 July, 2009 organized by Freshwater Biodiversity Unit, IUCN Species Programme (Species Survival Commission) Cambridge, United Kingdom and report submitted to Director, ZSI, Kolkata.
57. Dr. Gaurav Sharma, Scientist-C has delivered lecture on “Odonata Diversity in India” in “IUCN Eastern Himalayas Freshwater Biodiversity Assessment Training Workshop” at Kathmandu, Nepal on 25th July, 2009.
58. Dr. Gaurav Sharma, Scientist-C has participated in training on “*Right to Information Act, 2005*” at ISTM, New Delhi from 22-23 Oct., 2009.
59. Dr. Gaurav Sharma, Scientist-C has participated in “*55th Meeting of Nagar Rajbhasha Karayanvyan Samiti*” at North-West Railway, Jodhpur on 23-6-09.
60. Dr. Gaurav Sharma, Scientist-C has participated as ZSI representative/member in “*The review meeting of Regional Museum of Natural History*” at Sawai Madhopur on 20th August, 2009 and report submitted to Director, ZSI, Kolkata.
61. Dr. Gaurav Sharma, Scientist-C has participated as ZSI representative/member in the “*4th Meeting of the State Board for Wildlife, Gujarat*” chaired by Sh. Narendrabhai Damodardas Modi (Hon’ble Chief Minister of Gujarat & Chairman of the State Board for Wildlife) on 4-07-09.
62. Dr. Gaurav Sharma, Scientist-C has participated as ZSI representative/member in the “*Brain storming session on Khejri mortality in Rajasthan*” held at AFRI, Jodhpur on 16-11-2009.
63. Dr. Gaurav Sharma, Scientist-C has participated in “PRAKRITI-2010-A Festival of Indian Documentary Films on Environment, Development & Human Rights” from 4th to 6th March, 2010 at Dr. S.N. Medical College Auditorium, Jodhpur organized by Educational Multimedia research Centre, Jai Narain Vyas University, Jodhpur and Consortium for Educational Communication, New Delhi.
64. Dr. Gaurav Sharma, Scientist-C, Dr. Sanjeev Kumar, Scientist-C, Dr. Vinita Sharma, Scientist-B and Dr. Ram Sewak, Scientist-B has attended and presented the progress of work of the self for the period from 1st April, 2008 to 31st March, 2009 and from 1st April to 31st August, 2009 to the Review committee meeting for monitoring of the progress of work done by Scientist B & C held at DRC, ZSI, Jodhpur from 10th-11th September, 2009.
65. Dr. Gaurav Sharma, Scientist-C, Dr. Sanjeev Kumar, Scientist-C and Dr. Ram Sewak, Scientist-B has participated and presented papers in “*National Seminar on Desert: Its Biodiversity and Conservation*” held on 9th February, 2010 at Deptt. of Zoology, J.N.V. University, Jodhpur sponsored by UGC and jointly organised by Deptt. of Zoology, Faculty of Sciences, J.N.V. University and Jodhpur Natural History Society (JNHS), Jodhpur.

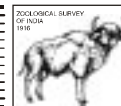


66. Dr. Gaurav Sharma, Scientist-C and Dr. Ram Sewak, Scientist-B has participated in "*Regional Consultation on Biodiversity*" organized by Centre for Community Economics and Development Consultants Society (CECOEDECON), Jaipur held at Sri Ram Excellency, Jodhpur on 23rd February.
67. Dr. Sanjeev Kumar, Scientist-C has participated and presented the research proposal entitled "Studies on Faunal Diversity and Ecology of Moss-associated terrestrial invertebrates and affect of climate change and human intervention" at Schirmarchar Oasis, Antarctica in the "*National Workshop on Evaluation of Research Projects for Planning the 29th Indian Scientific Expedition to Antarctic*" held at National Centre for Antarctic and Ocean Research, Goa on 11-12 June, 2009.
68. Dr. Sanjeev Kumar, Scientist-C has attended "*Training programme of CDDO-2-PAO*" at the Regional Training Centre, Institute of Government Accounts & Finance, Kolkata from 27th to 28th January, 2010.
69. Dr. Sanjeev Kumar, Scientist-C has attended, participated and delivered lecture on Indian Wetlands and their Conservation in the "*Workshop on Environment Conservation and Environmental Laws*" organised by the Office of the Deputy Conservator of Forest, State Forest Deptt., (SFD), Pali district, Rajasthan held at Pali, Rajasthan on 10th March, 2010.
70. Dr. Sanjeev Kumar, Scientist-C has attended "*Training course on Current Trends in Faunal Diversity Studies*" held from 17th -19th March, 2010 at WGRC, ZSI, Kozhikode and a certificate was awarded.
71. Dr. Sanjeev Kumar, Scientist-C has attended, participated and delivered lecture on Faunal Diversity of The Thar Desert in the "Regional Consultation on Biodiversity" organised by Centre for Community Economics and Development Consultants Society, (CECOEDECON), Jaipur held at Jodhpur on 23rd February, 2010.
72. Dr. Sanjeev Kumar, Scientist-C has delivered lecture on Biodiversity in the "*Training programme on New Techniques in Forest Management*" organized by Office of the Dy. Conservator of Forest, Desert Forest Training Centre, State Forest Deptt., Jodhpur on 24th February, 2010.
73. Scientists of DRC, ZSI has participated in the discussion held on "Draft Report of the Task Forces" constituted to make Recommendations to the Government for Strengthening of Botanical and Zoological Surveys of India on 11th Sept., 2009 in the "*MoEF - Task Force meeting*" for BSI/ ZSI held from 11th-12th September, 2009 at DRC, ZSI, Jodhpur.
74. Dr. K. Venkataraman, attended Governing Body meeting of The Madura College, Madurai, Tamilnadu on 14.12.2009
75. Dr. K. Venkataraman, attended National Conference on "Climate Change and Future Security", Loyola Institute of Frontier Energy, Loyola College, Chennai on 9.01.2010 and presented a paper on "Climate Change on Marine Biodiversity" (Abstracts : Invited Talks p. 11).
76. Dr. K. Venkataraman, attended a meeting of Global Biodiversity Information Facility nodes on 12th January 2010 from 10.00 to 13.00 hrs in Room No. 623 of Ministry of Environment and Forests, New Delhi followed by a meeting with Dr. Vishwas



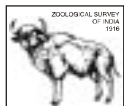
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- Chavan, GBIF Senior Programme Officer at the same venue at 2.30 P.M under the chairmanship of Shri A.K. Goyal, Joint Secretary.
77. Dr. K. Venkataraman, organised meeting on Expert Group on Zoological Survey of India Information System in ZSI, Chennai on 7.02.2009.
  78. Dr. K. Venkataraman, organised display of marine diversity in the Science City festival organized by the State Science & Technology (Tamil Nadu) Anna University and w.e.f 3-7, February, 2010.
  79. Dr. K. Venkataraman, attended and contributed to the National Subcommittee meeting on Coral Reef, Mangrove and wetlands under Ministry of Environment and Forests in CAS, Marine Biology, Annamalai University, Chidambaram on 29-30, March 2010.
  80. Dr. Rema Devi, attended the IUCN Eastern Himalayas Freshwater Biodiversity Assessment and High ARCS Evaluation Workshop from 22nd to 26th March 2010 at Kolkata, as an invitee.
  81. Dr. Rema Devi, attended the interactive meeting of the QRT with the stakeholders of the sector, from 2-5 pm on 27th June at CIBA, Chennai.
  82. Dr. C. Venkatraman attended the Institutional Animal Ethics Committee (IAEC) meeting at SRM College of Pharmacy, Kattangulathur as a CPCSEA nominee on 12.12.09 & 04.01.10.
  83. Dr.C.Venkatraman, attended preliminary discussion meeting at Anna University in connection with Science festival 2010 on 19.01.10.
  84. Dr. K. Venkataraman, delivered an invited lecture on "Biodiversity Conservation in India" for the UGC Spl. Asst Programme on 1st April, 2009 at Annamalai University, Parangipettai.
  85. Dr. K. Venkataraman, participated in the Brainstorming workshop on Strategy for conservation of Farm Animal Genetic Resources and delivered a lecture on Biological diversity Act and Conservation of Farm animals of India from 10th -12th April 2009 at Birsa Agricultural University, Ranchi.
  86. Dr. K. Venkataraman, participated in the brainstorming session on Marine Biodiversity Conservation in India, held at Mandapam Regional Centre of CMFRI, Mandapam for two days on 18th & 19th April, 2009.
  87. Dr. K. Venkatraman, attended the meeting of the Indian Youth Science Congress held during 5th-7th June, 2009 at Rajiv Gandhi Nat. Inst. for Youth Development organized by MSSRF at Sriperambudur, Tamil Nadu. Participated in the Panel discussion on Science for Human Security and Well-being-Importance of Biodiversity in India.
  88. Dr. K. Venkataraman, attended the Regional Workshop on Promoting Conservation and Sustainable Use of Agrobiodiversity in Northeast India from 26th-27th May 2009, organized by Assam Agricultural university, Jorhat, Assam, in co-operation with MSSRF, Chennai and Wageningen International, Wageningen University and Research Centre, Netherlands and delivered a lecture on "Biological Diversity Act and Conservation of Bioresources in North Eastern India".
  89. Dr. K. Venkataraman, presented a Film on Deadly Neighbours "Invasive Alien Species" on 22nd May 2009 during the



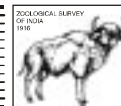
- celebration of the International Day for Biological Diversity, organized by the National Biodiversity Authority, Chennai and NBPGR, New Delhi.
90. Dr. K. Venkatraman, delivered a lecture on "Role of NBA and Biological Diversity Act" during the Regional Training programme on Plant Genetic Resources and Seeds, Policies, Conservation and Use, on 5th October 2009 at Sambasivan Auditorium, MSSRF, Chennai.
91. Dr. K. Venkataraman, delivered a lecture on "Himalayan Biodiversity and Climate Change" during the Himalayan Chief Ministers Conclave-Glaciers, Climate and Livelihood, held at Shimla, Himachal Pradesh from 29th -30th October 2009.
92. Dr. K. Venkataraman, delivered a lecture on "Biodiversity in India and its Conservation strategies" under Faculty Development Training Program on "Environmental Science and Engineering" organized by Department of Rubber and plastics Technology, MIT Campus, Anna University, Chennai on 16.12.2009.
93. Dr. K. Venkatraman, delivered an interactive Lecture on "Conservation of Coral reefs of India" for 187 students visited MBRC from Madhya Pradesh Council of Science and Technology, Bhopal.
94. Dr. K. Venkataraman, delivered lecture in Faculty Development Training Program on "Climate change and Biodiversity" the Algology Laboratory, Center for Advanced Studies in Botany, School of Life sciences University of Madras, Guindy Campus Chennai-600 025 on 10.02.2010.
95. Dr. K. Venkataraman, delivered a lecture in the Meeting of the IMO Level-1 training on Pollution Response Team (East) of the Indian Coast Guard at Chennai on "Wildlife Causalities" on 11th March 2010.
96. Dr. K. Venkataraman, delivered a lecture in the Training Programme on Role of Youth in Climate Change and Globalisation: on "Biodiversity Conservation and Climate Change" on 19.03.2010 in Rajiv Gandhi National Institute of Youth Development, Sriperumputhur.
97. Dr. K. Venkataraman, delivered a lecture on 23.03.2010 "Reducing pressure on spawning areas" organized by Project Management Unit of International Fund for Agriculture Development (IFAD) assisted Post Tsunami Sustainable Livelihood Project (PTSLP) on "Fisheries Resource Management" based on the issues consolidated from Cluster Level Workshop in Chennai.
98. Dr. K. Rema Devi, gave an invited lecture titled "Ichthyology with special reference to Diversity and Distribution of Freshwater fishes of India" for M. Sc students, at the Summer Training Programme of the University of Madras on Biological Sciences organized by Science City, Govt. of Tamil Nadu, on 4th June, 2009 in the Anna University Campus, Chennai.
99. Dr. K. Rema Devi, served as a Panelist for the Round Table Discussion on Biodiversity and Invasive Alien Species as part of the International Biodiversity Day celebrations at C.P.R. Environmental Education Centre on the forenoon of 22.5.09. A power point on "Invasive Alien Freshwater Fishes of India" was presented.
100. Dr. K. Rema Devi served as a Panelist during the Discussion on Climate Change



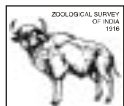


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- and Biodiversity, organized by the Science City, Chennai, during the Chennai Science Festival 2010, on 5th Feb, at the Science City Auditorium and presented a power point presentation on "Wildlife and Climate Change" to students from various schools.
101. Dr. K. Rema Devi, attended the Training Programme on "Advances in DNA Marker Techniques" conducted by the National Bureau of Fish Genetic Resources (NBFGR) Cochin Unit, Kerala from 17th-28th February 2009.
  102. Dr. C. Venkatraman attended Training course on CDDO 2 PAO from 27.01.10 to 28.01.10 conducted by Institute of Government accounts & finance, Kolkata.
  103. Dr. C. Venkatraman and Ms. G. Sivaleela attended training course on "Current trends in faunal diversity studies" from 17-19, March 2010 felicitated by WGRC/ZSI, Kozhikkode.
  104. Dr. C. Raghunathan, served as a External Examiner for the M.Sc. Marine Biology degree practical and viva voce examinations held in Department of Coastal and Marine Sciences, Pondicherry University on 17th April 2009.
  105. Dr. C. Raghunathan attended the Senior Scientists meeting held at ZSI Headquarters from April 27-30, 2009 to discuss the annual progress of work made during the year 2008-2009.
  106. Dr. C. Raghunathan served as a Member for the Walk-in-Interview committee to select JRF at Department of Coastal and Marine Sciences, Pondicherry University on 19th May 2009.
  107. Dr. C. Raghunathan served as a Judge for the sit and draw and debate completion organized by Botanical Survey of India, Port Blair on the eve of International Biodiversity Day held on May 22, 2009.
  108. Dr. C. Raghunathan attended 6th Anniversary celebration of Science Centre, Port Blair on May 31, 2009 as a special invitee.
  109. Dr. C. Raghunathan, attended the State Level Environmental Council Meeting chaired by Honourable Lieutenant Governor of A & N Islands held at Raj Niwas, Port Blair on 17th June 2009.
  110. Dr. C. Raghunathan and Dr. C. Sivaperuman, served as a Member for the Walk-in-Interview committee to select JRF held at ZSI, Port Blair on 3rd June and ZSI Chennai on 5th June 2009.
  111. Dr. C. Raghunathan attended State Level Wildlife Board Meeting chaired by Honourable Lieutenant Governor of A & N Islands held at Raj Niwas, Port Blair on 24th July 2009.
  112. Dr. C. Raghunathan attended the meeting to discuss in the issue pertaining to seashell craft industries of the Islands chaired by Chief Secretary of A&N Administration held at Secretariat, Port Blair on 27th July 2009.
  113. Dr. C. Raghunathan presented an Annual Report of Lead Institution : Great Nicobar Biosphere Reserve in the 'Indian National Man and Biosphere Reserve Committee' meeting held at Pachmarhi, Madhya Pradesh during 24th to 26th September 2009.
  114. Dr. C. Raghunathan presented the report on the Activities and Achievements of National Coral Reef Research Institute in the 'National Committee on Mangroves and Coral Reefs' meeting held at Andhra University during 29th to 30th September 2009.

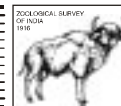


115. Dr. C. Sivaperuman has been nominated as CPCSEA Nominee to the Institutional Animal Ethics Committee (IAEC) of Central Agricultural Institute (CARI), Port Blair by Ministry of Environment and Forest, Government of India, New Delhi.
116. Dr. C. Sivaperuman attended the meeting of Town Official Language Implementation at ZSI, ANRC on 31st July 2009.
117. Dr. C. Sivaperuman Attended the meeting to monitor the progress of works of Scientist B & C during 21-22nd August 2009 at ZSI.
118. Dr. C. Sivaperuman attended the meeting of scientific interaction at CARI on 3rd September 2009 chaired by former President A.P.J. Abdul Kalam.
119. Dr. C. Sivaperuman attended seminar on New Economic view on agriculture and agricultural research at CARI on 23rd September 2009.
120. Mr. P.T. Rajan delivered a lecture on Climate change and its impact on the fauna of these A&N Island' in the refresher course for forest guards, on 19th August 2009.
121. Dr. C. Raghunathan attended the Half Yearly progress meeting of Regional Stations of ZSI held at Northeastern Regional Centre of ZSI, Shillong during 7th-8th December 2009.
122. Dr. C. Sivaperuman attended the review the progress on promotion and industries of Handicraft at Chief Secretary Office, Andaman & Nicobar Administration, Port Blair on 9th December 2009
123. Dr. C. Raghunathan attended the Marine Mammal Stranding Workshop held at CMFRI, Kochi from 21st to 23rd January 2010 organized by National Oceanic and Atmospheric Administration (NOAA), USA.
124. Dr. C. Sivaperuman attended the Institutional Animal Ethics Committee Meeting (IAEC) at Regional Medical Research Centre, ICMR, Port Blair on 13th January 2010.
125. Dr. C. Sivaperuman delivered a lecture on Crocodile conservation and Census Technique to the staff of the Department of Environment and Forest, as a part of two week refresher course organized by Forest Training School, Andaman on 14th January 2010.
126. Mr. P.T. Rajan, delivered a lecture on 'Biodiversity of to the staff of the Department of Environment and Forest, as a part of two week refresher course organized by Forest Training School, Andaman on 14th January 2010.
127. Dr. C. Raghunathan attended the all India co-ordinated committee meeting on Rodent Control at Central Agricultural Research Institute, Port Blair during March 19-20, 2010
128. Dr. C. Raghunathan served as a member in the interview committee for the selection of Group-C staff in Pondicherry University, Port Blair on March 22, 2010.
129. Dr. R. Rajkumar participated in the Training workshop on 'DNA Bar coding of Marine Fauna' from August 10-11, 2009 held at Marine Microbial Reference Facility (MMRF), Regional Centre-National Institute of Oceanography, Kochi.
130. Dr. R. Rajkumar attended the Debriefing and facilitation function organized at National Centre for Antarctic and Ocean Research, Goa on 5th April 2010.



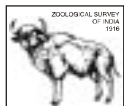
## Annual Report 2009-10

131. Dr. Rajkumar, attended the 'National Seminar on Applied Geochemistry in Marine Science: Current and Future trends, 24-24 February 2010' organized by, Department of Marine Biology, Pondicherry University, Brookshabad Campus, Port Blair.
132. Dr. D.V. Rao, Scientist-C attended the 1st Expert Committee meeting for Revalidation of Potential Fishery Resources in the Indian EEZ conducted on 26th Nov.& 2nd on 9th March 2010 at CMFRI, Cochin.
133. Dr. L. Kosygin Singh participated in training programme on "*Purchase Management in Government*" which was organized by the Institute of Secretariat Training and Management, Department of Personnel and Training, Government of India, New Delhi from March 29 to 31, 2010.
134. Dr. L.K. Singh participated in the "*IUCN Eastern Himalaya Freshwater Biodiversity Assessment Training Workshop*" organized by IUCN Species Programme, U K, held at Kathmandu, Nepal from 22nd to 26th July, 09.
135. Dr L. Kosygin Singh of the Centre participated in residential training workshop on "The Right to Information Act, 2005" organized by the Institute of Public Administration, Bangalore held at Bhubaneswar from May 29th to 30th, 2009.
136. Dr. S. Dash of the Centre Participated in 88th Orientation course in Records Management for Departmental Record Officers from 14th -18th December'09.
137. Dr S. Dash of the Centre participated and Presented a paper at National Seminar on Modern Biology and Human Welfare from 28th-29th March 2010 organised by Dept. of Zoology, Berhampur University, Orissa.
138. Mrs. I.J. Kharkongor, Scientist-B and Dr. D. Khyntiam, Assistant Zoologist attended the Regional Seminar on "*Intellectual Property & Innovation Management in Knowledge era*" from 14th - 15th May, 2009 at Tourist lodge, Chaltlang, Aizawl, Mizoram organized by National Research Development Corporation, New Delhi.
139. Mrs. I.J. Kharkongor, Scientist-B and Dr. D. Khyntiam, Assistant Zoologist participated in the function organized by the Department of Post, Govt. of India, N.E. Circle, on 1.10.2009 at GPO, Shillong to release the "*Stamps on rare fauna of NE India*". Before the official release of the stamps by the chief guest, Smt. I.J. Kharkongor, Scientist-B, gave a short talk on the rare fauna of N.E. India depicted in the novel stamps.
140. Mrs. I.J. Kharkongor, Scientist-B and Shri. Vijay Kumar, UDC attended the "*Regional Official Language Conference (East & North-Eastern Region) & Technical Workshop*" organized by the Department of Official Language, Ministry of Home Affairs at the Conference Hall of the Directorate General Assam Rifles, Laitkor, Shillong, on the 4th & 5th February, 2009.
141. Mrs. J. Lyngdoh, Scientist-B attended the Regional Seminar on "*Environmental problems: Extinction of Biological Species in North- East India*", organized by Dept. of Zoology, Synod College, Shillong on the 17th Sept, 2009.
142. Shri S.S. Ghatak, Asst. Zoologist was deputed to the training programme on 17th Awareness & E-Governance held at CMC Academy from 22. 02. 2010 to 26. 02. 2010.



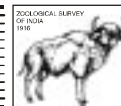
143. Shri S.S. Ghatak, Asst. Zoologist was deputed as observer for the exhibition hrld at Kakinara, 24 Parganas, West Bengal.
144. Dr. A.K. Karmakar, Scientist-B, Mr. A. Das, Sr. Zool., Mr. P.K. Bannerjee, Zool. Asst. participated in the training program on IT awareness and E-governess at CMC Academy Kolkata, during Feb- Mar, 2010
145. Sri S. Talukdar, Asstt Zoologist & Smt. K. Biswas, Sr. Zool Asstt. attended training courses on it awareness & e-governance held at C.M.C. academi, Kolkata in separate batches on January & February, 2010.
146. Sri S. Talukdar, Asstt. Zoologist organided an obsevation program on July 22, 2009 at taregna near patna in collaboration with gprs, zsi, patna & Shri A. Mahapatra, mollusca section, HQs ZSI, Kolkata related to the effect of total solar eclipse on animal behaviour in captivity and nature with special reference to spiders
147. Dr Kailash Chandra, Officer-in-Charge, attended the Annual Monitoring Meeting of Regional Stations at HQs, Kolkata from 27th to 29th April, 2009.
148. Dr. Kailash Chandra, Scientist 'F' & Officer-in-Charge of the station was invitedas Chief Guest on 'International Biodiversity Day' celebrated by Rani Durgavati Vishvavidyalaya, Jabalpur. During the occasion, a lecture on 'Animal Biodiversity' was also delivered by the Officer-in-Charge. The IBD function was presided over by the Hon'ble Vice Chancellor of the R.D.V.V. Jabalpur.
149. Dr. Kailash Chandra, Scientist 'F' attended the meeting of Board of Studies of Environment Science (M.Sc & B.Sc) at Government (Autonomous) Science College, Jabalpur on 20th August, 2009.
150. Dr. Kailash Chandra, Scientist 'F' attended the meeting held at Desert Regional Centre, Jodhpur on 10th & 11th Sept 2009 to monitor the progress of work of Scientist B & C and the task force meeting by Ministry of Environment & Forests.
151. Dr. Kailash Chandra, Scientist 'F' and Officer-in-Charge of the Centre was invited as Chief Guest of the occasion of 'Eco Water Literary Campaign-2009' programme organized at Govt. Autonomous Science College, Jabalpur on 14th November, 2009.
152. Dr. Kailash Chandra, Scientist 'F' attended the half yearly monitoring meeting of ZSI regional centres on 7th & 8th December, 2009 at North-Eastern Regional Centre, Shillong.
153. Dr. Kailash Chandra, Scientist 'F' attended the DPC meeting as member on 10th & 11th December, 2009 at ZSI HQs, Kolkata.
154. Dr. R.M. Sharma, Scientist, 'D' attended 51st six monthly meeting of Town Official Language Implementation Committee, Jabalpur on 22nd December, 2009.
155. Dr. R.M. Sharma, Scientist, 'D' attended Research Advisory Committee meeting of State Forest Research Institute, Jabalpur on 24th December, 2009.
156. Dr. Kailash Chandra, Scientist 'F' attended the 'ZSIFDIS' meeting at SRC, Chennai on 7th February 2010 for the uploading of ZSI database in the website.
157. Dr. Kailash Chandra, Scientist 'F' was on tour to ZSI, HQs, Kolkata from 13th to 27th Feb. 2010 for attending the Screening Committee of the Annual Plan of Research Work of 2010 -2011 and for the finalization of Tenders regarding the purchase of Scientific Equipments.



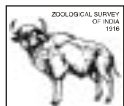


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158. Dr. Kailash Chandra, Scientist 'F' participated in the Tawang Expedition (Arunachal Pradesh) from 27-09-2009 to 15-10-2009 and 2386 specimens of various groups of animals were collected and the data on higher vertebrates were recorded.
159. Dr. Jayasree Thilak, Scientist "B" attended the training course on Current Trends in Faunal Diversity Studies facilitated by the ZSI, MoEF, GOI from 17 to 19, March, 2010 at Western Ghat Regional centre, Calicut, Kerala.
160. Sri C. Radhakrishnan, Scientist-F & Officer-in-Charge, attended the Annual Heads of Offices Conference at Kolkata on 27th to 29th and presented station work progress and also chaired the sessions of Scientific and Administrative matters.
161. Sri C. Radhakrishnan, Scientist-F & O/C and Sri. K.C. Gopi, Scientist-E, attended the Research Advisory and Monitoring Committee (RAMC) meeting of BSI and ZSI at the Ministry of Environment & Forests, New Delhi on 9th November 2009 as members of RAMC.
162. Sri C. Radhakrishnan, Scientist- F & O/C chaired the meeting on Expert Group on Zoological Survey of India Faunal Diversity Information System" at MBRC, Chennai on 7th February 2010.
163. Dr. K.C. Gopi, Scientist-E attended Biodiversity meeting held by the State Forest Department at Thiruvananthapuram on 4th February 2010.
164. Dr. K.C. Gopi, Scientist-E attended training on 'Purchase Management in Government' at Institute of Secretarial Training Management at Delhi from 29th to 31st March 2010.
165. Scientists of the Centre attended a symposium on "bicentenary of birth of Charles Darwin and 150th years of the publication of the Origin of Species by Charles Darwin" organized by Prof. T.C.Narendran Trust for Animal Taxonomy and Zoology Dept, Malabar Christian College, Kozhikode on 25.11.2009 at Malabar Christian College, Kozhikode.
166. Dr. K. Rajmohana, Scientist- C was invited to attend a workshop "National Consultation on Advancing the Science of Taxonomy in India for Biodiversity Conservation", organized by ATREE, Bangalore on 23rd Feb 2010.
167. Dr. K. Rajmohana, Scientist-C, attended a seminar on Gender Equity & Biodiversity Conservation organized in connection with National Science Day Celebrations and delivered an Invited Lecture "Women in Research-Some Gender Aspects" on 27th Feb, 2010, at the Department of Zoology, Pazhassi Raja N.S.S College, Mattannur, Kannur.
168. K.G. Emiliyamma, Scientist-C, participated in the IUCN Eastern Himalayas Freshwater Biodiversity Assessment Training Workshop held at Kathmandu, Nepal from 22-26th July 2009.
169. K.G. Emiliyamma, Scientist-C and Dr. Muhamed Jafer Palot, Sr. Zool. Asstt attended training course on 'Current Trends in Faunal Diversity Studies' organized by the Zoological Survey of India from 17-19th March 2010, at WGRC, ZSI, Calicut.
170. Dr. Muhamed. Jafer Palot, Sr. Zool. Asstt participated in a seminar on "Proposed Malabar Wildlife Sanctuary" on 12th June 2009 at Forest HQ, Kozhikode and

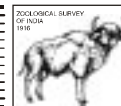


- presented a paper on the “faunal diversity of the proposed Malabar WLS and its environs”
171. Dr. Muhamed. Jafer Palot, Sr. Zool. Asstt attended a workshop on the preparation of the Management plan for the proposed Malabar WLS at Forest HQ, Kozhikode on 26th June 2009.
172. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended two days workshop on the preparation of Management Plan (Faunal part) for the newly declared Malabar WLS at Forest HQ, Kozhikode on 29-30th July.
173. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, participated in the workshop on “Along the trails of Dr.Salim Ali” at Salim Ali Nature Study Centre, Parambikulam WLS from 11-13th Nov., organized by the Kerala Forest & Wildlife Dept., Kerala.
174. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, participated in the seminar on “Values & threat to Karvayi wetlands” organized by the CWRDM and Payyannur Municipality on 5th December, 2009 and delivered a talk on “Avian diversity of Karvayi Kayal, Kasaragod district.”
175. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended Silent Valley Silver Jubilee Seminar at Malabar Christian College, Calicut on 10th December 2009.
176. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended a seminar on ‘Declaration of Malabar Wildlife Sanctuary in the context of International year of Biodiversity’ at Calicut on 15th and 20.03.2010 organized by the Kerala Forests & Wildlife Department jointly with Zoological Survey of India, Kerala State Biodiversity Board and Malabar Natural History Society and presented a paper on ‘Faunal diversity of Malabar Wildlife Sanctuary’.
177. C. Radhakrishnan, Scientist-F delivered lecture on the Zoogeography of India with special reference to Western Ghats.
178. K.C. Gopi, Scientist-E, presented a talk on Overview, forest types, river systems rain shadow regions etc of the Western Ghats.
179. Dr. K. Rajmohana, Scientist-C, delivered two lectures on concepts of Hotspots, Protected areas, Endemism etc. and major threats to the ecosystem of Western Ghats.
180. K.G. Emiliyamma, Scientist-C, delivered a talk on Invertebrate diversity of Western Ghats.
181. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, delivered two lectures on Vertebrate diversity and Conservation measures of Western Ghats.
182. Dr. K.P. Dinesh, Zool. Asstt, presented a talk on Amphibian diversity of Western Ghats.
183. Dr. K. Rajmohana, Scientist-C, organized a 10-day training programme on Collection, Preservation, and Taxonomy of Platygastriidae (Platygastridae: Hymenoptera) for a senior scientist from National Bureau of Agriculturally Important Insects (formerly PDBC), Bangalore, on request.
184. C. Radhakrishnan, Scientist-F & Officer-in-Charge, delivered an invited talk on Alfred Russel Wallace and Darwin in the symposium on bicentenary of birth of Charles Darwin and 150th year of the publication of the *Origin of Species*, organized by Prof. T.C. Narendran Trust for Animal Taxonomy and Zoology Dept, Malabar Christian College, Kozhikode on 25.11.2009 at Malabar Christian College, Kozhikode.
185. Dr. K. Rajmohana, Scientist-C, delivered lecture as invited resource person at the



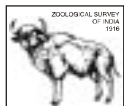
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- Orientation Course for college lecturers, at Academic Staff College, UGC sponsored, University of Calicut on 13th July 2009.
186. Dr. K. Rajmohana, Scientist-C, delivered an invited talk on the topic "Impact of Man on Biodiversity" on 19th September 2009 at the Refresher Course for Lectures, organized by the Academic Staff College, University of Calicut, sponsored by the UGC.
187. Dr. K. Rajmohana, Scientist-C, delivered Prof. Hunt Memorial Annual Lecture, 'A Tribute to the Living World' at Malabar Christian College Calicut, Kerala, on 29th March-2010.
188. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered a lecture on the "Biodiversity of Mangroves in Kerala" at Chinmaya Vidyalaya Mission Higher Secondary School, Kozhikode on 5th June 2009 in connection with World Environmental Day celebrations.
189. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered a talk on the "Faunal diversity of the proposed Malabar Wildlife Sanctuary and its environs" in a seminar organized by the state forest dept at Calicut on 12th June 2009.
190. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered a lecture on the "Mangrove Biodiversity of Kerala" to the M.Sc. Wildlife students of Farooque College, Kozhikode on 5th August 2009.
191. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered lectures on 'Endangered animals of Malabar' and 'Butterflies of Kerala' to the students of Al-Ameen English Medium School Calicut; students of Govt. Veterinary College, Kerala Agricultural University, Pookode, Wayanad on 18th and 29th October 2009 respectively.
192. The Regional Centre participated in the 97th Indian Science Congress and set up a stall for exhibiting the Zoological collections of the Centre and Western Ghats at Karyavattom University Campus, Thiruvananthapuram from 3-7th January 2010.
193. The station hosted two programmes [*Hindi Bhashan Pratiyogita* (Hindi Elocution) and *Hindi Kavitha paad* (Hindi Poem Recitation)] of the *Nagar Raajabhaasha Karyanvayan Samithi-Kozhikode* (Town Official Language Implementation Committee-TOLIC) on 30th in connection with the Samyukth Hindi Samaroh-2009 (Joint Hindi celebration-2009) of the TOLIC. Two staff members were participated in the competitions and won the item.
194. Dr. P.M. Sureshan, Scientist-C & Dr. Gopal Sharma, Scientist-B participated in the two day National workshop on the conservation of Gangetic Dolphin organized by Patna University at Patna on 22 nd and 23 rd February 2010.
195. Dr. Gopal Sharma, Scientist-B attended the International workshop on conservation of the irrawady dolphin with special reference to underwater acoustic study at Bhubaneswar on 25 th to 26 th March 2010.organised by Chilka Development Authority.
196. Dr. Gopal Sharma, Scientist-B and Dr. S.Sambath, Scientist-B. attended the training programme (current trends in faunal diversity studies) at Calicut, kerala on 17 th to 19 th March 2010.
197. Dr. Gopal Sharma, Scientist-B attended and presented a paper on faunal diversity



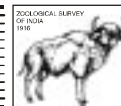
- of river Gandak, Bihar in the International symposium at Tirupati from 25 th to 27 th July 2009.
198. Dr. S. Sambath has been attended on the training course on "Information Technology and Office Suite" organized by Ministry of Environment and Forests, Govt. of India from 31st August to 04th Sept, 2009 held at CMC, Kolkatta
199. Dr. K.A. Subramanian, Scientist-C. Participated in Training course on "Current trends in faunal Diversity studies." Organized by WGRC, Zoological Survey of India, Kozhikode as course instructor on 17-19th March, 2010.
200. Dr. P.S. Bhatnagar, Scientist-C. Attended training in "Bioacoustical recording and spectrographic analysis of Grasshopper (Acrididae) sounds." At CES, IISc., Bangalore with Dr. Rohini Balakrishnan, Associate Professor on 7-21 Feb., 2010.
201. Dr. K.A. Subramanian, Scientist-C. Delivered a lecture on "Spatial patterns in Stream Biodiversity : Insights from Stream Insect Communities of the Western Ghats" at Dr. Ravi Sankaran Memorial Symposium, SACON (MoEF).
202. Dr. K.A. Subramanian, Scientist-C. Delivered a lecture on "Insect-Bird Interactions" in Ornithology Course, ELA Foundation and Garware College held at Garware College, Pune on 18th January, 2010.
203. Dr. K.A. Subramanian, Scientist-C. Attended IUCN Western Ghats Freshwater Biodiversity Assessment Workshop, Karunya University, Coimbatore on 11th to 15th January, 2010.
204. Dr. K.A. Subramanian, Scientist-C. Delivered a lecture on "Collection and Preservation of Reptiles and Amphibians." To Zoo Keepers as part of Zoo Authority of India and Rajiv Gandhi, Zoo, Katraj, Pune training programme.
205. Dr. P.S. Bhatnagar, Scientist-C. Attended CDDO-2-PAO at RTC, INGAF at Kolkata on 27.1.10 to 28.1.10.
206. Dr. S.S. Talmale, SZA. Attended "Twelfth Training course on Field Ornithology from 12-15th Jan.-2010 held at ZSI, Kolkata.
207. Dr. K.A. Subramanian, Scientist-C. Delivered a lecture on "Freshwater Biodiversity of India." In National Symposium on current Trends in Life sciences at Annasaheb Magar College, Hadapsar, Pune on 18th Dec. 2009.
208. Dr. K.A. Subramanian, Scientist-C. Delivered a lecture on "Role of ZSI in Biodiversity Conservation in India." Ornithology Course, ELA Foundation and Garware College held at Tikader Auditorium, ZSI, Pune on 20th December, 2009.
209. Dr. K.A. Subramanian, Scientist-C. Attended Half Yearly meeting of Officers in Charge at ZSI, ERC, Shilong on 7th and 8th Dec. 2009.
210. Dr. P.S. Bhatnagar, Scientist-C. Attended a workshop "Cultures of sustainability-Biodiversity conservation in Pune" on 22nd December, 2009 organised by Centre for Environment Education and INTACH in partnership with Eaton Technologies Pvt. Ltd.
211. Dr. B.E. Yadav, SZA. Delivered a lecture on "Collection and Preservation of Animals." to F.Y.B.Sc students of M.J. College, Jalgaon.
212. Dr. S.S. Talmale, SZA. Delivered a lecture on "Identification of small mammal





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- species through Owl Pellet analysis” to the participants of Ornithology Certificate Course of Garware College, Pune on 20th Dec. 2009.
213. C. Radhakrishnan, Scientist-F & Officer-in-Charge, attended the Annual Heads of Offices Conference at Kolkata on 27<sup>th</sup> to 29<sup>th</sup> and presented station work progress and also chaired the sessions of Scientific and Administrative matters.
214. C. Radhakrishnan, Scientist-F & OIC and Sri. K.C. Gopi, Scientist-E, attended the Research Advisory and Monitoring Committee (RAMC) meeting of BSI and ZSI at the Ministry of Environment & Forests, New Delhi on 9<sup>th</sup> November 2009 as members of RAMC.
215. C. Radhakrishnan, Scientist-F & OIC chaired the meeting on Expert Group on Zoological Survey of India Faunal Diversity Information System” at MBRC, Chennai on 7<sup>th</sup> February 2010.
216. K.C. Gopi, Scientist-E attended Biodiversity meeting held by the State Forest Department at Thiruvananthapuram on 4<sup>th</sup> February 2010.
217. K.C. Gopi, Scientist-E, attended training on ‘Purchase Management in Government’ at Institute of Secretarial Training Management at Delhi from 29<sup>th</sup> to 31<sup>st</sup> March 2010.
218. Scientists of the Centre attended a symposium on “bicentenary of birth of Charles Darwin and 150th years of the publication of the Origin of Species by Charles Darwin” organized by Prof. T.C. Narendran Trust for Animal Taxonomy and Zoology Dept, Malabar Christian College, Kozhikode on 25.11.2009 at Malabar Christian College, Kozhikode.
219. Dr. K. Rajmohana, Scientist-C was invited to attend a workshop “National Consultation on Advancing the Science of Taxonomy in India for Biodiversity Conservation”, organized by ATREE, Bangalore on 23<sup>rd</sup> Feb 2010.
220. Dr. K. Rajmohana, Scientist-C, attended a seminar on Gender Equity & Biodiversity Conservation organized in connection with National Science Day Celebrations and delivered an Invited Lecture “Women in Research-Some Gender Aspects” on 27<sup>th</sup> Feb, 2010, at the Department of Zoology, Pazhassi Raja N.S.S College, Mattannur, Kannur.
221. K.G. Emiliyamma, Scientist-C, participated in the IUCN Eastern Himalayas Freshwater Biodiversity Assessment Training Workshop held at Kathmandu, Nepal from 22-26<sup>th</sup> July 2009.
222. K.G. Emiliyamma, Scientist-C and Dr. Muhamed Jafer Palot, Sr. Zool. Asstt attended training course on ‘Current Trends in Faunal Diversity Studies’ organized by the Zoological Survey of India from 17-19<sup>th</sup> March 2010, at WGRC, ZSI, Calicut.
223. Dr. Muhamed. Jafer Palot, Sr. Zool. Asstt participated in a seminar on “Proposed Malabar Wildlife Sanctuary” on 12<sup>th</sup> June 2009 at Forest HQ, Kozhikode and presented a paper on the “faunal diversity of the proposed Malabar WLS and its environs”
224. Dr. Muhamed. Jafer Palot, Sr. Zool. Asstt attended a workshop on the preparation of the Management plan for the proposed Malabar WLS at Forest HQ, Kozhikode on 26<sup>th</sup> June 2009.
225. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended two days workshop on the



preparation of Management Plan (Faunal part) for the newly declared Malabar WLS at Forest HQ, Kozhikode on 29-30<sup>th</sup> July.

226. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, participated in the workshop on “Along the trails of Dr.Salim Ali” at Salim Ali Nature Study Centre, Parambikulam WLS from 11-13<sup>th</sup> Nov., organized by the Kerala Forest & Wildlife Dept., Kerala.
237. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, participated in the seminar on “Values & threat to Karvayi wetlands” organized by the CWRDM and Payyannur Municipality on 5<sup>th</sup> December, 2009 and delivered a talk on “Avian diversity of Karvayi Kayal, Kasaragod district.”
238. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended Silent Valley Silver Jubilee Seminar at Malabar Christian College, Calicut on 10<sup>th</sup> December 2009.
239. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, attended a seminar on ‘Declaration of Malabar Wildlife Sanctuary in the context of International year of Biodiversity’ at Calicut on 15<sup>th</sup> and 20.03.2010 organized by the Kerala Forests & Wildlife Department jointly with Zoological Survey of India, Kerala State Biodiversity Board and Malabar Natural History Society and presented a paper on ‘Faunal diversity of Malabar Wildlife Sanctuary’.

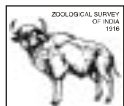
**Wildlife Week 2009 :** Wildlife Week 2009 was celebrated on 6<sup>th</sup> October 2009, in collaboration with Zoo Outreach Organization, Coimbatore. During this occasion, scientists of the Centre arranged a Quiz programme on ‘*Biodiversity of India*’ and a Debate on ‘*Development vs. Conservation*’ for High School Students on 6<sup>th</sup> October 2009. Students from 40 schools were participated. Trophies and Certificates were distributed to the winners by the Officer-in-Charge.

**Training Programmes : I.** Two days training programme on “Western Ghats” was organized for schoolteachers under the *Sarva Shiksha Abhiyan* (SSA) educational Scheme of Govt.of Kerala at ZSI, WGRC, Kozhikode on 8<sup>th</sup> July 2009. Scientists of the station delivered lectures on the following topics.

- (a) C. Radhakrishnan, Scientist-F delivered lecture on the Zoogeography of India with special reference to Western Ghats.
- (b) K.C. Gopi, Scientist-E, presented a talk on Overview, forest types, river systems rain shadow regions etc of the Western Ghats.
- (c) Dr. K. Rajmohana, Scientist-C, delivered two lectures on concepts of Hotspots, Protected areas, Endemism etc. and major threats to the ecosystem of Western Ghats.
- (d) K.G. Emiliyamma, Scientist-C, delivered a talk on Invertebrate diversity of Western Ghats.
- (e) Dr. Muhamed Jafer Palot, Sr. Zool. Asstt, delivered two lectures on Vertebrate diversity and Conservation measures of Western Ghats.
- (f) Dr. K.P. Dinesh, Zool.Asstt, presented a talk on Amphibian diversity of Western Ghats.

**II.** Dr.K.Rajmohana, Scientist-C, organized a 10-day training programme on Collection, Preservation, and Taxonomy of Platygastriidae (Platygastroidea: Hymenoptera) for a senior scientist from National Bureau of Agriculturally Important Insects (formerly PDBC), Bangalore, on request.

**III.** A training course on “Current Trends in Faunal Diversity Studies” was organized by the Zoological Survey of India from 17-19<sup>th</sup> March 2010, at WGRC, ZSI, Calicut. Dr. K.A. Subramanian, Scientist-C, ZSI, Pune, Dr. K. Rajmohana, Scientist-C and Dr. H.S. Sudheera, IIS, Bangalore delivered lectures on spatial sampling design, cyber taxonomy & electronic



database and use of GIS in faunal diversity assessment respectively.

**International Day for Biological Diversity :** The Scientists of the Regional Centre arranged an exhibition on “Invasive Alien Species (IAS) of plants and animals in India” to observe the International Day for Biological Diversity on 22<sup>nd</sup> May 2009. 35 species (19 of plants and 16 of animals, including live ones) were exhibited with explanatory charts, besides displaying pictorial charts of 100 of the World’s Worst Invasive Alien Species. An educative brochure on IAS prepared for the occasion was also distributed to the visitors. On popular demand, the exhibition was extended for one more day (23<sup>rd</sup>). The exhibition attracted 701 visitors.

**Workshops :** Two workshops (of one day duration) on the theme “Biodiversity richness of Western Ghats” were organized for 70 trainees of Calicut Orphanage Teachers Training Institute on 9<sup>th</sup> October, and for 40 Higher Secondary School teachers of the Calicut Corporation’s Educational Project on 27<sup>th</sup> October 2009. Sri.C.Radhakrishnan, Scientist-F, Sri. K.C. Gopi, Scientist-E, Dr. K. Rajmohana, Scientist-C and Dr. Muhamed Jafer Palot, Sr.Zool.Asstt delivered lectures on the topics pertaining to Zoogeography of India with special reference to Western Ghats, Origin and salient features of Western Ghats including forest types, river systems and rain shadow regions, major threats to the ecosystem, conservation measures and animal diversity respectively.

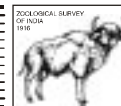
### 5. Classes Arranged :

Classes were arranged for graduate students of the Guruvayurappan College, Kozhikode on 14<sup>th</sup>, 25<sup>th</sup> August and 14<sup>th</sup> October 2009 at WGRC/ZSI auditorium. Dr.K.Rajmohana, Scientist-C and Dr. Muhamed Jafer Palot, Sr.Zool.Asstt delivered 6 lectures on the “Invertebrate and Vertebrate Diversity of the

Western Ghats, Biodiversity and Climate Change, Invasive Alien Species of Animals, Endangered Animals of Malabar and Butterflies of Kerala”.

### Talks delivered

1. C. Radhakrishnan, Scientist-F & Officer-in-Charge, delivered an invited talk on Alfred Russel Wallace and Darwin in the symposium on bicentenary of birth of Charles Darwin and 150<sup>th</sup> year of the publication of the *Origin of Species*, organized by Prof. T.C.Narendran Trust for Animal Taxonomy and Zoology Dept, Malabar Christian College, Kozhikode on 25.11.2009 at Malabar Christian College, Kozhikode.
2. Dr. K. Rajmohana, Scientist-C, delivered lecture as invited resource person at the Orientation Course for college lecturers, at Academic Staff College, UGC sponsored, University of Calicut on 13<sup>th</sup> July 2009.
3. Dr. K. Rajmohana, Scientist-C, delivered an invited talk on the topic “Impact of Man on Biodiversity” on 19<sup>th</sup> September 2009 at the Refresher Course for Lecturers, organized by the Academic Staff College, University of Calicut, sponsored by the UGC.
4. Dr. K. Rajmohana, Scientist-C, delivered Prof. Hunt Memorial Annual Lecture, ‘A Tribute to the Living World’ at Malabar Christian College Calicut, Kerala, on 29<sup>th</sup> March-2010.
5. Dr. Muhamed Jafer Palot, Sr.Zool.Asstt delivered a lecture on the “Biodiversity of Mangroves in Kerala” at Chinmaya Vidyalaya Mission Higher Secondary School, Kozhikode on 5<sup>th</sup> June 2009 in connection with World Environmental Day celebrations.
6. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered a talk on the “Faunal diversity of the proposed Malabar Wildlife Sanctuary and its environs” in a seminar organized



by the state forest dept at Calicut on 12<sup>th</sup> June 2009.

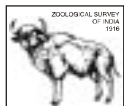
7. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered a lecture on the "Mangrove Biodiversity of Kerala" to the M.Sc.Wildlife students of Farooque College, Kozhikode on 5<sup>th</sup> August 2009.
8. Dr. Muhamed Jafer Palot, Sr. Zool. Asstt delivered lectures on 'Endangered animals of Malabar' and 'Butterflies of Kerala' to the students of Al-Ameen English Medium School Calicut; students of Govt.Veterinary College, Kerala Agricultural University, Pookode, Wayanad on 18<sup>th</sup> and 29<sup>th</sup> October 2009 respectively.

Participation in the 97<sup>th</sup> Indian Science Congress : The Regional Centre participated in the 97<sup>th</sup> Indian Science Congress and set up a stall for exhibiting the Zoological collections of the Centre and Western Ghats at Karyavattom University Campus, Thiruvananthapuram from 3-7<sup>th</sup> January 2010.

**Raj Bhasha (Hindi) Programmes :** The station hosted two programmes [*Hindi Bhashan Pratiyogita* (Hindi Elocution) and *Hindi Kavitha paad* (Hindi Poem Recitation)] of the *Nagar Raajabhaasha Karyanvayan Samithi* – Kozhikode (Town Official Language Implementation Committee- TOLIC) on 30<sup>th</sup> in connection with the Samyukth Hindi Samaroh-2009 (Joint Hindi celebration-2009) of the TOLIC. Two staff members were participated in the competitions and won the item.

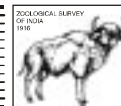
1. Dr. J.K. De, Scientist-D and O/C of the section attended Managing Committee Meeting of the Zoo Garden, Alipore, Kolkata during the month of June, 2009.
2. Dr. J.K. De, Scientist-D and O/C of the section attended the Governing Body Meeting of the Vulture Conservation Breeding Programme in West Bengal at Kolkata during the month of July, 2009.
3. Dr. J.K. De, Scientist-D and O/C of the section visited the Zoo Garden, Alipore regarding impact of Solar Eclipse on animals in captivity at the garden during the month of July, 2009.
4. Dr. J.K. De, Scientist-D and O/C of the section attended one special meeting on 17<sup>th</sup> August, 2009 at the Zoological Garden, Alipore regarding theft of 8 nos. Marmosets from the garden.
5. Dr. J.K. De, Scientist-D and O/C of the section attended one meeting with the Forest Deptt., W.B. regarding release of 4 to 5 group of Jackals of Tollygunge Club, Kolkata to Bethuadahari Wildlife Sanctuary, Nadia, West Bengal during the month of August, 2009.
6. Dr. J.K. De, Scientist-D and O/C of the section attended one meeting with Forest Deptt., West Bengal on 3<sup>rd</sup> September, 2009 regarding release of Jackals of Tollygunge Club, Kolkata.
7. Dr. J.K. De, Scientist-D and O/C of the section presented one paper entitled "Climate Change during the quaternary: special reference to Polar Regions and Southern Ocean", October, 22-23, 2009 at Headland Sada, Goa.
8. Dr. J.K. De, Scientist-D and O/C of the section attended one meeting with Forest Deptt., West Bengal on 21<sup>st</sup> December, 2009.
9. Dr. J.K. De, Scientist-D and O/C of the Section attended Field Ornithology Training from 12 to 15<sup>th</sup> January, 2010 as a resource person.
10. Dr. J.K. De, Scientist-D and O/C of the Section attended Training Programme on Collection & Preservation Techniques of Zoological Specimen from 16<sup>th</sup> to 19<sup>th</sup> March, 2010 as a resource person.



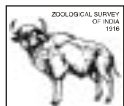


## RESEARCH PAPERS AND BOOKS PUBLISHED

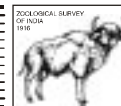
- Abhijit Das<sup>1</sup>, Uttam Saikia<sup>2</sup>, B.H.C.K. Murthy<sup>3</sup>, Santanu Dey<sup>4</sup> and Sushil K. Dutta<sup>5</sup>. A herpetofaunal inventory of Barail Wildlife Sanctuary and adjacent regions, Assam, north-eastern India
- Alok Saxena, R. Rajan and S.S. Choudhury. (2008) Status of Coral reefs in Post-Tsunami Period in Andaman & Nicobar Islands, *Proceedings of the 11th International Coral Reef Symposium Ft. Lauderdale, Florida 7-11 July, 2008, Session*
- Avtar Kaur Sidhu (2009). Revision of genus *Spindasis* Wallengren (Lepidoptera : Papilionoidea : Lycaenidae) from North-West India. *J. Entomol. Res.*, **33**(3) : 277-283.
- Avtar Kaur Sidhu (2009). Taxonomic Notes on the *Satyrium sassanides* (Kollar) (Lycaenidae : Theclinae : Eumaenini) from North-West India. *Zool. Surv. India*, **109**(Part-2) : 55-59.
- Avtar Kaur Sidhu (2009). Taxonomic notes on two sibling species *Euchrysops cnejus* (Fabricius) and *Catochrysops strabo* (Fabricius) (Lycaenidae : Polyommatainae). *Ann. Entomol.*, **27** : 53-58.
- Avtar Kaur Sidhu and H.S. Mehta (2009). Observations on the biology of some pest species of butterflies from Himachal Pradesh (Lepidoptera : Papilionoidea). *Proceedings Forest and Disease Management in North-West Himalayas, HFRI, Shimla* : 103-108 (2009).
- Avtar Kaur Sidhu, H.S. Mehta and K. Chandra (2009). Appressed basking posture—a prevalent method of behavioural thermoregulation adopted by butterflies of cold desert of Ladakh (India). *Association of Tropical Lepidoptera notes, USA*, June issue : 3-4 (2009).
- Avtar Kaur Sidhu, Kailash Chandra and P.C. Pathania (2010). A Checklist of Microlepidoptera of India (Part-I : Family Pterophoridae). *Checklists of Fauna of India, Zoological Survey of India, On Line version* : 1-12.
- Avtar Kaur Sidhu, Mehta, H.S and Chandra, K. 2009. Appressed basking posture a prevalent method of behavioural thermoregulation adopted by butterflies of cold desert of Ladakh (India). *Association of Tropical Lepidoptera notes, USA*, June issue : 3-4.
- Babu, R. and Mehta, H.S. (2009) Insecta : Odonata. In : *Faunal Diversity of Simbalbara Wildlife Sancturay, Conservation Area Series No. 41* : 21-28, Zoological Survey of India.
- Babu, R. and Mondal, S.B. (2009) First record of *Rhinocypha trifasciata* Selys from Maharashtra, India (Odonata : Zygoptera : Chlorocyphidae). *Rec. zool. Surv. India*, **109**(3) : 115-116.
- Babu, R. and Nandy, S. (2009) A Comparative review of three closely related *Calicnemia* species- *C. pulverulans* Selys, *C. imitans* Lieftinck and *C. sudhaae* Mitra (Odonata : Zygoptera : Platycnemididae). *Rec. zool. Surv. India*, **109**(3) : 79-84.
- Babu, R. and Nandy, S. (2010) Recorded diversity of Odonates from Maharashtra, India. *J. Exp. Zool. India*, **13**(1) : 63-74.
- Babu, R., Mehta, H.S. and Kamal, S. (2009) Insecta : Odonata. In : *Faunal Diversity of Pong Dam, Wetland Ecosystem Series No. 12* : 13-19, Zoological Survey of India.
- Bahuguna, A. (2009) Animal of the month—*Morenia petersi*, e-news ZSI, pp1.



- Bahuguna, A. (2009) Habitat deterioration of freshwater turtles in Banganga (Haridwar and around, Uttarakhand, India) A case study, *Climate change Biodiversity & food security in South Asian Region* (eds. Jerath, N., Boojh, R., Singh, G) Punjab State Council for Science & technology, Chandigarh & United Nations Educational Scientific & Cultural Organization, New Delhi. 159-173.
- Bahuguna, A. (2009) Identification through primary guard hair of species from Asia (India) of the Sciuridae family. (Abs.) "Easter Conference & Annual General Meeting 17-19th April 2009. Univ. of Winchester by Mammal Society, UK. Pp 12.
- Bahuguna, A. (2009) Impact of global warming on sex determination in Reptiles. (Abstract). *National seminar on Response of Eco biological components to the phenomenon of global warming*, 26, 27 Sep 2009 Kumaon University, Abs no 006).
- Bahuguna, A. (2009) Trichotaxonomy of species of the family : Sciuridae listed under Indian Wildlife Protection Act 1972, CITES and IUCN. (Abs.) 'Easter Conference & Annual General Meeting 17-19th April 2009. Univ. of Winchester, Mammal Society UK. Pp 17.
- Banerjee (Moitra), S., Moitra, M. N. and Sanyal, A.K. 2010. Ecology of soil mites in a solid waste disposal site at Kolkata, India. *Environment & Ecology*, **28**(1A) : 347-351.
- Banerjee (Moitra), S., Sanyal, A.K. and Moitra, M.N. 2009. Abundance and group diversity of soil mite population in relation to four edaphic factors at Chintamani Abhayaranya, Narendrapur, South 24-Parganas, West Bengal. *Proc. zool. Soc.*, **62**(1) : 57-65
- Banerjee Soumya, Sanyal, A.K. and Bhaduri, A.K. 2009. Studies on soil microarthropod population in three different garden plots of 24-Parganas, West Bengal-A preliminary report. *Rec. zool. Surv. India*, **109**(part-4) : 1-9.
- Banerjee, S. and Chatterjee, A. 2010. *Fauna of Uttarakhand, State Fauna Series*, **18**(Part-3) (Cestoda) : 53-80.
- Banerjee, S. and Sanyal, A.K. 2009. some features of soil microarthropod population with specila reference to oribatid mites (Acari, Oribatei) in two different types of roadsides. *Environment & Ecology*, **27**(3) : 1132-1138.
- Barid Baren Dutta (2009). Studies of the Ceylone Frogmouth *Batrachostomus moniliger* Blyth from India, with the description of a new subspecies from Western Ghats, *Records of Zoological Survey of India* Vol. **109**(Part II) : 79-85.
- Barid Baren Dutta and Rengasamy Sakthivel (2008). *Fauna of Andhra Pradesh, State Fauna Series*, **5**(Part-8)-Aves : 1-68
- Barman, R.P. and Mishra, S.S. 2009. A Pictorial Guide to the Fishes of the Family Nemipteridae of India : 1-50. Director, *Zool. Surv. India*, Kolkata.
- Barman, R.P. and Mishra, S.S. 2009. On a new record of a treadfin fish *Filamanus perplexa* Feltes (Pisces : Perciformes : Polynemidae) from India. *Rec. zool. Surv. India*, **109**(4) : 53-55.
- Barman, R.P. 2009. Freshwater Fish Fauna of Andhra Pradesh with comments on the threatened and endemic species. *Rec. zool. Surv. India*, **109**(1) : 41-47

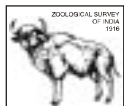


- Bindu L. 2009. On some testacids (protozoa) of Melghat wildlife sanctuary, Maharashtra, India. *J. of Threatened taxa*.
- Bindu, L. 2009. Cryopreservation of spermatozoa in fisheries sector. *J. Environ. & Sociobiol.* **6**(1) : 21-27.
- Bindu, L. 2009. Notes on freeliving ciliates in freshwater ponds of Kolkata. *Records of the Zool. Surv. India*, **109**(part-1) : 113-116.
- Biswas, T. and C.K. Mandal, 2010. Annelida : Oligochaetes (Freshwater) of Uttarakhand. *Zoological Survey of India, State Fauna Series*, **18**(Part-3) : 173-180.
- Bohra, P. 2009. Diversity of plant and soil nematodes of arid zone (Thar Desert) of India. In *International Conference Nurturing Arid Zone for people and the Environment issues and Agenda for 21st Century* held at CAZRI, Jodhpur from 24-28th Nov., 2009. pp. 201.
- Bohra, P. and Baqri, Q.H. 2010. Plant and soil nematodes. *Fauna of Ranthambore National Park, Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 45-46.
- Bohra, P. and Sultana, R. 2009. Description of new species of genus *Rostrulium* Siddiqi, 1995 (Dorylaimida : Tylencholaimidae) from Rajasthan. *Biosystematica*, **3** : 15-20.
- Bohra, P. and Sultana, R. 2010. Diversity of free-living nematodes in Thar Desert of Rajasthan. In *National seminar on "Desert: it's Biodiversity and Conservation"* organized by Dept. of Zoology, JNVU, Jodhpur. pp. 8.
- Bohra, P. and Sultana, R. 2010. Diversity of plant parasitic nematodes associated with economically important crops in Rajasthan. In *National Conference : Innovations in Nematological Research for Sustainability challenges and a Road Map Ahead*. organised by Nematological Society of India. TANU, Coimbatore. pp. 127.
- C. Radhakrishnan, K.C. Gopi and Muhamed Jafer Palot. 2009. Vertebrate Diversity of Vembanad and its environs. In: *Faunal Diversity of Vembanad Lake – a Ramsar Site in Kerala, India; Wetland Ecosystem Series*, **10** : 39-67.
- C. Radhakrishnan. 2010. Foreword to *Zoostalgia* (a commemoration volume brought out by the Malabar Christian College, Kozhikode, during its centenary celebrations). Olive Publications Pvt. Ltd., Kozhikode.
- C. Radhakrishnan. 2010. New discoveries of Amphibia from Western Ghats, India, in the new millennium. *Zoostalgia*, 70-89. Olive Publications Pvt. Ltd., Kozhikode.
- C. Raghunathan, B. Mehmuna, C. Sivaperuman and R. Kirubakaran, 2009. Diversity of Oceanic Zooplankton in Andaman Sea. *Nature Environment and Pollution Technology*, **8**(4) : 635-644.
- C. Shaji, H. Nimi and L. Bindu. 2009. Water quality assessment of open wells in and around Chavara industrial area, Quilon, Kerala. *J. of Environmental Biol.*, **30**(5) : 701-704.
- C. Stella and C. Raghunathan, 2009. New record of *Muricanthus kuesterianus* (Tapparone-Camefri, 1875), Family: Muricidae from Palk Strait, Southeast coast of India. *Nature Environment and Pollution Technology*, **8**(1) : 63-68.



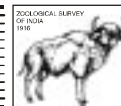
- Chakraborty, R. 2009 & Nandi, N.C. 2009. Ethnology and Conservation of Indian Vultures. *Wesleyan J. of Research.*, **2**(1) : 9-14.
- Chakraborty, R. 2009. A threatened bird in Kolkata megacity. *Environ.*, **10**(3) : 58-61.
- Chakraborty, R. 2009. *Jekhane atit katha bale* (in regional language). *Rupashi Bangla.* **1**(3). (In collaboration with Dr. A.K. Sanyal)
- Chakraborty, R. 2009. A report on nesting and breeding of White-rumped Vulture, *Gyps bengalensis* (Gmelin) in Kolkata megacity, India. *Cheetal*, **47**(3&4) : 4-7.
- Chandra, K. & Gupta, R.P. 2009. Aves. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 179-270.
- Chandra, K. & Gupta, R.P. 2009. Reptilia. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 163-177.
- Chandra, K. & Thilak, J. 2009. Insecta : Neuroptera. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 71-73.
- Chandra, K. 2009. An overview. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 1-24.
- Chandra, K. 2009. An Overview : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*) **39** : 1-7.
- Chandra, K. 2009. Insecta : Coleoptera : Scarabaeidae. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 81-88.
- Chandra, K. 2009. Insecta : Coleoptera : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*), **39** : 259-299.
- Chandra, K. 2009. Insecta : Hemiptera: *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*) **39** : 247-257.
- Chandra, K. 2009. Insecta : Lepidoptera : Heterocera. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 131-140.
- Chandra, K. 2009. Insecta : Lepidoptera : Heterocera: *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*), **39** : 337-354.
- Chandra, K. 2009. Insecta : Mantodea. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 59-61.
- Chandra, K. 2009. Reptilia : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*) **39** : 117-128.
- Chandra, K. and Gupta, S.K. 2009. On a collection of Orthoptera from Veerangana Durgavati Wildlife Sanctuary. Madhya Pradesh, India. *Biological Forum- An International Journal*, **1**(1) : 69-74.
- Chandra, K. and Mahabal, A. 2009. Aves : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director–*Zool. Surv. India, Kolkata*), **39** : 43-116.



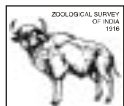


## Annual Report 2009-10

- Chandra, K. and Sidhu, A.K. 2009. Insects of Ladakh, *ENVIS Newsletter*, Vol. **15**(1&2) : 5-10.
- Chandra, K. Nema, D.K. and Kumar, S. 2010. Insecta : Lepidoptera : Heterocera. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata), **43** : 123-132.
- Chandra, K., Sharma, R.M & Koshta, M.L. 2009. Insecta : Coleoptera : Lepidoptera : Rhopalocera : Grypocera. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 89-129.
- Chandra, K., Sharma, R.M and Ojha, Praveen, 2010. A Compendium on the Faunal Resources of Narmada River Basin in Madhya Pradesh. *Zoological Survey of India. Occasional Paper No. 310* : 1-152.
- Chandra, K., Gupta, S.K. and Dubey, K.K. 2009. Study on the species composition and diversity of Orthoptera in Pench Tiger Reserve, Madhya Pradesh. *National Journal of Life Sciences*, **6**(1) : 81-86.
- Chaudhuri, P.S., Nath Sabyasachi, Bhattacharjee Subhalaxmi and R. Paliwal 2009. Biomass, density and diversity of earthworms under rubber (*Hevea brasiliensis*) plantations in Tripura, India. *The Bioscan*, **4**(3) : 475-479.
- Chitra, J. and S. Mitra. 2009. Echinodermata of Subarnarekha estuary. *Globec International Newsletter*, Plymouth, UK. 9-10.
- Dam, D. and A. Kumar. Record of occurrence of a rare species of fish the *Chaca chaca* (Hamilton, 1822) from two different localities (Syom River, Aalo and Senki River, Itanagar) in Arunachal Pradesh". Accepted for publication in Bulletin of Arunachal Forest Research.
- Das, Abhijit, Saikia, Uttam, B.H.C.K., Murthy, Santanu, Dey and Dutta, S.K. (2009) A herpetofauna inventory of Barail WLS and adjacent regions, Assam, North eastern India, *Hamadryad* **34**(1) : 117-134.
- Dash, S and R.K. Hazra. 2009. A preliminary note on the Mosquito fauna (Diptera : Culicidae) of Southern coastal Districts of Orissa. *Rec. zool. Surv. India*, **109**(Part-2) : 87-98.
- Dash, S and R.K. Hazra. 2009. A preliminary note on the Mosquito fauna (Diptera : Culicidae) of Southern coastal Districts of Orissa. *Rec. zool. Surv. India*, **109**(Part-2) : 87-98.
- Dash, S. and S.S. Mishra. 2009. *Notes on the Fish Resources of the Bahuda Estuary, Orissa, India. J. Indian Fish. Assoc.*, **34** : 11-14.
- Dash, S. 2009 (Abstract) Post cyclone investigations on faunal diversity of mosquito from southern coast of Orissa, India, National Seminar on Modern Biology and Human Welfare conducted by Dept. of Zoology, Berhampur University, Orissa, March 28-29, 2010. OP-19.
- De, J.K. 2009. Pygmy Hog-its Status and Conservation. Banabithi-Wildlife Issue. October, 12-15. Forest Dept., Govt. W.B. (in collaboration with A.K. Sanyal).
- De, J.K. 2009. Impact of climate changes on the Diversity, Distribution of Moss-Inhabiting invertebrate fauna of Schirmacher Oasis, East Antarctica 69-70-an abstract on Nat. Conf. Climate Change Southern Ocean, October, 22-23. at Goa.-A.K( in collaboration with Sanyal, A.K. and Mitra, B).

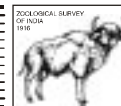


- Deepa, J. 2010. Aquatic insects, Pocharam lake, A.P. *Records Zoological Survey of India, Wetland Ecosystem Series*, **13** : 37-50 Ed. Dir., Zool. Surv. India, Kolkata.
- Deepa, J. *et al.* 2010. Ichthyofauna. *Fauna of Ranthambore National Park, Conservation Area series*, **43** : 145-158. Zool. Surv. India, Kolkata.
- Deepa, J. *et al.* 2009. Ichthyofauna, In : *Fauna of Nalsarovar, Gujarat*, Sanjeev Kumar *et al.*, Wetland Ecosystem Series, **11** : 113-128. Ed. Dir., Zool. Surv. India, Kolkata.
- Deuti, K. 2010. First record of Liebig's Hill Frog (*Nanorana liebigii*) from Bhutan. *Herpetological Review, USA.*, **41**(1) : 104.
- Dev Roy, M.K. and Nandi, N.C. 2009. A note on the distribution of brachyuran crabs in estuarine ecosystems of east coast of India. *J. Nat. Hist.*, **5**(1) : 7-11
- Dev Roy, M.K. and Nandi, N.C. 2009. Freshwater crustaceans of lentic and lotic ecosystems in West Bengal. *J. Environ. & Sociobiol.*, **6**(2) : 175-194.
- Dev Roy, M.K. and Nandi, N.C. 2009. Invertebrate diversity. *Faunal diversity of Kerala Backwaters (Vembanad Lake), Wetland Ecosystem Series*, **10** : 69-128.
- Dinesh, K.P., C. Radhakrishnan, K.V. Gururaja and G. Bhatta. 2009. An annotated checklist of Amphibia of India with some insights into the patterns of species discoveries, distribution and endemism. *Records of Zoological Survey of India, Occasional Paper*, (302). 1-133pp.
- Dinesh, K.P. and C. Radhakrishnan, 2009. Amphibia. In : *State Fauna Series, Fauna of Tamil Nadu*, 165-186.
- Dinesh, K.P., C. Radhakrishnan, K.V. Gururaja, K. Deuti and G.K. Bhatta. A Checklist of Amphibia of India' (online version) ([http://www.zsi.gov.in/zoological-survey-of-india/zsi\\_data/checklist/Checklist\\_Amphi.pdf](http://www.zsi.gov.in/zoological-survey-of-india/zsi_data/checklist/Checklist_Amphi.pdf))
- Emiliyamma, K.G. 2009. Insecta : Odonata. In : *State Fauna Series, Fauna of Tamil Nadu*, 35-40.
- G. Thirumalai, Kailash Chandra and Sidhu, A.K. (2009). "Ecological Diversity and Insect Biodiversity in cold desert in India" In : *Insect Biodiversity : Functional and ecological Perspective* Ed. T.N. Ananthakrishnan, Scientific Publishers (India).
- G.P. Mandal and A.K. Hazra. 2010. Insecta : Collembola. *Fauna of Uttarakhand. Zool. Surv. Ind. State fauna series*, **18**(Part 2) : pp. 1-12.
- G.P. Mandal and A.K. Hazra. 2010. Insecta : Thysanura. *Fauna of Uttarakhand. Zool. Surv. Ind. State fauna series*, **18**(Part 2) : pp. 13-16.
- G.P. Mandal and A.K. Sanyal. 2009. Soil invertebrate fauna of Ladak. *Envis News Letter*. Vol. No. **15**(1&2) : 13
- Gantait, V.V., Bhattacharyya, T. and Chatterjee, A. 2009. A new species of the genus *Discolaimus* Cobb, 1913 (Qudsianematidae : Dorylaimida) from West Bengal, India with revised key to the species. *Proc. Zool. Soc.*, **62** : 67-73.
- Gantait, V.V., Bhattacharyya, T. and Chatterjee, A. 2009. *Dorylaimus neominimus* sp. n. (Nematoda : Dorylaimida) from West Bengal, India. *Int. J. Nematol.*, **19** : 173-176.



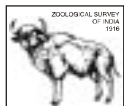
## Annual Report 2009-10

- Gantait, V.V. Bhattacharyya, T., Sanyal, A.K. and Chatterjee, A. 2009. Studies on soil and plant parasitic nematodes associated with banana in West Midnapur, West Bengal, India. *Proc. zool. Soc. Calcutta*, **62** : 143-146.
- Gantait, V.V., Chatterjee, A., Sanyal, A.K. and Bhattacharya, T. 2009. Studies on soil and plant parasitic nematodes associated with banana in West Midnapur, West Bengal, India. *Proc. zool. Soc.* **62**(2) : 143-146.
- Gautam, P.L., C.A. Reddy and Venkataraman, K. 2009. Harnessing synergies, need of the hour, *The Hindu, Survey of Indian Agriculture*, 32-34.
- Ghatak, S.S., Ghosh, S.K. and Dev Roy, M.K. 2008. Crustacea (Decapoda : Gecarcinucidae: Palaemonidae : Atyidae). *Zool. Surv. India Fauna of Kopili Hydro-Electric Project Site. Wetland Ecosystem Series*, **8** : 35-38.
- Girish Kumar, P. and Srinivasan, G. 2009 New Record of *Vespa Soror* Du Buysson (Hymenoptera : Vespidae) from India. *Rec. Zool. Surv. India*, **109**(Part-4) 111-112.
- Gopal Sharma, Ajeet Kumar Singh and D.N. Chowdhary, 2009. A new distributional record of great stone Plover *Esacus magnirostris recurvirostris* from the island of river Gandak in Bihar, India ( IBA-BR-IN-01). *News letter for bird watchers* Vol. **49**(3) : 40-42.
- Gopal Sharma, Hasko Neumann and Subodh Sharma, 2009. Discovery of a population of a virtually unknown large freshwater bivalve *Parreysia rajahensis* (lea, 1841) (Unionoidea : Amblemidae ) in the river Subernrekha. *Indian. J. Environment & Sociobiology*. **12**(36) : 75-79.
- Gupta, S.K 2009. New records of some Grasshoppers and Crickets from Central India. *Bionotes*. Vol. **11**(3) : 97-98.
- Gupta, S.K and Chandra, K. 2009. On Orthoptera collection from Panna National Park, M.P., India. *Indian J. Trop. Biodiv.* **16**(1) : 97-102.
- Gupta, S.K. 2009. Insecta : Orthoptera. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 39-57.
- Gupta, S.K. and Chandra, K. 2009. Orthoptera of Madhav National Park, Shivpuri, Madhya Pradesh, India. *Uttar Pradesh J. Zool.* **29**(1) : 79-89.
- Gupta, Y.N. 2009. Acari : Tetranychidae. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 141-146.
- H. S. Rose, Manbeer Kaur and Avtar Kaur Sidhu (2009). The life history of the tawny coster, *Acraea terpsicore* (Linnaeus) (Lepidoptera : Nymphalidae : Acraeinae). *Ann. For.* **17**(1) : 108-112.
- H.B. Butterflies of Himachal Pradesh
- Halder, K.R. and C.K. Mandal 2010. Annelid fauna of some selected wetlands of Uttarakhand. *Zoological Survey of India, State Fauna Series*, **18**(Part-3) : 167-172.
- Harshey, D.K. 2009. Mammalia. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 271-291.

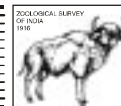


- Harshey, D.K. and Chandra, K. 2009. Mammalia : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series* (Published by the Director-Zool. Surv. India, Kolkata) **39** : 9-41.
- Hegde, V.D., Ray, S & Lal, B. 2009. Range extension of a tree frog *Polypedates taeniatus* (Boulenger, 1906). *Rec. zool. Surv. Ind.*, **109**(1) : 111-112.
- J.R. Turner, D. Vousden, R. Klaus, C. Satyanarayana, D. Fenner, K. Venkataraman, P.T. Rajan, N.V. Subba Rao, J.R.B. Alfred, Ramakrishna and C. Raghunathan, 2009. Coral Reef Ecosystem of Andaman Islands-Remote Sensing and Rapid Assessment Survey. *Records of Zoological Survey of India*, Occasional Paper No. 301.
- Jaiswal, D., Rao, C.A.N., Kumar, S. and Mohd. Hakeel. 2010. Ichthyofauna. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 145-158.
- Julka J.M., R. Paliwal, and P. Kathireswari 2009. Biodiversity of Indian earthworms – An overview : 36-56. In : C.A. Edwards, R. Jeyaraaj and Indira A. Jayraaj (eds.) *Proc. Indo-US Wkshp. Vermitech. Human Welfare*, Kongunadu Arts and Science College (Autonomous), Coimbatore, India.
- K.C. Gopi and C. Radhakrishnan. 2009 (released in 2010). Charles Darwin : A biogeographer par excellence and a figurehead of rational Science. *Rec. zool. Surv India*, **109**(3) : 1-4.
- K.G. Emiliyamma, 2009. Gynandromorphism in *Neurothemis tullia tullia* (Drury) and *Rhinocypha bisignata* (Selys) (Odonata : Insecta) from Kerala. *Rec. zool. Surv. India*, **109** (Part-1) : 73-75.
- K.G. Emiliyamma. 2008. (Released in Nov. 2009). Taxonomic Studies : Odonata (Insecta) of Kerala, India. *Fraseria* (N.S.), vol. **7** : 11-17.
- Kailash Chandra and Avtar Kaur Sidhu (2009). Insects of Ladakh. *ENVIS Newsletter*, **15**(1&2) : 5-10.
- Kamal Saini, Metha, H.S. and Mandal, S.K. 2009. *Faunal Diversity of Pong Dam, Wetland Series*, **12** : 43-63.
- Kankane, P.L. 2010. The Chinkara or Indian Gazelle, *Gazella bennettii* (Sykes) *ZSI e-NEWS February 2010* pp 17-18
- Kar, S., Mishra, S.S. and Burman, R.P. 2009. *Diodon liturosus* Shaw, a new record of porcupine fish from north-eastern coast of India. *ZSI News Letter*...
- Khan, R.A., Nandi, N.C., Dev Roy, M.K. and Radhakrishnan, C. Overview. *Faunal diversity of Kerala Backwaters (Vembanad Lake), Wetland Ecosystem Series*, **10** : 1-24.
- Khan, R.A., Radhakrishnan, C., Nandi, N.C. and Dev Roy, M.K. 2009. Conservation and Management Aspects. *Faunal diversity of Kerala Backwaters (Vembanad Lake), Wetland Ecosystem Series*, **10** : 181-192.
- Khan, R.A., G. Maheswaran, K. Deuti (In Press). Occurrence, abundance and ecology of Indian Sarus Crane *Grus antigone antigone* in Uttar Pradesh and Bihar. *Rec. Zool. Survey of India*.
- Khanna, V. 2009. Updated Checklist of Scolopendrid Centipedes (Chilopoda: Scolopendromorpha) from India. *ZSI Website* September 2009. <http://zsi.gov.in>

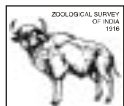




- Khanna, V. 2009. Chilopoda: Scolopendromorpha). In : *Fauna of Tamil Nadu State, State Fauna Series*, **17** (Part-1) : 1-256 (Published by the Director, Zoological Survey of India, Kolkata, pp. 145-148.
- Khanna, V. 2010. Chilopoda: Scolopendromorpha : Centipedes. *Zool. Surv. India, Fauna of States, Fauna of Uttarakhand*. Ser. **18**(Part-3) : 209-241.
- Khanna, V. 2009. Effect of climate change on the soil fauna-Predictions and Analysis. *National Seminar on Response of Eco-Biological Components to the Phenomenon of Global Warming (NSREG-2009)*. 26th-27th September 2009, Nainital. (Abs. No. 5)
- Khanna, V. 2009. Effect of climate change on the soil Fauna- Predictions and Analysis. *Annals of Forestry*, **17**(2) : 337-348.
- Khanna, V. 2009. Medical and Economic importance of Scolopendrid Centipedes *Annals of Forestry*, **17**(2) : 323-328.
- Khanna, V. 2010. Chilopoda : Scolopendromorpha. *Zool. Surv. India, Fauna of Ranthambore National Park, Fauna of Conservation Area Series*, **43** : 61-66.
- Krishnamoorthy, P. 2009. Brachyuran crabs from the collections of marine Biological Centre. *Rec. zool. Surv India, Occ. Paper*, **304** : 1-46, ZSI, Kolkata.
- Kumar, R., Sharma, G., Kumar, N. and Ramamurthy, V.V. 2009. Taxonomic studies on vegetable pests of Family Pieridae (Lepidoptera) form North India. *Biological Forum-An International Journal*, **1**(1) : 89-97.
- Kumar, S. 2009. Studies on Faunal Diversity and Ecology of Moss-associated terrestrial invertebrates and affect of climate change and human intervention at Schirmarchar Oasis, Antarctica. In : *ERP planning the XXIX In SEA 2009-2010. BES-10* : 63. (Abstracted) Ed: Rahul Mohan, NCAOR, Goa.
- Kumar, S. 2010. Changing trend of avian winter migrants to the Thar Desert of India with special reference to Jodhpur district, Rajasthan. UGC Sponsored *National Seminar on Desert: Its Biodiversity and Conservation*. Abstracted: pp. 24.
- Kumar, S. 2010. Insecta : Diptera. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub. : Director, Zool. Surv. India, Kolkata), **43** : 119-122.
- Kumar, S. 2010. Mammals. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 199-220.
- Kumar, S. 2010. Threats and Conservation. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 221-229.
- Kumar, S. and Gaur, Shalini. 2010. Amphibia. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 159-162.
- Kumar, S. and Gaur, Shalini. 2010. Amphibia. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 159-162.
- Kumar, S. and Sivaperuman, C. 2010. Aves. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 181-197.

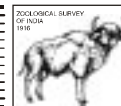


- Kumar, S., Gaur, Shalini and Khandal, D. 2010. Reptilia. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 163-179.
- Kumar, Sanjeev and Bohra, P. Editor-Director. 2010. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series*, **43** : 1-229. (Published by the Director, Zool. Surv. India, Kolkata).
- Kumar, Sanjeev. 2009. *Fauna of Nalsarovar, Gujarat. Wetland Ecosystem Series*, **11** : 1-137 + 12 plates (Published by the Director, Zool. Surv. India, Kolkata).
- Maheswaran, G. & Smith, A.T. 2008. *Caprolagus hispidus*. In : IUCN 2010. IUCN Red List of Threatened Species. Version 2010.1. <www.iucnredlist.org>.
- Majumdar, M. 2010. Insecta : Lepidoptera Pieridae, Aractiidae. *State Fauna Series, Fauna of Uttarakhand, Zool. Surv. India*, **18**(Part-2) : 501-529.
- Majumdar, M. and Kumar J. 2010. Insecta : Lepidoptera : Sphingidae. *State Fauna Series, Fauna of Uttarakhand, Zool. Surv. India*, **18**(Part-2) : 553-568.
- Mandal, C.K. 2010. *Haemadipsa anaigundiensis* sp. nov. (Hirudinea: Haemadipsidae) a new species of leech from Tamil Nadu, India. *Rec. zool. Surv. India*, **109**(Part1-3) : 27-31.
- Mandal, C.K. 2010. Leech fauna of Uttarakhand. *Zoological Survey of India, State Fauna Series*, **18** (Part-3) : 193-197.
- Mandal, C.K., S. Dhani, S. Mitra and A. Misra. 2010. Annelid fauna of some selected wetlands of Uttarakhand. *Zoological Survey of India, State Fauna Series*, **18**(Part-3) : 173-180.
- Mandal, G. P. 2009. The diversity of Collembola (Hexapoda) from East and North-East India with some notes on their Ecology. *Records of the Zoological Survey of India. Occ. Paper no.* **298** : 1-206.
- Marcus Knight, J.D. and Rema Devi, K. 2009. Record of *Oreochromis aureus* (Steindachner, 1864) (Teleostei : Perciformes : Cichlidae) in the natural waters of Tamil Nadu, India. *TAPROBANICA*, ISSN 1800-427X, Vol. 01, No. 02 : 126-129.
- Mathew, R. and N. Sen, 2009. Description of a new species of *Leptobrachium* Tschudi, 1838, (Amphibia : Anura : Megophryidae) from Meghalaya, India. *Rec. zool. Surv. India*, **109**(3): 91-108.
- Mathew, R. and N. Sen, 2009. Studies on Caecilians (Amphibia : Gymnophiona : Ichthyophiidae) of North East India with description of three new species of *Ichthyophis* from Garo Hills, Meghalaya and additional information on *Ichthyophis garoensis* Pillai and Ravidhandran, 1999. *Rec. Zool. Surv. India, Occ. Paper No.*, 309 : 1-56 (Published by the Director, Zool. Surv. India, Kolkata).
- Mathew, R. and N. Sen, 2010. *Pictorial Guide to the Amphibians of North East India* : 1-144 (Published by the Director, Zool. Surv. India, Kolkata).
- Maulik, D.R. 2010. Insecta : Lepidoptera :Papilionidae, Danaidae, Lasiocampidae and Lymantriidae. *State Fauna Series, Fauna of Uttarakhand, Zool. Surv. India*, **18**(Part-2) : 592-610.
- Mishra, S.K. 2009. Insecta : Odonata *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 25-38.



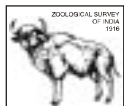
## Annual Report 2009-10

- Mitra, S. 2009. "On the first record of the pen shell, *Pinna incurva* Gmelin (Mollusca : Bivalvia : Pteroida : Pinnidae) from Digba coast of West Bengal. *Rec. zool. Surv. India*, **109**(2) : 99-101.
- Mitra, T.R. and Babu, R. (2008). Numerical density of adult Odonates in Arunachal Pradesh, India. *Fraseria –The South Asian Bulletin of Odonatology* (N.S.), **7** : 51-54.
- Muhammed Jafer Palot and C. Radhakrishnan, 2009. Insecta : Lepidoptera : Rhopalocera. In : *State Fauna Series, Fauna of Tamil Nadu*, 125–136.
- Muhammed Jafer Palot, 2009. Chola Naikar tribal Names for birds of Nilambur forests, Malappuram district, Kerala. *Malabar Trogon*, **6**(3) : 19.
- Muhammed Jafer Palot, Bimalnath, K.G. and C. Radhakrishnan. 2009 (released in 2010). *Holostemma ada-kodien* Schult (family Asclepiadaceae), a new larval food plant of the Blue Tiger, *Tirumala limniace* Cramer (Insecta : Lepidoptera : Nymphalidae). *Rec. zool. Surv. India*, **109**(4) : 105-106.
- Mukhopadhyay, P. 2010. Insecta : Coleoptera : Hydrophilidae, *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 323-334.
- Mukhopadhyay, P. & A. Sar. 2010 Insecta : Coleoptera : Staphylinidae. *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 335-359
- Mukhopadhyay, P. & S.K. Ghosh. 2010. Insecta : Coleoptera: Adephaga : Fam. Gyrinidae, Dytiscidae *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 269-282.
- Nandi, N.C. and Dev Roy, M.K. 2009. Macrobenthos. *Faunal diversity of Kerala Backwaters (Vembanad Lake), Wetland Ecosystem Series*, **10** : 149-180.
- Nandi, N.C. and Dev Roy, M.K. 2009. Fisheries and Socioeconomic aspects. *Faunal diversity of Kerala Backwaters (Vembanad Lake), Wetland Ecosystem Series*, **10** : 149-180.
- Nandi, N.C., Khan, R.A. and Dev Roy, M.K. General Ecology. *Faunal diversity of Kerala Backwater (Vembanad Lake), Wetland Ecosystem Series*, **10** : 25-38.
- Nandy, S. and Babu, R. (2009) On a collection of dragonflies (Odonata : Anisoptera) from Andaman and Nicobar Islands. *Rec. zool. Surv. India*, **109**(4) : 35-51.
- Narendran, T.C., P. Girish Kumar & S. Talukdar. 2009. A new species of *Philoloma cameron* (Hymenoptera : Eurytomidae) parasitic on spider eggs (Arachnida : Araneae) from India" *Rec. Zool. Surv. India*, **109**(part-4) : 11-14.
- Nath, P., D. Dam and A. Kumar. A new sub-species of fish *Barilius bendelisis* (Cyprinidae : Rasborinae), from river Siang, D'ering Memorial Wildlife Sanctuary, Arunachal Pradesh, India. Final manuscript submitted for publication to Publication Division, ZSI, Kolkata.
- Njam, Ahad K.A., Siddique, M.S, Deshpande, V.D and Sharma, R.M. 2009. A new species of the genus *Camptomyia* Kieffer (Diptera: Cecidomyiidae: Porricondylinae) from Maharashtra, India. *Rec. zool. Surv. India*, **109** (Pt-3) : 85-89.
- P.M. Sureshan & S. Talukdar, 2009. First record of *Epipteromalus* Ashmead from the old world with the description of a new species associated with spider egg sacs from India (Hymenoptera : Pteromalidae. *Biosystematica*. **3**(1) : 33-36.



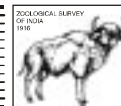
- P.M. Sureshan & Sambath, S. 2009. Mantid (Insecta : Mantodea) fauna of Old Bihar (Bihar and Jharkhand) with some new records for the state. *Rec. zool. Surv. India*. **109**(30) : 11-26.
- P.M. Sureshan 2009 : *Podagrion charybdis* Fernando (Hymenoptera : Chalcidoidea : Torymidae) parasitic on ootheca of *Tenodera fasciata* (Insecta : Mantodea) First record from India and description. *Journal of Threatened taxa*, **1**(4) : 234-235.
- P.M. Sureshan. 2009. A preliminary study on the mantid fauna (Insecta : Mantodea) of Orissa, India. (Records of Zool. Surv. India. Occ. Paper)
- P.M. Sureshan. Two species of *Megastigmus* Dalman associated with wild rose *Rosa webbiana* (Rosaceae) from Ladakh, India with a key to the Oriental species (*Rosa webbiana* (Rosaceae) from Ladakh, India with a key to the Oriental species (Hymenoptera : Chalcidoidea : Torymidae) *Journal of Threatened taxa*, **1**(5) : 305-308.
- P.M.Sureshan. 2009. On a collection of Chalcidoidea (Hymenoptera : Insecta) from Orissa, India. *Rec. zool. Surv. India*. **109**(4) : 87-104.
- Paliwal, R. 2009. Annelida. In : *Fauna of Pachmarhi Biosphere Reserve, Conservation Area Series*, **39** : 363-374. Zoological Survey of India, Kolkata.
- Paliwal, R. 2009. Annelida : Oligochaeta :13-19. In : *Faunal Diversity of Simbalbara Wildlife Sanctuary. Conservation Area Series*, **41** : 1-118 pp, Zoological Survey of India, Kolkata.
- Paliwal, R. and H.S. Mehta 2009. Aves. In : *Faunal Diversity of Pong Dam and its Catchment Area. Wetland Ecosystem Series*, **12** : 1-138 pp, Zoological Survey of India, Kolkata.
- Paliwal, R. and J.M. Julka, 2009. Survey of earthworms of western Himalaya with special reference to search for vermicomposting species: 57-79. In : C.A. Edwards, R. Jeyaraaj and Indira A. Jayraaj (eds.) *Proc. Indo-US Wkshp. Vermitech. Human Welfare*, Kongunadu Arts and Science College (Autonomous), Coimbatore, India.
- Paliwal, R. and J.M. Julka 2009. Earthworm (Oligochaeta) : 7-12. In: *Faunal Diversity of Pong Dam and its Catchment Area. Wetland Ecosystem Series*, **12** : 1-138 pp, Zoological Survey of India, Kolkata.
- Parmar, L., Sharma, G. and Mathur, R. 2009. New Record of Indian Chamaeleon, *Chamaeleo zeylanicus* Laurenti, 1768 (Chamaeleonidae : Reptilia : Chordata) from Mount Abu Wildlife Sanctuary (District Sirohi) Rajasthan, India. In "International Conference on Nurturing Arid Zone for people and the Environment Issues and Agenda for the 21st century" held at CAZRI, Jodhpur from 24-28 Nov., 2009. pp. 215-216.
- Parmod Kumar, 2010. A new distributional record of *Euthalia lubentina* (Cramer, 1777) (Lepidoptera: Nymphallidae) from Kalesar National Park, Haryana. *Zoos' Print*, **25**(4) : 19.
- Parmod Kumar, 2010. Lepidoptera: Rhopalocera. *Zool. Surv. India, Fauna of States, Fauna of Uttarakhand*, **18**(Part-2) : 611-689.
- Pattanayak, J.G. 2009. Catalogue of Extant Marine Porifera type specimens in the Zoological Survey of India, Calcutta. *Rec. zool. Surv. India, Occ. Paper No.* **307** : 1-80.





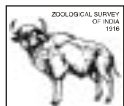
## Annual Report 2009-10

- Prasanna Yennawar, 2009. Recent stranding incidences of marine mammals in West Bengal. *J. Bombay Nat. Hist. Soc.*, **106**(1) : 95-97.
- Prasanna Yennawar, 2009., Reproduction and development strategies of marine bivalves along West coast of India. In, *Proceedings National Conference on Biodiversity & Physiology of Aquatic Resources in Sustainable Development for Rural Livelihood* organised by Dept. of Zoology, Dr. B.A.M. University, Aurangabad with Indian Association of Aquatic Biologists, Hyderabad, PH-15 : 78.
- R.K. Sinha, K.M. Khan, Gopal Sharma, D.K. Kedia and Samir Kr. Sinha (2009). A preliminary Survey of the bird diversity along the lower middle reaches of the River Ganga, Bihar, India', in the *Newsletter for Birdwatchers*, **49**(5) : 65-70.
- R.K. Sinha, Samir Kumar Sinha, Gopal Sharma and D.K. Kedia (2010). Surfacing and diving behaviour of free-ranging Ganges river Dolphin, *Platanista gangetica gangetica* (Journal of Current Science, Vol. 98, No. 2, 25 January 2010).
- Rajmohana K and Muhamed Jafer 2009. African Giant Snail, An issue of Environmental concern in Kerala. *Malabar Trogon*, Vol. 7(1&2) : 15-17.
- Rajmohana K, 2010. Our Changing Climate. *Zoostalgia*, Olive publications, Calicut., 182-184.
- Ramakrishna, C. Raghunathan and C. Sivaperuman, 2010. Status survey on *Trochus niloticus* (Linnaeus, 1767) in Andaman and Nicobar Islands, Technical Report, ZSI, Port Blair, 42p.
- Rao, C.A.N, Hakeel Mohd. & Deepa, J. 2010. Ichthyofauna of Pocharam lake, A.P. *Records Zoological Survey of India, Wetland Ecosystem series*, **13** : 77-100 Ed. Dir., Zool. Surv. India, Kolkata.
- Rath Shibhananda and Dev Roy, M.K. 2009. Brachyuran Crabs (Crustacea : Decapoda : Brachyura) *Fauna of Krishna Estuary, Estuarine Ecosystem Series*, **5** : 48-81.
- Rath Shibhananda and Dev Roy, M.K. 2009. Brachyuran Prawns (Crustacea : Decapoda). *Fauna of Krishna Estuary, Estuarine Ecosystem Series*, **5** : 83-103. *Zool. Surv. India*.
- Reddy, K.N. and Dev Roy, M.K. 2008. Hermit Crab (Crustacea : Decapoda). *Zool. Surv. India Fauna of Krishna Estuary, Estuarine Ecosystem Series*, **5** : 33-42.
- Rema Devi, K. and Indra, T.J. 2010. Checklist of the Native Freshwater Fishes of India. 24 pp. e-news, Zool. Surv. India.
- Rema Devi, K., Indra, T.J., K. Ilango and Raghunathan, M.B. 2007. Status and distribution of fishes of Eastern Ghats. Proc. National Seminar on Conservation of Eastern Ghats, 252- 256. Tables 1-3.
- Rizvi A.N. (2009) First report on the nematode, *Diploscapter* sp. associated with termites, from India. *Annals of Forestry*, **17**(1) : 157-159.
- Rizvi, A.N. & Bhutia P.T. (2009). Effects of climate change on Parasites and Parasitic Diseases In: abstract book : National Seminar on response of eco-Biological Components to the phenomenon of global warming (NSREG-2009) held at Nainital. Abstract no 033
- Rizvi, A. N. & Bhutia P.T. (2009) Helminth Parasite Fauna in Anuran Amphibia of Kalesar Wildlife Sanctuary (Haryana), India. Abs. *National Seminar on Bioresources and its Management*



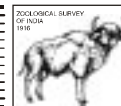
for Food, Livelihood and Environmental security and National helminthological Congress, Mumbai.  
Abstract no HEO-001

- Rizvi, A. N. (2010). Nematoda : Plant and Soil Nematodes, Fauna of Uttarakhand, *State Fauna Series*, **18**(Part 3) : 81-166. Zoological Survey of India.
- Rizvi, A.N. & Bhutia P.T. & Mehta, H.S. (2009). Nematodes as bioindicators of climate change, *Climate Change, Biodiversity & food Security in South Asian Region* (Eds: Jerath, N., Boojh, R., Singh, G.) Punjab State Council for Science & Technology, Chandigarh and United Nations Educational, Scientific & Cultural Organization, New Delhi, 149-158.
- Rizvi, A.N. & Bhutia P.T. (2009). Some Bacterivorous nematodes from Uttarakhand, India. *Records of the Zoological Survey of India*, **109**(4) : 79-86.
- Rizvi, A.N. & Mehta, H.S. (2009) Significance of Trophic Diversity of Soil Nematodes. *Annals of Forestry*, **17**(2) : 311-318.
- Rizvi, A.N. and Bhandari, R.S. 2008. New record of Rhabditid Nematodes in Frass of Back Beetles from India. *Indian J. Nematol.*, **38**(2) : 181-185. (Released April. 2009).
- S.K. Chakraborty 2010. Insecta : Coleoptera : Coccinellidae. *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 283-301.
- S.K. Chakraborty. 2010. Insecta : Coleoptera : Histeridae. *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 303-309.
- S.K. Chatterjee. 2010. Insecta : Coleoptera : Scarabaeidae. *Fauna of Uttarakhand, State Fauna Series*, **18**(2) : 311-321.
- Saha, N., 2010. Fixing Priority of Conservation area in the Eastern Himalayan Territory based on Biodiversity values of termites, *Proceedings National Seminar on Biodiversity Conservation*, at Assam University, Silchar, India, Abstract pp. 65.
- Saha, N., Roy, P.H. and Sar, A. 2010. Insecta : Isoptera, *Zool. Surv. India, Fauna of Uttarakhand, State Fauna Series*, **18**(Part-2) : 81-104.
- Sambath, S. 2010. Insect species diversity in Bamboos. In : Conservation and Management of Bamboo Resources (ed. Nath *et al.*), Institute of Forest Productivity, Ranchi, Jharkhand.
- Sambath, S., Joshi, K.C. and Krishnamurthy. 2009 Effect of temperature and relative humidity on the different life stages of *Spirama retorta* Cram (Lepidoptera : Noctuidae). *Indian Forester*. **135**(5) : 583-594.
- Sambath, S., Joshi, K.C. and Krishnamurthy. 2009. Effectiveness of three varietal toxins of *Bacillus thuringiensis* against the larvae of *Albizia* foliage feeder, *Spirama retorta* Cram. (Lepidoptera : Noctuidae). *Indian J. Forestry*, **32**(1) : 99-102.
- Sanyal, A.K. 2009. A new subgenus and two new species of the family Oppiidae (Acarina : Oribatida) from India. *Rec. zool. Surv. India*, **109**(Part-3) : 5-9.
- Sanyal, A. K. 2009. Impact of climatic changes on the diversity and distribution of moss inhabiting invertebrate fauna in Schirmacher Oasis, East Antarctica. Abstract of Papers, National



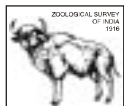
## Annual Report 2009-10

- Conference on Climatic changes during the Quaternary: special reference to Polar Regions and Southern Ocean held at Goa during October 22-23, 2009, 69-70.
- Sanyal, A.K. 2009. Oribatid mites (Acari : Oribatei). *Fauna of Mizoram, State Fauna Series*, **14**(Part-2) : 1-17 (Published by the Director, *Zool. Surv. India*, Kolkata).
- Sanyal, A.K. 2010. Antarctica Abhijan-Kichhu Ghatana Kichhu Durghatana. *Bon*, pp. 32-37.
- Sanyal, A.K. 2010. Expedition to Antarctica. *Baha*, pp. 112-114.
- Sanyal, A.K. 2010. Invasive alien fauna in India- A threat to Biodiversity. Invited Lecture No. 10, Golden Jubilee International Seminar on Researches in Zoology-basic and applied, Organised by the Dept. of Zoology, The University of Burdwan during March 17-19, 2010, pp. xvii-xviii.
- Sanyal, A.K. 2010. Ixodid Ticks (Acari : Ixodidae). *Fauna of Uttarakhand, State Fauna Series*, **18**(Part-3) : 283-288. Published by the Director, *Zool. Surv. India*, Kolkata).
- Sanyal, A.K. 2010. Oribatid mites (Acari : Oribatei). *Fauna of Uttarakhand, State Fauna Series*, **18**(Part-3) : 289-307 (Published by the Director, *Zool. Surv. India*, Kolkata).
- Sanyal, A.K. and Chakraborti, R. 2010. Praanhin Pranira jakhan Katha Bole. Aamar Rupasi Bangla, Jadughar Issue, pp. 153-156.
- Sanyal, A.K. and De, J.K. 2009. Pygmy Hog-Its Status and Conservation. Banabithi, pp. 12-15.
- Sanyal, A.K. and Hazra, A.K. 2008. A review on Collembola (Insecta) and Mite (Acari) In Schirmacher Oasis, East Antarctica. *BIONOTES*, **10**(4) : 118-120.
- Sastry, D.R.K. and Ch. Satyanarayana 2009. "On two species of Crinoidea, Echinodermata from Lakshadweep, Arabian Sea". *Rec. zool. Surv. India*, **109**(2) : 23-26.
- Satyanarayana, Ch and Ramakrishna 2009. *Hand book on the Hard corals of Gulf of Kachchh* : 1-114 (ZSI, Kolkata).
- Sen, Nibedita, 2009. Description of a new species of *Aborichthys*, Chaudhuri from North-East India (Pisces : Cypriniformes : Balitoridae), *Rec. zool. Surv. India*, **109**(2) : 13-20.
- Sen, Nibedita, 2009. New record of *Horallabiosa joshuai* Silas (Pisces: Cypriniformes: Cyprinidae) from North East India, *Rec.zool. Surv. India*, **109**(2) : 21-22.
- Sethy, P.G.S., Sahu, P & Mishra, S.S. 2009. On the occurrence of two Balitorid fishes of the genus *Schistura* from Simlipal Biosphere Reserve, Orissa., *Rec. zool. Surv. India*, **108**(4) : 34-40.
- Sewak, R. and Sharma, G. 2009. Dung beetles (Coleoptera : Insecta : Arthropoda) of Rajasthan. In "International Conference on Nurturing Arid Zone for people and the Environment Issues and Agenda for the 21st century" held at CAZRI, Jodhpur from 24-28 Nov., 2009.
- Sewak, R. and Sharma, G. 2010. Studies on dung Beetles (Coprinae : Scarabaeidae : Coleoptera : Insecta) in and around Jodhpur. In UGC sponsored "National Seminar on Desert: Biodiversity and It's Conservation" organized by Department of Zoology, Jai Narian Vyas University, Jodhpur & Jodhpur Natural History Society, Jodhpur held on 09.02.2010. pp .11.

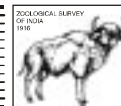


- Sewak, R., 2009. *Dung Beetles (Insecta : Coleoptera : Scarabaeidae : Coprinae) of Rajasthan*. *Rec. Zool. Surv. India, Occ. Paper No.* **296** : 1-106.
- Sharma, B.K. and Sharma, Sumita, 2009. Biodiversity and distribution of freshwater rotifers (Rotifera, Eurotatoria) of Tamil Nadu. *Rec. zool. Surv. India*, **109**(3) : 41-60.
- Sharma, B.K. and Sharma, Sumita, 2009. Diversity of microcrustacea (Crustacea : Branchiopoda) of Loktak lake, a Ramsar site, Manipur, India. *Journal of Threatened Taxa*, **1**(11) : 541-548.
- Sharma, B.K. and Sharma, Sumita, 2009. Micro-Crustacea (Crustacea: Branchiopoda) of Deepor beel: richness, abundance and ecology. *Journal of Threatened Taxa*, **1**(8) : 411-418.
- Sharma, D.K., R. Paliwal, and Saikia Uttam. 2009. Aves: 81-101. In : *Faunal diversity of Simbalbara Wildlife Sanctuary*, **41** : 1-118 pp, Zoological Survey of India, Kolkata.
- Sharma, G. 2009. Life history and Reproductive behaviour of *Ceriagrion coromandelianum* (Fabricius) (Odonata: Insecta). *Annals of Forestry-An International Journal of Forest Sciences*, **17**(2) : 298-310.
- Sharma, G. 2009. Studies and status of damselflies and dragonflies (Odonata: Insecta) of Arid and Semi-Arid regions of India. *Hexapoda*. **16**(1) : 36-39.
- Sharma, G. 2009. Studies on the diversity of Damselflies and Dragonflies (Odonata: Insecta: Arthropoda) in and around Mount Abu Wildlife Sanctuary and on the reproductive behaviour of selected species. In "*International Conference on Nurturing Arid Zone for people and the Environment Issues and Agenda for the 21st century*" held at CAZRI, Jodhpur from 24-28 Nov., 2009. pp. 175-176.
- Sharma, G. 2010. Insecta : Odonata. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, *Zool. Surv. India*, Kolkata). **43** : 67-74.
- Sharma, G. and Kumar, A. 2008 (published in 2009). Odonata diversity of Punjab Shivalik with their habitats and flight period. *Fraseria-South Asian Bulletin of Odonatology*. **7**(1/2) : 29-33.
- Sharma, G. and Sewak, R. 2010. Studies on Damselflies and Dragonflies (Odonata : Insecta) in and around Thar Desert at Osian, Jodhpur. In UGC sponsored "*National Seminar on Desert: Biodiversity and It's Conservation*" organized by Department of Zoology, Jai Narain Vyas University, Jodhpur & Jodhpur Natural History Society, Jodhpur held on 09.02.2010. pp.12.
- Sharma, G., Joshi, P.C., Kumar, R. and Vasu, D. 2009. Floral diversity and limnological studies in and around Dholbaha dam (Punjab Shivalik, India). *Biological Forum-An International Journal*, **1**(1) : 22-31.
- Sharma, G., Sundararaj, R. and Karibasavaraja, L.R. 2008 (published in 2009). Species diversity of odonates (Odonata : Insects) in sandal rich ecosystem of Karnataka and reproductive behaviour of *Orthetrum pruinsum neglectum* (Rambur). *Fraseria-South Asian Bulletin of Odonatology*. **7**(1/2) : 35-40.
- Sharma, Indu and H.S. Mehta (2009) Fishes of Ladakh, *ENVIS Newsletter*, **15** : 13-15.
- Sharma, Indu and Mehta, H.S. (2009) *Limnological Status of the Pong Dam Wetland, A Ramsar Site*, *BIONOTES* **11** : 45-46.

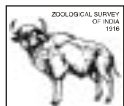




- Sharma, N and Sidhu, A.K.. 2010. Insecta : Lepidoptera : Satyridae. *Fauna of Uttarakhand, State Fauna Series*, **18**(Part-2) : 569-591. *Zool. Surv. India*,
- Sharma, N. 2009. Acridoidea Diversity of Patna Bird Sanctuary, Uttar Pradesh, India. *Rec. zool. Surv. India*, **109**(part-4) : 67-76.
- Sharma, R. M. 2009. Insecta : Diptera : Cecidomyiidae (Gall midges). *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 75-79.
- Sharma, R.M. 2009. Insecta: Lepidoptera; Rhopalocera & Grypocera. *Zool. Surv. India, Fauna of Bhimashankar Wildlife Sanctuary (Maharashtra), Conservation Area Series*, **42** : 257-262.
- Sharma, R.M. and Chandra, K. 2009. First report of the occurrence of some rare butterflies (Lepidoptera : Rhopalocera) from Chhattisgarh, Central India. *Rec. zool. Surv. India*, **109**(Pt-3) : 33-36.
- Sharma, S.K., R.K. Khetarpal, Kavita Gupta, Arjun Lal, K. Venkataraman and C.A. Reddy, 2009. International Day for Biological Diversity, Invasive Alien Species—A threat to biodiversity organized by Indian Council of Agricultural Research, National Biodiversity Authority and Ministry of Environment and Forests, 130 pp.
- Sharma, V. 2009. Forest ecosystem : Diversity of plant and soil nematodes in Rajasthan. In "International Conference on Nurturing Arid Zone for people and the Environment Issues and Agenda for the 21st century" held at CAZRI, Jodhpur from 24-28 Nov., 2009.
- Sidhu, A.K. and Sharma, N. 2010. Insecta : Lepidoptera :Lycaenidae. *Fauna of Uttarakhand, State Fauna Series, Zool. Surv. India*, **18**(Part-2) : 531-552.
- Sidhu, A.K. and H.S. Mehta (2009) Butterflies of Pangi Valley (Himachal Pradesh) along with record of new larval host plant and some nectar food plants. *Annals of Ent.*, **26** : 65-68.
- Sidhu, A.K. and H.S. Mehta (2009). Record of thirteen species of butterflies taking nectar from *Pogostemon benghalense* (Burm. F.) (Lamiaceae) in Simbalbara Wildlife Sanctuary, district Sirmour (Himachal Pradesh, India). *News of the Lepidopterists' Society, USA*. **51** : 60-61.
- Sidhu, A.K., Mabeer Kaur and H.S. Rose (2010). Observations on the life history and behaviour of the common pierrot *Castalius rosimon* ( Fab.) (Lepidoptera : Papilionoidea : Lycaenidae). *J. ent. Res.* **33**(4) : 373-375.
- Singh A.K. 2009. *Rec. zool. Surv. India. Occ. Paper No.*, **300** : 1-72.
- Singh, V.P. Suman, A.K. and Sood, R.K. 2009. Application of ICTs for Information Management to help Developmental Process and Issues in 21st Century. Library vision 2020. Profession and Education. Published by the Central Government Library Association., xv+ 1-300 : 99-112.
- Singh, V.P., Sood, R.K. Suman, A.K. and Goyal, J.B. (Eds.) 2009. Library vision 2020. Profession and Education. Published by the Central Government Library Association., xv+ 1-300.
- Sinha, R.K., D.K. Kedia, A.K. Singh, I.A. Khan and Gopal Sharma. Faunal diversity of River Gandak in Bihar. (Abstract Vol. of International symposium on Environmental pollution, Ecology and Human health at Tirupathi, India. (July 25-27)



- Sivaleela, G. and K.Venkataraman: 2009. Meiofauna of Gulf of Mannar. *Rec. Zool. Surv. India*, **109**(part-4) : 25-33.
- Sivaperuman, C. and E.A. Jayson. 2009. Population dynamics of wetland birds in the Kole wetlands of Kerala, India. *Journal of Scientific Transactions in Environment and Technovation* **2**(3) : 152-162.
- Sood, R.K. and Niwas, R. 2009. *Overview. Library vision 2020. Profession and*
- Srinivasan, G and Girish Kumar, P., 2009 Taxonomic Studies of the Hover Wasps (Hymenoptera Vespidae) of Arunachal Pradesh. *Rec. Zool. Surv. India*, **109**(Part -3) : 37-40. 2009
- Srinivasan, G. and Girish Kumar, P. 2009 Observations on some Behavioural aspects of the potter wasp *Xenorhynchium nitidulum* (Fabricius) (Hymenoptera : Vespidae : Eumininae). *Rec. zool. Surv. India*, **109**(Part-4) : 77-78.
- Stella, C. and Raghunathan, C. 2009. Age and growth of muricid gastropods *Chicoreus virgineus* (Roding, 1798) and *Muricanthus virgineus* (Roding, 1798), from Thondi coast, Palk Bay, Bay of Bengal. *Nature Environment and Pollution Technology*, **8**(2) : 237-245.
- Tak, N. 2010. Insecta : Hymenoptera : Formicidae. *Fauna of Ranthambhore National Park, Rajasthan. Conservation Area Series* (Pub.: Director, Zool. Surv. India, Kolkata). **43** : 133-144.
- Tak, P C. Kankane, P L and Bohra, P. (2009). Birds of Barmer District, Rajasthan, India. *Newsletter for Birdwatchers*, **49**(2) : 17-22
- Tak, P.C., Kankane, P.L. and Padma Bohra. 2009. Birds of Barmer district, Rajasthan, India. *Newsletter for Birdwatchers*, **49**(2) : 17-22.
- Tak, P.C., Sharma, D.K., Thakur, M.L. and Saikia, U. 2009 (2008). Birds of Ladakh and Analysis of Their Status. *Rec. zool. Surv. India*, **109**(108)(Part- 2) : 27-53.
- Thakur, M.L., V.K. Mattu, R. Paliwal, H.S. Mehta, and V. Thakur 2009. Birds of Shahnahar Reservoir, Kangra, Himachal Pradesh. *Ann. For.*, **16**(1) : 129-151.
- Thilak, J & Ojha Praveen 2009. First record of a fish *Glyptothorax trilineatus*, from Madhya Pradesh (Siluriformes : Sisoridae). *Bionotes*. Vol. **11**(3) P. 93.
- Thilak, J and Ojha, P. 2009. Fishes recorded from Bandhavgarh Tiger Reserve, Madhya Pradesh. *Bionotes*. Vol. **11**(4), p. 139.
- Thilak, J. 2009. On a Fish collection from Veerangana Durgavati Wildlife Sanctuary, Distt. Damoh, Madhya Pradesh. *Bionotes*. Vol. **11**(4), p. 128.
- Thilak, J. 2009. Pisces. *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 147-160.
- Thirumalai, G & Sharma, R.M. 2009. Insecta : Hemiptera (Aquatic & Semiaquatic). *Zool. Surv. India, Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 63-70.
- Thirumalai, G., Chandra, K and Sidhu Avtar Kaur. 2009. Ecological diversity and Insect Biodiversity in Cold Desert in India. Pp: 199-210. (Editor, Prof. T.N. Ananthakrishnan: in Insect Biodiversity-Functional Dynamics and Ecological Perspectives).



## Annual Report 2009-10

- Turner, J.R., D. Vousden, R. Klaus, Ch. Satyanarayana, D. Fenner, K. Venkataraman, P.T. Rajan, N.V. Subba rao, J.R.B. Alfred, Ramakrishna and C. Raghunathan 2009. "Coral Reef Ecosystem of Andaman Islands – Remote Sensing and Rapid Site Assessment Survey". *Rec. zool. Surv. India, Occ. Paper No. 301* : 1-132.
- V. Madhan Chakkaravarthy, R. Periasamy, E.G. Wesely and G. Raja, 2009. A Novel Approach on Production of Amylase Enzyme from *Pleurotus ostreatus*. *Bulletin of Environmental Science*, Vol. XXVIII (2) : 169-175.
- V. Madhan Chakkaravarthy, S. Kumaralingam, Koushik Saudhukhan, C. Raghunathan and Ramakrishna, 2010. *Bulletin of Environment Science*, XXVIII : 23-36
- Varadaraju. 2009. An account of the Amphibian and Reptilian fauna of Sunderban, West Bengal. *Rec. zool. Surv. India*, **109**(Part-4) : 57-66.
- Varadaraju. 2009. Ecology, Faunal Diversity and Habitat management strategies of Amphibians and reptiles of Sunderban. *Rec. zool. Surv. India.*, **109**(Part-3) : 61-78.
- Venkatraman, C. 2009. Breeding of Glossy Ibis *Plegadis falcinellus* at Vedanthangal Waterbird Sanctuary, Southern India. *Indian Birds*, **5**(1) : 18-19.
- Vijay, M. and P.T. Bhutia. 2009, Local Climate Change and winter fluctuation in water bird community of Asan Conservation Reserve. *National Seminar on Response of Eco-Biological Components to the Phenomenon of Global Warming (NSREG-2009)*. 26th-27th September 2009, Nainital (Abs. no. 2)
- Vijay, M., Tak, P.C., Sati, J.P. and Bhutia, P.T. 2009. Pollution threat to water Birds of Asan Conservation Reserve, Dehra Dun, Uttarakhand. *Bionotes*, **11**(1) : 29.