



ANNUAL REPORT

2022- 23

ZOOLOGICAL SURVEY OF INDIA



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Vision

Taxonomy
towards
conservation
and sustaining
faunal
diversity for
future.



Mission

To contribute
towards
conservation
of the fauna
through status
assessment,
taxonomic
studies and
documentation
of the country's
vast faunal
diversity.

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FROM THE DESK OF DIRECTOR...

I am extremely delighted to represent the Annual Report 2022-23 of Zoological Survey of India [ZSI] to signify and highlight the crucial points of progress, achieved during the span of one year by the activities of ZSI scientists and staff. The leading accomplishments of ZSI endorse surveys and exploration of faunal communities from various ecosystems from high mountain ranges to the greater depth of oceanic habitats, identification of faunal diversity and documentation of bio-resources, new discoveries and distributional records, assessment and evaluation on the status of threatened & endemic species, long term permanent biodiversity monitoring, advisory services, molecular studies, capacity building and outreach Activities like Mission LiFE & Special Campaign 3.0.

During 2022-2023, ZSI scientists conducted 119 surveys to assess, evaluate and explore the faunal diversity covering Protected Areas, biogeographic zones including all the Ecosystems of India as well as the Quadrilateral highways. During the year, ZSI dealt with 177 research programmes on different faunal groups ranging from Protozoa to Mammalia

This year 220 species have been added to the Indian fauna by the scientists of ZSI including 111 new species and 109 new records to India.



including 26 grants-in-aids projects funded by different agencies.

Being the lead organization of taxonomic exploration of faunal communities, ZSI performs one of the most significant and challenging tasks of naming faunal species by means of new discovery. This year 220 species have been added to the Indian fauna by the scientists of ZSI including 111 new species and 109 new records to India.

Scientific publications are the key ways to disseminate knowledge and information about Indian faunal wealth and their status evaluation to educate and enlighten other fraternities throughout the world. ZSI is playing a vital role in this area and published a total of 732 publications covering 31 Books, 179 Research Papers in SCI Journals, 170 Research Paper in National and International Journals including NAAS Rated Journals, 320 Book Chapters, 12 Zoological Survey of India E-News, 19 Popular Articles, and one Online Checklist. Apart from this, three volumes of the departmental Journal "*Records of the Zoological Survey of India*" were published with 39 articles from ZSI as well as outside ZSI.

The recent trend of scientific studies on taxonomical research entrusted with molecular evidence to establish research findings. ZSI is also keen to maintain and propagate the modern tool of scientific studies and has been carrying out molecular studies with the presence of well-established DNA barcoding laboratories in the Headquarter office and regional centers and uploaded 1770 barcodes of 497 animal species this year whereas a total 10,742 barcodes have been generated since the inception of DNA barcoding laboratory. Providing capacity-building training on faunal communities as well as on conservational aspects is one of the major mandates of ZSI to empower the students, biodiversity managers, conservationists, naturalists, and other stakeholders. During this year a total of 78 Workshops/ Webinars/ Training programmes/ seminars were organized by ZSI (including Headquarters and 16 Regional Centres) and

more than 10,000 participants benefited.

ZSI is regularly rendering Identification and Advisory services to research, academic, and teaching institutions across India, Central and State Government Agencies, as well as NGOs. During this year, a total of 7549 specimens along with 86 photographs belonging to 1063 species were identified for 162 Institutes/colleges.

The current research domain relies on comprehensive and cooperative works among the various institutions to develop sustainable outcomes. The ZSI signed MoUs with eight universities and institutions from India in the field of animal taxonomical studies and a conservational approach.

ZSI has been doing comprehensive studies on ecological aspects of the faunal communities and the restoration of vulnerable ecosystems. In order to identify the migratory route, pattern, and frequency, the marine turtles are being tagged by ZSI in the Odisha coast (Olive ridley turtles) and Great Nicobar Island (Leatherback turtles). Long term permanent monitoring plots are being established in the coral reef ecosystem of Andaman and Nicobar Islands and Lakshadweep. ZSI is the only institution in India with a success story of transplantation and restoration of the coral reef ecosystem in the Gulf of Kachchh.

On this occasion, I take this opportunity to extend my gratitude to the entire fraternity of ZSI for their untiring support for efficiently achieving the mandates and targets of ZSI for the effective conservation of nature and its natural resources and achieving our goals in sustainable ways.

JAI HIND

[Dr. Dhriti Banerjee]





Executive Summary

EXECUTIVE SUMMARY

The history of Indian Faunal Exploration and Studies is quite long and well-accepted across the globe. The Zoological Survey of India [ZSI] is a 108-year-old organization dedicated to taxonomical studies of faunal communities since its inception in the year 1916. This institution under the Ministry of Environment, Forest and Climate Change, Government of India is documenting the faunal resources of India in various diversified ecosystems by effectively conducting periodic surveys through its dedicated manpower. In recent years, much emphasis has been given to recording the animals in Protected Areas, Biogeographic Zones, and Ramsar Sites of the country. Having the strength of data on faunal distribution in the country, the ZSI is providing inputs to policy-related issues, especially on biodiversity management, climate change, forensic studies, biodiversity impact assessments in ecologically fragile areas, status surveys of threatened species, long-term permanent ecological monitoring and restoration of vulnerable or degraded ecosystems. ZSI acts as a custodian of the National Zoological Collections and is a Designated National Repository of Type and voucher specimens under Section 39 of the National Biodiversity Act, 2002 of the Government of India.



A total of 998 Protected Areas including 106 National Parks, 567 Wildlife Sanctuaries, 105 Conservation Reserves, and 220 Community Reserves were declared by the Government of India to protect and conserve the wildlife of India which covers a total of 1,73,629.52 sq. km of the geographical area of the country shearing nearly 5.28%. ZSI has been working proactively to document faunal communities of the Protected Areas and covered more than 120 major PAs and documented faunal elements present in these areas to date. ZSI has so far documented 20,444 species from marine ecosystems, 9,457 species from freshwater ecosystems, 3,939 species from estuarine, 5,747 species from mangroves, and 6,602 species from wetlands ecosystems whereas

documentation on the faunal communities of all the 10 Biogeographic Zones has been completed and published.

Each year, the Zoological Survey of India conducts over 100 surveys as part of its annual program of research. During the reporting year, in headquarters out of the 50 programmes 18 were completed, 15 are ongoing and 17 programmes are newly inducted. Regarding Regional Centres, out of 101 programmes, 49 were completed, 20 are ongoing and 32 were initiated during the reporting period. A total of 26 external projects are being handled by ZSI's scientists whereas 7 are completed. Among the 177 programmes of headquarters & Regional centres, 74 were completed, 54 are ongoing and 49 programmes were newly inducted. During the present year, A total of 119 field survey tours have been conducted across all the ecosystems of country including 44 by headquarters and 75 by regional centres.



ZSI is one of the largest faunal specimen repositories in the world, and it maintains voucher specimens as reference material for taxonomists, researchers, students, and academicians to resolve the ambiguity in the identification of the taxon. The main task of the scientists of ZSI is to identify faunal species found within Indian boundaries. Accordingly, during the year 1,78,699 specimens belonging to 7,043 species have been identified by the scientists of ZSI Headquarters and Regional Centres. Specimens from backlog collections available with the National Zoological Collections (NZC) of ZSI have also been considered



for identification. All the species identified are also digitized with the habitat details for the benefit of the needy.

ZSI has been playing a key role in the taxonomical research of India and scientists of ZSI are describing new species at the rate of 125 to 135 per year. ZSI publishes every year the compiled information on the published new species and new records from India in the Book "Animal Discoveries of India - New Species and New Records". A total of 5503 new species of faunal communities have been described by the scientists of ZSI since its inception. During the year 2022, a total of 220 new discoveries have been published by the scientists of ZSI including 111 new species and 109 species of new distributional record of faunal communities in India.

Documentation and dissemination of the information and knowledge of ZSI's research works are recognized through the publications. During 2022-2023, a total of 732 publications have been made by ZSI including 31 Books, 179 Research Papers in SCI Journals, 170 Research Paper in National and International Journals including NAAS Rated Journals, 320 Book Chapters,



12 Zoological Survey of India E-News, 19 Popular Articles, and one Online Checklist. Apart from these, three volumes of the departmental Journal “Records of the Zoological Survey of India” have been published with 39 articles from ZSI as well as outside ZSI.

The well-established DNA bar-coding laboratory in the HQ office and regional centers continues to upload barcodes of various animal species and accordingly this year the lab produced 1770 barcodes belonging to 497 species whereas a total 10,742 barcodes have been generated now since the inception of the laboratories. Apart from ZSI headquarters, Northern

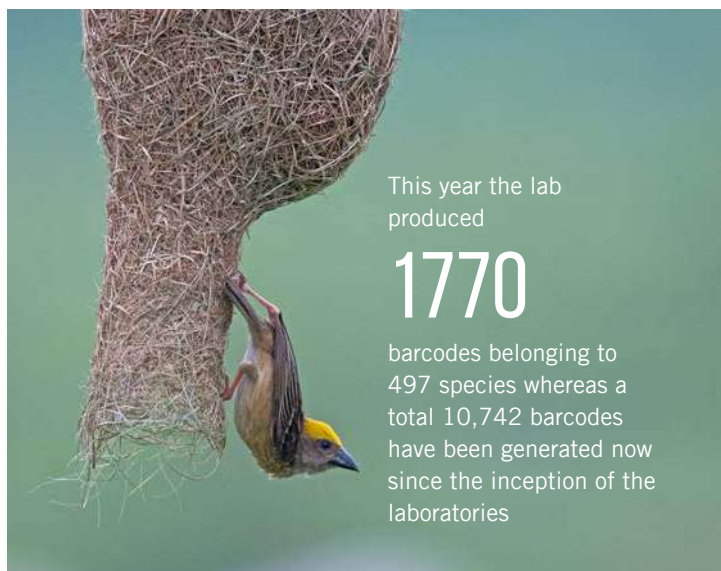
During 2022-2023, a total of

732

publications have been made by ZSI



and all Regional Centres celebrated Hindi Pakhwada). More than 10,000 participants benefited from these outreach activities. Our capacity-building efforts also target front-line forest staff from various states who have undergone basic training in identifying confiscated illegal wildlife articles by poachers and villagers.



This year the lab produced

1770

barcodes belonging to 497 species whereas a total 10,742 barcodes have been generated now since the inception of the laboratories

The ZSI also signed MoUs with various universities and institutions from India and abroad in the field of animal taxonomy and conservation. This year a total of eight MoUs have been signed with various national institutes and universities.

As part of Identification and Advisory

More than

10,000

participants benefited from these outreach activities.

Regional Centre, Dehradun; Western Regional Centre, Pune; Freshwater Biology Regional Centre, Hyderabad; Southern Regional Centre, Chennai; Andaman and Nicobar Regional Centre, Port Blair; Marine Aquarium cum Regional Centre, Digha; High Altitude Regional Centre, Solan; and Estuarine Biology Regional Centre, Gopalpur-on-Sea represents DNA bar-coding laboratory.

Under the capacity building programme, ZSI is organizing a series of training programmes, workshops, symposia, seminars, etc. on different thematic areas for the benefit of students, researchers, academicians, policymakers, etc. This year 78 Workshops/Webinars/ Training programmes/seminars/ organized by ZSI Headquarters and Regional Centres (ZSI Headquarters





ZSI had managed to identify

7549

specimens and

86

photographs
belonging to

1063

species
received from

162

Institutes/
colleges



services during the year, the ZSI had managed to identify 7549 specimens and 86 photographs belonging to 1063 species received from 162 Institutes/colleges. ZSI has been playing a notable role in the identification of confiscated wildlife material of different animals or body parts are being regularly provided to different law and enforcement agencies and thus contributing to the control of wildlife crime. During the reporting period, a total of 2499 specimens were identified belonging to 62 species received from 71 Agencies.



Though ZSI is the premier taxonomic research institution in the country, in recent years it enlarged its scope to address the issues related to species distribution modelling, development of a Mobile App for species identification, formulating insecticides, forensic science, forest fire, human-wildlife conflict, ecosystem services, pollination, invasive species, livelihood, ecosystem management and restoration, long term monitoring, and climate change for the advancement in research and the benefit of the general public at large.





Introduction

The Zoological Survey of India (ZSI) is a prestigious research organization established on July 1, 1916, to encourage survey, explorations and research in order to advance our knowledge of various aspects of our country's exceptionally rich faunal resources. ZSI is functioning under the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India. ZSI's mandate has expanded over time to better meet the needs of the country, and it is currently working on State Fauna, Conservation Areas including Protected Areas; Status Survey of Endangered Species; Documentation of faunal resources in different ecosystems, Biogeographic zones, Pollinators, Insect vectors, Digitization of faunal diversity, Mapping of faunal distribution in GIS platform, Molecular tools for taxonomy and forensic sciences, Long-term monitoring of biodiversity to assess the impact of climate change, Environmental DNA studies; Paleontological studies, Assessment of water pollution and Environmental Impact Assessment, Environmental Information System (ENVIS) on faunal diversity; Identification and Advisory services; Supporting policy and planning pertaining to Wildlife (Protection) Act, 1972; CITES, Red data Book, establishment of Marine Aquariums and development of Museum for awareness on conservation of biodiversity etc. ZSI acts as a custodian of the National Zoological Collections and is a Designated National Repository of Type and voucher specimens under Section 39 of National Biodiversity Act, 2002 of Government of India. The National Zoological Collections of ZSI comprises more than 6.4 million faunal specimens belonging to as many as 60,000 animal species including about 10,000 from neighboring countries like China, Nepal, Bhutan, Myanmar, Pakistan, Bangladesh and Sri Lanka.



Primary Objectives

- » Exploration, Survey, Inventorisation and Monitoring of faunal diversity in various states, some selected ecosystems and protected areas of India.
- » Taxonomic studies of all faunal components.
- » Status survey of Threatened and Endemic species.
- » Preparation of Red Data Book, Fauna of India and Fauna of States.
- » Bio-ecological studies on some important communities/species.
- » Preparation of database for the recorded species of the country.
- » Maintenance & Development of National Zoological Collections.
- » Training, Capacity Building and Human Resource Development.
- » Faunal Identification, Advisory services and Library Services.
- » Publication of study-results, including documentation of Fauna of India and Fauna of States



Secondary Objectives

- » GIS and Remote Sensing studies for recorded animal diversity as well as for selected threatened species.
- » Chromosomal Mapping and DNA finger printing.
- » Environmental Impact Studies.
- » Maintenance of Museums at Headquarters and Regional Centres
- » Development of ENVIS and CITES Centres.
- » Research Fellowship, Associate ship and Emeritus Scientist Programme.
- » Collaborative research programmes on Biodiversity with other Organizations.
- » All India Coordinated Project on Taxonomy (AICOPTAX)

Principal Thrust Areas of Work (2022-23)

1. Faunal Inventorization of States and Union Territories:

Inventory of different Faunal group on the following states and Union Territories were undertaken, viz. U.T. of Lakshadweep, Andaman & Nicobar, Puducherry, Ladakh and Bihar.

2. Faunal Inventorization of Ecosystems:

Faunal inventory of various Ecosystem were proposed during the period- As part of fauna of Ecosystem -Marine Ecosystem: East and West coast of India, Bay of Bengal, Arabian Sea, Island Ecosystem: Andaman & Nicobar Islands, Lakshadweep, Estuarine Ecosystem: Dhamara estuary, Freshwater Ecosystem: River Godhavari, Himalayan Ecosystem, Semi-Arid and Desert Ecosystem and Temperate and Alpine Grasslands

of Himalayas, Subterranean ecosystem of Cave fauna of Meghalaya, Agroecosystems of Low hills in subtropical and Mid-hills in sub-humid zones of Himachal Pradesh.

3. Faunal Inventorization of Conservation Areas:

Towards faunal inventory of Protected Areas: Shearome Island Wildlife Sanctuary West Island Wildlife Sanctuary, White Cliff Island Wildlife Sanctuary and Point Island Wildlife Sanctuary of North Andaman, Mount Abu Wildlife Sanctuary, Rajasthan, Todgarh-Raoli Wildlife Sanctuary, Rajasthan, Kinnerasani WLS and Pakhal WLS, Telangana, Barela Jheel Salim Ali Bird Sanctuary and Bhimbandh Wildlife Sanctuary, Dibru-Saikhowa Biosphere Reserve, Assam, Kedarnath Wildlife Sanctuary, Uttarakhand, Satyamangalam Tiger Reserve, Bhagwan Mahaveer Sanctuary

and Mollem National Park, Goa, Daroji Sloth Bear Sanctuary, Karnataka, Lakhari Valley WLS Odisha, Bethuadahari WLS, Bibhutibhushan WLS, Ballavpur WLS, Ramnabagan WLS, Yawal WLS, Gautala WLS, Kali WLS, Gandhisagar, Ratapani, Palpur and Kuno Wildlife Sanctuaries including Sehere and Raisen of Madhya Pradesh, Fauna of three conservation reserves (Rakh Sarai Amanat Khan, Ranjit Sagar and Beas River) of Punjab, Abohar WLS, Punjab, Amrabad and Kawal Tiger Reserve, Khol Hi-Raitan (Morni Hills) WLS, Haryana, Manas National Park, Assam, Sanjay, Panna and Fossil National Parks, Purna WLS and Fauna of Parambikulam Tiger Reserve, Kerala.

4. Status Survey of Endangered Species:

As a mandate of status survey of endangered species, Status survey of white cheeked macaque (*Macaca leucogenys*) in Arunachal Pradesh, Forest cane turtle (*Vijayachelys silvatica*) and Travancore turtle (*Indotestudo travancorica*), Conservation genetics and status survey of Kiang (*Equus kiang*) in India, Otters from mangrove ecosystem of east coast of India, Windowpane Oyster (*Placuna placenta*), Water Monitor Lizard (*Varanus salvator*), Nilgiri marten (*Martes gwatkinsii*) in the Western Ghats, Andaman Teal (*Anas albogularis*) in Andaman Islands, Long term monitoring of olive ridley sea turtles, Freshwater turtles of India, status survey CMS-CITES avian species of India were undertaken.

5. Ecological, Behavioral and other studies:

Exploration of Natural Enemies of tea gardens of India with special emphasis on South and Northeast India, Ecological Studies and conservation of *Lingula anatina* (Brachiopoda: Lingulata) in Subarnarekha estuary, Odisha, Long term monitoring of olive ridley sea turtles, Drinking water microbiome: monitoring of the water quality and associated health implications, Faunal Inventorisation on Smart Cities of Andhra Pradesh (Amravati & Visakhapatnam) Survey, detection and identification of bioactive molecules from various marine animals available in West Bengal and Odisha Coast and Assessment on Landing of By-Catch Fauna in the Digha Shankarpur Fish Landing Center of East Coast of India, Understanding the behavior ecology and habitat utilization by Himalayan black bear (*Ursus thibetanus laniger*) in Himachal Pradesh for mitigating human-wildlife conflict.

6. Taxonomic Studies:

Building Digital Sequence Information (DSI) Library of India Fauna, Revisionary studies of Genus *Tomocerus* Nicolet, 1842 (Collembola: Tomoceridae) from Eastern Part of Indian Himalayan Region, Portunoid Crabs of India, Diptera fauna from Tropical evergreen forest and coastal ecosystem of Andaman and Nicobar Islands, Sisorid Catfishes of India, Systematics and distribution of fishes of the Mandovi and Zuari aquatic ecosystems, Bionomics and DNA barcoding of host caterpillars of *Ophiocordyceps sinensis* (caterpillar fungus) along with the taxonomy of their adult moths from the state of Uttarakhand, Lacertid Lizards in India, Land Molluscs of India, Diversity, Freshwater Fish Fauna of Andaman and Nicobar Islands, Taxonomic review of the Suborder Pleuronectoidei along the East Coast of India, Marine Sponges in Gulf of Kachchh, Endemic Odonata (Insecta) of India, Indian Fish Diversity Metadata, Endemic Butterflies (Lepidoptera: Rhopaclocera) of the Western Ghats with their Mitochondrial DNA Barcode studies.

7. Maintenance of National Zoological Collections (NZC):

Preservation and Maintenance of NZC, holding more than 20,000 Type specimens.

8. Advisory, Training and Extension Services:

Provided as and when sought by different Institutions/ Organizations and confiscated wildlife material for law enforcing authorities.

9. Computerization and Dissemination of Data:

Computerization of registered collection of Types and other specimens are being carried out along with digitization of the specimens. Interactive Identification and Information System, Primary Type Information Systems already initiated. Digitization of ZSI publication is freely available on website (www.zsi.nic.in).

10. Collaborative Research Programmes/Projects:

ZSI is involved in many collaborative research programmes with several Institutes and Universities across the country.

11. Checklist of faunal groups:

More than 80 Checklist are uploaded in ZSI webportal (zsi.gov.in).

HEADQUARTERS, KOLKATA

Headquarters of ZSI has Scientific Divisions /Sections, Library, Publication, Identification and Advisory, ENVIS centre, Field Survey, Training and Extension, Fauna Division, Museum and Taxidermy Division, Photography Section, Art Section, Scanning Electron Microscopy Unit and Data Centre. Besides, it also holds 7 zoological galleries in Indian Museum. These units support research work of the scientists.

The Scientific Divisions and Sections at ZSI Headquarters undertake studies on various animal groups from Protozoa to Mammalia. The different sections of headquarters are:



Section: Protozoology

Protozoology Section is mainly dealing with the studies on single celled, eukaryotic organisms, which are mostly microscopic and display enormous variability in shape, size and structure. The major contribution of this section includes the taxonomic account of 1500 species i.e., ~ 44% of the known Indian protozoan species is published from this section, including the description of 98 new species and 4 new genera. The total collection holding of this section is about 12607 specimens with 975 species. The type collections include 321 slides of 109 species of free-living and parasitic protozoans. Among that about 1130 slides of ciliates, 153 of which are types slides representing 49 holotypes and 104 paratype. More than 50 barcodes of the Protozoan ciliates and testate amoebae. About 11 inhouse research programmes are ongoing during this

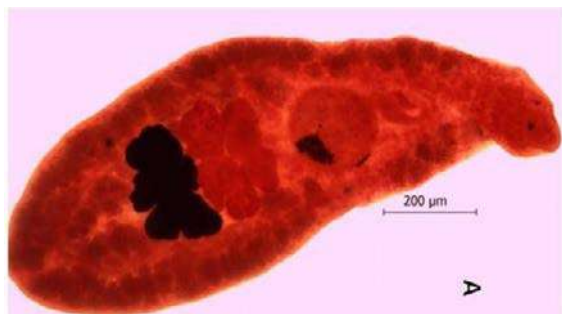
year. Two externally funded programmes (DST-SERB) on protozoans and Gelatinous zooplankton are also dealt by this section namely, Seasonal diversity and distribution of gelatinous zooplankton and its ecological and economic implications in the marine ecosystems of northern Bay of Bengal and Barcoding of free-living protozoan ciliates from the conserved aquatic ecosystems of Himachal Pradesh.



2

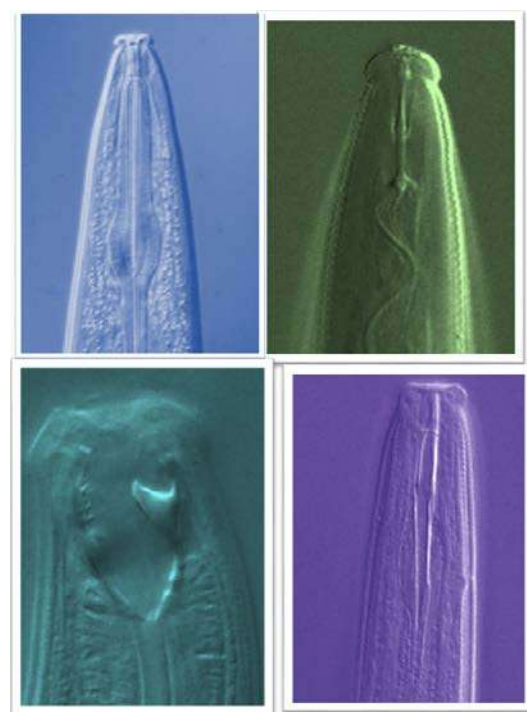
Section: Platyhelminthes

Platyhelminthes section deals with Phylum Platyhelminthes or flatworms which include the planarians, flukes and tapeworms. It is mainly working on the following groups of organisms: Trematode, Cestode and Monogenean parasites of Vertebrates and Acanthocephala. More than 41 programmes have been handled by the section and completed the database of 18 States and UTs. Database on Platyhelminthes species of 5 Biogeographic zones have been completed so far. Altogether 41 Families of Platyhelminthes and Acanthocephala have been dealt till date. The section has total holdings of 23685 comprising (Identified 23169 + Unidentified 516) including 456 Type Collections. In total 673 examples belonging to 131 species identified in the reporting period. One programme has been completed in this year and presently the section is involved in four ongoing programmes on Trematodes of Fishes.



slides and 249 specimens of wet collections. At present Soil nematodes are being studied from remaining States, Conservation Areas and several Ecosystems, while free-living marine nematodes are being studied from both east & west Coasts of India. More than six Ph. Ds have been awarded and two students are pursuing Ph.D. More than 50 species have been described as new to science and several new records to India have been published. During the reporting period

one student awarded Ph.D. degree while two students have been enrolled for Ph. D. in the section. Two Books and 14 papers have been published from the section.



3

Section: Nemathelminthes

Nemathelminthes section deals with the following groups of organisms: Soil-inhabiting nematodes comprising Bacterivorous, Fungivorous, Plant-Parasitic, Predatory and Omnivorous, Entomopathogenic nematodes and Helminth parasites of Vertebrates. More than 49 programmes have been handled by the section and completed the database of 26 States and UTs. The present holdings of the section include 29,988 identified specimens and 7870 vials of unidentified wet collections. Besides, Type collections include 187

4

Section: General Non-Chordata

General Non-Chordata section is holding the groups that are associated with Corals and coral reef habitat such as Porifera, Soft corals, Octocorals, Polychaetes, Echinodermata and minor-phyla. In addition, section also holds leeches, terrestrial and aquatic oligochaetes. The section houses 8,49,742 specimens which includes Porifera, Cnidaria, Annelida, Echinodermata and Minor-phyla. Among these, 1655 specimens are Type specimens.

5

Section: Crustacea

The Crustacea Division holds Crustacean samples like Shrimps, Crabs, Hermit crabs, Woodlice, Fice-lice, and many Planktonic forms like Cladocerans, Copepods, Ostracods, etc., and is more diverse. These specimens were collected from India and adjacent country during various period (from 1850 to till date). The specimens received from several countries across the world, specimens inherited from Asiatic Society of Bengal, Indian Museum and valuable types specimens submitted by the researches of Zoological Survey of India and other research Institutes across the country are maintained by ZSI for more than a century since its inception. Apart from that crustaceans are collected every year from different survey programmes under various projects. At present the Crustacea Division holds more than 133049 specimens of crustaceans including 6531 Types specimens.



6

Section: Mollusca

The Mollusca section deals with the taxonomic study of Mollusca. The section had its inception in 1916 and was well known through the works of distinguished malacologists like the founder Director of ZSI, Dr. N. Annandale, William Benson, Godwin Austen, Hanley and Theobald, Nevill, Gude, Baini Prasad during the British period. Holdings of the section include 1,95,220 identified specimens including 1465 Type specimens. These specimens were collected from India and adjacent countries during various periods (1885 to till date). The specimens received from several countries across the world, specimens inherited from the Asiatic Society of Bengal, Indian Museum, and valuable type specimens are maintained in the National Zoological Collections of Malacology Division. More than 57 research programmes completed and Fauna volumes dealing with Mollusca have been published by the section and completed the database of 23 States and UTs. During this year, a total of 231 species was identified and one new species of Mollusca was described. Augmentation of 7 species was made in the National Zoological Collections and a total of 19180 specimens were registered in the NZCs. A total of 26 publications were made including one book, eight SCI papers, three NAAS Rated papers, and 14 book chapters. A total of 396 visitors including 36 researchers, 338 students, and 22 general public visited the Mollusca sectional museum for the development of their awareness, and research work on taxonomic revisions and identification.



7

Section: CEL

Central Entomology Laboratory (CEL), is the National repository of Insect Types, hosting types from different parts of the world. 22 orders of insects : Diptera, Coleoptera, Lepidoptera, Hemiptera, Hymenoptera, Orthoptera, Mantodea, Phasmatodea, Thysanoptera, Dermaptera, Ephimeroptera, Odonata, Trichoptera, Neuroptera, Phthiraptera, Plecoptera Thysanura, Dictyoptera, Embioptera, Siphonoptera, Strepsiptera and Psocoptera are available in CEL and have total holdings of Type collections which consist of 13838 examples containing 5810 species. During the year 12 species of Types added. During 2022-2023 two species of Hymenoptera *Leptanilla ujjalai* Saroj, Mandi & Dubey, 2022 (Formicidae) and *Occipitotus langpramensis* Singh & Van Achterberg (Braconidae) described new to science and one species *Plagiolepis pissina* Roger, 1863 (Formicidae) reported for the first time from the country. Presently the section is involved in ongoing programmes on Studies on Formicidae and Chalcididae (Hymenoptera) of Deccan Peninsula; wildlife Sanctuaries and Dry deciduous forests of West Bengal and Natural enemies of Tea gardens of India.



8

Section: Isoptera

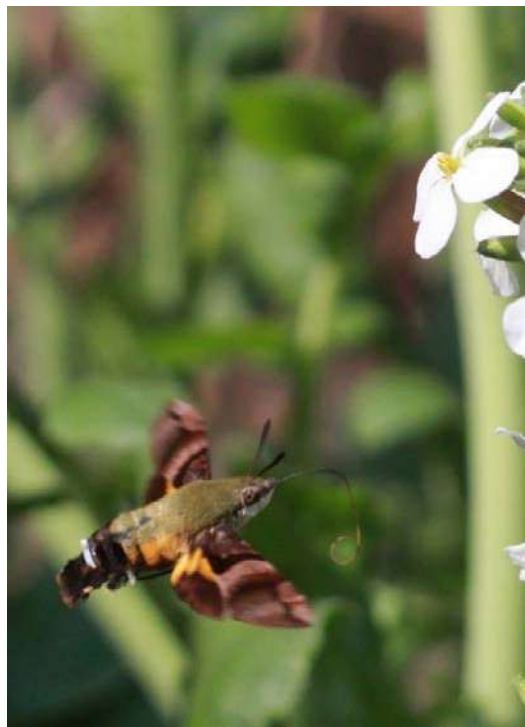
The Isoptera Section at ZSI-HQ works on both morphological and molecular taxonomy of termites. The section had its inception in 1956 and has been well known through the works of the internationally renowned experts like Dr. M. L. Roonwal, Dr. O. B. Chhotani, Dr. G. Bose and Dr. P.K. Maity. More than 22 research programmes have been handled by the section. All 6 families of termites have been dealt with. The section has a total of nearly 344 species, from India and several countries abroad and also holds about 4435 vials of termite specimens, of which 3933 are identified. The section also has 1060 Type Collections. Presently the section is contributing to 7 annual research programmes of ZSI. Scientists of this section have described till date, a total of 105 species of termites new to science and have published over 150 research publications in the form of books, book chapters and research articles in various national and international journals/ books. The section also caters Identification and Advisory services regularly to several institutions and also provides 'Hands-on-Training on Termite Taxonomy' on request.



9

Section: Lepidoptera

Indian Lepidoptera (Butterflies and Moths) diversity is extremely rich and fascinating with nearly 13,500 species reported from India. Among Lepidoptera, butterflies are relatively well worked out which represents 10% of the total Lepidopteran diversity of India, leaving hyper-diverse moths as the 'lesser known kin'. Lepidoptera section is primarily involved in collection, preservation, identification, cataloguing/ computerization, digitization and documentation of Lepidopteran (moths and butterflies) fauna of our country. The section holds 1,20,285 specimens of which 83,325 are named specimens and the rest 36,960 are unnamed specimens (till 31st March 2023). There are 4024 species and subspecies of butterflies and about 2500 species and subspecies of moths. Lepidoptera section is honored in having the collection of 49 countries (including India) and about 750 types. The first registered specimen of Lepidoptera section is a male butterfly, *Hasora umbrina* Mab., collected by N. E. Celebes and was catalogued by Cap. Evans on October 01, 1931. The collection of L. de. Niceville, K. Jordan, W.H. Evans, E. E. Green, G. C. Dudgeon are some of the important collections housed in the Lepidoptera section. So far, the scientists and scientific staff of the Lepidoptera section provided Identification and Advisory services to more than 150 institutions. As an initiative of Lepidoptera section under 'Digital India', an online portal, 'Catalogue of Indian Lepidoptera (<https://www.indianlepidoptera.in>)' was launched on 1st July, 2022. Currently, the online catalogue is enriched with the taxonomic information including, but not limited to updated nomenclature and distribution of more than 3000 species of Indian Lepidoptera. The catalogue is being updated continuously and aims to have taxonomic information on all the Indian Lepidoptera.



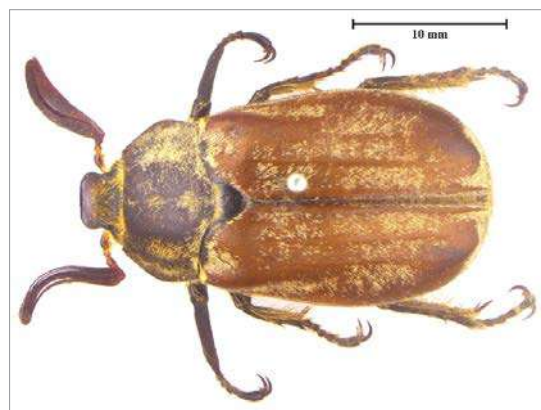
10

Section: Hymenoptera

The Hymenoptera section deals with pests, pollinators, parasitic, predatory groups of hymenopteran families (Apidae, Halictidae, Megachilidae, Encyrtidae, Mymaridae, Evanidae, Eupelmidae, Vespidae, Sphecidae, Tenthredinidae etc.). The primary role of the section is the collection, preservation, identification, cataloguing, digitization and computerization of hymenopteran fauna. In addition, the Hymenoptera section provides Identification and Advisory services to researchers from various Institutions in India. Presently the section is involved in six research programs, including a DST-SERB funded project entitled "Parasitic wasps of the families Encyrtidae and Mymaridae (Hymenoptera: Chalcidoidea) and their utilization in the management of sucking insect pests on Agricultural and Horticultural crops of Northeast India". The section has a total holding comprising 46419 specimens, of which 25736 are identified. Two new species were described, and two species were reported for the first time from India. Nine research papers, six book chapters and one abstract were published during the year.



scientific staff and research scholars of the section have described over 25 new species, reported 15 new records to India and published 14 books, 153 book chapters, and 55 research articles.



11

Section: Coleoptera

Coleoptera Section was established in 1927 and has the largest depository of beetles in India and even in Asia. There are currently 3,45,933 specimens in section out of which 61,086 are named and 2,84,847 are unnamed including 1,096 type species (specimens can be traced in CEL). The section is equipped with a Nikon SMZ-25 auto-montage stereo zoom microscope, Leica stereo zoom binoculars, Nikon DSLR cameras, and magnoscopes. Currently the Section is involved with the survey and study of Deccan Peninsula Biogeographic Zone, Bihar state, as well as Wildlife Sanctuaries and tropical dry deciduous forests in the state of West Bengal. The section focuses taxonomic research on the following families: Carabidae, Cicindelidae, Gyrinidae, Dytiscidae, Noteridae, Hydrophilidae, Haliplidae, Scarabaeidae, Passalidae, Lucanidae, Geotrupidae, Nitidulidae, Coccinellidae, Chrysomelidae, Cerambycidae, Staphylinidae, and Histeridae, resulting in the publication of new species, new records in India, reviews of genera, and checklists. The scientist in the section is also been recognized as a doctoral supervisor at University of Calcutta. Four research scholars are currently working on their PhD thesis on different aspects of beetle taxonomy. The section also provides advisory services in identifying beetles for various institutions. In the past five years the scientists,

12

Section: Miscellaneous Insect Order (MIO)

The Miscellaneous Insect Order section is one of the oldest insect order section at ZSI headquarters and currently deals with taxonomic studies on several orders of insects like Odonata, Trichoptera, Neuroptera, Ephemeroptera, Psocoptera, Embioptera, Plecoptera, Megaloptera and Mecoptera. The official registration of specimens of MIO section started in March 1973. The section holds some very old collections made by eminent scientists like H.S. Pruthi and H.A. Rao and others dating back to even 1933. Some very old collections are from outside India, including countries like Myanmar, Germany, Canada, USA, Russia, Croatia and Indonesia. Nearly 666 species under 239 genera belonging to 72 families are present in the sectional holdings and holds a total of 20319 specimens, of which 16970 are identified and registered. So far more than 20 programmes have been handled by the scientists of MIO section. Presently the section is participating in 12 ongoing Annual Programmes of Research.



specimens includes 62 species of Holotype with 1032 examples of Paratype specimens and 01 species of Syntype with 02 examples; Type collection of Dipluran specimens includes 01 Holotype species with 21 examples of Paratype specimens; Type collection of Protura includes 02 species of Paratype with 02 examples; Zygentoma Type collection includes 06 species of Holotype with 63 examples of Paratype specimens and 01 Type species with 01 example. All the type specimens are retained in Apterygota section, ZSIHQ.



13

Section: Apterygota

The Apterygota are most primitive, wingless hexapods usually found in moist places such as soil, forest leaf litter, humus, under stones, caves, in ant and termite nests. More than 34 programmes have been handled by the section and completed the database of 11 States and UTs. Five groups- like Collembola, Protura, Diplura, Archaeognatha and Zygentoma have been worked out. More than 232 research publications including Pictorial handbook of Collembola & Thysanura, and revisionary studies of Collembola was published. The section has a holding of 46,195 specimens of Apterygota of which 29,379 specimens are identified and 16,816 specimens are unidentified. Type Collection of Collembolan

14

Section: Orthoptera

Orthoptera Section deals with Orthoptera, Blattodea, Mantodea, Phasmida and Dermaptera. The section has holdings of 52300 specimens of which 43672 are identified specimens (Orthoptera-35000 nos., Blattodea-909 nos., Mantodea-488 nos., Phasmida-314 nos., and

Dermaptera-6961nos.). Type specimens of Orthoptera are deposited in Central Entomological Laboratory of ZSI, Kolkata. More than 52 programmes have been handled by the section and completed the database of 27 States and UTs. Presently the section is involved in 9 ongoing programmes on Orthoptera and Dermaptera.



15

Section: Hemiptera

Hemiptera Section is the largest among hemimetabolous insects. Collection, preservation, identification, registration, digitization and documentation of the true bugs is primarily mandate of the Section. Major achievements of the section are Fauna of India-Aphididae (8 vols.), Checklist of the Scale Insects and Mealybugs of South Asia, A review of Indian coccids, Assassin bugs (Reduviidae: Heteroptera) from Chhattisgarh, India, Handbook on Major Hemipteran Predators of India, Catalogue of Reduviidae of India. Presently Hemiptera section is participating in 7 Inhouse co-ordinated Projects and one Externally Funded Project. The section has total holdings of 1,59,654 specimens comprising of 64,097 identified and 94,747 unidentified specimens. In total 6634 specimens under 504 species were identified in the reporting period. During this year, six book chapters and eight research articles were published. Forty seven species augmented to National Zoological Collections out of which 4 are holotypes and rest are paratypes. Identification and advisory services are offered to students, researchers and scientists of different institutes and Universities.



16

Section: Diptera

The Dipteran fauna popularly known as flies is a group of insect with two wings and two halteres. With more than 1,50,000 species this family have been predominant universally. Their extensive range of ecosystem services, derivation and distributional diversification have altogether made this dipteran flies essential part of any global ecosystem. The economic importance of the group is immense. From being Predators and parasitoids of other insects, assisting in pest management to nutrient cycling, from soil turnover, forensic investigators, decomposition of biological by-products to blossoming of plants, this group of true flies has contributed towards significant economic and aesthetic benefits as well as cultural values to human society. With the legacy of more than 60 years of fly research, Diptera section (Estd: 1962) is currently carrying out research to solve this discrepancy in both classical and applied field of fly taxonomy. Diptera section deals with the following groups of organisms: Diptera of Vector importance, predatory group, pollinating efficiency, forensic importance and some other groups of economically important Diptera. More than 89 programmes have been handled by the section and completed the database of 19 States and UTs. 95 families of Diptera have been dealt till date. The section has total holdings comprising a national zoological collection of 10,1855 specimens which includes 10,0324 specimens in General Collections and 1531 samples in Type Collections. A group of young researchers also completed their Ph. D. from this section with a notable

research publication and established themselves in different organization. Presently the section is involved in 8 ongoing programmes on Diptera.



17

Section: Acarology

Acari are by far the most diverse and abundant group of arachnids and are clearly important in the functionary of many ecosystems. Acarology section established in the year 1964 deals with a variety of Soil mites, Plant mites, Parasitic mites, Water mites, and Ticks. More than 45 Programmes have been handled by the section and completed the details of 28 states and 08 UTs. More than 18 families of plant mites, 115 families of soil mites, 1 family of water mites and 3 families of ticks have been dealt till date. The Section has a total holding of 19,142 general collection 1604 type collection. Presently the section is handling 8 ongoing programs to cover various ecosystems and Protective areas. The major contribution of this section is to prepare the faunal account of the Indian acari comprises 1937 species belonging to 529 genera and 146 families in compare to the world diversity of 48,200 described species.



18

Section: Arachnida

Arachnida Section deals with the following groups of organisms: Spiders (Order: Araneae) Scorpions (Order: Scorpiones), Pseudo scorpions (Order: Pseudoscorpiones), Whip Scorpions (Order: Uropygi), Tailless whip scorpion (Amblypygi), Harvestmen (Order: Opiliones), Sun spiders (Order: Solifugae), Sea Spider (Class: Pycnogonida), Centipedes (Class: Chilopoda) and Millipedes (Class: Diplopoda). 22 programmes have been handled by the section and completed the database of 22 states and UTs. Forty-two families of spiders have been dealt till date. The section has a total holding comprising of 39215 general collections and 883 type specimens. Presently the section is involved in 9 ongoing programmes. The section focuses taxonomic research on all arachnid orders except acari, resulting in the publication of new species, new records in India, reviews of genera, and checklists. Identification and Advisory services are offered to students, researchers and scientists of different institutes. This section is also helping M.Sc. students to complete their dissertation on arachnids.



19

Section: Marine Fish

The Marine Fish Section is one of the oldest sections in ZSI, and the one among the largest repository of Marine Fish in India. This Section is mainly involved in collection, preservation, identification, digitization and documentation of marine ichthyofaunal diversity of Indian waters. At present, the section has a total holding of 502,704 specimens including 501,692 specimens in general collections and 1012 specimens in Type collections. The type collections of the section comprise 356 species, including Holotype, Paratype, Syntype, Lectotype, Paralectotype & Neotype. This repository is unique with the collections from the Asiatic Society of Bengal (collected made in the 19th century), collections of Sir Francis Day (collections made 160 years back), and several exotic species obtained through the exchange in past. Marine Fish Section has completed more than fifty research programs so far and continuing its involvement in different ongoing research programs of ZSI.



eight projects/ programmes have been completed, including one externally funded project and at present, seven programmes are ongoing in the section. Scientists and researchers of the Freshwater Fish section have discovered and described more than 35 fish species from India and Myanmar during the last decade.



21

Section: Amphibia

At present, the Section is involved in several programs on Anuans (frogs and toads), Agamid lizards of India, Status Survey of Water Monitor Lizard and Fauna of Dry Deciduous Forests. Thirty five programs have been handled by the Section. Databases of all the States of north-eastern India (except Nagaland) and northern India (except Jammu & Kashmir) have been completed. 16 families of Indian amphibians belonging to all 3 orders have been dealt till date comprising 177 species. The present holdings of the Section include 36383 specimens comprising 36293 identified specimens and 90 unidentified wet collection specimens. Besides, the Section also possesses 143 specimens from other countries and 323 type specimens. This year the sectional scientists described one new species of Anuran amphibian (*Euphlyctis jaladhara*).

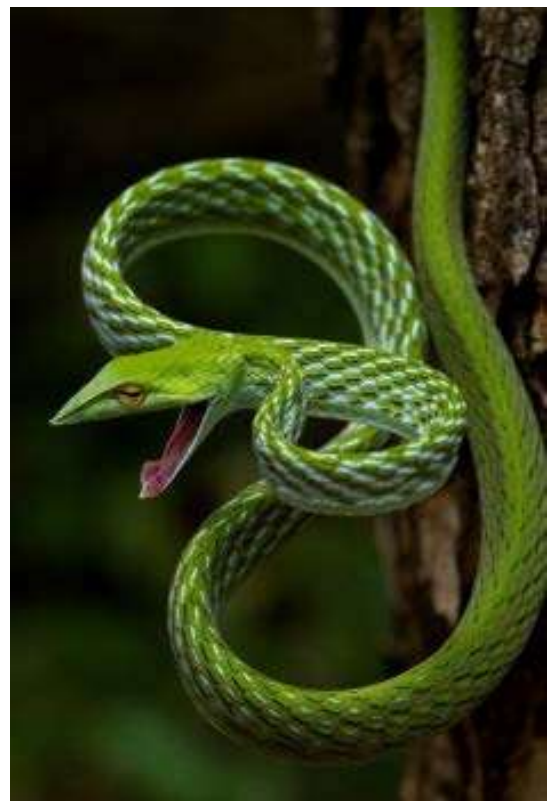
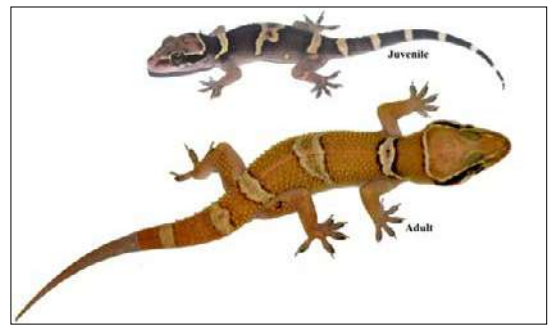
20

Section: Freshwater Fish

The freshwater fish section of the Zoological Survey of India, Kolkata, is the country's largest repository for freshwater fishes, hosting 3.50 lakh specimens, including more than 1500 type specimens. It includes a century-old collection made by the Asiatic Society of Bengal, which was later handed over to the Zoological Survey of India. Collections made by eminent scientists/researchers of the country and abroad are being maintained in the section. During the last decade, more than



Ghat's endemic Jeypore Hill gecko (*Cyrtodactylus jeyporensis*) in Appendix-II were accepted. All these three species are facing rapid decline and their population is threatened due to the international pet trade.



22

Section: Reptilia

The Reptilia section houses some of the very old collections of specimens from India as well as other countries acquired during the British period, with several new additions afterwards. This section holds the maximum number of reptile collections from India comprising groups such as Crocodilia, Testudines, and Squamata (lizards and snakes). The section has a total holding comprising 34517 general collections including 527 type specimens. Apart from taxonomic studies, scientists of the section are involved in works on ecology, evolution and conservation of reptiles in India. The section provides advisory services through the identification of specimens, identification of confiscated materials and capacity building of students and researchers through lectures, training, and internship guidance. During the reporting period (2022-23), this section was involved in developing three proposals for the CITES CoP-19 meeting held in Panama. India's proposal on shifting two species of turtles (*Batagur kachuga* and *Nilssonia leithii*) from Appendix-II to Appendix-I and inclusion of the Eastern

Section: Bird

The avian collection comprises a total of 50,000 meticulously preserved specimens representing approximately 600 distinct bird species. These specimens have been systematically gathered from both within and beyond Protected Areas, spanning not only the borders of India but also encompassing various neighboring nations and beyond. Among these, an impressive count of 44,852 specimens have been precisely identified down to the species level. In the recent period of 2022-23, a noteworthy accomplishment entails the identification of 493 specimens, encompassing 92 different species, from the accumulated backlog collection. A pivotal highlight of this bird collection revolves around the presence of Type specimens—a collection that has evolved over two centuries, signifying an invaluable resource in the field. The collection currently boasts the curation of 504 distinct Type specimens. Furthermore, the bird section of this institution actively fulfills its role by offering identification services and expert guidance in relation to confiscated wildlife articles. This support is extended to a range of enforcement agencies, thereby contributing significantly to conservation and legal interventions.



Section: Mammal & Osteology

The Mammal & Osteology Section at ZSI houses 32,000 dry and wet specimens, including 300 Type collections, representing various mammalian species. Approximately 71% (323 species) of the 450 Indian mammal species are available in the collection, including 28 endemic species. One of the distinguishing features of the National Zoological Collection is the inclusion of mammals spanning the entire size spectrum. From the Etruscan pygmy shrew (*Suncus etruscus*), recognized as the world's smallest mammal, to the magnificent Blue whale (*Balaenoptera musculus*), the largest mammal on Earth, this collection showcases the vast diversity of mammalian life. Specimens are preserved as dry, wet, and osteological collections. Noteworthy mammal specimens are displayed in the Zoological & Osteological galleries for public viewing.

Applying the phylogenetic species concept, the team of Mammal Section has described the 'Sela macaque' as a distinct primate species, separate from other closely related macaque species based on phylogenetic species concept. The team also identified the White Cheeked Macaque in central Arunachal Pradesh, utilizing camera trapping and non-invasive genetics. The discovery of the Sela and the White Cheeked macaques exemplifies the dedication and expertise of the Mammal & Osteology Section at ZSI in unraveling the complexities of biodiversity. The section has also adopted modern tools like non-invasive genetics monitoring, genomics, and metagenomics to study the evolutionary patterns of large mammals. The Mammal & Osteology Section actively provides Identification and Advisory services for confiscated mammal articles received from enforcement agencies in India, and during the last financial years over 50 advisories have been submitted by the section to various law enforcement authorities.



many other important sites. Prehistoric zoology section also has a great collection of modern comparative collection of different domestic as well as wild species which is very important for the study of animal remains. From recent excavations by ASI Patna and Bhubaneswar Branch at Urain and Bharatihuda respectively and by OIMSEAS, Bhubaneswar at Radhanagar – Kankaria, a good number of zooarchaeological remains has been sent to ZSI.

Vertebrate and Invertebrate Palaeozoology sections are holding also a lot of vertebrate (fish, reptile and mammal) and invertebrate fossils. More than 26000 specimens are present in the holdings of three sections of Palaeozoology Division. Two ongoing research programmes on animal remains from Bharatihuda Archaeological site, Odisha and North & South 24 Parganas, West Bengal. Identification of two lots of animal remains sent by Calcutta University also done. One reconnaissance survey to Dwarka Devbhumi dist, Gujarat carried out for the study on marine fossils of coastal Dwarka belt.

25

Section: Paleozoology Division: Invertebrate & Vertebrate Palaeozoology and Prehistoric Zoology Section

Palaeozoology Division of ZSI is the repository of the immense important collection of zooarchaeological remains from different archaeological sites of Indian subcontinent, collected from the excavations mostly by Archaeological Survey of India, also Directorate of State Archaeology, universities, individuals and other institutions. Till date ZSI worked out specimens from more than fifty archaeological sites and custodian of the zooarchaeological remains from more than forty different prehistoric sites of the Indian subcontinent. The repository of Prehistoric Zoology Section is holding collections from Harappa, Mohenjodaro, Rupar, Lothal, Rangpur, Kalibangan, Nagarjunakonda, Hastinapur, Ujjain, Burzahom, Kausambi, Taxilla, Tilaurkot & Kodan (Nepal), Andaman Kitchen Midden site and

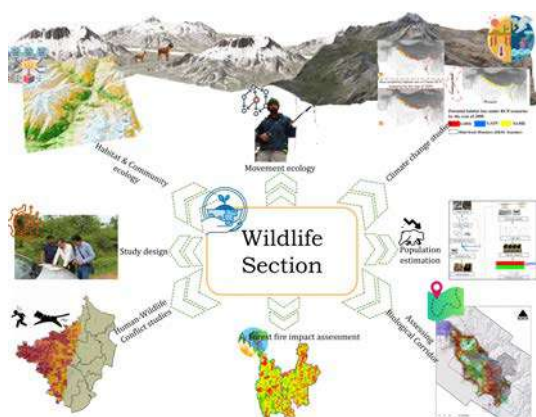


26

Section: Wildlife & Conservation

The Wildlife Section at the Zoological Survey of India, Kolkata, has earned a reputation as a leading force in conducting extensive and impactful studies on various wildlife species, with a primary focus on their landscape ecology. A number of externally funded projects are implemented, which are comprehensive studies that cover crucial aspects related to these species, including habitat ecology, landscape ecology, climate change impact assessment and human-

wildlife conflict studies across diverse landscapes in the country. The section has conducted training programmes aimed at enhancing the skills and expertise of various stakeholders involved in wildlife management and conservation. At present the section is implementing two annual projects sanctioned under the annual programme of research of Zoological Survey of India, Kolkata. Furthermore, the scientists of the section are actively engaged with the academic community by offering research opportunities for Ph.D. and M.Sc. students interested in wildlife conservation and landscape ecology.



27

Section: Soil Zoology

Soil Zoology section deals with taxonomical and ecological studies on microscopic protozoans to macroscopic mammals. Enormous projects were handled on mammals, mollusca, insects, mites, earthworms and protozoans inhabiting in soil. The identified specimens reported were deposited in sections respective to the group of fauna. At present the collection holdings of 1245 specimens belonging to 58 species of Testate Amoeba has been digitized. The Microslides of protozoans mainly on testate amoeba are present in the section. The section renders internship and training to post graduate students, research scholars on soil fauna. Currently section is involved in 10 research programmes.



28

Section: DNA and Molecular Systematics Laboratory

The establishment of the Centre for DNA Taxonomy (CDT) under Molecular Systematics Division (MSD) was initiated in 2011 at the Zoological Survey of India (ZSI). The section was formally inaugurated on 19 May 2012 and could be operational in the year 2013. Apart from HQ Kolkata, eight regional centers (WRC, Pune; NRC, Dehradun; FBRC, Hyderabad; SRC, Chennai; ANRC Port Blair, EBRC Odisha, HARC Solan, and MARC Digha) are now operational to generate DNA barcode sequences of Indian fauna. As of now, the CDT, MSD, HQ has generated 7519 DNA barcode data of various animal taxa, especially the spiders, insects, amphibians, reptiles, birds and mammals. The generated DNA barcode data has contributed greatly to the global databases (GenBank and BOLD) to accelerate the systematics and evolutionary research. The section has a current holding of 13998 specimens, comprising 7413 identified and 6585 unidentified specimens. Several externally funded projects funded by the Department of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR), Ministry of Environment, Forest and Climate Change, etc. are have been completed by the section. Comparative Mitogenomics, Environmental Metagenomics, etc. are some of the current thrust areas of the Centre. At present, the scientists at CDT MSD are handling four in-house funded projects..



29

Section: Museum & Taxidermy

Museum and Taxidermy maintains the seven Zoological galleries in Indian Museum Kolkata. Along with the Museum exhibits, it has Reserve and Loan collections in the Taxidermy Section. Seven programmes have been handled by the section and completed the database of 4 States. The section has a total holding comprising 3050 Exhibits (Gallery exhibits, Reserve Collections and Loan Unit) display in the Indian Museum. Mammals, Birds, Reptilia and Insects groups were worked out till date. Presently the section is involved in two ongoing programme *i.e.* Taxonomy and phylogeny of Lacertid Lizards in India and Status survey of Water Monitor Lizard in eastern India. For creating awareness on environment and its faunal resources, this Section participates in various Science Exhibitions with Ecological, Environmental and Conservational themes.





Research Programmes: Headquarters

ZSI is the only research institute in India working from primitive organisms belonging to Kingdom Protista to the highly evolved Mammalia of the Kingdom Animalia. Scientific research is being carried out on fauna inhabiting different Ecosystems, Protected Areas, States & UTs, Biogeographic zones as well as Conservation areas and status of Threatened species. Besides taxonomic studies and ecology, latest techniques in like Metagenomics, Forensics and GIS applications are also studied by the scientists of ZSI.

During the reporting year, 50 in-house programmes were handled by the scientists of HQ, of which 18 were completed, 15 ongoing and 17 were newly inducted.

1

Fauna of Sunderban NP, Sajnekhali WLS, Halliday Island WLS and Lothian WLS, West Bengal

- » **Coordinator:** Dr. Suresh Chand
- » **Investigators:** Subject experts
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To inventorize the fauna of Sunderban NP, Sajnekhali WLS, Halliday Island WLS and Lothian WLS, West Bengal.
- » **Outcome:** Three surveys were conducted and collected 15 faunal groups representing 656 species of 466 genera belonging to Amoebozoa, Trematodes, Orthoptera, Hemiptera, Odonata, Lepidoptera, Coleoptera, Acari, Crustacea, Mollusca, Pisces, Amphibia, Reptiles, Birds and Mammals.
- » **Significant findings:** 36 species of Amoebozoa are reported for the first time from Sunderbans, and three species are first time reported from West Bengal. Seven species of soil oribatid are new records to India. 32 species of Trematodes have new distributional records from West Bengal. 30 species of Orthoptera are reported for the first time from the Lothian Wildlife Sanctuary, of which five species are new to Sunderbans, and three species are reported for the first time from West Bengal.



View of Sajnekhali WLS

2

Faunal inventorization of Bunning and Zeilad Wildlife Sanctuaries, Manipur

- » **Investigators:** Dr. L. Kosygin Singh & Dr. S.D. Gurumayum
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To study the fauna of Bunning and Zeilad Wildlife sanctuaries, Manipur.
- » **Outcome:** Three surveys were conducted and more than 3785 specimens of different faunal groups were identified, belonging to 18 species of Protozoa, 25 species of Mollusca, 10 species of Crustacea, 17 species of Hymenoptera, 9 species of Coleoptera, one species of Trichoptera, 24 species of Isoptera, 51 species of Diptera, 65 species of Lepidoptera, 5 species of Odonata, 41 species of Fishes, 9 species of Amphibia, 9 species of Reptilia, 61 species of Birds and 50 species of Mammals.
- » **Significant findings:** Two new species such as *Glyptothorax giudikyensis* and *Ceylonitermes nivedita* were described, from the Bunning Wildlife Sanctuary and Zeilad Wildlife Sanctuary, Manipur, respectively. 4 species of fishes and 1 fruit bat were reported as first record to the Manipur state.



Glyptothorax giudikyensis, Kosygin, Singh & Gurumayum, 2020

3

Fauna of Eastern Ghats

- » **Coordinator:** Dr. Swetapadma Dash
- » **Investigators:** Subject Experts from HQ & SRC
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** Survey exploration and inventorying, Fauna of Eastern Ghats.
- » **Outcome:** Two surveys were conducted and a total of 5723 specimens of invertebrate pertaining to 1553 species and 3471 vertebrate specimens pertaining to 184 species have been identified.
- » **Significant findings:** The present study documented 5,622 species under 2324 genera and 681 families. The Eastern Ghats represented 5.18 % of the Indian Fauna.



View of Deomali, Koraput, Odisha

ii. To study and describe new taxa and new records (whenever available).

iii. To publish a detailed taxonomic report on Potamid crab diversity and make a revision of this family.

- » **Outcome:** Total four surveys were conducted and collected 340 Potamid crabs and more than 2000 specimens of potamid crabs of were re-examined present at ZSI HQ and Regional centres of Itanagar, Patna, Dehradun and Shillong. The document submitted include 61 species under 20 genera from India, Detail diagnosis and diagrams are provided for the new species and new genera, a short diagnosis are provided for already described species. Taxonomic key provided for all the species in those particular genera. This revisionary works also reveals 6 new combinations.
- » **Significant findings:** The study resulted in discovering 20 new species under 8 new genera.



Potamiscus takedai Pati, Mitra & Ng, 2021

4

Taxonomic Revision of Potamid Freshwater Crabs of India

- » **Investigator:** Mr. Santanu Mitra
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To collect the previously described potamid species to enumerate their present status and make a re-describe of those species as well as to revise some genera.

5

Fauna of Singalila National Park

- » **Coordinator:** Dr. Kaushik Deuti
- » **Investigators:** Subject Experts
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To document the faunal diversity of the Singhalila National Park.

6

Efficacy of DNA barcoding in the identification of Platygastroidea (Hymenoptera) from India

- » **Investigators:** Dr. Rajmohana K., Dr. Vikas Kumar & Dr. Kaumod Tyagi
- » **Period:** April 2017 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To generate a DNA barcode library of the species of Platygastroidea in India,

- » **Outcome:** Altogether 15 faunal groups were collected and two faunal groups (birds and mammals) were observed and identified. A total of 2749 examples were collected and 431 species have been identified and observed including the Protozoa, Nematodes, Annelida Collembola, Lepidoptera, Hemiptera, Hymenoptera, Trichoptera, Coleoptera, Crustacea, Mollusca, Amphibia, Reptiles, Birds and Mammals.
- » **Significant findings:** During the reporting period, total of 507 species of fauna from Protozoa to Mammalia have been documented. Of these, 242 species are new records to this high-altitude National Park and 60 are new records to the State of West Bengal.



Microhyla ornata (Duméril and Bibron, 1841)

7

Fishes of the Siang River, Brahmaputra drainage, Arunachal Pradesh, North East India

- » **Investigators:** Dr. L. Kosygin Singh, Dr. S.D. Gurumayum & Mr. Shibananda Rath
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To study the fish diversity of the Siang River, Brahmaputra drainage, Arunachal Pradesh.
- » **Outcome:** A total of three surveys were conducted and 105 species of fish were identified. The order Cypriniformes has the highest diversity with 62 species followed by Siluriformes with 25 species Anabantiformes with 9 species and Synbranchiformes with four species Other orders such as Anguilliformes, Osteoglossiformes, Gobiiformes, Beloniformes and Perciformes were represented by one species each.
- » **Significant findings:** Five new species namely, *Aborichthys bajpaii*, *Exostoma dhritiae*, *Glyptothorax rupiri*, *Glyptothorax siangensis*, and *Glyptothorax* sp. 1 were described as new to science from the Siang River in Arunachal Pradesh. *Olyra praestigiosa* is reported for the first time in Arunachal Pradesh.

- ii. To compare species hypotheses in Platygastroidea through morphological and DNA barcodes.

- » **Outcome:** This document covers 36 DNA barcodes of 24 species of Platygastroidea of India.
- » **Significant findings:** All sequences generated are novel.



View of collection site

8

Distribution and incidence of Freshwater Turtles in India

- » **Investigators:** Dr. P. G. S. Sethy, Dr. Pratyush Mohapatra, Dr. K. Deuti, Mr. S. Raha & Mr. Sumidh Ray
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To perform ecological studies on all 23 species of freshwater turtles in India.
- » **Outcome:** One survey was conducted to West Bengal and other surveys to Madhya Pradesh, Uttar Pradesh and Rajasthan and various river systems and water bodies were surveyed for the presence of turtles. During the survey, 11 species were observed in Narmada and Chambal rivers. In the Reptilia collection, 23 specimens were physically verified and morphological characters were studied.
- » **Significant findings:** Identification, distribution and status of 24 species of Freshwater turtles distributed in India are dealt with.



Pangshura tentoria (Gray, 1834) on the bank of Chambal river

9

Taxonomic study and distribution of Agamid lizards of India

- » **Investigators:** Dr. P. G. S Sethy, Dr. Pratyush Mohapatra , Dr. K. Deuti & Mr. S. Raha
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To study the taxonomic revision of Agamid lizards of India.
- » **Outcome:** One survey was conducted to ZSI, Dehradun and WII, Dehradun and 159 specimens were identified belonging to 19 species. Besides, 734 specimens identified belonging to 34 species from ZSI, HQ, collections.
- » **Significant findings:** Out of 68 Indian Agamid species, 53 species have been characterized, specimens documented, scale counted and measurements taken, and a new species, *Sitana sushili* was described. The species with Type locality at Sambalpur, Odisha is distributed in West Bengal, Odisha, Chhattisgarh, Eastern Madhya Pradesh and Andhra Pradesh.



Japalura variegata Gray, 1853

10

DNA Metasystematics studies for the assessment of the Macrobiome and Microbiome in Freshwater Ecosystems with relation to the noxious pollutants

- » **Coordinator:** Dr. Vikas Kumar
- » **Investigators:** Dr. Inderjeet Tyagi & Dr. Kaomud Tyagi
- » **Period:** April 2019 to March 2023
- » **Status:** Completed
- » **Objective:** To study DNA Metasystematics for the assessment of the Macrobiome and Microbiome in freshwater ecosystems in relation to noxious pollutants.
- » **Outcome:** Analysis of previous water samples was carried out to access the microbiome and microbiome. WGS data of Najafgarh drain were analyzed to access the microbiome and microbiome. Based on marker gene profiling, a total of 41 genera and 69 species were identified in high abundance across the Najafgarh drain systems from 11 points. Whereas high-end analysis of water samples from cancer-affected villages is under process and metal analysis of cancer-affected villages revealed the presence of some carcinogenic heavy metals above the prescribed limit of WHO, USEPA and CPCB.

11

Insights into the Gut Microbiome of Thrips (Thysanoptera: Insecta) from India

- » **Coordinator:** Dr. Vikas Kumar
- » **Investigators:** Dr. Kaomud Tyagi & Dr. Inderjeet Tyagi
- » **Period:** April 2019 to March 2023
- » **Status:** Completed
- » **Objective:** Insights into the gut microbiome of thrips (Thysanoptera: Insecta) from India.
- » **Outcome:** One survey was conducted. Thirteen species were identified after the DNA isolation and subjected to gut bacterial analysis and analysis of WGS data of thrips species is under process.
- » **Significant finding:** Two new species were identified (*Mycterothrips nainae* and *Psephenothrips uttarkhandnensis*).

12

Studies on the ciliates and bacterial communities associated with corals based on morphology and molecular tools

- » **Investigators:** Dr. Santosh Kumar & Dr. Vikas Kumar
- » **Period:** April 2019 to March 2023
- » **Status:** Completed
- » **Objectives:** To document the diversity of protozoan ciliate and bacteria associated with live and dead corals in the Gulf of Mannar MNP and Palk Bay.
- » **Outcome:** A total of three surveys were conducted under the program with collected

water samples from live and diseased corals of the Gulf of Mannar Marine National Park and Palk Bay. A total of 53 marine ciliate species were identified that were associated with live and dead corals of the Gulf of Mannar Marine National Park and Palk Bay. Out of 53 ciliate species, 22 were parasitic and have been reported to be causative agents of corals diseases. Further, metagenomic analyses of the water samples collected revealed over 450 bacteria species that were associated with Indian corals of the Gulf of Mannar Marine National Park.

- » **Significant findings:** 22 species are known to be causative agents of various diseases in corals, e.g., White Syndrome (WS), Brown Band Disease (BRB), Porites White Patch Syndrome (PWPS), White Plaque (WP), Skeletal Eroding Band (SEB), Black Band Disease (BBD), and Caribbean Yellow Band Disease (CYBD). The other 31 species need further ecological investigations for their possible role in disease-causing. Also, a nematode species was identified as the possible causative agent of pink spot disease in Indian coral species.

13

Biogeography and systematic revision of freshwater mollusca *Gyraulus* (Gastropoda: Heterobranchia: Planorbidae) of India

- » **Investigator:** Dr. A. K. Mukhopadhyay & Dr. Basudev Tripathy
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** Taxonomic revision of the genus *Gyraulus* (Gastropoda).
- » **Outcome:** A total of 2441 specimens were collected and examined belonging to 6 species. One new species *G. odishaensis* sp. nov. has been described from Odisha. *Gyraulus labiatus*

recorded for the first time from Madhya Pradesh, and *G. ladacensis* from Himachal Pradesh. *G. rotula* previously reported from Maharashtra and Uttar Pradesh is now reported from Bihar and Jharkhand state of India.

14

Studies on Insect Pollinators of West Bengal

- » **Investigator:** Dr. K. Rajmohana
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To study the insect pollinators of West Bengal.
- » **Outcome:** This study could compile a total of 373 species of insects as potential pollinators, falling under 6 orders-Hymenoptera (137 spp. of bees under 29 genera), Diptera (118 spp. belonging to 56 genera), Lepidoptera (73 spp. under 10 families, of which 42 spp. moths and 31 spp. Butterflies), Coleoptera (34 spp), Thysanoptera (9 spp. under 2 genera) and Hemiptera (2 spp) of West Bengal, serving as the first comprehensive database, and also the base-line data. A manuscript has been prepared with an updated checklist with 137 species of bees (Hymenoptera: Apoidea), belonging to 32 genera under 5 families found in West Bengal along, with two new state records.



Apis cerana Fabricius, 1793

15

Faunal Diversity of Mudflats of east Coast of India

- » **Coordinator:** Dr. C. Raghunathan
- » **Investigators:** Dr. G. Maheswaran, Dr. K.G. Emiliyamma, Dr. Anjum Rizvi, Dr. H. Pillai, Dr. S. Balakrishnan, Dr. J.S. Yogesh Kumar, Dr. J. Chitra, Dr.C.R. Sreeraj, Dr. Tamal Mandal & Dr. P.C. Tudu
- » **Period:** April 2019 to March 2023
- » **Status:** Completed
- » **Objective:** Collection and taxonomical identification of faunal diversity Mudflats ecosystem in India.
- » **Outcome:** A total of 2,112 species of organisms from the mudflats of the east coast of India including 1,989 faunal communities under 16 phyla and 123 protozoans. Among the faunal communities, a maximum number of 977 species are recorded under the Phylum Chordata followed by Mollusca with 330 species, Annelida with 211 species, Arthropoda with 199 species, Annelida with 117 species whereas only one species was recorded under the phyla Platyhelminthes and Hemichordata, respectively. The state-wise faunal composition reveals a maximum of 1296 species from mudflats of Andhra Pradesh, followed by 1028 species from West Bengal, 925 species from Odisha, 476 species from Tamil Nadu, and 62 species from Puducherry.



A view of mudflat of Andhra Pradesh

16

Fauna of Protected Areas of Lakshadweep (Newly Declared PAs)

- » **Investigator:** Dr. N. Marimuthu
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objective:** To inventorize marine fauna of protected areas of Lakshadweep.
- » **Outcome:** A total of 856 marine fauna were collected from two surveys. Of which, 79 species under 64 genera and 51 families were identified.
- » **Significant findings:** Spatial variability of a bio-indicator species on coral was explored and an opportunistic sighting of a sperm whale also recorded.



Drupella cornus (Röding, 1798) on *Pocillopora verrucosa* (Ellis & Solander, 1786)

17

Genetic management of Indian pangolin (*Manis crassicaudata*) in captive facility of Nandankanan Zoological Park, Bhubaneswar, Odisha

- » **Investigator:** Dr. Mukesh Thakur
- » **Co-Investigators:** Dr. C. Venkatraman & Dr. Lalit Kumar Sharma

» **Period:** April 2021 to March 2023

» **Status:** Completed

» **Objectives:**

- i. Individual-based assessment of genetic diversity and extent of inbreeding in Indian pangolin in the captive facility of NZP.
- ii. Establish pedigree and kinship relationships among the Indian pangolin housed at NZP and its implication for planning mating and monitoring genetic diversity.
- iii. Suggest a conservation breeding program, based on genetic information, for long-term stability in captivity and Strengthen/update the studbook records for the Indian pangolin based on genetic information generated in this study.
- iv. Strengthen/update the studbook records for the Indian pangolin based on genetic information generated in this study.

» **Outcome:** Two surveys were undertaken and various samples like faecal samples, oral swabs, hair samples, and scales were collected from 28 Indian pangolins; Genetic analysis (STR genotyping with 8 locus and control region sequencing) was undertaken to generate individual-level profiles; collected scales and hairs were used to generate species signatures to be used in forensic casework; established individual level heterozygosity, and genetic relatedness estimates.

» **Significant findings:** An adequate amount of genetic diversity at nuclear (H_o 0.631 $\pm$ 0.061; H_e 0.739 $\pm$ 0.036; F_{is} 0.134 $\pm$ 0.086) and mitochondrial (H_d 0.151 $\pm$ 0.093; P_i 0.00118 $\pm$ 0.00083) was obtained in pangolin at NZP; Out of 29 individuals, ten showed higher genetic diversity and can be used for further captive breeding programs. Seven unrelated individuals were identified and can be used for making breeding pairs with other individuals to maintain genetic diversity.

18

Grazers impact on Benthic Invertebrate recruitment – A spatial approach in Gulf of Mannar and Palk Bay

» **Investigator:** Dr. N. Marimuthu

» **Period:** April 2019 to March 2023

» **Status:** Completed

» **Objectives:** To inventorize marine fauna of the Gulf of Mannar and Palk Bay with special reference to recruited colonies of the benthic substrate.

» **Outcome:** A total of 362 marine fauna were collected. Of which, 237 examples (Porifera, Crabs, Mollusca and Fish grazers) were identified. Totally 105 species including Grazing fishes (28 species under 20 genera and 16 families), Porifera (4 species under 4 genera and 4 families), Polychaetes (9 species under 8 genera and 7 families), Crustaceans (11 species under 9 genera 9 families), Molluscans (8 species under 8 genera and 6 families) were identified. Moreover, in-situ assessments of Scleractinian corals (45 species under 17 genera and 8 families) have also been done.

» **Significant findings:** Fish grazers' biodiversity was interpreted with a time series dataset.



Favites abdita (Ellis & Solander, 1786)

19

Faunal Diversity of Wildlife Sanctuaries of West Bengal (Bethuadahari WLS, Bibhutibhushan WLS, Ballavpur WLS, Ramnabagan WLS)

- » **Coordinators:** Dr. Dhriti Banerjee & Dr. G. P. Mandal
- » **Investigators:** Subject Experts
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To undertake faunal inventories for documentation of the fauna of the protected areas of the state.
- » **Progress:** A total of 5259 examples were collected and 169 species have been identified from the collections made so far. Identification includes two species of Porifera, 5 species of Platyhelminthes, 11 species of Nematodes, 5 species of Crustacea, 14 species of Odonata, 11 species of Hemiptera, 32 species of Coleoptera, 11 species of Hymenoptera, 44 species of Diptera and 37 species of Mollusca.
- » **Significant findings:** One poriferan species *Posthodiplostomum cuticola* (von Nordmann, 1832) Dubois, 1836, one platyhelminth species *Posthodiplostomum cuticola* (von Nordmann, 1832) Dubois, 1836 and three molluscan species namely *Indosuccinea semiserica* (Gould, 1846), *Glossula gemma* (Reeve, 1850), *Glossula crassula* (Reeve, 1850) have been reported as new distributional records to West Bengal.



Family Tachinidae

20

Bio-indicative value of soil fauna to access the health of agricultural and naturally disturbed soils of India

- » **Coordinator:** Dr. Santosh Kumar
- » **Investigators:** Dr. Anjum N. Rizvi, Dr. G. P. Mandal, Dr. Shelley Acharya & Dr. Jasmine, P.
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the diversity of soil ciliates, amoeba, nematodes, collembola and mites.
- » **Progress:** A total of 27 ciliate species with 317 examples and 10 testate amoebae with 56 examples have been identified and registered during the year. Nematodes: 40 species with 170 examples identified and registered. Collembola: 150 examples collected representing 06 families of Collembola. A ciliate species new to science and six species new record to Indian fauna were identified under the program during the year. Four species of testate amoebae were also identified as new records to India.
- » **Significant findings:** In the present study, it is observed that certain testate amoebae and ciliates are species-specific to Agricultural ecosystems like Paddy, wheat, etc. The species which are more common with the Paddy associated are *Diffflugia* and *Euglypha* genera.

21

Taxonomy and diversity of Jellyfish from the east coast of India

- » **Investigator:** Dr. Jasmine. P
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** Documentation and faunal study of the diversity of gelatinous zooplankton of Phylum Cnidaria and Phylum Ctenophora along the east coast of India.
- » **Progress:** Two seasonal coastal surveys have been conducted along the coastal waters of the Bay of Bengal. Jellyfish as well as fauna associated with jellyfish were collected in these surveys. Nutrient analysis and chlorophyll concentration calculation of the summer monsoon 2022 (August) survey have been completed. Species-level identification of protozoans during the time of jellyfish swarms in 2021 has been completed. 91 specimens of protozoa (38 species) with 323 examples as part of fauna associated with jellyfish have been registered in the National Zoological Collection. Three new records of jellyfish swarms along the east coast of India were published.
- » **Significant findings:** During a survey on the Tamil Nadu coast, we observed intense blooming of microplankton at multiple locations in the Gulf of Mannar and Palk Bay.



Chrysaora caliparea (Reynaud, 1830)

22

Morphology, Molecular taxonomy and Bionomics of forensic flies (Insecta: Diptera) across the different Geo-climatic regions of West Bengal

- » **Investigators:** Dr. Dhriti Banerjee (PI) & Dr. Atanu Naskar (Co-PI)
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 - i. Taxonomic characterization of forensic fly species by updating diagnostic characters and construction of modified taxonomic keys for their easy identification,
 - ii. Barcode the species of Diptera with mitochondrial marker (mtCOI) and develop databases for meta-barcoding workflow,
 - iii. To examine patterns of mitochondrial/ nuclear marker sequence divergence in specimens of different taxa from different geographical regions,
 - iv. To assess the mode of life and its correlation with the environment of the most abundant forensic fly species in different geo-climatic zones throughout the seasons.
- » **Progress:** Under this program, two surveys have been conducted which include the collection of 1975 dipteran examples, of which 933 are forensic flies and 1042 are other dipteran flies. From which 147 forensic fly specimens have been morphologically identified. This includes 15 species of forensic flies. From all these specimens DNA has been isolated and sequences have been generated for 73 specimens. Of these, 35 sequences have already been uploaded to BOLD. BOLD IDs have been generated for 13 sequences to date.

- » **Significant findings:** Band has been generated and the sample has been sent for sequencing. A list of sequences is received and processed for uploading in BOLD. 13 sequences have been already uploaded to BOLD, for which an NCBI Accession number has been generated.

23

Taxonomic studies of the Dermaptera fauna of India

- » **Investigator:** Dr. K.G. Emiliyamma
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the Dermapteran Fauna of India and bring out a document.
- » **Progress:** Two surveys and an Institution visit to IARI, New Delhi was conducted during the year and a total of 441 Dermaptera samples were collected. During the period under report, 702 examples were identified belonging to 42 species under 29 genera and 6 families. Totally 1433 examples were identified belongs to 44 species under 32 genera and 7 families. Further identification is under progress.
- » **Significant findings:** Many new records from various States have been reported.



Gonolabis sisera (Burr, 1914)

24

Drinking water Microbiome: Monitoring of the water quality and Associated Health Implications

- » **Coordinator:** Dr. Vikas Kumar
- » **Investigators:** Dr. Inderjeet Tyagi & Dr. Kaomud Tyagi
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 1. Microbial community patterns of drinking water using e-DNA metabarcoding in a metropolitan city of Kolkata, West Bengal,
 2. Drinking water Health assessment with special reference to chemical analysis and pathogenic bacterial compositions,
 3. Conducting training cum workshop for Drinking Water Microbiome.
- » **Progress:** A survey was conducted for the collection of drinking water samples out from the 10 Borough comprising 30 wards of Kolkata, following the grid map approach. Samples (1-2 L) were subjected to the heavy metal analysis using the Atomic Absorption Spectrometer (AAS) or Inductively Coupled Plasma Mass Spectrometry/Optical Emission Spectrometry (ICP-MS/ OES).
- » **Significant finding:** The qualitative and quantitative analysis of extracted DNA of drinking water samples was carried out; it reveals the high amount of DNA (60-800 ng/μl). Further during filtration, it was also observed that some drinking water samples possess high amounts of sediments.

25

Fauna of Deccan Peninsular, Biogeographic Zone – Deccan Peninsular India

- » **Coordinator:** Dr. Navneet Singh
- » **Subject Experts:** HQ Scientists, Scientific Staff, Regional Centre Scientists & Scientific Staff
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** Survey and inventorisation of the fauna of Deccan Peninsular, Biogeographic Zone – Deccan Peninsular India
- » **Progress:** A total of 5945 examples have been collected/ received under this programme. Of which, 4570 examples representing 414 species under 263 genera representing 23 families have been identified.

specimens belonging to 25 species under 15 families of four classes. So far identified 1539 specimens from this site.

- » **Significant findings:** The finding of a number of wild species including Rhinoceros from prehistoric periods of Odisha is noteworthy.



Animal remains from Bharatihuda, Odisha

26

Zooarchaeological study of faunal remains from Bharatihuda Archaeological Site, Dist. Cuttack, Odisha

- » **Investigator:** Mrs. Supriya Nandy
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the Zooarchaeological faunal remains from Bharatihuda Archaeological Site, Dist. Cuttack, Odisha.
- » **Progress:** Animal remains, excavated by the Archaeological Survey of India, Bhubaneswar, Odisha from the Archaeological site of Bharati Huda, Dist. Cuttack, Odisha, is preserved in the Prehistoric Zoology Section repository. During the period under report identified 1081

27

Zooarchaeological study of faunal remains from north 24 Parganas and south 24 Parganas districts of deltaic West Bengal

- » **Investigator:** Mrs. Supriya Nandy
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the Zooarchaeological faunal remains from north 24 Parganas and south 24 Parganas districts of deltaic West Bengal.

- » **Progress:** A survey was conducted at the Gobardhanpur, Pathar Pratima Island, Sundarbans, South 24 Parganas, of West Bengal. The existing specimens in the ZSI repository, collected from the study area in past have been sorted and are being worked out. So far 103 specimens belonging to 14 species from South 24 Parganas, identified and registered and 148 specimens have been identified from various sites from South 24 Parganas. Identified more than 11 species belonging to 08 families and 04 orders under 05 classes, Mammals, Birds, Reptiles, Fish and Crustacea.
- » **Significant findings:** Bone remains of some long-extinct species like wild buffalo and rhinoceros could be identified in the faunal remains collection during the surveys.



Animal remains from West Bengal

28

Distribution of birds in various habitats in Valmiki Tiger Reserve, with special reference to RET bird species

- » **Investigator:** Dr. Gopinathan Maheswaran
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** Bird Community Study

- » **Progress:** During the report period, 108 bird species under 17 orders, 49 families and 80 genera were recorded.
- » **Significant findings:** Of these, 2 were near threatened, 1 endangered and 105 were least concerned. 5 Schedule I species, 1 Schedule V and the rest all are under Schedule IV. Complete systematic list of birds prepared and incorporated in survey tour report.



Ortygornis gularis (Temminck, 1815)

29

Taxonomic studies on Apidae of India

- » **Investigators:** Dr. S. I. Kazmi (PI), Dr. A. Rameshkumar & Mr. P.C. Mazumder (Co-PIs)
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 - To study the taxonomy, diversity and distribution of selected genera of Apidae from India.
 - To describe the new taxon as well as new distributional records, if any.
 - To catalogue the fauna of Apidae from India.
 - To prepare the identification key to the Indian genera of Apidae.
- » **Progress:** Four surveys cum museum visits (Western Ghat Regional Centre/ZSI, Aligarh Muslim University, ICAR-National Bureau of Agricultural Insect Resources, University of Agricultural University, Bengaluru, National Centre for Biological Sciences, Bengaluru,

Indian Wood Science and Technology) have been conducted. Sorted apid specimens from backlog collection of the Hymenoptera section.

- » **Significant findings:** One species, *Ceratina cognata* (Apidae) is reported for the first time from India. 490 specimens (04 genera and 18 species) were identified, registered and digitized. Prepared the checklist of Apidae from India.

30

Taxonomic studies on the tribe Sericini (Coleoptera: Scarabaeidae: Melolonthinae) of India

- » **Investigator:** Dr. Devanshu Gupta
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the diversity of order Coleoptera from Taxonomic studies on the tribe Sericini (Coleoptera: Scarabaeidae: Melolonthinae) of India.
- » **Progress:** A survey tour has been conducted for Siliguri and Jalpaiguri (West Bengal) and its associated areas for 8 days and 225 specimens were collected. A total of 270 specimens were studied, resulting in the identification of 46 species of 7 genera of the tribe Sericini of the family Scarabaeidae.
- » **Significant findings:** Under this programme, *Neoserica panchmariensis* and *Neoserica debasrie* were described as new to science. In addition, 16 species were augmented to the National Zoological Collection. A total of total 12 species have been reported as new records in different states of India.

31

Status of threatened Herpetofauna of Sunderbans Biosphere Reserve

- » **Investigators:** Dr. Kaushik Deuti, Dr. P. Mohapatra & Dr. J.S. Yogesh Kumar
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** Status and distribution of threatened herpetofauna of Sundarbans BR, India.
- » **Progress:** A survey was conducted and the current status of River Terrapin (*Batagur baska*) was noted. The status of King Cobra discussed with Forest Department staff. During the survey many Red-tailed Pit Vipers were physically observed.
- » **Significant findings:** Out of 14 species of threatened reptiles reported from Sundarbans, *Geoclemys hamiltonii* (EN), *Batagur dhongoka* (CR), *Batagur kachuga* (CR), *Pelochelys cantorii* (CR), *Chitra indica* (CR), *Nilssonia hurum* (VU), *N. gangetica* (VU), *Varanus flavescens* (EN) and *Python molurus* (VU) are only known from historical records and their present status is uncertain. Similarly, *Batagur baska* (CR) is only found in captivity as there is no sighting record in the wild during the past decade. During the survey, only *Lissemys punctata* (VU) was recorded, which inhabits ponds and freshwater marshes in villages. A nest having 9 eggs were found during the survey from Bali Island.

32

Assessment of Groundwater Quality and Bacterial Diversity in Villages around Sundarbans Biosphere Reserve

- » **Investigators:** Dr. Inderjeet Tyagi (PI), Dr. Vikas Kumar (Co-PI) & Dr. Kaomud Tyagi (Co-PI)
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To assess the Groundwater Quality and Bacterial Diversity in Villages around Sundarbans Biosphere Reserve.
- » **Progress:** One survey was conducted, 61 groundwater samples were collected, and species will be identified using NGS technology. Till now, filtration of 61 water samples has been completed.
- » **Significant finding:** The physio-chemical analysis of 33 water samples completed.

» Objectives:

- i. To assess the faunal diversity along the peripheral region of Golden Quadrilateral Highways passing through 13 states of India; record the road kill animals along the Golden Quadrilateral Highway.
- ii. To demark the high faunal diversity areas in the Highways also with their risk and draw mitigation measures to minimize the road kill.

- » **Progress:** A total of five long-term surveys have been conducted covering 123 survey points and 5846 km covering 13 States. A total of 1,00,665 specimens have been collected under 34 animal groups. Altogether 1152 species have been identified.



View of Golden Quadrilateral

33

Faunal diversity along the periphery of Indian highways - Golden Quadrilateral

- » **Coordinator:** Dr. C. Raghunathan
- » **Co-coordinators:** Dr. Devanshu Gupta
- » **Investigators:** Scientists and Scientific Staff from HQ and Regional Centres
- » **Period:** April 2020 to March 2023
- » **Status:** Ongoing

34

Building Digital Sequence Information (DSI) Library of India Fauna

- » **Coordinator:** Dr. Dhriti Banerjee
- » **Investigators:** Subject Experts
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To build digital sequence information of the library of Indian Fauna

35

Faunal Composition of Tropical Dry Deciduous Forest, Phase I: West Bengal

- » **Coordinators:** Dr. Dhriti Banerjee & Dr. Gurupada Mandal
- » **Investigators:** Subject experts
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:** To collect and identify the fauna of the Tropical Dry Deciduous Forest of West Bengal and to make a consolidated report of different invertebrate and vertebrate faunal groups of the region.
- » **Progress:** Three surveys were undertaken in the districts of Bankura (partly), Jhargram, Purulia and West Midnapur in 2022–23. A total of 3900 specimens belonging to 568 species of faunal groups were identified.
- » **Significant findings:** 432 examples have been identified, which includes 18 species under 11 genera over 6 families.



Landscape View of Tropical Dry Deciduous Forests, WB

36

Fauna of Manas National Park, Assam

- » **Coordinator:** Dr. G. Maheswaran
- » **Investigators:** Subject experts
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the fauna of Manas National Park, Assam.
- » **Progress:** A survey was undertaken by invertebrate team in October, a total of 1960 examples belonging to 16 faunal groups and 157 soil, moss and water samples were collected for the study of Testate amoeba, Tardigrada, Ciliates, Rotifers, Acari and Nematodes. Besides the invertebrate collections and observations, a herd of wild elephants, wild buffaloes, one-horned rhinoceros, capped langur and python were observed.



Rhinoceros unicornis Linnaeus, 1758



ZSI team at Sewali Camp, Manas National Park

37

Taxonomic studies of the Portunoid Crabs of India (Crustacea: Brachyura: Portunoidea)

- » **Investigators:** Dr. K. Valarmathi, Dr. A. Gokul & Mr. Santanu Mitra
- » **Period:** April 2022 to March 2026
- » **Status:** Initiated
- » **Objective:** To study the present status of Portunoid crabs in India and to bring out a consolidated volume on Indian Portunoid Crabs.
- » **Progress:** A survey was undertaken to the Coastal areas of Karnataka, Goa and Maharashtra. A total of 1766 examples comprising different faunal groups such as Crabs, Prawns, Isopods, Stomatopods, Plankton, Soil samples, Molluscs, Jelly fish, Star fish, Insects, Frogs, Polychaets, Lobsters and Barnacles. 146 examples including 16 species of Portunoid crabs were identified. Further, 81 species of Portunoid crabs that available in the National Zoological collections of ZSI were digitized.

38

Species inventory, Documentation and Checklist of land Mollusca of India

- » **Investigators:** Dr. Tamal Mondal, Dr. Amit Mukhopadhyay, Dr. Abhijna Ghosh, Dr. Basudev Tripathy, Dr. R. Venkitesan & Dr. S.D. Gurumayum
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated

» Objectives:

- i. Taxonomic estimation of the entire land molluscs of India.
- ii. Preparation of an updated checklist of Indian land molluscs.
- iii. Reinvestigation of the type locality.

- » **Progress:** Two survey tours have been conducted in part of Himachal Pradesh, Uttarakhand, Gujarat, Maharashtra, Madhya Pradesh and Chattisgarh. A total of 5258 specimens of molluscs including 1537 specimens of freshwater molluscs and 3721 specimens of land molluscs have been collected. A total of 39 species have been identified till now.

- » **Significant findings:** Rediscovery of two new *Gessula* sp. from India.

39

Bionomics and DNA barcoding of host caterpillars of *Ophiocordyceps sinensis* (caterpillar fungus) along with the taxonomy of their adult moths from the state of Uttarakhand

- » **Investigators:** Dr. Dhriti Banerjee, Dr. Navneet Singh & Dr. Vikas Kumar

- » **Period:** April 2022 to March 2025

- » **Status:** Initiated

» Objectives:

- i. To study the bionomics of host (moth) caterpillars of *Ophiocordyceps sinensis*
- ii. To undertake taxonomy of their adult moths
- iii. To undertake DNA barcoding for understanding the host fungus relationship.

- » **Progress:** 139 examples of Lepidoptera were collected. Of which, 17 species of moths were identified.

40

Revisionary studies of Genus *Tomocerus* Nicolet, 1842 (Collembola: Tomoceridae) from Eastern Part of Indian Himalayan Region (Phase-I)

- » **Investigators:** Dr. Gurupada Mandal (PI), Mr. Kusumendra Kumar Suman & Mr. Kaushik Kumar Bhattacharya (Co-PIs).
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. To survey, explore and documentation of this little-known group of the genus *Tomocerus* (Collembola: Tomoceridae) of India.
 - ii. To prepare a catalogue of all the known species of the genus *Tomocerus* (Collembola: Tomoceridae) of India.
 - iii. To provide a consolidated taxonomic account of the group with their diagnosis, keys and distribution maps, etc.
 - iv. To prepare the database of the Indian genus *Tomocerus* (Collembola: Tomoceridae).
- » **Progress:** Two faunistic surveys have been completed. Five species were identified. Two species of *Tomocerus* detailed taxonomic study made. The drawings were completed.

41

Diptera fauna from Tropical evergreen forest and coastal ecosystem of Andaman and Nicobar Islands

- » **Coordinator:** Dr. Dhriti Banerjee
- » **Investigators:** Dr. C.Sivaperuman & Dr. Atanu Naskar
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:** To undertake faunal inventories for documentation of the dipteran fauna from this Island ecosystem. To discover the undescribed dipteran fauna from this island ecosystem.
- » **Progress:** Under this programme, a total of 869 dipteran specimens have been collected from South Andaman, Middle Andaman, and North Andaman. Sorting and pinning of the 449 dipteran specimens have been completed to date.
- » **Significant findings:** Under this programme, 26 species of 21 genera over 13 families have been identified to date.



View of Dipteran habitat

42

Ichthyofaunal diversity of the Gulf of Kutch

- » **Investigators:** Dr. Honey U. K. Pillai (PI), Dr. K. K. Bineesh & Mr. S. C. Saren (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To study the Ichthyofaunal diversity of the Gulf of Kutch
- » **Progress:** Under this programme, one survey conducted and a total of 403 specimens were collected from the different regions of the Gulf of Kutch including Narara, Salaya, Sachana, Okha, KTP Jetty, Bherana, Jamnagar, Vadinar, Mithapur, Sikka etc. Out of 403 specimens, 156 specimens (belongs to 54 species, 46 genera, 35 families of 13 orders) were identified and registered..One gobiid species, *Acentrogobius nebulosus* (Forsk., 1775) noticed as first record from the Gujarat state.



Pomacanthus annularis (Blotch, 1787)

43

Systematics and distribution of fishes of the Mandovi and Zuari aquatic ecosystems (freshwater & estuarine) in the Western Ghats, India

- » **Investigators:** Dr. L. Kosygin Singh (PI), Dr. Honey U. K. Pillai & Dr. S. Rath (Co-PIs)
 - » **Period:** April 2022 to March 2025
 - » **Status:** Initiated
 - » **Objective:** To study the Ichthyofaunal diversity of Mandovi and Zuari aquatic ecosystems (freshwater & estuarine)
 - » **Progress:** One survey was conducted, which covered different zones of the Mandovi and Zuari aquatic ecosystems, including freshwater, estuarine and Marine regions. A total of 291 examples of freshwater fishes were collected, of which 16 were identified under 5 species, 5 genera, and 4 families.
- The survey also collected 360 estuarine and marine fish specimens and identified 97 species (under 72 genera, 41 families and 17 orders).
- » **Significant findings:** Two species of Engraulids i.e. *Thryssa gautamiensis* and *Stolephorus tamilensis* (Family Engraulidae) identified from the area were noticed as first record from the west coast of India.



Pethia conchonius (Hamilton, 1822)

44

Taxonomic Studies and Biogeography of the Sisorid Catfishes of India

- » **Investigators:** Dr. L. Kosygin Singh & Dr. S. D. Gurumayum
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To study the diversity and distribution of Sisorid catfish in India.
- » **Progress:** Under this programme, a total number of 91 examples of fish were identified under 5 species and 2 genera. Fifteen types of specimens of Sisorid catfishes were studied. Two new species were described, namely



Glyptothorax rupiri Kosygin & Singh & Rath 2021

number of sightings per km of line transect showed that these Schedule-I lizards are more abundant in Howrah and South 24 Parganas as compared to Hugli and East Medinipur probably because of more wetlands and better availability of food sources. Local peoples' protection was another significant factor. 4 examples of amphibians, 5 reptilians, 2 centipedes and 15 insects were collected during the survey.

- » **Significant findings:** The number of Water Monitor Lizard sightings per km of line transect showed that lizards are more abundant in Howrah and South 24 Parganas as compared to Hugli and East Medinipur.



Varanus salvator (Laurenti, 1768)

45

Status Survey of Water Monitor Lizard (*Varanus salvator salvator*) in Eastern India

- » **Investigators:** Dr. Kaushik Deuti & Dr. P. G. S. Sathy
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To study the status of Water Monitor Lizard in Eastern India.
- » **Progress:** Line transect surveys were conducted in four districts (Howrah, Hugli, East Medinipur and South 24 Parganas) of southern West Bengal and the results revealed population decline in all areas, however

46

Status survey of the white-cheeked macaque (*Macaca leucogenys*) in Arunachal Pradesh

- » **Investigators:** Dr Mukesh Thakur (PI) & Dr Lalit Kumar Sharma (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. To undertake a reconnaissance (presence/absence) survey for white-cheeked macaque in Arunachal Pradesh
 - ii. To evaluate the status, distribution and potential threats to a white-cheeked macaque in Arunachal Pradesh

- iii. To undertake a phylogenetic assessment of white-cheeked macaque and investigate intraspecific divergence with its counterpart reported from Medog, southeastern Tibet, China.

» **Progress:** Two surveys were undertaken, jointly with the DST INSPIRE Red Panda Project, and the BRO Highway Project in the districts of Dibang Valley and West Siang, Arunachal Pradesh. About 20 non-invasive faecal samples were collected that were identified to be of WCM origin; two skin samples were also collected, and processed for whole genome analysis; out of the total 43 presence locations of the species 32 were direct sightings, six points were collected from previous studies, and five location points of sightings were recorded through interviews with local, foresters and experienced guides; used 26 predictor variables representing biotic environment (19), topography (3), land covers (5) and anthropogenic factor (1); Geo-coordinates recorded on the localities where faecal samples were obtained and used in distribution modelling.

» **Significant findings:** Extracted whole mitogenome and TSPY gene of Y chromosome from the samples collected from the West Siang and Dibang valley; recorded two diverged male mediated paraphyletic lineages in WCM, of which one clustered with the type locality (South Tibet) and other clustered with a common lineage of *M. assamensis* and *M. munzala* indicating a possible historic male-mediated introgression in 'sinica' group. First report on multiple introgression events within 'sinica' group macaques.

47

Conservation genetics and status survey of Kiang, *Equus kiang* Moorcroft, 1841 in India

- » **Investigators:** Dr Lalit Kumar Sharma (PI) & Dr Mukesh Thakur (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated

» Objectives:

- i. To assess the current distribution of Kiang in India,
- ii. To understand the population status of Kiang in India for conservation and management planning,
- iii. To evaluate the genetic composition of Kiang with reference to its taxonomy as well as population fitness in India.

» **Progress:** Secondary information collected on the species distribution based on earlier ZSI survey.

48

Understanding the behavior ecology and habitat utilization by Himalayan black bear (*Ursus thibetanus laniger*) in Himachal Pradesh for mitigating human-wildlife conflict

» **Investigators:** Dr Lalit Kumar Sharma (PI) & Dr Mukesh Thakur (Co-PI)

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» Objectives:

- i. To understand the hibernation behavior of the black bear in Himachal Pradesh.
- ii. To understand the landscape utilization by black bears in the Great Himalayan landscape of Himachal Pradesh.
- iii. To understand the movement and ranging patterns of black bears.
- iv. To understand the food and feeding habits of black bears in Himachal Pradesh.

» **Progress:** Identified the animal capturing sites at different locations in Himachal Pradesh with the help of the Forest Department.

49

Ecological Studies and Conservation of *Lingula anatena* (Brachiopoda: Lingulata) in Subarnarekha Estuary, Odisha

- » **Investigator:** Mr. Santanu Mitra
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To study the ecology and conservation of *Lingula anatena* (Brachiopoda: Lingulata) in Subarnarekha Estuary, Odisha.
- » **Progress:** A survey was conducted at several localities of Subarnarekha estuary for observation and estimation of the status of *Lingula anatena*, their ecological environmental and associated fauna. A total of 1229 examples of different invertebrate and vertebrates were collected so far from the same locality of the targeted species including brachyuran crabs, prawns, hermit crabs, isopods, Stomatopods, barnacles, gastropods, bivalves, echinoderms and polychaetes.



View of Habitat

50

Taxonomy and Phylogeny of Lacertid Lizards in India

- » **Investigators:** Dr. P. G. S. Sethy & Dr. P. P. Mohapatra
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To study the taxonomy and phylogeny of Lacertid Lizards in India.
- » **Progress:** Generated cytb sequence data from 13 individuals of *Ophisops jerdonii* complex collected from Central and Eastern India in collaboration with peers from ATREE. A total of 426 specimens from ZSI Kolkata, CZRC and NERC were examined and morphometric data of 63 specimens of *Ophisops jerdonii*, *O. beddomei*, *O. microlepis*, *O. leschenaultii* and *O. nictans* were collected from the above-mentioned NZCs.





Research Programmes: Regional Centres

The 16 Regional Centres of ZSI are spread across the country and deal with research programmes on fauna of States and Union Territories, Conservation Areas and Ecosystems under their jurisdiction. During 2022-2023, the Regional Centres of ZSI were involved in 101 research programmes comprising of 49 completed, 20 ongoing and 32 newly inducted programmes.

NORTH EASTERN REGIONAL CENTRE (NERC), SHILLONG, MEGHALAYA



The North Eastern Regional Centre, Shillong is the first of the 16 Regional Centres of the Zoological Survey of India established on 6th March, 1959 with the primary objective of exploring and documenting the faunal diversity of the northeastern region of India. The Centre's jurisdiction extends over six North East Indian states of Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. The North-East India biogeographic zone covering these six states constitutes about 5.2% of the total geographic area of the country. This region is situated in the transition zone of the Palearctic and Indomalayan biogeographic realm and constitutes parts of Indo-Burma biodiversity hotspots. The Centre is engaged in documenting the myriad diversity of animal life forms in this biologically rich region. To date, 127 research programmes covering various aspects of faunal diversity in the Northeastern states have been completed by the Centre. The scientists of the Centre

published over 360 research papers, books and book chapters in various national and international journals and books of repute. At present, Centre is handling several research programmes in the states of Assam, Manipur and Mizoram. The Centre maintains a museum exhibiting the faunal wealth of the northeastern region and also holds a collection of about 103,000 identified specimens and over 1,65,000 unidentified specimens representing various faunal groups. There are three ongoing projects at the Centre at present.

1

Faunal Inventory of Murlen National Park, Mizoram

- » **Investigators:** Mrs. I. J. Kharkongor, Dr. U. Saikia, Dr. D. Khynriam, Mr. A. B. Meetei, Mr. A. Rana & Mr. B. Saikia
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To document the species diversity and status of various faunal groups in the National Park.
- » **Outcome:** A total of 87 species have been documented comprising 47 species of mammals, 18 species of reptiles, 14 species of anurans, 6 species of Pisces and 2 species of Crustacea.
- » **Significant Findings:** Four species of bats were newly recorded from Mizoram State.



Landscape of Murlen NP during spring season

2

Studies on the aquatic and semi-aquatic Hemiptera of important floodplain Wetlands of the Central Valley of Manipur, North-East India

- » **Investigator:** Smt J. Lyngdoh
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To study the aquatic and Semi-Aquatic Hemiptera of important floodplain wetlands of Manipur, North-East India.
- » **Outcome:** A total of 47 species of water bugs belonging to 27 genera under 13 families with 16 species of new State records have been documented.

3

Studies on Cladoceran Diversity in the Protected Areas of Western Arunachal Pradesh

- » **Investigator:** Dr. B. Sinha
- » **Period:** April 2018 to March 2023
- » **Status:** Completed
- » **Objective:** To study the diversity of Cladocera in the PAs of western Arunachal Pradesh.

- » **Outcome:** A total of 37 species of Cladocera belonging to seven families and 21 genera have been documented from the protected areas of western Arunachal Pradesh.
- » **Significant findings:** The study has resulted in the addition of as many as 19 taxa of Cladocera to the state of Arunachal Pradesh and one new India record.



Macrothrix triserialis Brady, 1886

mammals from Manipur deposited at the North Eastern Regional Centre (NERC) of ZSI, Shillong and two specimens of rodents deposited in Manipur University in recent times were also examined. Based on these voucher records and field evidence, the presence of 38 species of small mammals from the state including 27 species of bats, 10 species of rodents and one species of shrew have been reported. A total of 17 species of bats were recorded for the first time from the state during the project period.



Mirostrellus joffrei (Thomas, 1915)

4

Diversity and status of small mammalian fauna (Chiroptera, Rodentia and Soricomorpha) of Manipur state, North-eastern India

- » **Investigator:** Dr. Uttam Saikia
- » **Period:** April 2019 to March 2022
- » **Status:** Ongoing
- » **Objective:** To know the diversity and status of small mammalian fauna (Chiroptera, Rodentia and Soricomorpha) of Manipur state.
- » **Progress:** Under this program, 62 examples of Chiroptera, Rodentia and Soricomorpha. Besides, 12 additional examples of small

5

Faunal diversity of Dibru Saikhowa Biosphere Reserve, Assam

- » **Investigators:** Smt. Jennifer Lyngdoh (PI) & Dr. B. Sinha, Dr. Uttam Saikia, Dr. D. Khyntiam Sh. A B Meetei, Shri. A. Rana & Shri. B. Saikia (Co-PIs)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the faunal diversity in the Dibru Saikhowa Biosphere Reserve, Assam.
- » **Progress:** A total of 1182 examples of various faunal elements and 4 tubes of plankton were collected which include Coleoptera-83, Mollusca-70, Hemiptera-532, Pisces-340, Amphibia-5, Dermaptera-6, Prawns-10, Annelida-6, Lepidoptera-17, Odonata-3, Orthoptera-80, Arachnida-27, Diptera-1, Insecta-2 and Plankton-4 vials.



Tadorna ferruginea (Pallas, 1764)

7

Studies on the taxonomy and diversity of edible Amphibians of North East India, Phase I: Assam, Manipur, Meghalaya & Nagaland

- » **Investigators:** Dr. Bikramjit Sinha (PI) & Shri. B. Saikia (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the diversity and taxonomy of the edible amphibians in North East India including the livelihood options and conservation implications.
- » **Progress:** A survey tour to Nagaland and Assam was conducted where both a questionnaire survey and field sampling was done. A total of 154 examples of frog samples were collected. The questionnaire surveys were done in Bongaigaon, Kokrajhar, Jorhat, Karbi Anglong and Golaghat districts of Assam and Dimapur, Kohima, Mokokchung, and Chümoukedima districts of Nagaland. 140 examples of frogs belonging to 7 species under 6 genera and 4 families have been identified and registered. Data on edible amphibia of the following tribes were documented: Bodo, Garo, Karbi, Mishing, Rajbongshi, Kuki (Thadou), Angami, and Ao during the study period under the report.

6

Exploring the Subterranean Biodiversity: selected cave fauna of Meghalaya state (Phase I. Khasi hills)

- » **Investigators:** Dr. Uttam Saikia (PI) and Smt. Jennifer Lyngdoh, Dr. B. Sinha, Dr. Uttam Saikia, Dr. D. Khynriam, Shri. A B Meetei, Shri. A. Rana & Shri. B. Saikia (Co-PIs)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the faunal diversity in the cave ecosystems of Meghalaya State.
- » **Progress:** A survey tour of six caves in the Khasi Hills region was conducted. A total of 154 specimens belonging to eight major faunal groups from these subterranean habitats were collected.



Inside Mawpun cave, Meghalaya

WESTERN REGIONAL CENTRE (WRC), PUNE, MAHARASHTRA



The Western Regional Centre (WRC) is one of the first formed regional centers of ZSI, which was established at Pune, Maharashtra in September 1959. The center now completed 60 years (1959-2019). The primary objective of this setup is to explore and document faunal diversity in its area of jurisdiction. WRC has completed various research programmes, including the Fauna of India (Scorpiones and Araneae), the Fauna of Ecosystem (Nathsagar wetland, Ujani wetland, and Northern Western Ghats), State Fauna (Maharashtra and Goa), Wildlife Sanctuaries (Bhimashankar, Koyna, Lonar, Phansad, Radhanagari and Koyna), National Parks (Chandoli, Navegaon, Pench, and Sanjay Gandhi), Tiger Reserves (Melghat and Tadoba-Andhari), Navegaon National park and Status surveys (Indian Edible Nest Swiftlet and Western Tragopan). New taxa from various animal groups (Brachyura, Araneae, Opiliones, Scorpiones, Schizomids, Coleoptera, Lepidoptera, Diptera, Ephemeroptera, Hymenoptera, freshwater fishes, Amphibia, Reptilia, and Rodentia) that include over 120 new species, some new genera and one sub-family have been described by the scientists of the centre. The total holdings of National Zoological Collections in Western Regional Centre is 2,06,528 as on March 2023. The collection includes type specimens of 566 belonging to new species and new records for state described by scientists of ZSI and other organisations, deposited in the NZC of WRC, ZSI, Pune and donated specimens from individuals and other institutes. A museum, displaying nearly 500 specimens, serves to educate and generate awareness on faunal diversity and habitat. WRC has also a DNA Barcoding laboratory, which has generated more than 100 DNA barcodes. The library of this center holds more than 4,000

books and many journals. WRC researchers have published a long list of books, book chapters, research articles, research notes, taxonomic reviews, monographs, catalogues, etc. Western Regional Centre renders identification and advisory services of various animal groups to students, teachers and researchers on regular basis. Certificate of identification of confiscated wildlife, animal skins, body parts etc. are regularly provided for identification to various legal and law enforcement bodies, Forest Department, Crime branch, Maharashtra Police etc. Identification reports help these agencies in prosecution of or punishing the culprits involved in illegal trade. Western Regional Centre also provides workshops and training to students and researchers on regular basis. We also provide Research guidance to scholars.



Taxonomic studies of Amphibians of Western Ghats

- » **Investigator:** Dr. K.P. Dinesh
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** Taxonomic study of Amphibians of Western Ghats.
- » **Outcome:** A total of 219 examples collected during the surveys were identified under 72 species, 22 genera and nine families from the Western Ghats. In collaborative efforts and study of specimens housed at different institutes a total of six new species, one new genus and one new sub-family of frogs from the Western Ghats have been published in various journals with phylogenetic studies. Study includes a new report of the frog species *Minervarya kalinga* from the Western Ghats, which was initially described from the Eastern Ghats. IUCN assessment was done for Karaavali Skittering frog from the peninsular India. Mitochondrial DNA barcoding of 16S rRNA gene was done for all the new species reported.
- » **Significant findings:** Report of six new species, one new genus and one new subfamily of frogs from the Western Ghats.



Faunal diversity of Yawal Wildlife Sanctuary, Jalgaon district, Maharashtra

- » **Investigators:** Officer-in-Charge and all Scientific Staff
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To ascertain the faunal diversity of Yawal Wildlife Sanctuary, Jalgaon district, Maharashtra.
- » **Outcome:** A total of 672 species under 459 genera in 19 faunal groups have been documented from yawal wildlife sanctuary, Maharashtra for the first time. The details include 2 species of Decapoda (Brachyura); 2 species of Decapoda (Caridea); 22 species of Arachnida (Araneae); 3 species of Arachnida (Scorpionida); 13 species of Coleoptera (Aquatic); 22 species of Coleoptera (Carabidae); 15 species of Coleoptera (Scarabaeidae); 8 species of Diptera: Cecidomyiidae; 7 species of Hymenoptera (Sphecidae); 80 species of Lepidoptera (Butterflies); 72 species of Lepidoptera (Moths); 5 species of Mantodea; 50 species of Odonata; 16 species of Orthoptera (Acrididae); 10 species of Mollusca; 8 species of Amphibia; 25 species of Reptilia (collections and observations); 255 species under Aves (observations); 54 species of Mammalia (collections and observations).

- » **Significant findings:** A first report of dung beetle *Garreta smaragdifer* (Walker, 1858) attending the faecal matter of Northern Plain Gray Langur *Semnopithecus entellus* (Dufresne, 1997) with range extension and a checklist of the genus *Garreta* Janssen, 1940, was observed.

3

Taxonomic studies of small mammals of Southern Western Ghats

- » **Investigator:** Dr. S.S. Talmale
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - To ascertain the small mammal (Rodents, Shrews, and Bats) diversity and distribution of Southern Western Ghats.
 - To develop a small mammalian collection of WRC, ZSI, Pune.

- » **Outcome:** A total of 71 small mammals were collected under this programme. The collections were identified into 8 species or subspecies (order Rodentia), 1 species (order Eulipotyphla) and 6 species or subspecies (order Chiroptera).

4

Faunal diversity of Gautala Autramghat Wildlife Sanctuary, Maharashtra

- » **Investigators:** Officer-in-Charge and all Scientific Staff of the Centre
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To ascertain the faunal diversity of Gautala Autramghat Wildlife Sanctuary, Maharashtra.

- » **Outcome:** A total of 601 species of 447 genera belonging to 19 different faunal groups have been documented from Gautala-Autramghat Wildlife Sanctuary, Maharashtra for the first time. The faunal diversity include 46 species of Amphibia; 23 species of Reptilia; 238 species of Aves; 50 species of Mammalia; 2 species of freshwater crabs; 4 species of prawns; 19 species of spiders; 3 species of scorpions; 13 species of aquatic coleoptera; 13 species of ground beetle; 9 species of dung beetles; 6 species of gall midges; 4 species of the wasp; 74 species of butterflies; 67 species of moths; 7 species of mantids; 27 species of Odonata; 22 species of Orthoptera; 11 species of Mollusca.

- » **Significant findings:** Two species of aquatic beetles are the new record to the state of Maharashtra.

5

Faunal diversity of Kali Tiger Reserve, Karnataka

- » **Investigators:** Officer-in-Charge and all scientific staff of the Centre
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To ascertain the faunal diversity of Kali Tiger Reserve, Karnataka.
- » **Progress:** Two surveys were conducted and collected 3375 examples belonging to 26 different faunal groups. A total of 37 species under 9 groups have been identified along with 'Vela Bandhavya', a new species of freshwater crab discovered from the Protected Area.



Bos gaurus Smith, 1827

6

Faunal diversity of Bhagwan Mahaveer Sanctuary and Mollem National Park, Goa

» **Investigators:** Dr. Basudev Tripathy, Dr. Aparna Kalawate, Dr. K.P. Dinesh, Dr. S.S. Talmale, Dr. J.Palot, Dr. S.K.Pati, Dr. S.R.Patil, Ms. R.Dev & Dr. D.Vasanthakumar.

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objective:** To ascertain the faunal diversity of Bhagwan Mahaveer Sanctuary and Mollem National Park, Goa.

» **Progress:** Two surveys were conducted and collected 1238 examples belonging to 26 different faunal groups. . A total of 42 specimens of 13 species under 04 groups have been identified.



Ocyeros griseus (Latham, 1790)

7

Faunal diversity of Daroji Sloth Bear Sanctuary, Karnataka

» **Investigators:** Dr. Aparna Kalawate, Dr. B. Tripathy, Dr. K.P. Dinesh, Dr. S.S.Talmale, Dr. J. Palot, Dr. S.K. Pati, Dr. S.R. Patel, Dr. R. Deb & Dr. D. Vasanthakumar

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objective:** To ascertain the faunal diversity of Daroji Sloth Bear Sanctuary, Karnataka.

» **Progress:** Two surveys were conducted and collected 2565 examples belonging to 27 different faunal groups. .A total of 102 specimens of 36 species under 4 groups have been identified.



Melursus ursinus (Shaw, 1791)

8

Long-term monitoring of olive ridley sea turtles along the Odisha coast- (Phase -II)

» **Investigators:** Dr. Basudev Tripathy, Dr. Anil Mohapatra & Dr. Pratyush P. Mohapatra

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objective:** Long-term monitoring of olive ridley sea turtles along the Odisha coast.

» **Progress:** Studied the activities of the turtle by tagging and observed their nesting behaviour during arribada at Rushikulya rookery of Odisha coast. Surveys were also conducted to Andhra Pradesh and Odisha for monitoring of nesting population along the coast. Tagging of olive ridley turtles continuing at Rushikulya and more than 1500 turtles were tagged during sporadic and arribada nesting. Mass nesting census and tag recapture undertaken by the researchers in the field.



Mass nesting of Olive ridley at Rushikulya rookery of Odisha coast

9

Status, distribution and diversity of butterflies of the Western Ghats with their Mitochondrial DNA barcode studies

- » **Investigator:** Dr Md. Jafer Palot
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To ascertain the status, distribution and diversity of butterflies of the Western Ghats with their Mitochondrial DNA barcode studies.
- » **Progress:** A survey of the Kerala part of Western Ghats has been conducted. About 50 examples of Butterflies collected including 12 endemic species.



Papilio buddha Westwood, 1872

10

Catalogue on Arachnida: Araneae: Spider Collection in the National Zoological Collection of ZSI, WRC, Pune (Non-Survey Based)

- » **Investigator:** Dr. S.R. Patil
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To catalogue Arachnida: Araneae: Spider Collection in the National Zoological Collection of ZSI, WRC, Pune.
- » **Progress:** Physical verification of identified Araneae comprising 3896 specimens was completed. Digital database for the identified and registered Araneae comprising 3896 specimens was also verified and updated. 784 examples of 38 species of Araneae were identified.

- » **Objective:** To catalogue the Coleoptera: Aquatic Beetles present in the National Zoological Collection of Western Regional Centre, ZSI, Pune.
- » **Progress:** A total of 5597 identified specimens of aquatic beetles have been physically verified and 1267 old registration numbers were updated with geo coordinates/ locality and other missing details. 1999 examples of aquatic beetles from collections are identified as belonging to 5 families under 30 genera and 74 species. Digitisation and cataloguing work are being carried out simultaneously.



Copelatus neelumae Vazirani, 1973

11

Cataloguing of Coleoptera: Aquatic Beetles present in the National Zoological Collection of Western Regional Centre, ZSI, Pune (Non-Survey Based)

- » **Investigator:** Mrs. Rita Deb
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated

CENTRAL ZONE REGIONAL CENTRE (CZRC), JABALPUR, MADHYA PRADESH



Central Zone Regional Centre of Zoological Survey of India was established at Jabalpur on 24th February 1960 under Second Five Year Plan, to survey and document our knowledge of the faunal resources of Central India. Central Zone Regional Centre covers two states of Central India namely Madhya Pradesh (covering 52 Districts having 10 National Parks, 25 Wildlife Sanctuaries, 5 Tiger Reserves and 1 Biosphere Reserve) and Chhattisgarh (covering 28 Districts with 3 National Parks, 10 Wildlife Sanctuaries and 3 Tiger Reserve and 1 Biosphere Reserve shared with M. P.). The National Zoological Collection of this centre comprises 152,154 specimens including 83460 identified and 68694 unidentified specimens. This regional centre has completed 42 Research Programmes involving faunal exploration in various protected and non-protected areas of Madhya Pradesh and Chhattisgarh along with studies on the status survey, behavior, taxonomic revisions/studies and State Fauna Series of Madhya Pradesh and Chhattisgarh. The Centre is presently handling two ongoing programmes.

1

Faunal Diversity of Sanjay, Panna and Fossil National Parks, District Panna & Chhattarpur, Madhya Pradesh

- » **Investigators:** Officer-in-Charge & Scientists of the Centre
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To study and document the faunal diversity of Sanjay, Panna & Fossil National Parks through field surveys.
- » **Outcome:** A total of 518 species belonging to 12 faunal groups from Sanjay National Park, 699 species belonging to 11 faunal groups from Panna National Park and 196 species belonging to 9 faunal groups from Fossil National Park have been documented.



Euphlycis cyanophlyctis (Schneider, 1799)

2

Status survey of Critically Endangered Sacred grove bush frog *Raorchestes sanctisilvaticus* (Das and Chanda, 1997)

- » **Investigators:** Dr. Pratyush P. Mohapatra & Dr. Saipari Sailo
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objectives:**
 - i. To study the distribution and occupancy of sacred grove bush frog *Raorchestes sanctisilvaticus* in Madhya Pradesh and Chattisgarh,
 - ii. To assess the status of other bush frogs occurring in the study area,
 - iii. To evaluate the habitat requirement of the species,
 - iv. To identify the potential factors affecting the survival of wild populations and assessment of the level of human impact, if any.
- » **Outcome:** A new species of *Sitana* was collected, which belongs to *Sitana sivalensis* clad. The same species, which is also found in most parts of Odisha, Chattisgarh and eastern Madhya Pradesh, is morphologically and genetically distinct from the "*Sitana ponticeriana*".
- » **Significant findings:** *Minervarya kalinga* is recorded for the first time from Chhattisgarh and many juveniles were also sighted during the survey from various localities.

3

Faunal diversity of protected areas of Madhya Pradesh w.r.t. Gandhisagar, Ratapani, Palpur and Kuno Wildlife Sanctuaries including Sehore and Raisen

- » **Investigators:** Dr. P. S. Bhatnagar & Officer-in-Charge, Dr. S. D. Paunikar, Dr. Saipari Sailo, Dr. Sandeep Kushwaha, Mrs. Pallabi Priyadarshani & Mr. Akhil Nair.
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To study the faunal diversity of protected areas of Madhya Pradesh w.r.t. Gandhisagar Ratapani, Palpur and Kuno Wildlife Sanctuaries including Sehore and Raisen.
- » **Progress:** A survey was completed from Kuno Palpur National Park and collected 887 specimens pertaining to 38 faunal groups. All specimens were registered in the unidentified register of ZSI, CZRC, Jabalpur. Total 314 specimens belonging to 76 species are identified and registered.

4

Faunal Diversity of Panna Biosphere Reserve, Dist. Panna, Madhya Pradesh

- » **Investigators:** Officer-in-Charge and Scientists & Staff of CZRC
- » **Period:** April, 2023 to March, 2025
- » **Status:** Initiated
- » **Objective:** To study Faunal diversity of Panna Biosphere Reserve, including the Gangu Sanctuary and the Reserved and Protected Forests of the North Panna Forest Division.
- » **Progress:** Two survey conducted to Panna Biosphere Reserve, Dist. Panna (M.P.) and collected 2917 specimens pertaining to 22 faunal groups. Identification include 25 species belonging to Lepidoptera (29 species, 18 specimens); Odonata (01 species, 04 specimens); Mollusca (06 species, 61 specimens); Pisces (02 species, 03 specimens) and Amphibia (04 species, 13 specimens).



Catchment area of Ratapani Dam, Ratapani Wildlife Sanctuary

DESERT REGIONAL CENTRE (DRC), JODHPUR, RAJASTHAN



The Desert Regional Centre (DRC) of the Zoological Survey of India, Jodhpur was established in June, 1960 in the name of Desert and Gangetic Plains Regional Station under Second Five Year Plan to survey the faunal diversity of Desert Biome. Later, in 1965 due to the characteristic changes in its boundaries, it was renamed as at present DRC. The Jurisdiction of the Centre is spread over 3,42,239 Sq. km. area of Rajasthan and 1,96,024 sq. km. of Gujarat, covering 50 districts of Rajasthan and 33 districts of Gujarat State. The area encompasses seven National Parks, 48 Wildlife Sanctuaries, 14 Conservation Reserves, three Tiger Reserve, one Biosphere Reserve and six Ramsar Sites. The state of Gujarat has a coastline of 1596 kms. as part of the west coast of India. The Centre is engaged in the documentation of the rich and diverse faunal resources of the Rajasthan and Gujarat states by conducting field explorations and scientific studies. So far 3346 species of animals are known from the desert biogeographic zone of India. The total holdings of the Centre include 509880 specimens with 93473 Identified specimens and 416407 unidentified specimens. So far, 68 species have been described as new to science by the scientists of this Regional Centre. Other than this, 38 Books and more than 870 research papers have been published in various national/ international journals by scientists. The centre maintains a Natural History Museum depicting the rich and diverse faunal wealth of the Desert Ecosystem. 1024 visitors including more than 900 students from various schools, colleges and universities visited museum of the Centre. The centre also extended identification and advisory services by delivering lectures and participated in public exhibitions under the reporting period. During the year 2022-23, the Centre was engaged in six research programmes of which four has been completed, three ongoing and beside this one externally funded research roject is also going on in the Centre.

Studies on Faunal Diversity of Narayan Sarovar Wildlife Sanctuary, Gujarat

- » **Investigators:** Dr. Indu Sharma and Scientific Staff
- » **Period:** April 2017 to March 2022
- » **Status:** Completed
- » **Objectives:**
 1. Survey, Inventorization and documentation of faunal diversity of Narayan Sarovar Wildlife Sanctuary.
 2. Data on exotic species and their status in the Narayan Sarovar Wildlife Sanctuary.

3. Digital Inventory of Avifauna and other vertebrates of Narayan Sarovar Wildlife Sanctuary
 4. Assessment of the threatened/endangered faunal species of the Narayan Sarovar Wildlife Sanctuary
- » **Outcome:** Six surveys had been conducted and 435 species referable to 315 genera belonging to 12 Faunal groups viz. Arachnida, Hemiptera, Hymenoptera, Coleoptera, Hemiptera, Lepidoptera, Mollusca, Pisces, Amphibia, Reptiles, Aves and Mammalia has been documented.
 - » **Significant findings:** Seven species of Fishes, one species of Reptile (*Bungarus sindanus* Boulenger, 1897) and four species of Aves recorded for the first time from the sanctuary. All Invertebrate Fauna recorded form first report from the sanctuary. Three research papers on first record of fishes, Reptiles and Aves have been published.



Landscape at Narayan Sarovar Wildlife Sanctuary, Gujarat

Studies on the diversity of pollinating bees (Apoidea: Hymenoptera) of Semi-Arid and Desert Ecosystem

- » **Investigators:** Dr. R. H. Raina & Dr. Sanjeev Kumar
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To collect adult bees (Hymenoptera) through intensive and extensive faunistic surveys from the semi-arid and desert ecosystem of Rajasthan,
 - ii. To study taxonomy based on some important morphological features including genitalic characters with a view to reviewing the pollinating bees of the study area,
 - iii. To determine the richness and abundance of bee species in different habitats of the semi-arid and desert ecosystems of Rajasthan by repeated surveys and consulting the old entomological literature and other sources,
 - iv. To record the present distributional status of different bee species from the study area.
- » **Outcome:** Identified 21 species of bees Hymenoptera (Apoidea) covering 4 families viz., Apidae, Andrenidae, Megachilidae and Halictidae covering 10 genera by examining 879 examples. 1 species of wasp (Hymenoptera), 4 species of Coleoptera, 2 species of Hemiptera and 24 species of Lepidoptera were also identified during the year. The distributional status of the bee species and comparative inventory and diversity of host plants of bee species from the study area have been updated.
- » **Significant findings:** Under this programme, a total of 57 species of Bee (Apoidea:

Hymenoptera) have been identified and compiled from Semi-Arid and Desert Ecosystem, covering 24 genera by examining 3354 examples.



Bombus festivus Smith, 1861

Assessment of faunal diversity of some selected Wildlife Sanctuaries of Gujarat- Gaps in Research

- » **Investigators:** Dr. Indu Sharma & Scientists of the Centre
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objective:** Documentation of the faunal diversity of some selected (11) Wildlife Sanctuaries of Gujarat and to work out- Gaps in Research.
- » **Outcome:** Documented and compiled information on various faunal groups from 11 selected Wildlife Sanctuaries of Gujarat viz. 238 species from Balaram Ambaji WLS, Banaskantha; 315 species from Jessore WLS, Banaskantha; 19 species from Pania WLS, Amreli; 113 species from Girnar WLS, Junagarh; 84 species from Hingolgarh WLS, Rajkot; 123 species from Rampara WLS, Rajkot; 214 species from Ratanmahal WLS, Dahod; 95 species from Thol WLS, Kalol; 246 species from Shoolpaneshwar WLS, Vadodara; 414 species from Porbandar Bird sanctuary, Porbandar and 376 from Barda WLS, Porbandar.

4

Studies on faunal diversity of Purna Wildlife Sanctuary, Gujarat

- » **Investigators:** Dr. Indu Sharma & Scientific staff
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. Inventorization and documentation of faunal diversity of Purna WL Sanctuary,
 - ii. Assessment of the threatened/endangered faunal species of the Sanctuary.
- » **Outcome:** Five surveys were conducted from the Sanctuary and document containing 537 species referable to 398 genera belonging to 12 Faunal groups viz. Arachnida, Coleoptera, Hemiptera, Hymenoptera, Orthoptera, Lepidoptera, Mollusca, Pisces, Amphibia, Reptiles, Aves and Mammalia has been submitted.
- » **Significant findings:** 17 species of fish (First record) from the sanctuary have been worked out and research paper published. All Invertebrate Fauna recorded form first report from the sanctuary.



Landscape at Purna Wildlife Sanctuary, Gujarat

5

Studies on the Faunal Diversity of Todgarh-Raoli Wildlife Sanctuary, Rajasthan

- » **Investigators:** Dr. Indu Sharma & Scientific Staff
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. Survey, exploration and documentation of faunal diversity from the Todgarh-Raoli Wildlife Sanctuary, Rajasthan,
 - ii. Taxonomic studies of the fauna collected,
 - iii. To Observe/ record the Herpeto fauna, aves, and mammal species of the Sanctuary,
- » **Progress:** Under this programme, a total of 2018 examples belonging to 16 faunal groups have been collected and identified 18 species of Lepidoptera by examining 59 examples; 7 species of Coleoptera by examining 98 specimens; 2 species of Collembola by examining 11 specimens; 4 species of Pisces by examining 7 examples and 10 species of Arachnida by examining 20 examples.
- » **Significant findings:** 41 species from five different faunal groups' viz. Lepidoptera, Coleoptera, Collembola, Arachnida and Pisces from the Wildlife Sanctuary have been identified and the same has been digitized.



Boselaphus tragocamelus (Pallas, 1766)

Studies on the Faunal Diversity of Mount Abu Wildlife Sanctuary, Rajasthan

» **Investigators:** Dr. Indu Sharma & Scientific Staff

» **Period:** April 2022 to March 2025

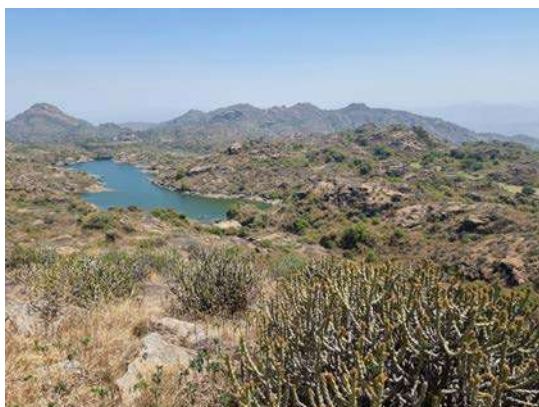
» **Status:** Initiated

» **Objectives:**

- i. Survey, exploration and documentation of faunal diversity from the Mount Abu Wildlife Sanctuary, Rajasthan.
- ii. Taxonomic studies of the fauna collected.

» **Progress:** Total collection collected during two different surveys viz. 1369 examples referable to 15 faunal groups and 1213 examples referable to 17 faunal groups, respectively. Identified and digitized 17 species of Lepidoptera by examining 36 examples; 1 species of Hemiptera by examining 270 examples; 4 species of Pisces by examining 7 examples and 1 species of Decapoda by examining 2 examples.

» **Significant findings:** 23 species from four different faunal groups viz. Lepidoptera, Hemiptera, Decapoda and Pisces from the Wildlife sanctuary has been identified and same has been digitized for RFD Formats.



View of Mount Abu WLS, Rajasthan



NORTHERN REGIONAL CENTRE (NRC), DEHRADUN, UTTARAKHAND



Northern Regional Centre was established in August 1960 under the second five-year plan of the Government of India. Over the decades it is working to fulfil its mandate to explore and document the fauna of four north Indian states namely Uttarakhand, Uttar Pradesh, Punjab and Haryana, including Union Territories i.e. Chandigarh and Delhi NCR, covering an area of c.446441 km². The region comprises ecologically diverse areas ranging from the western Himalayas in the north with Shivalik ranges at the base, through Gangetic Plains with Terai in the north and Bundelkhand in the south, and the part of the Aravallis in the southwest with equally diverse biodiversity in its one Natural World Heritage Site (Nanda Devi and Valley of Flowers National park), one Biosphere Reserve (Nanda Devi), four Tiger Reserves (Corbett, Dudhwa, Pilibhit and Rajaji), two Elephant Reserves, nine National Parks, fifty-seven Wildlife Sanctuaries, ten Conservation Reserves, fourteen RAMSAR sites and twenty-eight Important Bird Areas. During the last few years, the centre has adopted modern approaches in the field of taxonomy and faunal exploration, and well-equipped modern labs and faunal repositories with state-of-art facilities for investigations in taxonomy, systematics and faunal documentation have been established. The centre holds a rich collection of various faunal groups. Total holdings of the centre include 411291 (Identified specimens 323052; Unidentified specimens: 88239) specimens including 341 type specimens available in the National Zoological Collection of NRC. The centre has published documents on Fauna of four states, Fauna of Protected areas, Fauna of Western Himalaya, seven Environmental Impact Assessment studies, four Status surveys of Endangered species, two Green Skill Development Programme courses, thirty-five Programmes and about 859 research papers in various National and International journals.

1

Status survey of CMS-CITES avian species of India

- » **Investigators:** Dr. Anil Kumar & Dr. G. Maheswaran
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objectives:**
 - i. To enlist the CITES and CMS birds of India along with information on the present status in the country.
 - ii. To prepare the species accounts of all CMS-CITES avian species of India.
- » **Outcome:** A total of 230 avian species belonging to 16 orders and 33 families are covered in CMS (128 spp.) and CITES (161 spp.) in India. Order Acciptriformes with 52 species was the most dominant group of birds. While, some species covered under CITES are widespread and common, and the populations are quite stable. The status of such species may be stepped down so that space could be created to pay more attention to those species that required special efforts/ new initiatives for conservation.



Ruddy Shelducks and Bar-headed Geese at Asan Conservation Reserve

2

Revision of Butterfly (Insecta: Lepidoptera) Fauna of Arunachal Pradesh

- » **Investigator:** Dr. Narender Sharma
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objective:** To document Butterfly (Lepidoptera) fauna from Arunachal Pradesh.
- » **Outcome:** A total of 339 species under 160 genera and six families and 946 examples have been identified/recorded from the state of Arunachal Pradesh.
- » **Significant findings:** 10 species under 8 genera recorded for the first time from Arunachal Pradesh. The species i.e., *Issoria mackinnoni* from Arunachal Pradesh has been rediscovered after more than a hundred years from India and first sighting from the Eastern Himalaya.



Vindula erota (Fabricius, 1793)

3

Survey of Phthirapteran ectoparasites infesting common poultry of Odisha

- » **Investigator:** Dr. Aftab Ahmad
- » **Period:** April 2020 to March 2023

» **Status:** Completed

» **Objective:** Taxonomic study of Phthirapteran ectoparasites on common poultry birds of Odisha.

» **Outcome:** The survey was undertaken in six districts of the Odisha state, namely, Ganjam, Khurda, Gajapati, Bolangir, Baleswar and Bhadrak. During the survey, common poultry birds were examined randomly at the different poultry forms, bird's keepers at their houses, gardens, etc. A total of 23 species have been reported.

» **Significant findings:** The occurrence of certain Phthirapteran ectoparasites were recorded for the first time in Odisha state and *Goniocoted gallinae* is also reported for the first time as a new host record from India.



Menopon gallinae Linnaeus 1758

4

Fauna of three conservation reserves (Rakh Sarai Amanat Khan, Ranjit Sagar and Beas River) of Punjab

» **Investigators:** Dr. Gaurav Sharma & Scientists of Centre

» **Period:** April 2021 to March 2024

» **Status:** Ongoing

» **Objective:** To study the faunal diversity of selected three conservation reserves of Punjab.

» **Progress:** Under this programme, 1456 examples belonging to 16 faunal groups were collected. Identified 29 species of Lepidoptera, 6 species of Odonata, 13 species of Protozoa, 4 species of Phthiraptera, 03 species of Amphibia, 02 species of Reptilia, 94 species of Aves and 04 species of Mammals.



Panoramic view of Ranjit Sagar Lake

5

Fauna of Kedarnath Wildlife Sanctuary, Uttarakhand

- » **Investigators:** Dr. Gaurav Sharma & Scientists of the Centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the fauna of Kedarnath Wildlife Sanctuary, Uttarakhand.
- » **Progress:** A survey was conducted and collected 153 examples belong to 10 faunal groups. Identified 18 species of Lepidoptera, 2 species of Odonata, 77 species of Aves and 04 species of Mammals.
- » **Significant findings:** Threatened species of birds and mammals recorded.



Hemitragus jemlahicus (Smith, 1826)

6

Faunal diversity of Abohar Wildlife Sanctuary, Punjab

- » **Investigators:** Dr. Anil Kumar & Scientists of the Centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the fauna of Abohar Wildlife Sanctuary, Punjab.

- » **Progress:** Review of literature completed. Two surveys were conducted and collected 146 examples belonging to 13 faunal groups. Identified 4 species of Phthiraptera, 12 species of Lepidoptera, 6 species of Orthoptera, 3 species of Amphibia, 63 species of Aves and 04 Species of Mammals.
- » **Significant findings:** Threatened species of Birds and Mammals recorded, and extensive exploration by surveys will provide authentic information.



Perdix perdix (Linnaeus, 1758) in Abohar WLS

7

Faunal diversity of Khol Hi-Raitan (Morni Hills) Wildlife Sanctuary, Haryana

- » **Investigators:** Dr. Aftab Ahmad & Scientists of the Centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the fauna of Khol Hi-Raitan (Morni Hills) Wildlife Sanctuary, Haryana.
- » **Progress:** Review of literature completed. Two surveys conducted and collected 415 examples belongs to 15 faunal groups. Identified 2 spp. of Phthiraptera, 16 species of Lepidoptera, 10 species of Orthoptera, 3 species of Amphibia, 1 species of Reptilia, 56 Species of Aves and 04 species of Mammals.
- » **Significant findings:** Threatened species of Birds and Mammals recorded.

SOUTHERN REGIONAL CENTRE (SRC), CHENNAI, TAMIL NADU



The Southern Regional Centre was established during the 2nd Five Year Plan on 9th March 1961 to conduct faunal explorations in southern peninsular India. The jurisdiction of the centre cover entire Tamil Nadu, Southern Karnataka, Southern Andhra Pradesh and Union Territory of Puducherry which is about 1,50,000 Km². All protected areas within this jurisdiction is covered by the centre which comprise of three biosphere reserves, nine tiger reserves, 9 National Parks and 43 wildlife sanctuaries. The region under the jurisdiction covers all ecosystems of southern Western Ghats and southern Deccan province. The region is also one of the global biodiversity hotspots with several endemic and endangered species and some of the world-renowned protected areas are located here. The most significant contribution of the center is the scientific inputs it provided for the establishment of Silent Valley National Park (Palakkad, Kerala) and Nilgiri Biosphere Reserve (Tamil Nadu, Kerala and Karnataka). These protected areas were established based on the explorations conducted by the scientists of the centre a few decades ago. The centre has significantly contributed towards the discovery of several new species of amphibians, freshwater fishes, aquatic hemipterans, dipterans, mayfly and es and dragonflies from peninsular India. Currently, the centre is equipped with state of the art light microscopy facility, DNA laboratory, GIS facility, library and other scientific

infrastructure to conduct studies on faunal diversity. Several national projects sponsored by MoEF&CC, DST and Forest Department are operationalized through the Centre. During 2022-23 the centre has completed documentation fauna of the Meghamalai wildlife sanctuary and Agasthyamalai biosphere reserve. During the year, sixteen new species belonging to Ephemeroptera and one new species of Psocoptera were discovered in addition, two species of Ephemeroptera and one species of Hymenoptera were reported as new to India. In the reporting period, two books, eleven research articles and twenty two book chapters were published. During 2022-23, two students were registered for Ph.D. programme and one student was awarded Ph.D. Currently twelve students are pursuing their Ph. D programme under University of Madras. Total holding of the Centre comprises 4,80,041 of which 2,76,674, are named specimens, 2,03,367 unnamed. During the period, 72 type specimens were added in the centre and currently holds and 1906 are type specimens.

1

Fauna of Meghamalai Wildlife Sanctuary and adjoining landscapes, Tamil Nadu

- » **Investigators:** Officer-in-Charge & Scientific staff of the Centre
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To document the fauna of Meghamalai Wildlife Sanctuary and adjoining landscapes in Tamil Nadu.
- » **Outcome:** A total of 8 species of Rotifera; 5 species of Cladocera; 2 species of Ostracoda; 20 species of Ephemeroptera; 54 species of Odonata; 2 species of Plecoptera; 29 species of Blattodea; 19 species of aquatic Coleoptera; 8 species of Psocoptera; 98 species of butterflies (Lepidoptera); 28 species of Cicadellidae; 69 species of Mollusca; 13 species of Pisces; 21 species of Amphibia; 94 species of Reptilia; 254 species of Aves and 63 species of Mammalia were documented from the Megamalai Wildlife Sanctuary. The document covers 832 species under 18 taxa of invertebrates and vertebrates.
- » **Significant findings:** Described three new species of Ephemeroptera. High biodiversity area with several endangered species with a good population of tigers and other large

mammals such as elephants, gaur, leopards, etc. The area is now declared as Srivilliputhur-Meghamalai Tiger Reserve.



Nisaetus cirrhatus (Gmelin, 1788)

2

Fauna of conservation Area: Fauna of Agasthyamalai Biosphere Reserve

- » **Coordinators:** Dr. K.A. Subramanian & Dr. P.M. Sureshan
- » **Investigators:** Subject Experts
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objective:** To study and inventorize the fauna of Agasthyamalai Biosphere Reserve.

3

Phylogeography of Blackbuck (*Antilope cervicapra*) of India

- » **Investigator:** Dr. Ranjana Bhaskar
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To understand the phylogeography and population structure of Blackbucks in India.
- » **Outcome:** The Blackbuck faecal samples



Gallus sonneratii Temminck, 1813

- » **Outcome:** A total of 71 species of Testate Amoebae; 37 species of Rotifera; 32 species of Cladocera; 4 species of Ostracoda; 16 species of Brachyura; 16 species of Scolopendromorpha; 11 species of Scorpiones; 131 species of Araneae; 41 species of Ephemeroptera; 133 species of Odonata; 5 species of Plecoptera; 37 species of Blattodea; 19 species of Mantodea; 48 species of Hemiptera; 19 species of Cicadellidae; 12 species of Psocoptera; 209 species of Hymenoptera; 37 species of aquatic Coleoptera; 592 species of Lepidoptera; 125 species of Mollusca; 90 species of Pisces; 68 species of Amphibia; 78 species of reptiles; 258 species of birds and 98 species of mammals were documented. The document covers 2412 species under 35 taxa of invertebrates and vertebrates.

- » **Significant findings:** Described five new species of Mayfly.

4

Fauna of India: Study on the Blattodea fauna of India

- » **Investigator:** Dr. S. Prabakaran
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To prepare a monograph on the fauna of India Blattodea.
- » **Outcome:** Blattodea fauna of India is compiled based on the global catalogue, survey and material deposited at ZSI. A total of 176 species is listed in this work comprising 6 families and 72 genera. 34 species were studied and descriptions were made based on specimens at SRC, Chennai. Five and eleven species were studied from WGRC and FBRC, respectively.
- » **Significant findings:** Four new species were discovered from the Western Ghats.

were collected from their natural habitats, wildlife sanctuary and parks and zoos at various places of India. 550 faecal samples were collected. DNA was isolated and sequenced. 680 sequences generated and submitted from three markers, COI, Cytb and Control region data were analysed. The study confirms the structured populations of Blackbuck throughout India.

- » **Significant findings:** The results provide evidence that blackbuck in different locations has a distinct haplotype which is not shared by other populations. The analysis of molecular variance of the combined data set revealed genetic variation within the population. Mismatch distribution analysis revealed that blackbuck populations underwent complex changes with analysis of the combined dataset in the overall population.

5

DNA barcoding of selected faunal groups/species

- » **Investigator:** Dr. Ranjana
- » **Period:** April 2018 (continuing)
- » **Status:** Ongoing
- » **Objective:** To create a DNA barcode of the fauna of India.
- » **Progress:** A total of 460 DNA sequences were submitted in NCBI, Gen Bank, comprising 7 species of Mammals, 41 species of Insects, 4 species of Odonata, 2 species of Hymenoptera and 8 species of Crustacea. Barcodes were generated for the first time and submitted in NCBI for forty-one species of Ephemeroptera



Macaca radiata (É. Geoffroy, 1812)

6

Fauna of Satyamangalam Tiger Reserve

- » **Investigators:** Officer-in-Charge & all scientific staff of the Centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To document the faunal diversity in the Satyamangalam Tiger Reserve.

- » **Progress:** Two surveys were undertaken and collected 6587 specimens belonging to various animal groups. Identification of specimens in progress.

7

Current Status and Distribution of Endemic Odonata (Insecta) of India

- » **Investigators:** Dr. K. A. Subramanian, Dr. R. Babu, Dr. Gaurav Sharma & Dr. Bikramjit Sinha
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To assess the current status of endemic species of Odonata from India.
- » **Progress:** One survey was undertaken in Nilgiri district, Tamil Nadu and collected 1294 specimens belonging to various faunal groups. We have observed a total of 45 species belonging to 33 genera of nine families of order Odonata during the field survey, of which the following eleven species are endemic to India. In addition, a GIS database of 100 endemic species was prepared and distribution mapped.



Euphaea fraseri (Laidlaw, 1920)

Status Survey of Forest Cane Turtle, *Vijayachelys sylvatica* (Henderson, 1912) and Travancore Tortoise, *Indotestudo* *travancorica* (Boulenger, 1907) endemic to Western Ghats, India

» **Investigator:** Dr. Varadaraju

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objective:** To assess the faunal status of Cane Turtles and Travancore Tortoises in the Western Ghats.

» **Progress:** One survey was undertaken to Western Ghats of Karnataka and following areas were surveyed (i) Mangalore District: Neria forest, Charnady ghat, Beltangady, Kukke Subramanya, Puttur, Sulya (ii) Udupi-Kollur -Mookambika Wildlife Sanctuary and Kudremukh Wildlife Sanctuary (iii) Shimoga District: Sharavathy wildlife sanctuary, Someshwara Wildlife sanctuary, Agumbe forest division (iv) Coorg District (Madikeri): Pushpa Giri Wildlife sanctuary, Thala Cauvery wildlife sanctuary and adjacent areas. During the survey sighted Travancore tortoise at two localities. In addition, collected 145 examples of different faunal groups and observed various faunal groups during the survey.



GANGETIC PLAINS REGIONAL CENTRE (GPRC), PATNA, BIHAR



Gangetic Plains Regional Centre was set up at Patna in March 1965 under Third Five Year Plan to survey, ascertain and augment knowledge on the faunal resources of the Gangetic Plains area under its jurisdiction: The jurisdiction of the Centre is spread over two states. Bihar has 38 Districts with one National Park, eleven Wildlife Sanctuaries and one Tiger Reserve and Jharkhand has 24 Districts with one National Park, ten Wildlife Sanctuaries and one Tiger Reserve. During the last 56 years of its existence, this centre has shown all-around development such as research, field surveys, and development of the National Zoological Collections, Museum, Green Skill Development Program and construction of its own office building. The centre has completed more than 40 projects under Fauna of States, Fauna of Ecosystem, Status Survey, Ecological studies and revisionary studies. The total holding includes 152131 specimens, comprising 66152 named specimens and 85979 unnamed specimens. Apart from these 12 Type specimens are housed in the centre.

2

Fauna of Bihar State (Invertebrates) Part II

- » **Coordinator:** Dr. Gopal Sharma
- » **Investigators:** Scientists of Headquarters & Regional Centres
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing

1

Study of Hemiptera fauna of Agro-ecosystem of Bihar and identification of some potential hemipteran predators

- » **Investigators:** Dr. M. E. Hassan, Dr. Sandeep Kushwaha & Mr. P.C. Saha.
- » **Period:** April 2019 to March 2022
- » **Status:** Ongoing
- » **Objective:** To study the Hemipteran fauna of the Agroecosystem of Bihar and identification of some potential hemipteran predators.
- » **Progress:** A total of 3686 examples of Hemiptera including 112 examples of hemipteran predators of Agro-ecosystem of Bihar were collected. 121 species under 95 genera of suborder Heteroptera including 14 species of Reduviidae and 6 species of Asopinae belonging to the family Pentatomidae and 36 species under 27 genera belonging to 6 families of suborder Auchenorrhyncha from the agro-ecosystem of Bihar have been recorded.
- » **Significant findings:** Reported predation behaviour of *Perillus bioculatus* (Pentatomidae: Asopinae) predating on *Aulacophora indica* (Coleoptera: Chrysomelidae) a pest of bitter melon in agro-ecosystem of Bihar, India.

- » **Objective:** To collect and document the Invertebrate fauna of Bihar state.
- » **Progress:** A total of 28 species of Platyhelminthes are first record from Bihar. Soil sample: Soil sampling was done from six districts of Bihar viz. Patna, Jamui, Banka, Aurangabad, Kaimur and Buxar. Total 304 specimens including earthworm (295) and leech (9) were collected. 29 earthworm specimens have been identified as 2 species belonging to 2 genera and one family.



Cazira montandoni Breddin, 1903

3

Fauna of Baraila Lake and Bhimbandh Sanctuary, Bihar

- » **Investigators:** Dr. Gopal Sharma (PI) & Dr. M. E. Hassan (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To collect and document the fauna of Baraila Lake and Bhimbandh Sanctuary, Bihar.
- » **Progress:** During the reporting period a total of 3415 examples of 119 species were collected: Mollusca-2517 examples of 20 genera and 28 species; Fishes- 655 examples of 37 genera and 48 species; Insects- 243 examples of 36 genera and 43 species; Birds- 79 genera of 89 species Zooplankton: 21- genera of 29 species.

HIGH ALTITUDE REGIONAL CENTRE (HARC), SOLAN, HIMACHAL PRADESH



High Altitude Regional Centre was established in September 1968 under the fourth Five Year plan of the Government of India to explore the faunal diversity of North Western Himalaya. The jurisdiction of the Centre spreads over 2,77,909 sq. km. comprising of mountainous states of Himachal Pradesh, Union Territories of Jammu & Kashmir and Ladakh in the North Western Himalayan Ecosystems. Owing to the vast altitudinal variations from 350 m to 6,500m ASL (Above Sea Level), it covers all four physiographical zones of the Himalayas i.e. Shiwaliks, Lesser, Greater, and Trans Himalayas. Three important ranges are covered under the jurisdiction areas, Karakoram Range is the northernmost range, to the south of the Karakoram range runs the Zaskar range and parallel to the Zaskar range towards its southern side lies the Pir Panjal range. The area includes 09 National Parks, 41 Wildlife Sanctuaries, 37 Conservation Reserves, one Biosphere Reserve and 07 Ramsar sites. The National Zoological Collections of the Centre include 43,662 identified specimens and 1, 12,414 unidentified specimens. The Centre is well equipped with the facilities like modern analytical instruments for carrying out research in taxonomic studies. HARC has been recognized as a research institute for the Ph.D. programme by the University of Jammu, Jammu (UT), Himachal Pradesh University, Shimla, and Maharaja Agrasen University, Baddi, Solan (HP). The Centre has produced valuable results published in the form of "Fauna of Himachal Pradesh", Fauna of Trans-Himalaya, Occasional papers, Ecosystem studies, Conservation areas etc. Scientists at the centre have described 50 species as new to science. Zoological Survey of India, Solan has the Designated National Repository of

faunal samples under section 39 of the Biological Diversity Act, 2002, named “National Himalayan Faunal Repository” and a designated repository for the safe deposit of holotypes/isotypes/ paratypes of new taxa of Zoological Specimens discovered in the region. The repository and museum facilitate scientists, research scholars, forest departments, universities and other research institutes working on the fauna of the Indian Himalaya. The museum at HARC acts as a source of education and awareness to conserve biodiversity for the public and students.

1

Faunal Diversity of Union Territory Ladakh (Earlier the State fauna of Jammu & Kashmir)

- » **Investigators:** Dr. Avtar Kaur Sidhu, Dr. Gaurav Sharma, Dr. Indu Sharma, Dr. T. Kubendran & Dr. Kamal Saini
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To survey, explore and documentation of faunal diversity from the Union Territory of Ladakh.
 - ii. Taxonomic studies of the fauna collected.
 - iii. To observe/record the Aves and Mammal species of the area.
- » **Outcome:** The document covers 813 species across 18 major faunal groups in the Union territory of Ladakh. These include 33 species of Oligochaeta, 10 species of Collembola, 08 species of Odonata, 14 species of Orthoptera, 100 species of Diptera, 21 species of Ephemeroptera, Trichoptera and Plecoptera, 73 species of butterflies, 146 species of moths, 02 species of Ants, 24 species of other Hymenoptera: Chalcidoidea & Vespoidea, 10 species of Hymenoptera: Apoidea & Scolioidea, 30 species of Hemiptera, 20 species of Pisces, 02 species of Amphibia, 09 species of Reptilia, 310 species of Aves and 30 species of Mammals.



Blue sheep herd near Rumtse on way from Leh to Sarchu

2

Grassland Ecosystem: Faunal Diversity of Temperate and Alpine Grasslands of the Himalayas: Phase-1: (H.P.)

- » **Investigators:** Officer-in-Charge & Scientists
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To survey, explore and documentation of Faunal Diversity of Temperate and Alpine grasslands of Himachal Pradesh.
 - ii. Taxonomic studies of the fauna collected.

- iii. To observe/record the Aves and Mammal species of the Temperate and Alpine grasslands.

» **Outcome:** The document contains 679 species across 18 major faunal groups in the Alpine and temperate grassland ecosystem. These include 47 species of protozoa, 13 species of Oligochaeta, 02 species of Chilopoda, 02 species of Odonata, 34 species of Diptera, 45 species of Orthoptera, 39 species of Ephemeroptera, Trichoptera and Plecoptera, 140 species of butterflies, 52 species of moths, 16 species of Ants, 20 species of other Hymenoptera, 92 species of Hemiptera, 07 species of Amphibia, 14 species of Reptilia, 101 species of Aves and 21 species of Mammals. During present studies it has been observed that diversity is more in temperate grassland but endemism is more in faunal elements of Alpine grasslands.

» **Significant findings:** The faunal diversity has been observed more in those grasslands, which are surrounded by diverse vegetation.

3

Entomofauna of North Western Himalaya: Ephemeroptera, Plecoptera and Trichoptera: Phase-1

» **Coordinator:** Dr. Kailash Chandra

» **Investigators:** Dr. T. Kubendran & Dr. Avtar Kaur Sidhu

» **Period:** April 2018 to March 2022

» **Status:** Completed

» **Objectives:**

- To survey, explore and documentation of Ephemeroptera, Plecoptera and Trichoptera Diversity of North Western Himalaya,
- Taxonomic studies of the EPT fauna collected,

» **Outcome:** The documentation presents the current knowledge regarding the distribution and diversity of EPT complex viz., the Ephemeroptera, Plecoptera and Trichoptera from North Western Himalayan states of Himachal Pradesh, Union Territory of Jammu & Kashmir and Union Territory of Ladakh. A total of 41 species under 08 families, 17 genera of Ephemeroptera, Plecoptera and Trichoptera (EPT complex) were recorded from the rivers and streams of temperate and alpine grasslands of Himachal Pradesh. Out of these 27 species under 10 genera and 4 families of Ephemeroptera, followed by 7 species under 4 genera and 2 families of Plecoptera and 7 species under 3 genera and 2 families of Trichoptera.

4

Faunal diversity of Lahaul Valley, district Lahaul & Spiti (H.P.)

» **Investigators:** Dr. A. K. Sidhu, Dr. Boni Amin Laskar, Dr. P.C. Pathania, Dr. M. S. Pandher, Dr. Kamal Saini & Mrs. Anjoo Dhar

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objectives:**

- To survey, explore and documentation the Faunal Diversity of Lahaul Valley, district Lahaul & Spiti Himachal Pradesh.
- Taxonomic studies of the fauna collected.
- To observe/record the Aves and Mammal species of the Lahaul Valley, district Lahaul & Spiti.

» **Progress:** The First Women Scientist Faunal Expedition of ZSI to Lahaul Valley has been conducted under the leadership of the Director, Zoological Survey of India, covering an altitude of 2800 m to 5800 m. It included far-flung valleys (Tinan, Gahar, Tod, Pattan, Miyar, Chandra), passes (Baralacha and Shinkula pass), the freshwater lake of Suraj Tal, Shingula and Deepak Tal and trans-Himalayan Tract of Sarchu, Cchatru and

Chota Dara. Species identification: Insecta: Lepidoptera: Butterflies: 32 species; Insecta: Lepidoptera: Moth: 30 species; Insecta: Trichoptera: 03 species; Insecta: Orthoptera: 22 species; Herpetofauna: 06 species; Aves: 76 species; Mammals: 18 species. Stretched more than 100 examples of butterflies and the tissue for DNA extraction and molecular studies have been taken out and DNA isolation of 15 samples of Lepidoptera of recent field survey to Lahaul Valley, HP has been done



First Women Expedition to Lahaul valle- flagged off by DZSI

- ii. Taxonomic studies of the fauna collected; Ecological/behavioural studies.
- iii. To observe/record the Aves and Mammal species of the Agroecosystems of Low hills; In subtropical and Mid-hills in sub-humid zones of Himachal Pradesh: Phase-I.

» **Progress:** Over 5000 examples of 17 faunal groups have been collected from Agroecosystems of District Solan. Species identification: Insecta: Lepidoptera: Butterflies: 44 species; Insecta: Lepidoptera: Moth: 36 species; Insecta: Trichoptera: 02 species; Insecta: Orthoptera: 19 species; Herpetofauna: 06 species; Pisces: 08 Species; Aves: 64 species; Mammals: 08 Species.



View of Mustard and Sugarcane crops

5

Faunal diversity in Agroecosystems of Low hills in subtropical and Mid-hills in sub-humid zones of Himachal Pradesh: Phase-I

- » **Investigators:** Officer-in-charge & Scientists of ZSI, Solan
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. To survey, explore and documentation of Faunal Diversity of Agroecosystems of Low hills in subtropical and Mid-hills in sub-humid zones of Himachal Pradesh.



Pieris canidia (Sparman, 1768) in Agroecosystem of Himachal Pradesh

MARINE BIOLOGY REGIONAL CENTRE (MBRC), CHENNAI, TAMIL NADU



Marine Biology Regional Centre was established on March 1, 1973, in Chennai, with the mandate to study the marine faunal diversity of India. This centre has jurisdiction covering 2.02 million sq km EEZ of India's marine areas - from reef types such as fringing, barrier and atolls to seagrasses, mangroves, estuaries, dunes, salt marshes to the oceanic habitats, submerged reefs and mounts. Since its inception, the centre has completed 120 research programmes under the Annual Programmes of Research, including the three programmes completed this year. There are 09 ongoing programmes, of which four are externally funded. The key projects the centre is running are the long-term coral reef monitoring programme in Lakshadweep atolls and the coral restoration programme in the Gulf of Kacchch with funding support from the Department of Environment and Forests of the states concerned. The centre also undertook the massive coral translocation work in the Gulf of Kachchh Marine National Park as a conservation means to save the corals falling in the proposed IOCL pipeline route. The facilities in the centre include a full-fledged SCUBA facility for marine underwater studies, two stereo zoom microscopes (in which one is motorized), and a phase-contrast one. A DNA laboratory is also being set up to support molecular taxonomy studies. As a recognized centre for PhD studies with Madras University, 14 students have received their doctoral degrees until now. Eleven students are pursuing theirs, including a candidate who submitted her thesis this academic year. The centre

has 1,36,412 specimens as National Zoological Collection holdings, of which 1,21,096 are named, comprising 10 holotypes and 09 paratypes, representing 2455 species.

1

Population studies of commercially viable Sea cucumber species in Gulf of Mannar Marine National Park and Palk Bay

- » **Investigators:** Dr. Rajkumar Rajan, Dr. P. Padmanaban & Dr. Anand Kumar
- » **Period:** April 2017 to March 2019
- » **Status:** Completed
- » **Objective:** Population studies of commercially viable Sea cucumber species in Gulf of Mannar Marine National Park and Palk Bay.
- » **Outcome:** The densities of *H. scabra* varied over a spatial scale, showing the species preferring patchy and dense seagrass habitats (> 50 n/ha), with the values consistent over the seasons. From the histological studies on gonads, we observed that most of *H. scabra* in Palk Bay (64%) during the study period consisted of brooders and fully grown matured ones, i.e., ≥ 16 cm and up to 29 cm, which have achieved their first sexual maturity or have spawned at least once. However, as shown in the figure presented here, there is a complete absence of brooders in June, September and October, and matured ones in May and October. The absence of mature ones, the preferred size for harvest, in May and October precedes terms of intense fishing points to severe overfishing. The absence of brooders must be considered cautiously as more busts of breeders can cause irrevocable population decline. Similarly, the figures also show the absence of recruiters in most months of the year, i.e., March to June and August to October. The long spell of the absence of recruiters may indicate that the current level of recruitment may need to be revised to sustain a healthy population density of *H. scabra* in this region.

2

Morphology and Molecular Taxonomic studies of Marine Sponges of Lakshadweep

- » **Coordinator:** Dr. G. Sivaleela
- » **Co-investigators:** Mr. Surendar C. & Mr. Rajendar Kumar R.
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - Survey, collection, identification digitization and cataloguing of marine sponges,
 - To study the status and taxonomy of marine sponges and molecular studies of sponges of some important groups of sponges of Lakshadweep,
 - Status of endemic and boring sponges and barcoding of sponges.
- » **Outcome:** A total of 45 species of sponges belonging to 9 orders, 12 families and 32 genera from the class Demospongiae were recorded. A new species *Scalarispongia* sp is reported from Lakshadweep. Four species, *Axinella minor*, *Haliclona cymaeformis*, *Callyspongia subarmigera*, and *Leucetta chagosensis*, were new records to Lakshadweep. The species *Leucetta chagosensis* was DNA barcoded and the sequence was submitted to NCBI.

3

Studies on Taxonomy and Distribution of Benthic Foraminifera of Gulf of Mannar Marine Biosphere Reserve and National Park

- » **Investigators:** Dr. P. Padmanaban & Dr. Mrinal Kumar Das
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objectives:**
 - i. Detailed taxonomic studies, morphology and habitat of the marine foraminiferans in Gulf of Mannar Biosphere Reserve,
 - ii. To evaluate the abundance and diversity of foraminifera in the sediments.
 - iii. To understand the relation between the physicochemical parameters, sediments and their influence on the foraminiferal population.
- » **Outcome:** A survey was carried out in the Gulf of Mannar. Foraminiferan samples were collected from 30 sites. 36 species belonging to 20 genera, 16 families and 4 orders were identified from 338 specimens.



Thalayari Island, Keelakarai, Gulf of Mannar Biosphere Reserve

4

Status survey of Nilgiri marten *Martes gwatkinsii* Horsfield 1851 in the Western Ghats of Tamil Nadu

- » **Investigators:** Dr. C. Venkatraman (PI) & Dr. Lalit Kumar Sharma (Co-PI)
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 - i. To identify the status and distribution of Andaman Teal on Andaman Islands.
 - ii. To estimate the population structure (size, age, and sex) of Andaman Teal at habitat and Island level.
 - iii. To identify the factors governing the population structure of Andaman Teal.
- » **Progress:** A field survey was conducted in ten localities of Nilgiris districts of Western Ghats. Seven direct sightings of Nilgiri marten were recorded. Camera trap was deployed in those areas which captured a single Individual repeatedly in a single site near Parsons valley. Habitat characteristics of eight sighted locations were quantified. In order to confirm the presence and absence of Nilgiri marten in other areas, questionnaire survey was conducted in villages/settlements adjacent to protected area.

5

Status and Population Dynamics of Andaman Teal *Anas albogularis* in the Andaman Islands

- » **Investigator:** Dr. C. Venkatraman
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing

» **Objectives:**

- i. To identify the distribution and population status of Nilgiri Marten in various habitat Types,
- ii. To identify the ecological requirements of Nilgiri marten,
- iii. To identify the immediate threats to Nilgiri Marten,
- iv. And to generate the habitat suitability model to predict the potential habitats where Nilgiri marten is likely to be found.

» **Progress:** A survey tour was conducted in North, Middle and South Andaman localities. Presence and absence of Andaman teal in the eight wetlands, two in Middle Andaman, four localities in North Andaman and two localities in South Andaman. The block count method was adopted to enumerate the population of teal. Highest number (662) of the Andaman teal population was observed in the Sippighat wetlands followed by Ograbraj (46) of South Andaman. There is little variation (diurnal) in changes in the population level due to tidal influence. Developmental activities especially construction of houses are the major threats to teal population in the South Andaman.

» **Progress:** A survey was undertaken of Narara Sikka, Shivrajpur, Mitapur, Arambhada, Beyt Dwaraka, Sachana, Balachadi, Sikka, and Okha reef sites and mangrove areas of Gulf of Kachchh for 10 days from 17–26th December. 1466 examples in various faunal groups such as sponges, gastropods, bivalves, fishes, meiofauna samples, crabs, Squilla, Nudibranchs, Gorgonids, Polychaete, Prawns, Brittle star etc. were collected. 43 species of marine sponges belonging to 232 specimens were identified. An abstract on ‘Marine sponges of Gulf of Kachchh’ was submitted for presentation at the ‘Taxonomic Summit’ organised by ZSI, Kolkata.

» **Significant findings:** A species of the sponge is recorded as new to India and 3 species as new to the Gujarat coast.



Haliclona debilis Pultzer Finali, 1993

6

Diversity and Distribution of Marine Sponges in the Gulf of Kachchh

» **Investigator:** Dr. G. Sivaleela

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objectives:**

- i. To determine the diversity distribution documentation of boring sponges in the Gulf of Kachchh.
- ii. To document the genetic diversity of the endemic/calcareous sponges of the Gulf of Kachchh through DNA barcoding using COI (cytochrome c oxidase subunit I) region,

Integrative taxonomy, distribution and current status of batoids of India

» **Investigators:** Dr. Bineesh. K.K (PI), Dr. Rajkumar Rajan & Dr. Anil Mohapatra (Co-PIs)

» **Co-Investigators:** Mr. Surendar C. & Mr. Rajendar Kumar R.

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objectives:**

- i. To understand the current status of batoids in Indian waters,
- ii. To study the taxonomic diversity and phylogeny of Indian batoids using morphology and genetic tools like DNA barcoding,
- iii. To compare and study the current distribution pattern on the basis of historical baseline data and exploratory surveys,
- iv. To conduct the biology of selected species of critically endangered Guitarfishes,
- v. To improve the understanding of utilization and trade route of Indian species of batoids,

vi. To document the socio-economic and cultural aspects associated with batoid fisheries.

» **Progress:** Two surveys were undertaken along the coastal area of Tamil Nadu and Andhra Pradesh. 106 specimens under 9 families including Glaucostegidae, Rhinobatidae, Narcinidae, Torpenidae, Rajidae, Rhinopteridae, Gymnuridae and Dasyatidae were collected. Trawl surveys were conducted for population assessment. 26 species of batoids were recorded in the commercial catches and trade. A single individual of porcupine ray, *Urogymnus asperrimus*, a rare and WPA-listed species of stingray in the family Dasyatidae was observed in the Vishakhapatnam fishing harbour. Studies were also made on the fishery interaction to study the threats to the population of rays on the east coast of India. Length-weight relationship data of four species were recorded. Tissue samples of batoids were collected and preserved for DNA barcoding. DNA extraction and PCR amplification of 10 samples were carried out.



Hexatrygon bickelli Heemstra & Smith, 1980



Bottom trawling conducted at Gulf of Mannar

ANDAMAN AND NICOBAR ISLANDS RESEARCH CENTRE (ANRC), PORT BLAIR, A & N ISLANDS



Andaman and Nicobar Regional Centre of Zoological Survey of India were established at Port Blair on 21st April 1977 with the jurisdiction covering Andaman and Nicobar Islands and its coastal and off-shore waters. 80 research programmes have been completed on several faunal groups of this archipelago. The major areas of study at this Centre are on Taxonomy, Ecology and Zoogeography of protozoan to Mammalia from marine and terrestrial ecosystems. Scientists of the ZSI, Port Blair published 75 books, and over 800 research papers in various peer-reviewed national and international journals, 60 pamphlets, 50 general articles and 90 posters. At present, there are 11 ongoing projects including 09 in-house projects and 02 grant-in-aid projects. Coral reefs and their associated faunal communities are given special attention. Holdings of the Centre comprise 1,94,719 specimens with 69,450 named and 1,25,269 unnamed specimens. More than 1000 visitors from the mainland as well as foreigners witnessed the regional museum of the Centre during the reporting period, out of which more than 260 students from various colleges, and schools of this island.

1

Faunal diversity of Andaman and Nicobar Islands: Faunal diversity in the agro-ecosystem in the Andaman Islands

- » **Investigator:** Dr. C. Sivaperuman
- » **Period:** April 2018 to March 2023
- » **Status:** Completed
- » **Objectives:**
 - i. To assess the major faunal diversity in the Agroecosystem of the Andaman Islands,
 - ii. To analyze their association with different crops in the agroecosystem,
 - iii. To identify the ecosystem services provided by the insects and bird communities in the agroecosystem, 4. To provide suitable management suggestions to control the bird damage to the agricultural crops.
- » **Outcome:** A total of 1654 species including 747 species of Coleoptera, 372 species of Diptera, 78 species of Odonates, 55 species of Butterflies, 156 species of Moths, 78 species of Spiders, 8 species of Amphibians, 24 species of Reptiles and 136 species of Birds were identified.



Agroecosystem in the Andaman Islands

2

Terrestrial Faunal Diversity of the Little Andaman Island

- » **Investigator:** Dr. Anil Kumar Dubey
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objectives:**
 - i. To study the taxonomy, diversity and distribution of terrestrial fauna of Little Andaman Island,
 - ii. To document habitat and biological information of terrestrial fauna of the Little Andaman.
- » **Outcome:** A total of 1156 individual fauna were collected from the Little Andaman; discovery of three new species which includes one Coleoptera and two Hemiptera. 33 species of Birds, 7 species of Reptiles, 2 species of Amphibians, 16 species of Mollusca, 8 species of Coleoptera, 29 species of Hemiptera, 1 species of Diptera, 6 species of Hymenoptera, 92 species of Lepidoptera; 12 species of Odonata and 3 species of Orthoptera were identified.

3

Status of corals and associated macrofauna & Marine fishes of South Reef Island and Interview Island Wildlife Sanctuaries, Middle Andaman

- » **Investigators:** Dr. Tamal Mondal & Dr. Bineesh, K.K.
- » **Period:** April 2018 to March 2021
- » **Status:** Completed

4

Diversity, distribution and taxonomy of the terrestrial fauna of the Andaman group of Islands

» **Investigator:** Dr. Anil Kumar Dubey

» **Period:** April 2018 to March 2021

» **Status:** Completed

» **Objectives:**

- i. To study the taxonomy, diversity and distribution of terrestrial fauna of the Andaman group of Islands.

» **Objectives:**

- i. Assessment of the present status of corals and coral-associated faunal communities of South Reef Island and Interview Island Wildlife Sanctuaries,
- ii. Estimation of the diversity, density and distribution of coral and coral-associated faunal communities in the reef areas,
- iii. Assessments of the reef cover at the study areas,
- iv. Estimation of the physico-chemical parameters of seawater,
- v. Resilience against the impact of natural and anthropogenic activities, 6. Preparation of Heath Card to evaluate the status of coral reefs.

» **Outcome:** A total of 736 species marine faunal communities including 259 species of scleractinian corals, 22 species of octocorals, 4 species of zoanthids, 12 species of sea anemones, 8 species of hydrozoans, 25 species of sponges, 7 species of polyclads, 109 species of molluscs, 12 species of heterobranchs, 7 species of sipunculans, 1 species of nemertea, 44 species of echinoderms, 1 species of hemichordate, 11 species of ascidians, 164 species of fishes and 2 species of marine mammals have been identified.

5

Exploration of Marine fishes of the Nicobar Group of Islands

» **Investigator:** Dr. Bineesh. K.K.

» **Period:** April 2019 to March 2022

» **Status:** Completed

» **Objectives:**

- i. Taxonomy, species diversity and distribution of marine fishes in the Nicobar group of Islands,
- ii. Identification of venomous and poisonous fishes, marine ornamental and fishes cryptic species using an integrative taxonomic approach.

» **Outcome:** Field surveys were conducted to different Islands to document the marine fishes of Nicobar groups of Islands. Fish samples were collected from Great Nicobar Islands, Car Nicobar, Camorta and Nancowry at 21 locations. Present study recorded a total of 551 species belonging to 246 genera and 96 families in 45 orders on the basis of collected specimens, photographs, and previously deposited specimens in the museum collections. Present surveys recorded 102 new fishes to these Islands. Of the 102 new records, *Arius venosus* Valenciennes, 1840, *Bregmaceros pseudolanceolatus* Torii, Javonillo & Ozawa 2004, *Chaunax penicillatus* McCulloch, 1915, *Bembradium magnoculum* Kishimoto, Kawai, Tashiro & Aungtonya,

2019, *Priacanthus macracanthus* Cuvier, 1829, *Chelidoperca stella* Matsunuma & Motomura 2016, *Vanderhorstia ambanoro* (Fourmanoir, 1957), *Myripristis seychellensis* Cuvier, 1829, *Myripristis pralinia* Cuvier, 1829, *Thamnaconus striatus* (Kotthaus, 1979) are confirmed as first report for Indian waters.



Little Nicobar

6

Faunal diversity of Andaman and Nicobar Islands: Faunal diversity in the Grassland ecosystem in Andaman and Nicobar Islands

» **Investigator:** Dr. C. Sivaperuman

» **Period:** April 2019 to March 2022

» **Status:** Completed

» **Objectives:**

- i. To assess the present status and distribution of faunal diversity of the grassland ecosystem of the Nancowry group of Islands,
- ii. To study the species richness, abundance, and diversity of selected grassland fauna,
- iii. To prepare the distribution maps using ecological and GIS information,

- iv. To suggest management recommendations for the conservation of the fauna of the Grassland ecosystem.

» **Outcome:** A total of 679 species including 324 species of Hemiptera, 37 species of Odonates, 84 species of Hymenoptera, 11 species of Phasmids, 12 species of Mantodea, 31 species of Butterflies, 61 species of Moths, 35 species of Spiders, 17 species of Reptiles, 4 species of Amphibians and 63 species of Birds were identified.



Grassland ecosystem in Andaman & Nicobar Islands

7

Taxonomy, Distribution, Diversity and current status of Chondrichthyans from Andaman and Nicobar Islands

» **Investigator:** Dr. Bineesh, K.K.

» **Period:** April 2019 to March 2022

» **Status:** Completed

» **Objectives:**

1. To study taxonomy, species diversity and distribution of Chondrichthyans from Andaman and Nicobar Islands,
2. Identification of cryptic species using the integrative taxonomic approach,

3. To develop the species-specific DNA Barcodes of Chondrichthyans from Andaman and Nicobar Islands.

» **Outcome:** Field surveys were conducted to different Islands of Andaman and Nicobar Islands to document the Chondrichthyans fauna. Fish samples were collected from South Andaman Islands, North Andaman Islands, Little Andaman, Interview Islands, Great Nicobar Islands, Car Nicobar, Camorta and Nancowry during the period. Present study recorded a total of 78 species belonging to 53 genera and 31 families on the basis of specimen collections, photographs, and previously deposited specimens in museums. Present surveys along the various Islands of Andaman and Nicobar Islands recorded 26 new records of Chondrichthyans species to these Islands. Of the 26 new records, *Scymnodon ichiharai* Yano & Tanaka, 1984 and *Hexatrygon bickelli* Heemstra & Smith, 1980 are confirmed as first report for Indian waters.



Pomadassys andamanensis McKay & Satapoomin, 1994

8

Breeding ecology of Leatherback Turtle *Dermochelys coriacea* (Vandelli, 1761) in Andaman and Nicobar Islands

- » **Investigators:** Dr. C. Sivaperuman & Dr. Basudev Tripathy
- » **Period:** April 2021 to March 2024

» **Status:** Ongoing

» **Objectives:**

- The main objectives of the present study are to document some aspects of the ecology and the reproductive biology of a nesting population of leatherback turtles in the Nicobar group of islands,
- Study the morphometrics of eggs, hatchlings, and mature females; nesting behavior; hatching success, 3. Estimating body mass of leatherback turtles *Dermochelys coriacea*,
- Some aspects of human ecology as related to the leatherback turtle.

» **Progress:** A total of 181 individuals were tagged and the morphometric details have been collected for all tagged individuals. Besides data on temperature and humidity data were also recorded through data loggers in the nesting chambers during the entire incubation period.

9

Documentation of faunal diversity of Shearme Island Wildlife Sanctuary, West Island Wildlife Sanctuary, White Cliff Island Wildlife Sanctuary and Point Island Wildlife Sanctuary, North Andaman

» **Investigator:** Dr. C Sivaperuman

» **Period:** April 2021 to March 2024

» **Status:** Ongoing

» **Objectives:**

- To assess the present status and distribution of faunal diversity in the Shearme Island Wildlife Sanctuary,

- ii. West Island Wildlife Sanctuary, White Cliff Island Wildlife Sanctuary, Point Island Wildlife Sanctuary Reef,
- iii. Island Wildlife Sanctuary, Mayo Island Wildlife Sanctuary, North Andaman,
- iv. To study the species richness, abundance, and diversity of selected faunal groups,
- v. To prepare the distribution maps using ecological and GIS information,
- vi. To suggest management recommendations for the conservation of the fauna in the Shearme Island Wildlife Sanctuary, North Andaman.

» **Progress:** A total of 63 species of Birds, 13 species of Reptiles, 10 species of Amphibians, 5 species of Mammals, 43 species of Spiders, 39 species of Butterflies, 77 species of Moths, 12 species of Octocoral, 59 species of Mollusca, 16 species of Echinodermata were identified.

- iii. Prepare a list of fishes under the particular water bodies with their type of habitat, salinity and elevation and present detailed descriptions so that fishes may be easily identified.

» **Progress:** 1210 specimens of fishes were collected of which, 385 specimens (42 species) of freshwater fishes have been identified. 42 species of freshwater fish species have been identified and registered. Identified two fish species as new records to Andaman and Nicobar Islands. Registered 385 specimens.



Sturnia erythropgia Blyth, 1846

10

Diversity, Distribution and Status of Freshwater Fish Fauna of Andaman and Nicobar Islands

» **Investigators:** Dr. Mrinal Kumar Das & Dr. C. Sivaperuman

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objectives:**

- i. Sampling of freshwater fishes of the Andaman and Nicobar Islands to record the water (running, pool type, stagnant, clarity of water and salinity so that fishes may be categorized stenohaline, euryhaline, etc.) and the altitudes,
- ii. To carry out systematic taxonomic procedures to identify the fishes (morphometry, meristics, etc.) and identify them using relevant and up-to-date literature and comparison with types and non-types of closely related fishes,

SUNDERBAN REGIONAL CENTRE (SBRC), CANNING, WEST BENGAL



The Sunderban Regional Centre (SBRC) is the first regional Centre located inside the Biosphere Reserve, which was established at Kakdwip, West Bengal under the Fifth Five Year Plan of the Government of India in June 1979. After this, the centre was shifted to Canning, West Bengal in 1984 for better focus on Sunderban Biosphere Reserve. SbRC completed 43 years from 1979 to 2022 and conducted various research programmes. The primary objective of this centre is to explore the faunal wealth of Sunderban as it is closely entangled with waterways like rivers, creeks, estuaries and marine. The jurisdiction of the centre includes two districts of West Bengal viz., North 24 Parganas and South 24 Parganas. It includes important protected 1 Biosphere Reserve (Sunderban Biosphere Reserve), 1 National Park (Sunderban National Park), 1 Tiger Reserve (Sunderban Tiger Reserve), 5 Wildlife Sanctuaries (Haliday Island WLS, Lothian Island WLS, Sajnekhali WLS, ChintamaniKar Bird Sanctuary and Bibhutibhushan WLS). The holding of the centre comprises 53182 specimens which include 33723 identified specimens and 19459 unidentified specimens in the National Zoological Collection. The Museum displayed nearly 619 specimens of 465 species to educate and create awareness to the local public and students. The library of this centre holds more than 2576 books and journals.

1

Faunal diversity of Sagar Island West Bengal, India

- » **Coordinator:** Officer-in-Charge
- » **Investigators:** Dr. R. Aengals, Dr. Valarmathi, Dr. Chitra, J., Mr. S.S. Mishra & Dr. Sreeraj, C.R.
- » **Period:** April 2018 to March 2020
- » **Status:** Completed
- » **Objective:** To survey and inventory the Faunal Diversity of Sagar Island West Bengal, India.
- » **Outcome:** A total of 330 species belonging to 13 phyla comprising 26 species of Protozoa 22 species of Crustacea, 13 species of Mollusca, 35 species of Orthoptera, 26 species of Hemiptera, 12 species of Lepidoptera, 31 species of Hymenoptera, 26 species of Odonata, 31 species of Coleoptera 90 species of Pisces, 6 species of Reptilia, 3 species of Amphibia, 8 species of Aves and one species of Mammalia were documented from the Sagar Island.
- » **Significant findings:** In the present study, the invertebrates and vertebrates are highly diversified and reported species were reflected as the first time report from Sagar Island.



Wetlands in Sagar Island

2

Taxonomy and ecology of Heterobranch slugs (Mollusca, Gastropoda, Heterobranchia) of India

- » **Investigator:** Dr. Sreeraj, C.R.
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To understand the diversity and distribution of heterobranch slugs in the mangrove ecosystem of India
 - ii. To understand the ecological role of these slugs in the ecosystem.
- » **Outcome:** During the reporting period one major survey and 13 local surveys were carried out. A total of 304 examples of fauna were collected. A total of 533 species of opisthobranchs belonging to 7 orders and 64 families are now known from the Indian waters. Highest number of species reported from Andaman and Nicobar Islands (371 species), followed by Tamil Nadu (125 species) and Lakshadweep (114 species). Among the nine major marine heterobranch groups represented in Indian waters, the order Nudibranchia showed in domination (334 species), followed by Cephalaspidea (63 species) and Sacoglossa (51 Species). The order Umbraculida and Superorder Ringiculimorpha is represented by a single species and two species respectively. In the order Nudibranchia the most contributing family was Chromodorididae (100 species), followed by Discodorididae (46 species) and Phyllidiidae 10 (31 species).

3

Coral reef-associated faunal survey along the East coast of India (Taxonomical identification of coral and associated fauna along the East Coast of India)

- » **Investigator:** Dr. J. S. Yogesh Kumar
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** Survey and exploration of coral reef-associated fauna along the East Coast of India.
- » **Outcome:** A total 2108 specimens (335 species) were identified and 686 specimens were digitized and archived as the National Zoological Collections. Among them, 153 species of mollusca, 108 species of reef fishes, 20 species of crustaceans, 19 species each cnidarian and sponges, 15 species of echinoderms and one species of annelid were identified from the study sites along east coast of India. 45 species of corals, 2 species of black corals, 12 species of soft corals and sea fans, 69 species of sea slugs, 10 species of sea cucumbers and 117 species of reef associated fish from Gulf of Mannar Marine National Park have been documented.



Subergorgia suberosa (Pallas, 1766)

4

Studies on the Coral and reef-associated faunal community along the Andhra and Odisha coast of India

- » **Investigator:** Dr. J. S. Yogesh Kumar
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objectives:**
 - i. Explore the scleractinia corals and associated faunal community along Andhra and Orissa coast
 - ii. To assess the abundance of shallow water coral reef faunal community with SCUBA upto 30-meter depth.
 - iii. Taxonomical Identification and digitization of collected specimens.
- » **Outcome:** A total of 2341 examples (277 species) were identified under this project. Of which 86 examples (28 species) of crustaceans, 168 examples (96 species) of fishes, 148 examples (11 species) of echinoderms and 1939 examples (142 species) of mollusc were identified and deposited in National Zoological Collections (NZC, SbRC, Canning).
- » **Significant findings:** Six species of soft corals, two species of black corals, and one hard coral were reported first time from the Orissa coast and 7 species of hard corals, and 4 species of soft corals were identified and new distribution records to the Andhra Pradesh coast.



Verrucella umbraculum (Ellis & Solander, 1786)

Environmental Impact Study on Ichthyo Fauna of River Barak

- » **Investigators:** Dr. Prabhakar Rai (PI), Dr. Lalit Kumar Sharma & Dr. L. K. Singh (Co-PIs)
- » **Status:** Ongoing
- » **Objective:** To study the Environmental Impact on the Ichthyo Fauna of River Barak.
- » **Progress:** One survey was performed to full stretch of river from Maram, Senapati, Manipur to Badarpur, Karimganj, Assam was surveyed including 11 points. Collections: 281 specimens were collected during 2022-23 including 202 Fishes, 67 Molluscs, 8 Crustaceans, 2 Amphibians and 2 Arthropods. 161 examples of fish were identified belonging to 32 species. 66 physicochemical parameters were also recorded including, temperature, pressure, dissolved oxygen, total dissolved solids, conductivity and pH. Several other environmental parameters were also recorded.



Botia dario (Hamilton, 1822)



FRESHWATER BIOLOGY REGIONAL CENTRE (FBRC), HYDERABAD, TELANGANA



Freshwater Biology Regional Centre was established under the 5th Five-Year Plan of Govt. of India on 24th February 1979 at Hyderabad, Telangana State in contemplation to study the limnological aspects of the freshwater bodies throughout India focusing on exploration and documentation of physicochemical, and ecological profiles and faunal diversity of all the freshwater ecosystems including wetlands of National and International importance including Ramsar sites of India. Apart from freshwater faunal studies, faunistic studies on Protected Areas and Smart cities of Andhra Pradesh and Telangana are also being carried out. At present, there are five internal ongoing Annual Research Programmes at the Centre. The NZC holdings of the centre comprises 105816 including 71165 identified and 34651 unidentified specimens. Identification and advisory services of faunal groups particularly fishes, molluscs, aquatic insects and plankton rendered for research institutes, colleges, Universities and professional Laboratories across the nation by our scientists. The Centre is well equipped with facilities like modern analytical instruments for carrying out research in limnological, hydrobiological, faunistic studies and animal DNA Barcoding. The Centre contributed a total of 668 barcode sequences of 292 species to NCBI and

BOLD and published 24 books and more than 263 research papers in various reputed journals. The Centre is recognized by the Osmania University, Hyderabad for pursuing PhD in Zoology at FBRC. The centre maintains a National Museum of Zoological Collections depicting the rich and diverse faunal wealth with all representative faunal groups to educate students and researchers. The centre also extends identification and advisory services by delivering lectures, participating in public exhibitions, conducting awareness programmes etc for the public, research scholars, students, naturalists, Government and non-governmental Organizations.

1

Faunistic studies on Amrabad and Kawal Tiger Reserve, Telangana

- » **Investigators:** Dr. Deepa, J., Dr. S. Shrikanth Jadhav, Dr. M. Karuthapandi & Mrs. Sk. Rehanuma Sulthana
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To explore and document the faunal diversity of the Amrabad and Kawal tiger reserves.
- » **Outcome:** A total of eight surveys were carried out from April 2018 to March 2022 and collected 16959 examples from Amrabad Tiger Reserve and 14880 examples from the Kawal Tiger Reserve. So far 656 species belonging to 472 genera were identified from Amrabad Tiger Reserve, of which 357 species belong to invertebrates and 299 are vertebrates. Similarly, 756 species belonging to 542 genera were identified from Kawal Tiger Reserve, of which 350 species are invertebrates and 406 are vertebrates.
- » **Significant findings:** A Coleoptera has been reported as a new record *Omphra balli* from Amrabad Tiger Reserve and Butterflies diversity of Amrabad, Telangana with 106 species has been documented.

2

Diversity, Distributional Pattern and Assemblage of Fishes of Deccan Peninsular, India

- » **Investigator:** Dr. S. S. Jadhav
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To conduct a survey for exploration of fish faunal diversity of Deccan Peninsular India.
- » **Outcome:** Altogether 295 species were documented from Deccan Peninsular India, of which 143 fish species were collected from the surveys and 152 species were included in the literature.
- » **Significant findings:** Two new species have been described *Parapsilorhynchus alluriensis* and *Garra deccanensis*.

3

Faunal inventorisation on Smart Cities of Andhra Pradesh

- » **Investigator:** Dr. Deepa Jaiswal
- » **Period:** April 2020 to March 2023
- » **Status:** Completed

4

Faunal diversity of Kinnerasani and Pakhal Wildlife Sanctuary, Telangana

- » **Investigators:** Dr. S.S.Jadhav & Scientific Staff
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated



Funambulus pennantii Wroughton, 1905

» **Objectives:**

- i. To study and inventorise the fauna of Smart cities of Andhra Pradesh.
- ii. Explore the faunal diversities from two Smart cities of Andhra Pradesh (Vizag and Amaravathi).
- iii. To bring out the current status on faunal diversity and its habitats.

» **Outcome:** A total of 6 surveys were conducted and 15239 specimens were collected. Of these 4477 examples belonging to 539 species were identified.

» **Significant findings:** In the present study, the following freshwater invertebrates and invertebrates have been reported for the first time from the study area: *Oziotelphusa aurantia*, *Hydrovatus acuminatus*, *Hydrovatus seminaries*, *Coelostoma horni*, *Scaphula nagarjunai*, *Dawkinsia filamentosa*, *Ozius tuberculosis*, *Ranatra cardamomensis* and *Ranatra libera*.

» **Objective:** To explore and document the faunal diversity of Kinnerasani and Pakhal Wildlife Sanctuary, Telangana.

» **Progress:** A total of 4404 examples have been collected of which 3929 examples belong to invertebrates and 475 examples belong to Vertebrates. Identification: A total of 73 species from 844 specimens were identified belonging to 23 species of aquatic insects from 129 examples, 3 species of crustacea from 34 examples, 10 species of Mollusca from 200 examples, 30 species of fishes from 470 examples, 5 species of Reptilia from 9 examples.



Lissemys punctata (Lacépède, 1788)

5

Faunal diversity of River Godavari

- » **Investigators:** Dr. M. Karuthapandi and the scientific staff of the Centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objective:** To explore and document the freshwater faunal diversity of River Godavari,
- » **Progress:** A total of 4559 examples of faunas have been collected which include 3929 examples of invertebrates and 475 examples of vertebrates. Identification: Identified and registered 112 species from 1355 examples and 168 species were observed from fields belonging to various faunal groups. Also analysed were the physicochemical parameters of rivers during the summer and winter seasons for the trophic status assessment and water quality index.



Glareola lactea (Temminck, 1820)

WESTERN GHAT REGIONAL CENTRE (WGRC), KOZHIKODE, KERALA



The Western Ghat Regional Centre at Kozhikode, Kerala, was established in April 1980, under the Sixth Five-Year Plan of the Government of India. The jurisdictional limit of the Centre encompasses the entire biogeographical zone of the Western Ghats, an extremely important life-supporting system of Peninsular India. The Centre is engaged in the documentation of the rich and diverse faunal components/ resources of the Western Ghats and Kerala, by conducting field explorations and scientific studies. Few recent programmes include Fauna of Thattekkad Bird Sanctuary, Kerala, Shola grasslands, Tropical Rainforests, Sasthamkotta Lake, Agasthyamalai Biosphere Reserve, Fauna of India: Family Vespidae (Insecta: Hymenoptera), Mookambika Wildlife Sanctuary, Parambikulam Tiger Reserve, Palakkad, Fauna of Waynad wildlife sanctuary and Testate amoebae studies from the biotic provinces of Himalaya. The centre has signed MoU with Calicut University and Mampad college, Malappuram, Kerala. The National Zoological Collections (NZC) maintained in the Centre contain 56,472 named and 90,866 unnamed specimens. The collection also includes 787 holotypes deposited by scientists working in ZSI as well as in various parts of the country. The Centre is a recognized Research Centre for conducting research programs leading to PhD degrees at the University of Calicut, Kerala. The Centre maintains a Natural History Museum depicting the rich and diverse faunal wealth of the Western Ghats and Kerala. The Centre also extends identification and advisory services by delivering lectures, participating in public exhibitions, Identification of confiscated wildlife materials, conducting awareness programmes etc. to the general public, research scholars, students, naturalists, Government, and non-Governmental Organisations.

1

Fauna of India: Family Vespidae (Insecta: Hymenoptera)

- » **Investigators:** Dr. Girish Kumar, P. & Dr. P.M. Sureshan
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objective:** To prepare a fauna of India volume on Family Vespidae.
- » **Outcome:** A total of 196 species under 47 genera of the solitary wasp subfamily Eumeninae of Family Vespidae from India for the first time have been documented. This includes an updated checklist of social wasp subfamilies (with 94 species under 11 genera) and also the subfamily Masarinae. Besides taxonomic accounts of various taxa, keys to subfamilies, tribes, genera, subgenera, species and subspecies for Indian taxa have been provided for easy identification. A detailed list of synonymies, additional citations of each taxon, updated distribution data, etc., illustrations of the morphological characters and photographs of studied taxa are also provided.



Polistes (Gyrostoma) wattii (Cameron, 1900)

2

Studies on the Morphology and Ecology of testate amoebae (Protozoa: Rhizopoda) from three Biotic provinces of the Biogeographic zone of the Himalaya, India

- » **Investigator:** Dr. Bindu L.
- » **Period:** April 2019 to March 2023
- » **Status:** Completed
- » **Objective:** To explore the testate amoebae fauna from three biotic provinces (2A, 2B, 2D) of the Biogeographic zone, the Himalaya,
- » **Outcome:** The document covers 99 species of testate amoebae spanning over 30 genera and 14 families. Of these 13 species are new records to India.
- » **Significant findings:** 13 species of testate amoebae have been identified as new records to India from the study area.

3

Fauna of Mookambika Wildlife Sanctuary, Karnataka

- » **Coordinator:** Officer-in-Charge
- » **Investigators:** All scientific staff of the centre & Dr. Souvik Sen, ZSI, HQ
- » **Period:** April 2020 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 - i. To explore and document the diversity of the various faunal groups of Mookambika Wildlife Sanctuary;

- ii. To study the taxonomy of the various faunal groups and describes new taxa (if encountered) from the Sanctuary;

» **Progress:** A total of 5249 examples of various faunal groups were collected. The mud dauber wasp *Chalybion gracile* (Hensen) (Hymenoptera: Sphecidae) is recorded for the first time from India. The cockroach wasp *Ampulex ruficornis* (Cameron) (Hymenoptera: Ampulicidae) is recorded for the first time from southern India. Two new species of tiphiid wasps were described.



Rhacophorus malabaricus Jerdon, 1870

4

Fauna of Parambikulam Tiger Reserve, Kerala

- » **Coordinator:** Officer-in-Charge
- » **Investigators:** All scientific staff of the centre
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. Exploration and inventorization of the faunal diversity of the Parambikulam Tiger Reserve along with the observation of seasonal variation in the occurrence of various species.
 - ii. Also to study the taxonomy of the various faunal groups and describe new taxa (if encountered) from the reserve.
- » **Progress:** A total of 2284 examples of various faunal groups were collected.



Parambikulam Damsite

5

Exploration of Natural Enemies (predators and parasitoids) of tea gardens of India with special emphasis on South and Northeast India

- » **Investigators:** Dr. P. Girish Kumar (PI) & Dr. V.D. Hegde (Co-P.I)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. To explore the diversity of the Natural Enemies in tea gardens of India with special emphasis on South and Northeast India,
 - ii. To find out the dominant predators among the recorded natural enemies, and To prepare a consolidated faunal document pertaining to the Natural Enemies of tea gardens of India.
- » **Progress:** A total of 1086 examples of various faunal groups were collected.



Rhythmbara tea plantations, Vagamon

6

Spatial and temporal analysis of the Indian fish diversity metadata

- » **Investigator:** Dr. Sreeraj C.R.
- » **Period:** April 2022 to March 2024
- » **Status:** Initiated
- » **Objectives:**
 - i. To prepare a checklist of Indian fishes with updated taxonomic status;
 - ii. To analyze the temporal and spatial distribution of fish diversity in India;

- iii. To analyze the status of the fishes in the Wildlife (Protection) Act of India, 1972 based on metadata.
- » **Progress:** Based on the studies of the available reports, a total of 2247 species of marine fishes are compiled and 229 literature compiled to date are pending for updating in the marine fishes.
- » **Remarks:** The compilation works for the freshwater fishes are initiated.

ESTUARINE BIOLOGY REGIONAL CENTRE (EBRC), GOPALPUR-ON-SEA, ODISHA



Estuarine Biology Regional Centre, Gopalpur-on-sea, Ganjam, Odisha was established in 1980 during the 6th Five-year plan of Govt. of India. The Primary objective of this Centre is to conduct investigations on the faunal diversity of estuaries, backwaters, lagoons and mangrove ecosystems along the east and west coast of India. Geographical coverage includes estuaries and mangrove ecosystems of India, which are extended throughout the country along both east and west coasts and the jurisdiction of the Estuarine Biology Centre is "All India" covering all estuaries and associated mangrove ecosystems of the country. Total holdings of the Centre include 104798 specimens, of which 65290 are named and 9508 are unnamed specimens and 38 Type specimens.

1

Faunal diversity of Tampara Lake, Chhatrapur, Ganjam, Odisha

- » **Investigators:** Dr. A. Mohapatra, Dr. Aftab Ahmad, Dr. B. Tripathy & Mr. S.S. Mishra
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objective:** Comprehensive study of all the faunal groups of Tampara Lake.
- » **Outcome:** During this study, 9235 specimens of different fauna were collected. The highest numbers of collections were done in the group of Mollusca which is 4867 in number followed by Fishes (2689 in number). All the collected samples are identified by following the standardized literature. The present reports give an account of 11 species of aquatic insects, 14 species of zooplankton, 4 species of crustaceans, 13 species of molluscs, 21 species of fishes, 19 species of herpetofauna, 102 species of birds and 9 species of mammals.

2

Faunal diversity of Dhamara Estuary, Odisha

- » **Investigators:** Dr. Anil Mohapatra, Dr. Aftab Ahmad, Dr. Basudev Tripathy, Mr. S.S. Mishra & Dr. Prasad Chandra Tudu
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objective:** To study the faunal diversity of Dhamara Estuary, Odisha.
- » **Outcome:** A total of 5662 faunal specimens were collected from the Dhamara Estuarine survey belonging to 18 groups. Except for

Echinodermata group specimens, all groups have been identified. The present study summarizes an identification of 11 species aquatic insects; 1 species of Phthiraptera; 2 species of Ixodida; 2 species of horseshoe crabs; 17 species of crabs; 3 species of prawns; 2 species of stomatopods; 2 species of isopods; 51 species of bivalves (molluscs); 43 species of gastropods (molluscs); 2 species of cephalopods (molluscs); 2 species of sea pen; 11 species of cartilaginous fishes and 135 species of bony estuarine fishes.

3

Faunal diversity of Lakhari Valley Wildlife Sanctuary, Ganjam, Odisha

- » **Investigators:** Dr. Anil Mohapatra, Dr. Aftab Ahmad, Dr. Basudev Tripathy, Mr. S.S. Mishra & Dr. P.G.S. Sethy
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To explore and inventorize the faunal diversity of Lakhari Valley Wildlife Sanctuary, Ganjam, Odisha.
- » **Outcome:** From 3 major surveys and 3 local surveys most of the collections were identified. From the sanctuary, 16 species of mammals, 109 species of birds, 23 species of reptiles, and 17 species of amphibians were documented. Some of the small reptiles and amphibians were identified by collections and the mammals and birds by observation and photography. From the collections, 10 species of collembola, 11 species of Scorpions, 1 species of Amblypygi, 1 species of Uropygi, 6 species of other arachnids, 1 species of crab, 3 species of prawns, 6 species of molluscs, Aquatic insects 6 species, ants 19 species, Mosquitoes 6 species, 42 species of Lepidoptera, 11 species of Odonates, 4 species of grasshoppers and 31 species of fishes were identified.

4

Pictorial Guide on the Brachyuran Crabs of India

- » **Investigators:** Dr. A. Gokul, Dr. K. Valarmathi & Dr. S.K. Pati
- » **Period:** April 2020 to March 2023
- » **Status:** Completed
- » **Objective:** Prepare a pictorial guide on the Brachyuran Crabs of India.
- » **Outcome:** The available photographs were scanned. Visited local landing centres in and around Gopalpur for fresh photos of crabs. Monthly backlog specimens of this centre were identified and included. Manual preparation was initiated with existing photos of brachyuran crabs. Identification: 10 families; 14 genera; 18 species; 448 examples of brachyuran crabs along with 02 families; 04 genera; 09 species; 129 examples of prawns. Brachyuran Crabs: 09 families; 14 genera; 18 species; 363 examples.



Lakhari Landscape

5

Studies on the prevalence of *Wolbachia* in mosquitoes for the development of indigenous eco-friendly management tools for vector-borne diseases in India

- » **Investigators:** Dr. D.S. Suman (PI) & Dr. Vikas Kumar (Co-PI)
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** Studies on the prevalence of *Wolbachia* in mosquitoes for the development of indigenous eco-friendly management tools.
- » **Progress:** 336 specimens belong to 8 species and 3 genera have been registered from the collection of the survey at Koraput, Odisha. In the survey, larvae from aquatic habitats from human residences and field waterbodies were collected, while adult mosquitoes were collected from animal shelters and human premises using light traps and BG sentinel traps. From this collection, 10 samples of 4 species were processed for DNA isolation to identify *Wolbachia* presence. During the survey, 3 species of mosquitoes, namely *Anopheles jeyporensis*, *Anopheles splendidus*, *Anopheles barbirostris* were augmented to NZC which was a significant contribution. DNA isolated for *Wolbachia* bacteria and PCR have been done for the generation of DNA barcodes from 10 mosquito samples.



Anopheles kochi Dönitz, 1901

6

Status survey of Otters from mangrove ecosystems of the East Coast of India

- » **Investigators:** Dr. Anil Mohapatra, Dr. Bausdev Tripathy & Dr. Pratyush P. Mohapatra
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objectives:**
 - i. To document species diversity of Otters in Mangroves on the East Coast,
 - ii. To enumerate the spatiotemporal population structure of different species of Otters in Mangroves of the East Coast,
 - iii. Formulate suitable conservation strategies and management practices for the protection of Otters of mangroves on the East Coast.
- » **Progress:** A survey was conducted at Coringa Wildlife Sanctuary by using 10 numbers of camera traps. The camera traps were deployed at four different locations in the mangrove forest of Coringa Wildlife Sanctuary for seven consecutive days. The camera traps revealed photographic and video records of Otters, Fishing cats and Golden jackals. During the survey of Devi estuary, groups of Otters were directly sighted in the mangrove forest and from the deployed 10 numbers of camera traps there one group of otters with 6 members was captured in the camera trap.

7

Current status of faunal diversity of Bahuda, Devi, Nuanai estuarine, backwaters and mangrove ecosystems of Odisha

- » **Investigators:** Dr. Anil Mohapatra (PI), Dr. A. Gokul & Scientific staff of the centre (Co-PIs)
- » **Period:** April 2022 to March 2025
- » **Status:** Initiated
- » **Objectives:**
 - i. To document the faunal diversity of the three minor estuaries, with the associated backwaters, and mangroves.
 - ii. To carry out the DNA profiling of the confusing fauna of the region.
- » **Progress:** Two major surveys were conducted in Devi and Nuanai Estuaries: a total of 2117 numbers of specimens belonging to different groups have been identified and registered. A total of 5256 numbers of specimens of different groups were collected from the Bahuda estuary through 12 local surveys. A total 52 numbers of DNA sequences have been submitted to NCBI. Two new species of fish and two new records of molluscs have been recorded from the Bahuda estuary.



Camera trap photo of *Lutrogale perspicillata* (I. Geoffroy Saint-Hilaire, 1826)

Taxonomic review of the suborder Pleuronectoidei along the East Coast of India (Phase-I)

» **Investigators:** Dr. Anil Mohapatra & Dr. K.K. Bineesh (Co-PI)

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objectives:**

- i. To access the species diversity of the families under suborder Pleuronectoidei along East Coast of India. 2. Solving complex groups using molecular analysis.

- ii. DNA barcoding of novel species and the species complex if encountered.

» **Progress:** In the first survey at different fish landing centres of Odisha and West Bengal coast, a total of 1451 specimens belonging to different groups were collected, comprising 201 specimens from the Pleuronectidae group. In the second survey at Kakinada Fishing Harbour, Tumbaabhsekh Puram fish landing centre, Coringa Wildlife Sanctuary, Vishakhapatnam fishing harbour and Rushikunad Beach of Andhra Pradesh coast, a total of 1049 specimens belonging to different groups, including 190 specimens of the Pleuronectidae group were collected. A total of 32 species were identified to date and two new species are under the process of description. Also, several state fauna records (4 from West Bengal and 2 from Odisha) were documented.



ARUNACHAL PRADESH REGIONAL CENTRE (APRC), ITANAGAR



Arunachal Pradesh known as the land of 'dawn-lit mountains' is a thinly populated and mountainous tract on the easternmost part of India. The higher areas, especially the peaks of the Great Himalayas remain snow-capped throughout the year. Owing to great altitudinal variation, from less than 100 m to above 5000 m, five biomes are found in the State. Arunachal Pradesh forms a part of Eastern Himalaya global biodiversity hotspot and is also among the 200 globally important ecoregions. The State displays a high degree of endemism and a comparatively higher incidence of rare and threatened taxa. Such unparalleled distinction can be attributed primarily to the unique geophysical positioning of the State in the transition zone between the Palearctic and Oriental biogeographic regions. Being in the ecotone of the two regions, due to the edge effect, the State possesses biotic elements from both regions as well as has its exclusive components and thus represents Indo-Chinese, Indo-Malayan, Indo-Burmese and Indian biotic components. This has earned the State the distinction of being one of the main corridors for the eastern entrant of the Indian sub-region. That is why it is also referred to as an active centre of organic evolution. Recognizing the importance of the State in terms of faunal diversity, the Government of India established the Arunachal Pradesh Regional Centre of the Zoological Survey of India on 31st January 1983, at Itanagar under the Seventh Five Year Plan mainly to augment and explore the knowledge of faunal wealth of Arunachal Pradesh. The Area under Jurisdiction is the entire State of Arunachal Pradesh with an area of 83,743 sq. km. having 13 Wildlife Sanctuaries, one Orchid Sanctuary, two National Parks, three Tiger Reserves, eight Community Reserves and one Biosphere Reserve with a cumulative area

of approximately 12000 sq. km. Holdings of the Centre include 36,596 specimens of which 19818 specimens are named and 16778 are unnamed

1

Faunal inventORIZATION of land snails of Arunachal Pradesh, India

- » **Investigators:** Dr. S.D. Gurumayum, Dr. B. Sinha, Dr. B. Tripathy & Dr. A.K. Mukhopadhyay
- » **Period:** April 2018 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. Faunal inventORIZATION of land snails of Arunachal Pradesh by collection, observations and studies of its systematic and taxonomy.
 - ii. Preservation and maintenance of the collected samples.
 - iii. Digitization of data with photographs of the collected samples to facilitate easy reference of the land snails of the state.
 - iv. To prepare a checklist of land snails of Arunachal Pradesh.
- » **Outcome:** A total of 234 terrestrial land Mollusca belonging to 3 orders, 19 families and 69 genera from 1312 specimens were reported during the present study. Eighteen species of terrestrial mollusca are documented for the first time from the state; 132 species have type locality in the state of Arunachal and 129 species were found out to be endemic to the state (Endemicity > 55%).



Oxytesta oxytes Benson

2

Study of millipedes (Myriapoda: Diplopoda) distribution in Lower Subansiri & Papum Pare district of Arunachal Pradesh

- » **Investigator:** Dr. Temjenmongla
- » **Period:** April 2018 to March 2021
- » **Status:** Completed
- » **Objective:** To study the distribution of millipedes (Myriapoda: Diplopoda) in Lower Subansiri and Papum Pare district, Arunachal Pradesh and description of new species and new records, if any.
- » **Outcome:** The three species, viz., *Asiomorpha coarctata* (De Saussure, 1860) (Temjenmongla & Pegu, 2021), *Arthrosphaera magna* (Attems, 1936) and *Zephronia disparipora* (Attems, 1936) is reported for the first time not only from Arunachal Pradesh but from the North Eastern region of India as well. The study forms the first report of occurrence of millipedes from this remote state of the country.

3

Fauna of Anjaw District, Arunachal Pradesh

- » **Investigators:** Dr. S.D. Gurumayum & Dr. Temjenmongla
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** To document the faunal diversity of the Anjaw District.

- » **Progress:** Three extensive surveys have been undertaken. 74 species of birds were observed from the 1st Survey, 809 examples were collected from the 2nd survey and 3059 examples were collected from the 3rd Survey. Around 3115 examples belonging to 9 faunal groups were sent to various experts at HQ/ RC. Lepidoptera (44), Orthoptera (42), Pisces (32) and Amphibia (15) were identified and registered (Total 133).



Chondracris rosea (De Geer, 1773)

4

Faunal Diversity of Kane and Yordi- Reba Supse Wildlife Sanctuary, Arunachal Pradesh

» **Investigator:** Mrs I. J. Kharkongor

» **Period:** April 2022 to March 2025

» **Status:** Initiated

» **Objective:** To document the faunal diversity of Kane WLS Lower Siang District and Yordi-Reba Subse WLS, West Siang District, Arunachal Pradesh.

» **Progress:** One extensive survey has been undertaken of both Wildlife Sanctuaries. A total of 1399 specimens belonging to 23 groups were collected from the survey. Registrations of the specimens are in progress.



Zhangixalus smaragdinus (Blyth, 1852)

MARINE AQUARIUM & REGIONAL CENTRE (MARC), DIGHA, WEST BENGAL



Marine Aquarium and Regional Centre (MARC) was established on July 1, 1989. The centre has three distinct wings viz. research centre, aquarium and marine museum in addition to facilities for mass education to people. The research wing of the centre started functioning in 1989; however, the aquarium was opened for public since 2003 and the Marine museum with more than five hundred marine species of vertebrates and invertebrates displayed since 2016, and the Sundarban walkthrough diorama, 42 feet long Brydes whale skeleton and Instrumentation museum were displayed since 2017. Area under jurisdiction includes all the coastal states of India covering 7517 kilometres. It was set up with the objectives of conducting education and awareness programmes through the marine aquarium and marine museum which is an integral part of MARC and providing an infrastructure facility for conducting professional training courses on coastal and marine ecosystems. More than 11 training programmes were provided to several students, research scholars, researchers of colleges and universities, forest officials, coastal police, officials of the fishery department, coastal community and State Government Officials of West Bengal. Total holdings of the Centre include 74,813 specimens of which 47,423 specimens of named collection and 27,390 unnamed specimens and 48 Type specimens. This regional centre has completed 22 Annual Research Programmes involving marine faunal exploration in various Protected and non-protected areas of Coringa Wildlife Sanctuary, Andhra Pradesh, Gulf of Mannar, Tamil Nadu, Andaman and Nicobar Islands, Odisha and West Bengal along with studies on diversity, taxonomic, status survey and associated fauna from different ecosystems. The Centre has published 03 books, more than 130 research papers in various reputed journals, 30 book chapters and 13 abstracts published. The Centre was

recognized as a Research Centre for conducting research leading to the Ph.D. degree of the West Bengal State University, Kolkata. More than three lakh visitors including foreigners, journalists, senior officers, college & school staff and students, and research scholars from different reputed intuitions/universities visited the marine aquarium and museum of the Centre.

1

Seaweed and seagrass associated marine faunal diversity along the east coast of India

- » **Investigator:** Dr. S. Balakrishnan
- » **Period:** April 2019 to March 2022
- » **Status:** Completed
- » **Objective:** To inventory and documentation of the marine faunal species diversity and abundance along the east coast of India.
- » **Outcome:** The present investigation summarizes a total of 758 species belonging to 22 species of Sponges, 80 species of Polychaetes, 52 species of Brachyurans Crabs and Shrimps, 302 species of Molluscs, 98 species of Opisthobranchs, 35 species of Echinodermata, 158 species of Fishes, 10 species Reptiles and 1 species of Mammal were documented.



Gulf of Mannar, Tamil Nadu Landscape

2

Survey, detection and identification of bioactive molecules from various marine animals available in West Bengal and Odisha Coast

- » **Investigator:** Dr. Aditya Kapil Valiveti
- » **Period:** April 2019 to March 2022
- » **Status:** Ongoing
- » **Objective:** Survey and documentation of marine faunal species from the intertidal zones along the West Bengal and Odisha coastal belt,
- » **Progress:** Two local survey tour programs were conducted along the coastal zones of West Bengal and Odisha. Collections: 1352 specimen examples comprising molluscs, crustaceans, fish, Brachiopoda and Cnideria were collected during the survey period of which 493 examples were identified. 22 water samples were also collected from different survey locations and analyzed for various water quality parameters during the survey period.



Kasafal landscape

3

Assessment of Landing of By-Catch Fauna in the Digha Shankarpur Fish Landing Center on the East Coast of India

- » **Investigators:** Dr. S. Balakrishnan & Dr. Prasad Chandra Tudu
- » **Period:** April 2020 to March 2023
- » **Status:** Ongoing
- » **Objective:** To inventorize and documentation of the species diversity and abundance of by-catch fauna along the Digha Shankarpur fish landing center, east coast of India,
- » **Progress:** 55 days survey conducted at Digha Mohana & Shankarpur Fish Landing Center, West Bengal. A total of 1457 specimens belonging to various faunal groups were collected of which 348 species were identified.



Urogyrnus asperimus (Bloch & Schneider, 1801)

4

Study of Mangrove Associated Faunal Diversity of Khadibil Mangroves, Subarnarekha Estuary, Odisha

- » **Investigators:** Dr. S. Balakrishnan, Ms. Debashree Dam & Dr. A. Anand Kumar
- » **Period:** April 2020 to March 2023
- » **Status:** Ongoing
- » **Objectives:**
 - i. To assess the mangrove-associated faunal species such as molluscs, fishes, crabs, shrimp, Polychaeta, horseshoe crabs, red crabs, etc.,
 - ii. To access the physicochemical parameters like temperature, pH, salinity, oxygen, carbon dioxide and phosphate from water samples,
 - iii. To assess the effect of tourism by questionnaire survey among fishermen and nearby local people.
- » **Progress:** Two surveys were conducted at Khadibil Mangroves, Subarnarekha Estuary, Odisha. A total of 1689 specimens to various faunal groups were collected. Totally 120 specimens and 12 species belonging to 116 examples of Polychaete (11 spp.) and 04 examples of Fishes (01 sp.) have been identified.



Boleophthalmus boddarti (Pallas, 1770)

Status survey of Windowpane Oyster *Placuna placenta* in India

- » **Investigators:** Dr. Prasad Chandra Tudu, Dr. Basudev Tripathy & Dr. Anil Mahapatra
- » **Period:** April 2021 to March 2024
- » **Status:** Ongoing
- » **Objective:** The main objectives of the present survey are to study the status of Windowpane Oysters *Placuna placenta* along the Indian coast.
- » **Progress:** Two surveys have been conducted along the Western Coast of India, and all the maritime states along the West Coast viz, Gujarat, Maharashtra, Goa, Karnataka, and Kerala including Daman and Diu were covered. The Windowpane Oyster was seen at the Poshitra, Pindara, Beyt Dwarka of Gujarat along Gulf of Kachchh, Murud-Janjira of Maharashtra, Nauxim beach, Bambolin, Sirdao, Baina of Goa, Boithkol (Karwar) of Karnataka and Elathur estuary (Kozhikode) of Kerala. During the survey; a total of 2707 examples of other faunas are collected and out of these 1052 examples were identified and registered.



Landscape for *Placuna placenta* bed.







Externally Funded Projects

Externally funded projects are being funded from 15 agencies to the scientists of both HQ and Regional Centres. These projects dealt with Taxonomy and Biodiversity Documentation, Biosystematics, Management Plans, Population Assessment and Conservation of Threatened animals, Health Assessment and restoration of Coral reefs, Molecular Systematics, Phylogeography, DNA barcoding, Habitat of olive ridley turtle, Human-wildlife conflict management, Aquatic ecology, Pollinators study, Long Term Ecological Observatories, Environmental Impact assessment, Biodiversity corridor-baseline survey, Status, population distribution and habitat modeling, translocation and rehabilitation of Corals, Status and distribution of Avifauna Conservation of Red Panda, Conservation of Nicobar Megapode, Faunal Inventories of Pas, Integrated conservation of sea Turtles, Population estimation of leopard, etc. in different ecoregions of our country.

1

Conservation of Red Panda (*Ailurus fulgens*) in Eastern Himalayas: Evaluating distribution, population status and conservation genetics for long term management and implications in conservation

- » **Funding agency:** DST, INSPIRE Faculty Scheme
- » **Investigator:** Dr. Mukesh Thakur
- » **Period:** April 2021 to March 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To assess the current status, distribution and potential threats of red panda populations in Eastern Himalayas. 2. To investigate population genetic parameters (genetic diversity, extent of inbreeding, effective population size, population genetic structure and gene flow within and between sub-populations) of red panda populations in Eastern Himalayas.
 - ii. To investigate the effects of landscape features, historical climate changes and contemporary human activities on demographic history of red panda population in Eastern Himalayas.
- » **Outcome:** One-month field survey undertaken by the research scholar in Tawang, East & West Kameng and Shi-Yomi districts of Arunachal Pradesh, collected 20 (faecal: 10 and tissue: 10) samples of Red Panda western and central Arunachal Pradesh and sequencing and genotyping of the collected samples were performed. During field surveys, 400 interviews/ questionnaires conducted from Tawang, West Kameng, Kurum-kumey

and Shi-Yomi districts to understand the soci-economic dependency of local on natural resources and identifying threats to red panda (analysis underway). Species distribution modelling for red panda in Arunachal Pradesh was performed to understand habitat suitability of species and Prediction of red panda habitat under various climate change scenario Population genetics analysis with samples collected from Arunachal Pradesh performed with nine microsatellite data

2

Study on impact of the proposed Port on River Mahanadi, Odisha and its construction and operation activities on the sea turtle nesting

- » **Funding agency:** WAPCOS, Ministry of Jalshakti
- » **Investigator:** Dr. Basudev Tripathy
- » **Period:** October 2021 to May 2022
- » **Status:** Completed
- » **Objectives:**
 - i. To document the presence of turtles if any, in the study area.
 - ii. To identify turtle nesting and breeding grounds in the study area, if any.
 - iii. To document the impact on turtles during the construction phase.
 - iv. To document the impact on turtles during the Operation phase
 - v. To suggest mitigation measure to minimize the impacts and safeguarding turtles during construction and operation phases.
 - vi. To preparation of Bio-diversity Management Plan with focus on conservation plan for turtles.
 - vii. To suggest allocation of funds for various management activities proposed for conservation the turtles.

- » **Outcome:** As proposed by ZSI, the project work was initiated from second week of November 2021. Secondary Sources of Information about known migratory breeding / nesting activities of sea turtles at the project location are being collated through secondary sources of information from published and unpublished literature. A field visit was made to the proposed Port area on River Mahanadi, Odisha to investigate construction and operation activities, and based on this an inception report is submitted to the agency. The final technical report has been submitted.

3

Wildlife Management Plan study for the Dharma, Narayana and Bhomman Mines

- » **Funding agency:** JSW Steel Ltd., Bellary
- » **Investigator:** Dr. Basudev Tripathy
- » **Period:** October 2021 to June 2022
- » **Status:** Completed
- » **Objectives:**
 - Formulating a draft wildlife management plan based upon literature studies and information readily available with the Forest Dept. including the working plan, and other authenticated sources.
 - To carry out a detailed study of wildlife in Narayana Mines, Sandury, Bellary, Dharma Mines, Sandur, Bellary, and Bhomman Mines, Chitradurga.
 - To prepare and submit a Conservation Management Plan for scheduled species found if any in and around mines.
 - Capacity building among staff of Environment JSW, Steel Ltd. in monitoring wildlife and implementing conservation management plans.
- » **Outcome:** Secondary sources of information were collated related to wildlife conservation and management pertaining to the Bellary

and Chitradurga area. Preliminary surveys and intensive surveys were conducted for data collections from field including direct sighting of animals, scan sampling and camera trapping of animals. Data on biotic/abiotic parameters were also gathered at different sampling sites/grids for ecological evaluation. Data on floristic surveys were incorporated based upon primary and secondary data by external experts. Standard guidelines on human wildlife conflicts were also included. Conducted camera trap survey for assessment of biodiversity near the mining areas of Vijaya Nagar. Cameras were installed along with animal trails, resting sites, and possible sites.

- » **Significant findings:** Presence of mega carnivores like Leopard and rare species viz. Rusty spotted cat recorded. The final technical report has been submitted.

4

Study on the Aquatic Ecology and Comprehensive study of the Gangetic Dolphin in the river Brahmaputra

- » **Funding agency:** WAPCOS, Ministry of Jalshakti
- » **Investigator:** Dr. Basudev Tripathy
- » **Period:** August 2022-October 2022
- » **Status:** Completed
- » **Objective:** To study the aquatic ecology and comprehensive study of the Gangetic Dolphin in the river Brahmaputra.
- » **Outcome:** Field surveys from 2 September 2022 to 8 September 2022 were conducted in different areas of Assam. Collections from the field are deposited in NERC, Shillong, EBRC, Gopalpur and SRC, Chennai, and are being identified. The final technical report has been submitted.

Taxonomic studies on Pyralidae (Pyraloidea: Lepidoptera) of North East India

- » **Funding Agency:** DST-SERB, Govt. of India, New Delhi
- » **Investigator:** Dr. Navneet Singh
- » **Period:** April 2019 to January 2023
- » **Sanctioned at:** HQ, ZSI-Kolkata
- » **Status:** Completed
- » **Objectives:**
 - i. To collect Pyralid moths through intensive and extensive collection-cum-survey tours to the different/unexplored areas of North East India.
 - ii. To establish permanent plots at different altitudes for long term monitoring of environmental quality through collection of Pyralid moths.
 - iii. To identify the collected species of family Pyralidae and assign them to various taxa according to the latest trends in taxonomy.
 - iv. To study external male and female genital characters and to incorporate these taxonomically important attributes in the revised diagnosis of studied genera and species of family Pyralidae.
 - v. To provide a comprehensive checklist of family Pyralidae from North East India.
- » **Outcome:** Final technical report has been submitted with information on 116 identified species in 42 genera of Pyralidae from North East India. Published 01 monograph (in SCI), 07 research papers (in SCI) and 01 book Chapter (in NAAS) with information on 02 new genera, 12 new species, 06 new records to India, 01 replacement name, 02 new synonymies, 02 new combinations, and Lectotype designation for two species.

Delimiting Species Boundaries in Pest and Vector thrips (Thysanoptera: Thripidae) from India

- » **Funding Agency:** DST-SERB, Govt. of India, New Delhi
- » **Investigator:** Dr. Vikas Kumar
- » **Co-Investigator:** Dr. Kaomud Tyagi
- » **Period:** April 2019 to January 2023
- » **Sanctioned at:** HQ, ZSI-Kolkata
- » **Status:** Completed
- » **Objectives:**
 - i. Exhaustive survey, morphological identification, and morphometric analysis of pest and vector species of thrips (*Frankliniella schultzei*, *Scirtothrips dorsalis*, *Thrips palmi* and *Thrips tabaci*).
 - ii. Identification of cryptic species using multiple molecular markers of different populations of these thrips species.
 - iii. Delineation of species boundaries using multiple species delimitation methods and description of these cryptic species.
- » **Outcome:** One survey (15 days) has been conducted due to COVID restrictions in the proposed area. Approximately 946 species of thrips were collected. The collected specimens of thrips were sorted out and subjected to DNA isolation. After DNA isolation specimens were subjected to slide preparation. Till Now, 20 species of thrips were identified.
- » **Significant finding:** SCI Paper: 11 published. The final technical report has been submitted.

Status and Distribution of Avifauna in important bird Areas (IBAs) of Goa.

- » **Funding agency:** Goa Forest Department
- » **Investigator:** Dr. Basudev Tripathy
- » **Period:** September 2022 to March 2023
- » **Status:** Completed
- » **Objective:** To study the Status and Distribution of Avifauna in important bird Areas (IBAs) of Goa.
- » **Outcome:** Two surveys conducted The final report has been submitted to the sponsoring agency.

- i. Study on diversity and distribution of scorpion fauna of Madhya Pradesh based on field surveys to understand the biogeography with respect to their distribution pattern.
- ii. Documentation of spatial distribution of scorpions in various protected and non-protected areas of Madhya Pradesh.
- iii. To study the biology and behavior of various species of scorpions in the laboratory.
- iv. Study on the ecology of medically important species in terms of human-scorpion conflicts.
- v. To document the traditional knowledge associated with this group in terms of medicinal values, bio-prospective and treatment for scorpion stings.
- » **Progress:** Conducted field visits to various protected & non-protected areas of MP for scorpion survey. 146 examples were collected and field observations were made. Identified 135 examples of scorpions belonging to 16 species under 09 genera and 03 families.

Diversity of Scorpions (Arachnida: Scorpionida) in Madhya Pradesh with studies on ecology, biology and associated traditional knowledge about medically important species

- » **Funding Agency:** Madhya Pradesh State Biodiversity Board, Bhopal
- » **Investigator:** Dr. Pratyush P. Mohapatra
- » **Period:** December 2020 to January 2023
- » **Sanctioned at:** CZRC, ZSI-Jabalpur
- » **Status:** Ongoing
- » **Objectives:**

Health Assessment of Indian Corals and Coral Reefs

- » **Funding Agency:** Space Application Centre, Ahmedabad, Gujarat
- » **Investigator:** Dr. Rajkumar Rajan
- » **Period:** February 2019 to March 2023
- » **Sanctioned at:** MBRC, ZSI-Chennai
- » **Status:** Ongoing
- » **Objectives:**
 - i. Extending support for the assessment of Coral health indicators in different reef regions of India.
 - ii. Identification of change hotspots in India.
 - iii. Ground truth and field support at Malvan and Lakshadweep.
- » **Progress:** The reef areas in Kalubhar, Narara, Mogu and Pasu reefs were assessed for benthic community structure, coral cover and abundance, prevalence of disease and

non-disease health factors. Sixteen coral genera were observed, in which *Goniopora* sp., and *Porites* sp. were observed as dominant. A total of four coral disease factors such as yellow band disease, focal bleaching, white syndrome and trematodiasis, and eight non-diseases factors namely, ascidian overgrowth, CCA overgrowth, sponge overgrowth, worm infestation, algal overgrowth, fish predation, invertebrate gall and zooanthids overgrowth were observed. Coral bleaching intensity was surveyed rapidly in the month of June 2022 to August 2022 at Narara reef. The data showed *Porites* spp. were the first to be affected due to elevated temperature, followed by *Dipastrea* spp. Water quality parameters were analyzed through the hydrolab in Sachana, Sikka, Narara and Rozi Port areas in the Gulf of Kachchh at monthly intervals. Sea surface temperature (SST) is recorded daily using the NOAA satellite communications service. A survey tour was undertaken from 05 to 11 March 2023 to Gulf of Mannar Biosphere Reserve. Corals affected with diseases and other health compromisers (fish predation, sediment stress, algal abrasion, etc.,) were identified in-situ for the SAC team, who took spectral data for further analyses.

- i. To study the Migration and Inter Rookery Movement of Olive Ridley Turtles within and outside the Odisha coast in Bay of Bengal.
 - ii. To understand the breeding biology of Olive Ridley Turtles along Odisha coast.
 - iii. To study the offshore and onshore abundance and spatial distribution of Olive Ridley Turtles sea turtles.
 - iv. To study the various environmental factors responsible for Olive Ridley sea turtle breeding along Odisha coast.
5. To suggest suitable conservation and management strategies for Olive Ridley sea turtle population of Bay of Bengal, India.

» **Progress:** Studied the activities of the turtle by tagging and observed their nest and their behaviour. The PI made a survey tour to Andhra Pradesh and Odisha for monitoring of nesting population along the coast. Tagging of Olive Ridley Turtles continuing at Rushikulya and more than 1500 turtles were tagged during sporadic and arribadanesting. Mass nesting census and tag recapture undertaken by the researchers in the field.

10

Interesting movement and habitat use of olive ridley sea turtles (*Lepidochelys olivacea*) along Odisha coast, India

- » **Funding Agency:** DST (Core Research), Govt. of India, New Delhi
- » **Investigator:** Dr. Basudev Tripathy
- » **Period :** March 2020 to May 2023
- » **Sanctioned at:** HQ, ZSI-Kolkata
- » **Status:** Ongoing
- » **Objectives:**

11

Phylogeography and colonization history of Indian Rhesus macaques (*Macaca mulatta*)

- » **Funding Agency:** DST-SERB, Govt. of India, New Delhi
- » **Investigator:** Dr. Ranjana Bhaskar
- » **Period:** April 2020 to May 2023
- » **Sanctioned at:** SRC, ZSI- Chennai
- » **Status:** Ongoing
- » **Objectives:**
 - i. Distribution and current demography of Indian rhesus macaques.
 - ii. Colonization history of Indian rhesus macaques using molecular markers.

- iii. Estimation of gene flow and population structure of Indian rhesus macaque.
- iv. To resolve the morphological ambiguity of Rhesus and Bonnet macaques with respect to possible hybrid individuals in the Southern peninsular region.

» **Progress:** Total four field surveys have been conducted in the state of Madhya Pradesh, Odisha, Shimla and Assam. Samples were collected from distribution range of the selected species covering 13 districts. Total 535 faecal samples of rhesus macaque were collected. DNA was isolated from faecal samples and sequenced, for the COI, Cytb and Control region. Total 266 sequences submitted in NCBI. Data analysis and manuscript is under preparation.

conserved to prevent extinctions of rare Himalayan bumblebees.

- ii. To strengthen the network of expertise available for bumblebee conservation in the Himalaya, so that conservation assessments can be kept current and so that expertise can be targeted to address the highest priorities for conservation.
- iii. To documentation of Indigenous mountain pollinator's viz., bumblebees, mining bees and leafcutter bees (Apoidea) to confirm how their diversity changes along the great expanse of the Indian Himalaya.
- iv. To describe their distribution as stratified by elevation, by region, and by habitat.
- v. To extend an active outreach programme to local farmers for education on the role and value of these pollinators in the farmers' lives.

» **Progress:** Conducted three surveys of 117 days duration by two survey parties in 03 districts of Arunachal Pradesh, 02 districts in Uttarakhand 02 districts in Himachal Pradesh 05 districts of Jammu & Kashmir, and 02 districts of Ladakh, from 10th May to 13th June ,2022; 22nd June – 31st July, 2022 and 5th August-18th September,2022 by exploring various habitat, localities. Total 4293 specimens of Himalayan bumblebees including other pollinating bees (Hymenoptera: Apoidea) were collected at different elevations ranging from 900 m to 4850 m AMSL. 29 species of Himalayan Bumblebees by examining 4171 examples. Distributional maps of the identified species of the region have been updated. Database of Himalayan bumblebees (identified/ unidentified) has been prepared in the database register. Twelve Outreach/Awareness activities were carried out.

12

Documentation, conservation and utilization of indigenous mountain pollinators- with special reference to Himalayan Bumble Bees

» **Funding Agency:** NMHS, Ministry of Environment and Climate Change, Govt. of India

» **Investigator:** Dr. R.H. Raina and Dr. Devanshu Gupta

» **Period:** July 2020 to June 2023

» **Sanctioned at:** DRC, ZSI-Jodhpur

» **Status:** Ongoing

» **Objectives:**

- i. To identify that priority geographic areas and habitats that most need to be

13

A pilot project on biodiversity corridor-baseline survey and feasibility assessment under project for Improvement of Himachal Pradesh Forest Ecosystems Management & Livelihoods (PIHPFEM&L)

- » **Funding Agency:** Himachal Pradesh Forest Department, Govt. of Himachal Pradesh
- » **Investigator:** Dr. Lalit Kumar Sharma
- » **Co-Investigators:** Dr. Mukesh Thakur, Dr. G. Maheswaran and Dr. Basudev Tripathy
- » **Period:** August 2020 to August 2023
- » **Sanctioned at:** HQ, ZSI-Kolkata
- » **Status:** Ongoing
- » **Objectives:**
 - i. To identify potential areas for Biodiversity/ecological corridor designation on the basis of primary surveys and secondary literature reviews.
 - ii. To assess the biodiversity (Flora and Fauna) and prepare a bio-physical inventory along with identification of focal/target faunal species.
 - iii. GIS mapping and delineation of the potential corridor network of protected areas with potential corridor designation.
 - iv. To access the current status of livelihood of the local community, biodiversity conservation and human-wildlife conflict for the potential areas for biodiversity/ecological corridor.
 - v. To access the impact of biodiversity corridor designation of the potential areas on the livelihood of local communities

along with probable option for same, biodiversity conservation and human-wildlife conflict mitigation. 6. To develop a comprehensive strategy and action plan for the implementation of a biodiversity corridor project for effective biodiversity conservation.

- » **Progress:** During the reporting period field surveys were conducted in all eight Protected Areas of Kullu district, Chamba districts of Himachal Pradesh to understand the biological corridors. Fine-scale biological corridors have been mapped in the landscape and regions have been identified for conservation and management. Further surveys were also conducted to understand the impacts of identified corridors on the livelihood of local communities and developed a conservation and management plan for the identified biological corridors.
- » **Significant findings:** Biological corridors have been identified in the Great Himalayan landscape of Kullu and Chamba district for conservation and planning.

14

Status, population distribution and habitat modelling of *Nicobar Megapode Megapodius nicobariensis* Blyth, 1846: an impact assessment after fifteen years of the Tsunami 2004

- » **Funding Agency:** DST-SERB, Govt. of India, New Delhi
- » **Investigator:** Dr. C. Sivaperuman
- » **Period:** December 2022 to November 2023
- » **Sanctioned at:** ANRC, ZSI-Andaman and Nicobar

- » **Status:** Ongoing
- » **Objectives:**
- Assess and monitor the population of present status and distribution of Nicobar Megapode by establishing permanent monitoring plots,
 - Identify the breeding density trends in the light of management practices and environmental variables,
 - Study the habitat relationship of megapode during nesting & breeding season,
 - DNA barcoding a unique avifauna of Nicobar Megapode in order to assess the evolution, systematics and conservation,
 - Prepare conservation action plan and monitoring program which are most beneficial to Nicobar.
- » **Progress:** Total of 119 transects and 222.8 km were travelled to assess the population of Nicobar Megapode. 240 days were spent in the field in different parts of the Nicobar group. A total of 160 active mount were recorded and about 132 megapode was detected during the transect and playback surveys. The *Megapodius nicobariensis* was recorded in all seven islands of Nancowry group of islands (Nancowry Island, Katchal, Kamorta, Tillanchang, Trinket, Teressa and Bompoka islands). *Megapodius nicobariensis abbotti* occurs on all of the southern group of islands (Great Nicobar Island, Little Nicobar, Menchal, Kondul Meroe and Treis Island) it was estimated that 97 active mounds.

- » **Period:** February 2019 to December 2023
- » **Sanctioned at:** MBRC, ZSI-Chennai
- » **Status:** Ongoing
- » **Objectives:**
- To monitor and maintain the deployed biorocks at Mithapur and Arambhada coast of GoK Marine National Park & Sanctuary area.
 - To conduct biodiversity assemblage studies at the biorock deployed sites.
 - To identify the most resistant as well as sediment-adopted coral species of the area, which can be suitable for coral restoration in other reef regions of India.
- » **Progress:** During the period under the report, continuous monitoring of transplanted coral colonies on biorock reefs, seasonal variations, and health assessments around the offshore sites of Mithapur and Arambhada were undertaken. The project staff regularly visited the Mithapur and Arambhada Biorock sites. Algal overgrowth and sediment deposition were controlled by regularly cleaning the biorock frames and transplanted corals. The translocated corals were assessed for growth, survival, and recruitment of associated fauna. The water quality parameters were collected using an Aqua troll 500 multiple water quality parameter kit. The damaged float and solar panels were replaced and the power supply was restored to the biorock structures. A new buoy was installed at the Mithapur biorock site.



Bio-rock initial stages

15

Restoration of reefs using Electricity– A suitable technology to enhance and conserve Gulf of Kachchh reef

- » **Funding Agency:** Marine National Park Conservation Society, (MNPCS), Gujarat Forest Department, Jamnagar
- » **Investigator:** Dr. Rajkumar Rajan

Barcoding free-living protozoan ciliates from the conserved aquatic ecosystems of Himachal Pradesh

» **Funding agency:** DST-SERB, Govt. of India, New Delhi

» **Investigator:** Dr. Santosh Kumar

» **Period:** January 2020 to December 2023

» **Sanctioned at:** HQ, ZSI-Kolkata

» **Status:** Ongoing

» **Objectives:**

- i. To document free-living ciliates diversity from the conserved aquatic ecosystems (wetlands and lakes); description of species new to science/new to Indian fauna/poorly known based on morphology and molecular analyses.
- ii. To generate DNA barcodes (ribosome and mitochondrial genes) and perform molecular analyses of ciliates identified from the proposed area.
- iii. To evaluate the water quality of proposed aquatic ecosystems based on ciliate community structure.

» **Progress:** 17 species with 275 examples were identified and registered during the year. Of these, three species were identified as new records of Indian fauna. Soil samples are now being processed for the presence of ciliated protists. Also submitted 11 DNA barcodes in the NCBI database for seven species from Himachal Pradesh during the year. Two manuscripts were published during the year describing ciliates identified under the program: One in the European Journal of Protistology describing a poorly known species from Himachal Pradesh based on morphology and molecular sequences another in Subterranean Biology providing a comparison of the Himachal Pradesh ciliates with cave-dwelling counterparts.

» **Significant findings:** The articles published in the European Journal of Protistology describe a poorly known species based on details on the morphology and molecular phylogeny (18S rRNA gene). Further, in comparison with wetland ciliates with cave population, some adaptations were reported, such as frequent reorganization in *Euplotes* species, light sensitivity of *Urocentrum turbo*, and Voracious feeding in *Coleps* sp., all these were published in Subterranean Biology- a society journal.

GIZ-NERAQ Project Inventory of aquatic species and identification of biodiversity hotspots in the North Eastern Region of India

» **Funding agency:** GIZ, India

» **Investigators:** Dr. C. Raghunathan, Dr. Lalit Kumar Sharma, Dr. L.K. Singh, Dr. B. Tripathi, & Dr. Jasmine P.

» **Period:** January 2022 to December 2023

» **Status:** Ongoing

» **Objectives:**

- i. Red list assessment of conservation priority fish species of the region.
- ii. Development of a knowledge network and communication strategies for dissemination of knowledge products & policy inputs for SAPCCs for sustainable management of aquatic resources in the region.
- iii. Assessing the fish and invertebrate resources in the study landscape.
- iv. Identification and assessment of impacts of existing and future anticipated

anthropogenic risk, including the consequences of climate change on selected aquatic ecosystems.

- v. Development of awareness and training modules for capacity building for building climate resilience.

» **Progress:** Under this programme, a total of 22 species of Testate amoebae belonging to 7 genera with 94 examples were identified from the freshwater resources of North east, mainly from Deeporbeel, Chandubi river and Singra river. All the slides are registered in the general collection of protozoology, Pt. 5430 to 5433, Pt. 5517 to 5527, and Pt. 5534 to 5542. In addition to that the Productivity characteristics of freshwater systems were also analysed. Chlorophyll content indicates the physiological status of the phytoplankton community and the primary production of water. The Chl-a concentration ranged from 2.3-25 µg/L in the freshwater ecosystems of Meghalaya and from 4.5-38 µg/L in Assam. The nutrient characteristics of freshwater systems showed that In Meghalaya, Nitrite concentration ranged from 0.001 - 1.570 µg/ml, Silicate was recorded between 2.869 - 9.248 µg/ml, Phosphate varied from 0.242 - 0.706 µg/ml and Ammonia ranged from 1.012 - 3.872 µg/ml. In Assam: Nitrite ranged between 0.176- 2.737 µg/ml; Silicate ranged between 1.724 - 12.37 µg/ml; Phosphate ranged from 0.244 - 4.285 µg/ml and Ammonia ranged from 0.09 - 29.4 µg/ml. In Assam, water samples were rich in ammonia, nitrite and phosphate while Meghalaya water samples had a higher concentration of silicate. The abundance of Rotifera and Cladocera did not show much variation with changes in nutrient concentration but Copepoda abundance had a slight affinity towards higher ammonia, nitrite and phosphate concentration.

18

Parasitic wasps of the Families Encyrtidae and Mymaridae (Hymenoptera: Chalcidoidea) and their utilization in management of sucking insect pests on agricultural and horticultural crops of NorthEast India

» **Funding Agency:** DST-SERB, Govt. of India, New Delhi

» **Investigator:** Dr. A. Ramesh kumar

» **Co-Investigator:** Dr. S.I. Kazmi

» **Period:** January 2021 to December 2023

» **Sanctioned at:** HQ, ZSI-Kolkata

» **Status:** Ongoing

» **Objectives:**

- i. To assess the diversity of Encyrtidae and Mymaridae among unexplored northeastern states of India.
- ii. To provide detailed descriptions and illustrations of new/undescribed taxa along with new distributional data for known species.
- iii. To identify endemic and threatened species of Encyrtidae and Mymaridae in Northeast India.
- iv. To prepare baseline data of encyrtids and mymarids with host information for Northeast India.
- v. To generate distributional maps for species of mymarids and encyrtids.
- vi. To identify the plant-pest-parasitoid complexes from said states and to work out implementation possibilities for the management of sucking pests.

- » **Progress:** Two major surveys have been conducted in Manipur, Nagaland, Mizoram and Tripura from October 2022 to January 2023. Sorted the hymenopteran parasitoids from survey materials. 180 examples belonging to Encyrtidae and Mymaridae were identified, registered and digitized.
- » **Significant findings:** One research paper has been published:

- suitable compensatory mechanisms (where needed), exploring options for alternative livelihoods and improving attitudes towards conservation.
- iii. Developing Standard Operating Procedures (SOPs) for action related to wildlife attacks.
- iv Training needs assessment of the stakeholders for effective mitigation of Human-wildlife Conflicts.

- » **Progress:** During the reporting period assessment of human-wildlife conflict was carried out in all JICA project districts of Himachal Pradesh. A report on nature and extent of human wildlife conflict with respect to four study species along with range level conflict mitigation strategies was provided to forest department as well as to the JICA project for implementation. We have developed forest management level human-wildlife conflict mitigation strategy using the primary data collected using the questionnaire surveys. Further, a Geo-spatial conflict hotspot have also been mapped for the all the JICA project districts for all four species.
- » **Significant findings:** A report on current status and magnitude of human-wildlife conflicts in the JICA landscape was developed. A human-wildlife conflict mitigation strategy was developed for mitigating of conflicts in JICA landscape of Himachal Pradesh.

19

Species/area specific human-wildlife conflict management baseline survey and development of a comprehensive strategy for its mitigation in selected districts of Himachal Pradesh

- » **Funding Agency:** Himachal Pradesh Forest Department, Govt. of Himachal Pradesh
- » **Investigator:** Dr. Lalit Kumar Sharma
- » Co-Investigators: Dr. Mukesh Thakur, Dr. G. Maeshwaran, Dr. Basudev Tripathy
- » **Period:** August 2020 to December 2023
- » **Sanctioned at:** HQ, ZSI-Kolkata
- » **Status:** Ongoing
- » **Objectives:**
 - i. Assess the nature and extent of human-wildlife conflicts in terms of species/ area/season/pattern, etc. in the project landscapes mainly focused on 4 species i.e common leopard, black bear, monkey and wild boar.
 - ii. Designing a comprehensive conflict management strategy with species-specific guidelines. This includes preventing or reducing losses, providing

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Population estimation and assessment of Human-Wildlife conflicts for conservation and management planning of Common Leopard and Asiatic black bear in Himachal Pradesh

- » **Funding source:** Himachal Pradesh Forest Department, Govt. of Himachal Pradesh
- » **Investigator:** Dr. Lalit Kumar Sharma

» **Co-PI:** Dr. Mukesh Thakur, Dr. G. Maeshwaran and Dr. Basudev Tripathy

» **Period:** December 2020 to January 2024

» **Status:** Ongoing

» **Objectives:**

- i. Assess the nature and extent of human-wildlife conflicts in the entire state of HP with respect to Leopard and black bear and design a comprehensive conflict management strategy with species-specific guidelines.
- ii. Population estimation of black bears and leopards in the entire state of Himachal Pradesh for conservation and management planning.

» **Progress:** Field surveys were conducted in five districts of the state. During the period seven training were organized for the field staff to monitor wildlife species. Further, state-level data occupancy surveys were carried out to document both the species with the help and support of the HP Forest Department. About 2000 non-invasive samples of black bears and leopards were collected for genetic analysis.

» **Significant findings:** State-level habitat modelling as well as cite occupancy of black bear and common leopard was analyzed.

» **Status:** Ongoing

» **Objectives:**

- i. To study the Spatio-temporal variation of gelatinous zooplankton diversity in the northern Bay of Bengal.
- ii. To identify invasive gelatinous zooplankton species and study the survival and trophic ecology of selected invasive species.
- iii. To conduct a molecular analysis of selected species exhibiting invasiveness or regionalization.
- iv. To examine the impact of gelatinous zooplankton blooms or their impact on fishery harvest.
- v. To study the planktonic community structure and the role of hydrographic processes in creating a suitable environment for gelatinous zooplankton blooms.
- vi. To develop a database of gelatinous zooplankton species, including invasive species, present in the northern Bay of Bengal.

» **Progress:** The results of the programme have been published as three research articles in various SCI journals and three are under review. The meso and microzooplankton samples collected from the summer 2021 and winter 2022 survey from the coastal waters of the northern Bay of Bengal is completely sorted. The data analysis of gelatinous zooplankton samples from all the surveys resulted in taxonomic groups representing Chaetognaths, Appendicularians, Doliolids, Salps, Ctenophore, Hydrozoans and large Scyphozoans. Hydrozoans, Scyphozoans and Chaetognaths were completely identified to species level and the affect of environmental parameters on their abundance and distribution was analyzed.

21

Seasonal diversity and distribution of gelatinous zooplankton and its ecological and economic implications in the marine ecosystem of northern Bay of Bengal

» **Funding agency:** DST -SERB, Govt. of India, New Delhi

» **Investigator:** Dr. Jasmine P.

» **Period:** April 2021 to March 2024

Impact of climate change on the emergence of stress-tolerant *Symbodinium* clade and altered microbiome in reef-building coral species

» **Funding agency:** DBT, Govt. of India

» **Investigator:** Dr. C. Sivaperuaman

» **Period:** July 2021 – June 2024

» **Status:** Ongoing

» **Objectives:**

- i. To monitor the healthy/ diseased coral reefs of the Andaman and Nicobar Islands.
 - ii. To evaluate the types of coral disease.
 - iii. Quantitative assessment of coral diseases.
 - iv. To investigate the environmental drivers of disease.
 - v. To identify the pathogens that cause coral diseases.
 - vi. To understand the coral's ability to resist disease.
- » **Progress:** Field surveys have been carried out for marine faunal diversity and coral health issue survey conducted in the Nancowery group of Islands for 51 days; South Andaman for 60 days; Great Nicobar for 40 days; Line Intercept Transect Method (LIT) was used to conduct, survey and assess the Coral Diversity. Live coral cover was 43.18% in the Nancowery group of islands, followed by South Andaman (39.17%) and Great Nicobar 22.38% respectively. Rubbles were the dominant benthic category with 28.51% followed by Dead coral with 15.73%. Soft corals were also found with 9.24%, 9.29 and 7.88 in South Andaman, Great Nicobar and Nancowery group of islands respectively. Others were recorded with 9.34%. Algae were found

7.75% respectively. According to the present study, the South Andaman, Great Nicobar and Nancowery group of Islands are rich in coral cover and density. All forms of coral growth like branching, massive, Submissive, Table, Corymbose and foliose were present Dominant Coral Genus in Both study Sites is *Porites* sp., *Acropora* sp., *Favia* sp. and *Pocillopora* sp. The benthic structure was rich in different categories like soft corals, Echinoderms, Molluscs, Bivalves, Nudibranchs, Hydrozoan, Porifera, Polychaetes and Sea urchins.

Conservation and Management of coral reefs in Lakshadweep - Long-term monitoring programme

» **Funding Agency:** Department of Environment and Forest Administration of the UT of Lakshadweep.

» **Investigator:** Rajkumar Rajan

» **Period:** April 2015 to March 2025

» **Sanctioned at:** MBRC, ZSI-Chennai

» **Status:** Ongoing

» **Objectives:**

- i. To understand the level of impact of climate change on the reef ecosystem.
- ii. To assess the impact of persistent stressors.
- iii. To understand the recovery and resilient adaptations of reefs.
- iv. To understand the connectivity within and between reefs and associated habitats.
- v. To make an assessment of resources, utilisation needs and conservation.
- vi. To investigate the feasibility of improving functional capacity through restoration measures.

» **Progress:** Two surveys were undertaken, from 16 November to 12 December 2023 and 12 to 22 February 2023, to cover sites in Kavaratti, Kiltan, Kadmat, Agatti, Valiapani, Cheriapani and Bitra reefs. Monitoring data on coral health, and fish diversity, population and assemblages were collected from four-five sites on each reef at 5, 10, 15 and 20m depths. The data were recorded through LIT-assisted photoquadrat for coral health, belt transects for fishes, time-lapse video recordings to record fish assemblages, and chain and tape measure to measure reef rugosity. Permanent transects were laid on all the reef sites and at each depth. 4 fish specimens were collected and tissue samples from these are processed for DNA analyses. Data extraction from the fish video transects was completed for all the reef sites. Data extraction from the coral photo quadrats of the surveys in Oct-Nov 2022 is completed for Kavaratti Island.

» **Significant findings:** Cluster analysis of the fish diversity data, at depths of 5m, 10m, 15m, and 20m of over two consecutive years, 2021 and 2022, revealed that the fish diversity at 5m depth formed a distinct cluster, indicating that the fish community at this depth differs from those at other depths, which is consistent over the different sites, and over two consecutive years. Frequency of Occurrence (FO) and Total Abundance (TA) of the fish species (# 168) recorded showed the family Labridae was found to be the most diverse with 34 species representing 4.9% of the total fish diversity observed. Among the Labridae *Halichoeres hortulanus*, *Labroides dimidiatus* and *Gomphosus caeruleus* were the most observed, with *H. hortulanus* topping the count. 15 species of reef fish have been reported new from the diversity studies. The manuscript concerning this is accepted for publication in the Journal of Marine Biology Association UK.



Reefscape in Kavaratti atoll

24

Long Term Ecological Observatories (LTEO) Arthropod Project

» **Funding Agency:** Ministry of Environment, Forest and Climate Change, Govt. of India

» **Coordinator:** Dr. K. A. Subramanian

» **Investigators:** Dr. P.M. Sureshan, Dr. Girish Kumar, Dr. Jafer Palot & Dr. Sameer Kumar Pati

» **Period:** April 2020 to March 2025

» **Sanctioned at:** SRC, ZSI-Chennai

» **Status:** No funding was received for 2022-23.

» **Objectives:**

- i. Analyze the diversity and distribution (spatial and temporal) of selected arthropods across environmental gradients, habitats, and ecosystems in the LTEO sites,

25

Molecular taxonomy, distribution, and species diversity of fishes of the order Gobiiformes from Indian waters

- » **Funding agency:** DST-SERB, Govt. of India, New Delhi
- » **Investigators:** Dr. Bineesh. K. K (PI) & Dr. Anil Mohapatra (Co-PI)
- » **Period:** April 2022 to March 2025
- » **Status:** Ongoing
- » **Objectives:**
 - i. To do the taxonomy, species diversity and distribution of order Gobiiformes from Indian waters,
 - ii. Generate mitochondrial COI sequence signatures of the fishes from the order Gobiiformes.
- » **Progress:** Three surveys were undertaken in Kerala, Tamil Nadu and Andhra Pradesh. Twenty thousand and seventy-one examples of Gobiiformes were collected. A total of 138 specimens belonging to 29 species of gobiids were identified. A sampling of gillnet bycatch off Chennai resulted in the discovery of Scaly-nape tentacle goby, *Oxyurichthys auchenolepis* Bleeker, 1876, a new record for the east coast of India. Major genera identified are *Glossogobius*, *Auloperia*, *Psammogobius*, *Butis*, *Arcygobius*, *Istigobius*, *Obliquogobius*, *Oxyurichthys*, *Trypauchen*, *Teanoides*. Species under the genera *Glossogobius*,

Butis, *Teanoides*, *Psammogobius* and *Oxyurichthys* are predominant among collected specimens. A deep water gobioid fish species of *Vanderhorista* collected from the west coast of India is confirmed as new species. *Oxyurichthys tentacularis* is one of the high-in-demand fish in Ashtamudi Lake of Kollam, known by its vernacular name “Koozhali” which contributes economic importance and sustenance fishery to the people of rural areas of the lake. Tissue samples were preserved in ethanol and DNA was extracted for molecular sequence generation. Otoliths from identified gobiids were extracted and preserved for otolith imaging and morphometry. Photography and preparation for the pictorial guide of Indian gobiids is in progress.



Acanthurus lineatus (Linnaeus, 1758)

26

Translocation and Rehabilitation of True Corals from the Demarcated Route, Proposed for laying Oil Pipeline by IOCL at Narara, Gujarat

- » **Funding agency:** Indian Oil Corporation Limited, Vadinar
- » **Investigator:** Dr. Rajkumar Rajan
- » **Period:** 16th July 2021 to 15th June 2026
- » **Status:** Ongoing

» **Objectives:**

- i. Shifting coral colonies on both inter-tidal and sub-tidal areas along both the proposed demarcated pipeline routes of Narara by means of scientific methods and precautions & procedures.
- ii. To identify suitable recipient sites in the intertidal and sub-tidal areas for fixing the shifted coral colonies.
- iii. To attach the translocated corals in the selected recipient sites with similar conditions to that of the excavated site, using scientific procedures in vogue.
- iv. To carry out intensive monitoring post-translocation for about five years until the translocated corals are well settled.
- v. Capacity building of the staff to continue monitoring and sustain the objectives.

» **Progress:** The translocation of coral colonies, totaling 15000 (9010 from the Intertidal region and 6640 from the sub-tidal region) from the proposed demarcated pipeline route to the recipient sites was completed. The monitoring activities (post-coral translocation) in the recipient sites were continued. The maintenance measures included the removal of fouler and encrusting algae from the coral frames. The frames were also shifted to newer sites to avoid desiccation, severe clogging by fleshy algae, and acute sedimentation. The data on coral growth, survival, diseases, and

health compromisers were gathered. To assess the threats, the team observed plankton density and diversity, water quality, and sedimentation rate at the recipient and donor sites. The team also studied the coral health enhancers, such as coral and fish recruitment and succession of coral-associated fauna. The data will be further analysed to predict adverse conditions, enhance coral health at the recipient sites and suggest suitable management options.

» **Significant findings:** The translocated corals maintained optimal growth rates exhibiting adaptation or tolerance to existing perennial stressors like sedimentation, exposure during extreme low tides, extreme temperature, and high turbidity. The present status of corals at the recipient sites was 79.92% live, 12.74% bleached, and 7.34% dead.



Routine maintenance - fouling algae removal

At a Glance: Scientific Programmes 2022-23

Programmes	Completed	Ongoing	Initiated/ New	Total
Headquarters	18	15	17	50
Regional Centres	49	20	32	101
Externally Funded	7	19	0	26
Total	74	54	49	177





Surveys

Field Survey Division manages the overall surveys carried out by the different scientific divisions of Headquarters as well as Regional Centers. A total of 119 surveys were conducted by the scientists of Headquarters and Regional Centres during 2022-23.

Details of Surveys conducted during the year 2022-23

Details of Surveys	Head Quarters	Regional Centre
Ecosystems	-	-
Coastal	-	-
Island ecosystem	-	-
Estuarine ecosystem	-	4
Mangrove ecosystem	-	-
Fresh water ecosystem	-	4
Himalayan ecosystem	-	2
Semi arid/ Desert ecosystem	-	-
Grassland ecosystem	-	-
Agro ecosystem	2	3
Deccan Peninsula	4	-
Eastern Ghats ecosystem	-	-
Marine ecosystem	2	4
High Altitude ecosystem	-	-
Western Ghats ecosystem	-	-
Forest & Coastal ecosystem	1	-
Forest ecosystem	3	-
Protected Areas	6	34
State/Union Territories Surveys	-	3
Status Survey of Endangered Species	3	11
Taxonomic Studies	16	8
Ecology & Behavioural Studies	4	1
Study Tour	-	-
Other Studies	2	1
Local (Ecology & Behavioural Studies)	1	-
Total	44	75
Grand Total	119	

Faunal Identifications during 2022-23





New Discoveries

- » Scientists of ZSI are describing new species at the rate of 125 to 135 per year.
ZSI is publishing every year the compiled information on the published new species and new records from India in the Book "Animal Discoveries of India - New species and New Records".
- » 5503 new species have been described by the scientists of ZSI since its inception.
- » This year 220 new discoveries have been added to the Indian fauna which included 111 new species and 109 new records to India.

NEW DISCOVERIES

During the year 2022, a total of 220 new discoveries have been published by the scientists of ZSI, of which 111 are new species whereas 109 are new record to Indian fauna. The new species described belong to 3 species of Mammal, 5 species of Amphibia, 10 species of Pisces, 1 species of Mollusca, 19 species of Lepidoptera, 3 species of Coleoptera, 21 species of Hymenoptera, 2 species of Hemiptera, 2 species of Thysanoptera, 1 species of Psocoptera, 1 species of Mantodea, 3 species of Blattodea, 1 species of Odonata, 16 species of Ephemeroptera, 2 species of Collembola, 3 species of Zygentoma, 8 species of Crustacea, 6 species of Arachnida and 4 species of Annelida.

The new record to Indian fauna comprises: 1 species of Mammal, 1 species of Reptilia, 1 species of Amphibia, 4 species of Pisces, 3 species of Ascidiacea, 9 species of Mollusca, 38 species of Lepidoptera, 5 species of Coleoptera, 15 species of Hymenoptera, 6 species of Thysanoptera, 2 species of Ephemeroptera, 9 species of Crustacea, 1 species of Arachnida, 3 species of Platyhelminthes, 6 species of Cnidaria and 5 species of Chromista.

Details of the New Discoveries by the scientists of ZSI and other institutes //Colleges is published yearly in the Book “Animal Discoveries” and is available on ZSI website (zsi.gov.in).

List of the new species described by ZSI during 2022

MAMMALIA

- 1. *Glischropus meghalayanus* Saikia, Ruedi & Csorba
- 2. *Miniopterus phillipsi* Kusuminda *et al*
- 3. *Macaca selai* Ghosh, Thakur, Singh, Dutta, Sharma, Chandra & Banerjee

AMPHIBIA

- 4. *Euphlyctis jaladhara* Dinesh, Channakeshavamurthy, Deepek, Shabnam, Ghosh & Deuti
- 5. *Microhyla nakkavaram* Garg, Sivaperuman, Gokulakrishnan, Chandramouli & Biju
- 6. *Amolops chanakya* Saikia, Laskar, Dinesh, Shabnam & Sinha
- 7. *Amolops tawang* Saikia, Laskar, Dinesh, Shabnam & Sinha
- 8. *Amolops terraorchis* Saikia, Sinha, Laskar, Shabnam & Dinesh

PISCES

- 9. *Ariosoma bengalense* Ray, Acharya, Khatua, Roy, Mohapatra & Mishra
- 10. *Ariosoma indicum* Kodeeswaran, Kathirvelpandian, Acharya, Mohanty, Mohapatra, Kumar & Lal
- 11. *Rhynchoconger smithi* Mohapatra, Ching-Ho, Acharya, Ray & Mishra
- 12. *Ariosoma maurostigma* Kodeeswaran, Mohapatra, Dhinakaran, Kumar & Lal
- 13. *Rhynchoconger randalli* Acharya, Mohanty, Ray, Mishra & Mohapatra
- 14. *Aborichthys bajpali* Singh & Kosygin
- 15. *Exostoma dhritiae* Singh, Kosygin, Gurumayum & Rath
- 16. *Garra deccanensis* Jadhav, Karuthapandi, Shangningam & Shankar
- 17. *Glyptothorax waikhomi* Shangningam & Kosygin
- 18. *Pethia chakpiensis* Shangningam & Kosygin

MOLLUSCA

19. *Melanochlamys bengalensis* Tudu, Sajan, Roy, Mukhapadhyay, Tripathy & Mohapatra

LEPIDOPTERA

20. *Teliphasa dodaki* Ranjan, Singh & Kirti
21. *Teliphasa spinaejuxta* Ranjan, Singh & Kirti
22. *Termioptycha gnathospina* Ranjan, N. Singh & Kirti
23. *Termioptycha almae* Ranjan, N. Singh & Kirti
24. *Garudinia shompen* Singh, Ahmad & Raha
25. *Plusiodonta nicobarensis* Singh, Ahmad & Raha
26. *Patania shompen* Singh & Ahmad
27. *Caissa kashungii* Irungbam, Ahmad, N. Singh & Solovyev
28. *Squamosa wungchanngamii* Irungbam, Ahmad, N. Singh & Solovyev
29. *Locastra mizo* Ranjan, Singh & Kirti
30. *Caissa aruna* N. Singh & Ahmad
31. *Psaphis gerhardi* N. Singh, Ahmad & Joshi
32. *Atkinomus parilis* Ranjan, N. Singh & Kirti,
33. *Arcanusa confusa* Ranjan, N. Singh & Kirti
34. *Lamida whitakeri* Ranjan, N. Singh & Kirti
35. *Miltochrista idiomorfa* Volynkin, N. Singh. Kirti & Datta
36. *Miltochrista dankana* Volynkin, N. Singh. Kirti & Datta
37. *Miltochrista etalina* Volynkin, N. Singh. Kirti & Datta
38. *Psyra variabilis* Mallick, Bandyopadhyay & Sanyal

COLEOPTERA

39. *Bolboceras krikkeni* Gupta, Ghosh, Das & Chandra
40. *Neoserica panchmariensis* Bhunia, Gupta, Chandra & Ahrens
41. *Neoserica debasriae* Bhunia, Gupta, Chandra & Ahrens

HYMENOPTERA

42. *Occipitotus langpramensis* Singh & van Achterberg gen nov , sp. nov
43. *Atanycolus tangmargensis* Ahmed & Kazmi
44. *Taeniogonalos ayyari* Binoy, van Achterberg & Girish Kumar
45. *Taeniogonalos latae* Polaszek & Binoy
46. *Harpactus pulawskii* Binoy & Girish Kumar
47. *Gastrotrypes brevis* Sunita & Rajmohana
48. *Gastrotrypes carinatus* Sunita & Rajmohana
49. *Orgilus (Ischiolus) indicus* Ahmed, Kazmi & Rameshkumar
50. *Tiphia (Tiphia) bijui* Hanima & Girish Kumar
51. *Tiphia (Punctotiphia) chareshi* Hanima & Girish Kumar
52. *Tiphia (Tiphia) davidrajui* Hanima & Girish Kumar
53. *Tiphia (Tiphia) hyalina* Hanima & Girish Kumar
54. *Tiphia (Tiphia) kurumba* Hanima & Girish Kumar
55. *Tiphia (Tiphia) novus* Hanima & Girish Kumar
56. *Tiphia (Tiphia) rajeevani* Hanima & Girish Kumar
57. *Tiphia (Tiphia) sahyadriensis* Hanima & Girish Kumar
58. *Tiphia (Tiphia) shajii* Hanima & Girish Kumar
59. *Tiphia (Tiphia) venkataramani* Hanima & Girish Kumar
60. *Leptanilla ujjalai* Saroj, Mandi & Dubey
61. *Trimorus (Lochana) karna* Veenakumari, Keloth, Sreedevi, Girish Kumar & Mophanraj
62. *Trimorus (Lochana) satyaki* Veenakumari, Keloth, sreedevi , Girish Kumar & Mophanraj

HEMIPTERA

63. *Acanthonavis deflexa* Dubey gen. et sp. nov.
64. *Rhachisphora saddlensis* Dubey

THYSANOPTERA

65. *Psephenothrips uttarakhandensis* Patidar, Singha, Kumar & Tyagi
66. *Jammuthrips paikulensis* Pal, Kumar, Panjaliya & Tyagi

PSOCOPTERA

67. *Phallocaecilius indicus* Ramesh, Babu & Subramanian

MANTODEA

68. *Caliris mukherjeei* Kamila & Sureshan

BLATTODEA

69. *Amitermes kavarttiensis* Rituparna, Rajmohana & Amina
70. *Rinacapritermes silvius* Amina & Rajmohana
71. *Rinacapritermes abundans* Amina & Rajmohana

ODONATA

72. *Protosticta francyi* Sadasivan, Vibhu, Nair & Palot

EPHEMEROPTERA

73. *Tenuibaetis himani* Kubendran, Vasanth & Subramanian
74. *Tenuibaetis kangi* Kubendran, Vasanth & Subramanian
75. *Tenuibaetis amravati* Vasanth, Subramanian & Selvakumar
76. *Tenuibaetis cuspidatus* Vasanth, Subramanian & Selvakumar
77. *Tenuibaetis malabarensis* Vasanth, Subramanian & Selvakumar
78. *Tenuibaetis plumeus* Selvakumar, Vasanth & Subramanian
79. *Tenuibaetis vellimalaiensis* Vasanth, Subramanian & Selvakumar
80. *Choroerpes (Euthraulius) armillatus* Kluge, Pandiarajan, Vasanth & Sivaruban
81. *Choroerpes (Euthraulius) latus* Kluge, Pandiarajan, Vasanth & Sivaruban
82. *Choroerpes (Euthraulius) atelobranhis* Kluge *et al.*
83. *Choroerpes (Euthraulius) unicolor* Kluge, Pandiarajan, Vasanth & Sivaruban

84. *Choroerpes (Euthraulius) angustifolius* Kluge, Pandiarajan, Vasanth & Sivaruban
85. *Ghatula rufa* Kluge, Vasanth, Balasubramanian & Sivaramakrishnan
86. *Ghatula quadrimaculata* Kluge, Vasanth, Balasubramanian & Sivaramakrishnan
87. *Petersula heptagenoides* Kluge, Vasanth, Balasubramanian & Sivaramakrishnan
88. *Choroerpes (Choroerpes) girigangaensis* Kubendran and Vasanth

COLLEMBOLA

89. *Protaphorura sholai* Thunnisa, Arbea & Sanil
90. *Thalassaphorura udhagaiensis* Thunnisa, Arbea & Sanil

ZYGENTOMA

91. *Ctenolepisma (Ctenolepisma) venkataramani* Hazra, Jana, Mandal & Baltanas
92. *Ctenolepisma (Ctenolepisma) udumalpetense* Hazra, Jana, Mandal & Baltanas
93. *Ctenolepisma (Ctenolepisma) amrabadense* Hazra, Jana & Mandal

CRUSTACEA

94. *Spiralothelphusa andhra* Pati, Mandal & Jaiswal
95. *Barytelphusa inflata* Pati & Yeo
96. *Barusa gracillima* Pati & Yeo
97. *Barusa obesa* Pati & Yeo *Tortanus (Atortus) dhritiae* Francis & Jasmine
98. *Ghatiana dvivarna* Pati, Thackeray, Bajantri & Hedge
99. *Gurumon gurumayum* Pati
100. *Barusa choprai* Mandal, Mitra, Laskar, Adimalla & Jaiswal
101. *Tortanus (Atortus) dhritiae* Francis & Jasmine

ARACHNIDA

102. *Hamataliwa indica* Sen & Sureshan
103. *Heriaeus chareshi* Sen & Sureshan
104. *Cyrtarachne wayanadensis* Jwala, Sen & Sureshan

105. *Pasilobus sahyadriensis* Jwala, Sen & Sureshan
 106. *Cocalus shendurneyensis* Sudhin, Sen, Caleb & Hegde
 107. *Habrocestum mookambikaensis* Sudhin, Sen, Caleb & Hegde

ANNELIDA

108. *Tonoscolex kalimpongensis* Ahmed & Julka
 109. *Haemadipsa zeylanica dimapurensis* Mandal *et al.*
 110. *Haemadipsa zeylanica dhritii* Mandal *et al.*
 111. *Moniligaster julkai* Narayanan & Paliwal



Macaca selai Ghosh *et al.*, 2022



Euphlyctis jaladhara Dinesh *et al.*, 2022



Exostoma dhritiae Singh *et al.*, 2022



Pethia chakpiensis Shangningam & Kosygin, 2022



Barusa gracillima Pati & Yeo, 2022



Harpactus pulawskii Binoy & Girish Kumar, 2022



Psaphis gerhardi N. Singh, Ahmad & Joshi



Bolboceras krikkeni Gupta *et al.*, 2022



Psephenothrips uttarakhandensis Patidar *et al.*, 2022



Habrocestum mookambikaensis Sudhin, Sen, Caleb & Hegde, 2022

List of New Records to India

MAMMALIA

1. *Macaca leucogenys* Li, Zhao, Fan, 2015

REPTILIA

2. *Dendrelaphis bifrenalis* (Boulenger, 1890)

AMPHIBIA

3. *Amolops aniqiaoensis* Dong, Rao & Lü 2005

PISCES

4. *Oxyeleotris Urophthalmus* (Bleeker 1851)
5. *Acentrogobius gracilis* (Bleeker 1875)
6. *Acentrogobius moloanus* (Herre 1927)
7. *Ophidion smithi* (Fowler, 1934)

ASCIDIACEA

8. *Polycarpa reniformis* (Sluiter, 1904)
9. *Cnemidocarpa hemprichi* Hartmeyer, 1916
10. *Microcosmus bitunicatus* F. Monniot & C. Monniot, 2001

MOLLUSCA

11. *Homalocantha anatomica* (Perry, 1811)
12. *Aspella aclydis* Houart 2017
13. *Aspella mauritiana* Radwin & D'Attilio, 1976
14. *Cheilea imbricata* (Fischer Von Waldheim, 1807)
15. *Cheilea bulla* (Reeve, 1858)
16. *Amonovula pirie* (Petuch, 1973)
17. *Propeamussium sibogai* (Dautzenberg & Bavay, 1904)
18. *Phos gemmulifer* Kilburn, 2000
19. *Turbonilla juliae* Peñas & Rolán, 2010

LEPIDOPTERA

20. *Anoba rigida* (Swinhoe, 1895)
21. *Cania (Paracania) robusta* Hering, 1931
22. *Casminola arminbecheri* László, Ronkay & Witt, 2010
23. *Casminola johannstumpfi* László, Ronkay & Witt, 2010
24. *Lophoptera trigonoprocessa* Qi & Xue, 2011
25. *Nishada sambara* (Moore, 1859)
26. *Rhamnosa (Rhamnosa) convergens* Hering, 1931
27. *Squamosa chalcites* Orhant, 2000
28. *Tamba cosmoloma* Prout, 1928
29. *Tamba occidinawa* Holloway, 2005
30. *Teliphasa erythrina* Li in Liu, Wang & Li, 2016
31. *Teliphasa hamata* Li in Liu, Wang & Li, 2016
32. *Termioptycha bilineata* (Wileman, 1911)
33. *Termioptycha cornutitirfurca* Rong & Li, 2017
34. *Teulisna chiloides* Walker, 1862
35. *Locastra viridis* Rong & Li, 2017
36. *Caissa medialis* Yoshimoto, 1994
37. *Lamida buruensis* Janse, 1931
38. *Rhodoneura pudicula* Guenée, 1858
39. *Psyra gracilis* Yazaki, 1992
40. *Psyra szetschwana* Wehrli, 1953
41. *Psyra dsagara* Wehrli, 1953
42. *Psyra falcipennis* Yazaki, 1994
43. *Psyra debilis debilis* Warren, 1888
44. *Tarsolepis (Tarsolepis) taiwana* Wileman, 1910
45. *Ogulina ochrocinerea* Sugì, 1995
46. *Odnarda leechi* (Schintlmeister, 1997)
47. *Torona lucida* (Schintlmeister, 2008)
48. *Syntypistis synechoclora* (Kiriakoff, 1964)
49. *Syntypistis witoldi* (Schintlmeister, 1997)
50. *Pseudosomera noctuiformis yunwu* Schintlmeister & Fang, 2001

51. *Himalodontosia mahendra* (Sugi, 1993)
52. *Periphalera albicauda* (Bryk, 1949)
53. *Ptilodon amplius* Schintlmeister & Fang, 2001
54. *Glyphodes cosmarcha* Meyrick, 1887
55. *Pachynoa xanthochyta* (Turner, 1933)
56. *Pagyda arbiter* (Butler, 1879)
57. *Palpita cirralis* (Swinhoe, 1897)

COLEOPTERA

58. *Aspidimerus birmanicus* (Gorham, 1895)
59. *Cryptogonus nepalensis bhutanensis* Bielawski, 1979
60. *Henosepilachna processa* Li et Cook, 1961
61. *Sticholotis punctata* Crotch, 1874
62. *Synona consanguinea* Poorani Ślipiński et Booth, 2008

HYMENOPTERA

63. *Methocha (Dryinopsis) taprobane* Krombein, 1982
64. *Plagiolepis pissina* Roger, 1863
65. *Methocha ubiquita* Krombein, 1982
66. *Ectoploglossa sumbana* van der Vecht, 1963
67. *Tiphia (Tiphia) consueta* Smith, 1879
68. *Tiphia (Tiphia) flavipalpis* Allen, 1975
69. *Tiphia (Tiphia) godavariae* Allen, 1975
70. *Tiphia (Tiphia) lotharae* Allen, 1975
71. *Tiphia (Tiphia) lyrata* Magretti, 1892
72. *Tiphia (Tiphia) milleri* Allen, 1975
73. *Tiphia (Tiphia) nepa* Allen, 1975
74. *Anthidium (Anthidium) florentinum* (Fabricius, 1775)
75. *Anthidium (Proanthidium) qingtaoi* Niu & Zhu, 2020
76. *Anthidiellum (Pycnanthidium) carinatum* (Wu, 1962)
77. *Bathanthidium (Manthidium) binghami* (Fries, 1901)

THYSANOPTERA

78. *Neohydatothrips xestosternitus* (Han & Cui, 1991)
79. *Dolichothrips reuteri* (Karny, 1920)
80. *Litotetothrips pasaniae* Kurosawa, 1937
81. *Mesothrips annamensis* Priesner, 1929
82. *Hydatothrips haschemi* Girault, 1930
83. *Stenchaetothrips bambusicola* Mound, 2011

EPHEMEROPTERA

84. *Tenuibaetis arduus* (Kang & Yang, 1994)
85. *Tenuibaetis inornatus* (Kang & Yang, 1994)

CRUSTACEA

86. *Metopograpsus cannicci* Innocenti, Schubart & Fratini, 2020
87. *Varuna yui* Hwang & Takeda, 1986
88. *Ilyograpsus paludicola* (Rathbun, 1909)
89. *Laomenes nudirostris* (Bruce, 1968)
90. *Periclimenes affinis* (Zehrtner, 1894)
91. *Allogalathea babai* Cabezas et al. 2011
92. *Aliaporcellana pygmaea* (de Man 1902)
93. *Nerocila orbignyi* (Guérin-Ménéville, 1832)
94. *Nerocila kisra* Bowman and Tareen, 1983

ARACHNIDA

95. *Pardosa parathompsoni* Wang & Zhang, 2014

PLATYHELMINTHES

96. *Lecithochirium genypteri* Manter, 1954
97. *Opegaster plotosi* Yamaguti, 1940
98. *Saccocoelioides octavus* Szidat, 1970

CNIDARIA

- 99. *Truncatoflabellum crassum* (Milne Edwards & Haime, 1848)
- 100. *Truncatoflabellum incrustatum* (Cairns, 1989)
- 101. *Truncatoflabellum aculeatum* (Milne Edwards & Haime, 1848)
- 102. *Truncatoflabellum irregulare* (Semper, 1872)
- 103. *Anthemiphyllia dentata* (Alcock, 1902)
- 104. *Polycyathus chaishanensis* Lin, Kitahara, Tachikawa, Keshavmurthy & Chen, 2012

CHROMISTA

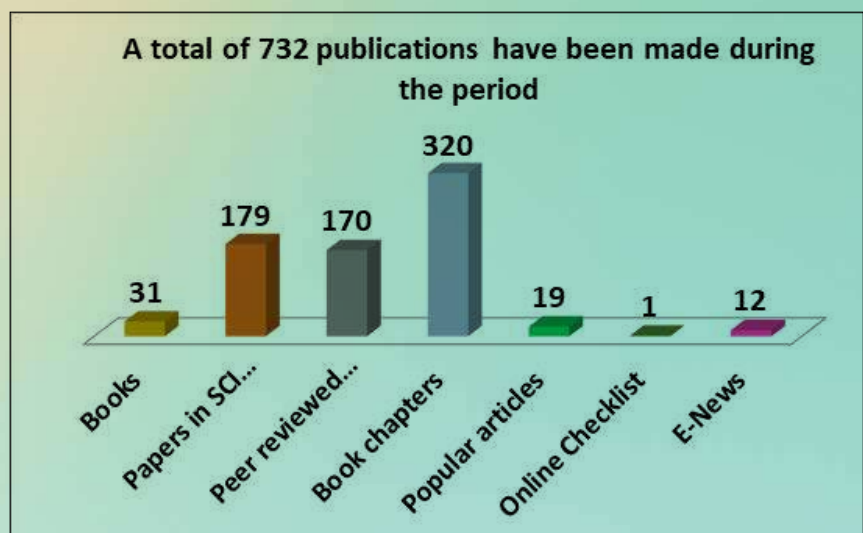
- 105. *Protophys hustedtiana* R. Simonsen, 1970
- 106. *Rigidohymena quadrinucleata* (Dragesco & Njiné, 1971)
- 107. *Oxytricha quadricirrata* Blatterer & Foissner, 1988
- 108. *Condyllostoma curvum* Burkovsky, 1970
- 109. *Spirostomum caudatum* (Müller, 1786)







Publications



Books	31
Zoological Survey of India E-News	12
Research Papers in SCI Journals	179
Research Paper in National and International Journals	170
Book Chapters	320
Popular Articles	19
Online Checklist	1
Total	732

Apart from this, three volumes of departmental Journal “Records of the Zoological Survey of India “was published with 39 articles from ZSI as well as outside ZSI.

Books: 31

1. Arora, B.M., Kamalakannan, M. and Venkatraman, C. 2022. *Anatomy of Indian Primates*. Occasional Paper No., 409: 1-186. (Published by the Director, Zoological Survey of India, Kolkata). ISBN 978-81-8171-602-6
2. Bahuguna, A. 2022. *Paristhiki sthayee arthiki hei*, 1-342. (Published by Winsar Publishing Company, Dehradun).
3. Banerjee, D. and Laishram, K. 2023. Fauna of Assam (Part II) Vertebrates. 1-353. (Published by the Director Zoological Survey of India).
4. Banerjee, D., Chandra, K., Raghunathan, C., Singh, N. and Gupta, D. 2022. *Faunal diversity of Biogeographic zones of India: Deccan Peninsula*: 1-647. (Published by Director, Zoological Survey of India). ISBN: 978-81-8171-595-1.
5. Banerjee, D., Naskar, A. and Sengupta, J. 2023. Fauna of Assam (Part I) Invertebrates. 1-754. (Published by the Director Zoological Survey of India).
6. Banerjee, D., Naskar, A., Mandal, G.P. and Chandra, K. 2022. *Faunal Diversity of Satkosia and Baisipalli Wildlife Sanctuaries, Satkosia Tiger Reserve, Conservation Area Series*, 73: 1-812. (Published by the Director, Zoological Survey of India, Kolkata). ISBN: 978-81-8171-594-4.
7. Banerjee, D., Raghunathan C., Rizvi, A.N. and Mandal, G. 2022. *Annual Report ZSI 2021-22*: 1-280. (Published by the Director Zoological Survey of India).
8. Banerjee, D., Raghunathan, C., Rizvi, A.N. and Das, D. 2022. *Animal Discoveries 2021: New Species and New Records*: 1-232. (Published by the Director, Zoological Survey of India, Kolkata). ISBN: 978-81-8171-591-3.
9. Chandra, K., Banerjee, D., Raghunathan, C., Gupta, D., Rai, P. and Sharma, G. 2022. *Faunal Diversity of Biogeographic Zone of India: Gangetic Plains*: 1-369. (Published by the Director, Zoological Survey of India, Kolkata). ISBN: 978-81-8171-582-1.
10. Das, P., Gupta, D., Chandra, K. and Saha, G.K. 2022. *Ladybird Beetles of (Coleoptera; Coccinellidae) Northeast India*: 1-192. (Published by Nature Books, India, New Delhi).
11. Dinesh, K.P., Shabnam, A. and Sreekumar, S. 2022. *A Catalogue of Amphibia in the collection of the Zoological Survey of India, Western Regional Centre, Pune*. Occasional Paper No., 408: 1-201. (Published by the Director, Zoological Survey of India, Kolkata). ISBN 978-81-8171-590-6.
12. Dubey, A.K. and Kushwaha, S. 2022. *Diversity of Chordates and comparative anatomy*: 1-223. (Published by Akhand Publishing House New Delhi). ISBN 978-93-90870-51-6.
13. Editor- Director. 2022. *Faunal Diversity of Lesser Known Fauna of Cauvery Estuary and Adjacent Areas, Tamil Nadu, India Fauna of Ecosystem Series*: 1-220. (Published by the Director, Zoological Survey of India, Kolkata).
14. Editor- Director. 2022. *Faunal Diversity of Point Calimere Wildlife Sanctuary, Conservation Area Series*, 70: 1-234. (Published by the Director, Zoological Survey of India, Kolkata). ISBN 978-81-8171-589-0.
15. Ghosh, J., Gupta, D., Chandra, K., and Saha, G.K. 2022. *Scarab Beetles (Coleoptera: Scarabaeidae) of North-East India*: 1-200. (Published by Nature Books, India, New Delhi). ISBN: 978-93-82258-229-2.
16. Gurumayum, S.D. 2022. *Malacofauna of Pennera River Estuary, Nellore, Andhra Pradesh (Estuarine Ecosystem Series, 12)*. (Published by Om Publications, New Delhi). ISBN 13: 9788181716019.
17. Jayaraj, R.S.C., Sivaperuman, C., Kumar, S.S., Ravichandran, K. and Kumar, P.N. 2022. *An Overview of Biodiversity of Mahatma Gandhi Marine National Park*: 1-194. (Published by Department of Environment and Forests, Andaman and Nicobar Islands and Zoological Survey of India).
18. Kalawate, A.S., Palot, M.J. and Valappil, B. 2022. *Common Moths and Butterflies of Western Ghats*: 1-120. (Published by the Director, Zoological Survey of India, Kolkata).
19. Majumder, A., Maheswaran, G., Alam, I., Chandra, K., Alfred, J.R.B. and Roy Chowdhury, B. 2022. *Birds of India*: 1-600. (Published by the Director, Zoological Survey of India, Kolkata). ISBN: 978-81-8171-581-4.

20. Purushothaman, J., Praveen Raj, C., Prasad, H., Bhowal, A., Siddique, A., Raghunathan, C. and Banerjee, D. 2022. *Handbook on Indian Scyphozoa, Handbook and Pictorial Guide*, 74: 1-156. (Published by Director, Zoological Survey of India, Kolkata).
21. Raghunathan, C., Balakrishnan, S., Mondal, T. and Banerjee, D. 2022. *Faunal Diversity of Coringa Wildlife Sanctuary, Andhra Pradesh. Conservation Area Series*, 74: 1-263. (Published by the Director, Zoological Survey of India, Kolkata). (ISBN 978-81-8171-596-8).
22. Raghunathan, C., Hassan, M.E., Mondal, T. and Banerjee, D. 2023. *Faunal Diversity of Puducherry*, 1-394. (Published by the Director, Zoological Survey of India, Kolkata). ISBN 978-81-8171-611-8
23. Ramakrishna and Sivaperuman, C. 2022. *History of Zoology and Present Status in India*. (Published by Write and Print Publishers, New Delhi).
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27. Sengupta. J., Naskar, A. and Banerjee, D. 2023. *Morphotaxonomic Studies of Syrphid Pollinators (Insecta: Diptera) from Lesser Himalayas*, Occasional Paper No., 411: 1-232. (Published by Director, Zoological Survey of India, Kolkata).
28. Sinha, B. and Saikia, B. 2022. *Fauna of Eastern Himalayas –Amphibians of Arunachal Pradesh*. Records of the Zoological Survey of India, *Occasional Paper*, 410: 1-100.
29. Sivaperuman, C., Banerjee, D., Tripathy, B. and Chandra, K. 2023. *Faunal Ecology and Conservation of the Great Nicobar Biosphere Reserve*: 1-666. (Published by Springer Nature Singapore Pvt. Ltd).
30. Tyagi, I., Goscianska, J., Dehghani, M.H. and Karri, R. 2022. *Sustainable Materials for Sensing and Remediation of Noxious Pollutants*, 1-14. Elsevier (ISBN: 9780323994255).
31. Vinod, K., Asokan, P.K., Joshi, K.K., Narayanakumar, R., Zacharia, P U., Molly, V., Jasmine, S., Anasu Koya, A., Kunjikoya, V.A., Ansar, C.P., Nikhiljith, M., Vijesh, V. Palot, M.J., Dinesan, C. and Gopalakrishnan, A. 2022. *Kadalundi- Vallikunnu Community Reserve Mekhalayile Jaiva Vaividhyam – Oru Avalokanam*. (Biodiversity of Kadalundi- Vallikunnu Community Reserve- An Overview: 1-116. (CMFRI Special Publication (141). ICAR - Central Marine Fisheries Research Institute, Kochi).

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1. Acharya, S., Mohanty, S.R., Ray, D., Mishra, S.S. and Mohapatra, A. 2022. A new Congrid eel, *Rhynchoconger randalli* sp. nov. (Congridae: Anguilliformes) with pentagonal pattern of vomer dentition from Bay of Bengal, Indian waters. *Zootaxa*, 5174(2): 188-194.
2. Ahmed, I., Kazmi, S.I. and Rameshkumar, A. 2022. New record of *Orgilonia* van Achterberg and description of a new species of *Orgilus Haliday* (Hymenoptera: Braconidae: Orgilinae) from India. *Zootaxa*, 5195(5): 437-448.
3. Ahmed, I., Kazmi, S.I., Farooqi, M.K. and Ahmed, Z. 2022. A new species of genus *Atanycolus* Foerster, 1863 (Hymenoptera: Braconidae: Braconinae) from India. *Zootaxa*, 5124(4): 496-500. <https://doi.org/10.11646/zootaxa.5124.4.8>.
4. Ahmed, S., Emiliyamma, K.G., Marimuthu, N., Sajan, S. and Julka, J.M. 2022. A new species of the genus *Tonoscolex* Gates, 1933 (Clitellata: Megascolecidae) from India. *Zootaxa*, 5124(3): 375-382.
5. Ahmed, S., Marimuthu, N., Tripathy, B., Julka, J.M. and Chandra, K. 2022. Earthworm community structure and diversity in different land-use systems along an elevation gradient in the Western Himalaya, India. *Applied Soil Ecology*, 176: 104468. <https://doi.org/10.1016/j.apsoil.2022.104468>

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7. Anand, P.P., Seena, S., Girish Kumar, P. and Shibu Vardhanan, Y. 2023. Species morphospace boundary revisited through wing phenotypic variations of *Antodynerus* species (Hymenoptera: Vespidae: Eumeninae) from the Indian subcontinent. *Frontiers in Ecology and Evolution*, 10: 965577. <https://doi.org/10.3389/fevo.2022.965577>
8. Aneesh Kumar, K.V., Rajeeshkumar M.P., Hashim, H., Deepa, K.P., Otero-Ferrer, J.L., Saravanane, N., Sujitha Thomas, Bineesh, K.K. and Tuset, V.M. 2022. Inferring ecological strategies of *Psenopsis* spp. (Teleostei: Centrolophidae) inhabiting Indian waters from morphological features. *Marine Biology Research*, 1-14. <https://doi.org/10.1080/17451000.2022.2101124>
9. Banerjee, A., Dwivedi, M.D., Kasana, S., Singh, P., Kumar, V., Maity, D. and Pandey, A.K. 2022. Phylogenetic relationships in Indian Daphne (Thymelaeaceae) based on nuclear ITS and cpDNA data. *Biologia*, 1- 16. <https://doi.org/10.1007/s11756-022-01125-4>
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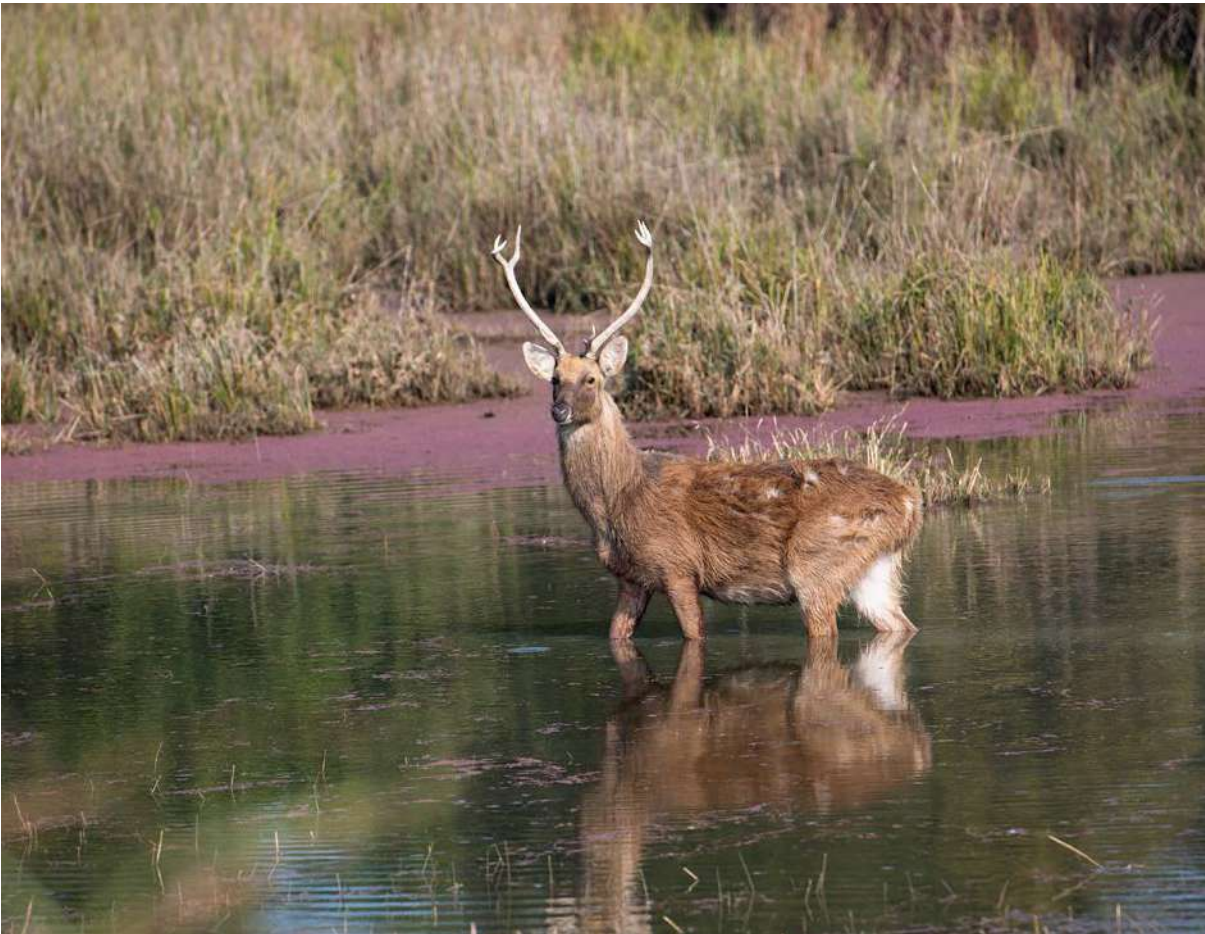
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9. Palot, M.J. and Janu. 2022. Koronakalathu oru Vawwal [About common bat species of Kerala state, in Malayalam language]. *Kerala Shasthra Sahithya Parishath (KSSP)*, Thrissur, Kerala: 60.
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Newsletter: Twelve Issues of ZSI E-News

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| 1. Monthly E-Newsletter from Zoological Survey of India, April, 2022, volume 38, pp. 13. | 7. Monthly E-Newsletter from Zoological Survey of India, October, 2022, volume 44, pp. 14 |
| 2. Monthly E-Newsletter from Zoological Survey of India, May, 2022, volume 39, pp. 20. | 8. Monthly E-Newsletter from Zoological Survey of India, November, 2022, volume 45, pp. 19. |
| 3. Monthly E-Newsletter from Zoological Survey of India, June, 2022, volume 40, pp. 15. | 9. Monthly E-Newsletter from Zoological Survey of India, December, 2022, volume 46, pp. 15 |
| 4. Monthly E-Newsletter from Zoological Survey of India, July, 2022, volume 41, pp. 20. | 10. Monthly E-Newsletter from Zoological Survey of India, January, 2022, volume 47, pp. 25. |
| 5. Monthly E-Newsletter from Zoological Survey of India, August, 2022, volume 42, pp. 17. | 11. Monthly E-Newsletter from Zoological Survey of India, February, 2022, volume 48, pp. 28. |
| 6. Monthly E-Newsletter from Zoological Survey of India, September, 2022, volume 43, pp. 17. | 12. Monthly E-Newsletter from Zoological Survey of India, March, 2022, volume 49, pp. 30. |





Digital Sequence Information

- » ZSI is enriching the information on DNA barcodes and solving many taxonomic queries and generated 10,742 barcodes till March 2023.
- » During the reporting period: Total Barcodes submitted: 1770; Total Species Barcoded: 497

DSI generated during 2022-23

Sl. No.	Faunal group	Number of species	Number of barcodes
1.	Ciliata	03	11
2.	Cnidaria	03	07
3.	Arachnida	08	09
4.	Insecta: Orthoptera	01	01
5.	Insecta: Odonata	04	06
6.	Insecta: Hymenoptera	48	92
7.	Insecta: Coleoptera	12	33
8.	Insecta: Isoptera	36	63
9.	Insecta: Diptera	30	74
10.	Insecta: Hemiptera	01	02
11.	Insecta: Lepidoptera	99	312
12.	Insecta: Thysanoptera	19	39
13.	Insecta: Ephmeroptera	18	39
14.	Insecta: Collembola	08	13
15.	Crustacea	11	26
16.	Tardigrada	01	03
17.	Mollusca	05	07
18.	Fish	109	154
19.	Amphibia	12	66
20.	Reptilia	26	87
21.	Aves	02	09
22.	Mammalia	41	717
	Total	497	1770

Details of DNA Barcoding of species during 2022-23

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
1	Ciliates	<i>Oxytricha quadricirrata</i> Blatterer and Foissner, 1988	Pt. 4990, Pt. 5224, Pt. 5510, Pt. 5511, and Pt. 5512	OQ231489
2	Ciliates	<i>Gonostomum strenuum</i> (Engelmann, 1862)	-	OQ713681
3	Ciliates	<i>Caenomorpha</i> sp.	-	OQ712017
4	Ciliates	<i>Deviata</i> sp.	-	OQ712070, OQ712087, OQ713634, OQ713617
5	Ciliates	<i>Perisincirra</i> sp.	-	OQ712088
6	Ciliates	<i>Spirostomum</i> sp.	-	OQ713635
7	Ciliates	<i>Blepharisma</i> sp.	-	OQ713678
8	Ciliates	<i>Paramecium caudatum</i> Ehrenberg, 1833	Pt 5307	OQ713680
9	Cnidaria	<i>Cyanea nozakii</i> Kishinouye, 1891	WN4_SCY_003, WN4_SCY_004, WN4_SCY_005	ON183265, ON184036, ON210095
10	Cnidaria	<i>Acromitus flagellatus</i> (Maas, 1903)	WN4_SCY_006, WN4_SCY_007	ON210141, ON210285
11	Cnidaria	<i>Eirene ceylonensis</i> Browne, 1905	SS4_HYD_001a, SS4_HYD_001b	ON210812, OQ344680
12	Acarii	<i>Rhipicephalus microplus</i> (Canestrini, 1888)	TK_8, TK_15, TK_25, TK_28, TK_29, TK_30, TK_31, TK_32, TK_33, TK_35, TK_36, TK_40, TK_41, TK_42, TK_43, TK_44, TK_45, TK_47, TK_48, TK_49, TK_52, TK_53, TK_55, TK_56, TK_58, TK_60, TK_61, TK_63	ACG1362
13	Acarii	<i>Rhipicephalus sanguineus</i> (Latreille, 1806)	TKW-1, TKW-2	ABW7307, AAU2924
14	Acarii	<i>Rhipicephalus annulatus</i> (Say, 1821)	TK_9, TK_11, TK_22, TK_24, TK_26, TK_27, TK_34, TK_37, TK_59,	ACG1362
15	Acarii	<i>Haemaphysalis wellingtoni</i> Nuttall and Warburton, 1907	TK_14	AEA8995
16	Acarii	<i>Haemaphysalis leachii</i> Audouin, 1826	TK_13	AEW0973
17	Acarii	<i>Haemaphysalis cornigera</i> Warburton, 1913	TK_7, TK_54	AEW0973

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
18	Acarii	<i>Haemaphysalis bispinosa</i> Neumann, 1897	TK_2, TK_5, TK_6, TK_10, TK_12, TK_19, TK_50	AEA8995
19	Acarii	<i>Amblyomma helvolum</i> Koch, 1844	TK_70	AEU5946
20	Ephemeroptera	<i>Epeorus gilliesi</i> Braasch, 1981	ZSI/SRC MI-33	ON557570 to ON557609
21	Ephemeroptera	<i>Epeorus bifurcates</i> Braasch & Soldán, 1979	ZSI/SRC MI-37	
22	Ephemeroptera	<i>Epeorus aculeatus</i> Braasch, 1990	ZSI/SRC MI-38	
23	Ephemeroptera	<i>Epeorus petersi</i> Sivaruvan <i>et al.</i> , 2013	ZSI/SRC MI-39	
24	Ephemeroptera	<i>Megaglena</i> sp.	ZSI/SRC MI-40	
25	Ephemeroptera	<i>Dudgeodes palnius</i> Selvakumar, Sivaramakrishnan & Jacobus, 2014	ZSI/SRC MI-42	
26	Ephemeroptera	<i>Caenis</i> sp.	ZSI/SRC MI-46	
27	Ephemeroptera	<i>Procloeon</i> sp.	ZSI/SRC MI-47	
28	Ephemeroptera	<i>Edmundsula</i> sp.	ZSI/SRC MI-51	
29	Ephemeroptera	<i>Choroterpes</i> sp.	ZSI/SRC MI-52	
30	Ephemeroptera	<i>Choroterpes nambiyarensis</i> Kumar, Arunachalam & Sivaramakrishnan, 2013	ZSI/SRC MI-53	
31	Ephemeroptera	<i>Choroterpes alagarensis</i> Dinakaran, Balachandran & Anbalagan, 2009	ZSI/SRC MI-54	
32	Ephemeroptera	<i>Isca purpurea</i> Flowers, 1990	ZSI/SRC MI-55	
33	Ephemeroptera	<i>Choroterpes parvula</i> (Gillies, . 1951)	ZSI/SRC MI-57	
34	Ephemeroptera	<i>Petersula courtallensis</i> Sivaramakrishnan, 1984	ZSI/SRC MI-58	
35	Ephemeroptera	<i>Edmundsula</i> sp.	ZSI/SRC MI-59	
36	Ephemeroptera	<i>Thalerosphyrus flowersi</i> Venkataraman & Sivaramakrishnan, 1987	ZSI/SRC MI-62	
37	Ephemeroptera	<i>Epeorus petersi</i> Sivaruvan <i>et al.</i> , 2013	ZSI/SRC MI-63	
38	Ephemeroptera	<i>Isonychia moyarensis</i> Vasanth <i>et al.</i> , 2019	ZSI/SRC MI-69	

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
39	Ephemeroptera	<i>Afronurus kumbakkaraiensis</i> (Venkataraman & Sivaramakrishnan, 1989)	ZSI/SRC MI-70	
40	Ephemeroptera	<i>Choroterpes nambiyarensis</i> Kumar, Arunachalam & Sivaramakrishnan, 2013	ZSI/SRC MI-71	
41	Ephemeroptera	<i>Prosopistoma indicum</i> Peters, 1967	ZSI/SRC MI-73	
42	Ephemeroptera	<i>Petersula courtallensis</i> Sivaramakrishnan, 1984	ZSI/SRC MI-74	
43	Ephemeroptera	<i>Teloganodes kodai</i> Sartori, 2008	ZSI/SRC MI-75	
44	Ephemeroptera	<i>Nathanella saraswathiae</i> Sivaramakrishnan et al., 1996	ZSI/SRC MI-76	
45	Ephemeroptera	<i>Indialis</i> sp.	ZSI/SRC MI-77	
46	Ephemeroptera	<i>Edmundsula lotica</i> Sivaramakrishnan, 1985	ZSI/SRC MI-78	
47	Ephemeroptera	<i>Notophlebia ganeshi</i> Kluge, 2014	ZSI/SRC MI-79, ZSI/SRC MI-80, ZSI/SRC MI-82 to ZSI/SRC MI-84, ZSI/SRC MI-92 to ZSI/SRC MI-95, ZSI/SRC MI-99, ZSI/SRC MI-100	
48	Ephemeroptera	<i>Epeorus petersi</i> Sivaruvan et al., 2013	ZSI/SRC MI-31	
49	Odonata	<i>Copera vittata</i> (Selys, 1863)	KAS01/ZSI-SRC-750	ON545810
50	Odonata	<i>Caconeura risi</i> (Fraser, 1931)	ZSI/SRC/DNA/751	ON165272
51	Odonata	<i>Heliocypha bisignata</i> (Hagen, 1853) Male	KAS02/ZSI-SRC-752	ON556626
52	Odonata	<i>Neurothemis tulia</i> (Drury, 1773)	ZSI/SRC/DNA /687, 688, 689	MZ773394, MZ771200, MZ773281
53	Orthoptera	<i>Acrida exaltata</i> (Walker, 1859)	ZSI_NRC_DNA_April22_1	ON310797
54	Isoptera	<i>Microcerotermes pakistanicus</i> Akhtar, 1974	4893/H11, 5367/H11, 4892/H11	DSIN161-22 to DSIN163-22
55	Isoptera	<i>Odontotermes kapuri</i> (Roonwal and Chhotani, 1989)	4782/H11, 4784/H11	DSIN165-22, DSIN164-22
56	Isoptera	<i>Odontotermes hainanensis</i> (Light, 1924)	4984/H11	DSIN166-22, DSIN167-22

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
57	Isoptera	<i>Odontotermes obesus</i> (Rambur, 1842)	4788/H11, 5368/H11	DSIN168-22, DSIN169-22
58	Isoptera	<i>Labioacpritermes microcephalus</i> sp. nov.	WGRC/IR/INV/6344, WGRC/IR/INV/6342	DSIN170-22, DSIN171-22
59	Isoptera	<i>Ampoulitermes maitii</i> sp. nov.	WGRC/IR/INV/6332	DSIN172-22
60	Isoptera	<i>Odontotermes giriensis</i> (Roonwal and Chhotani, 1964)	5369/H11, 4822/H11, 4681/H11	DSIN173-22, DSIN176-22, DSIN182-22
61	Isoptera	<i>Odontotermes redemanni</i> Wasmann, 1983	5370/H11	DSIN174-22
62	Isoptera	<i>Coptotermes kishori</i> Roonwal and Chhotani, 1962	4983/H11	DSIN175-22
63	Isoptera	<i>Microcerotermes cameroni</i> Snyder, 1934	4990/H11	DSIN177-22
64	Isoptera	<i>Hypotermes obscuriceps</i> (Wasmann, 1902)	5022/H11	DSIN178-22, DSIN179-22
65	Isoptera	<i>Macrotermes gilvus</i> (Hagen, 1858)	4650/H11	DSIN180-22, DSIN181-22
66	Isoptera	<i>Odontotermes boveni</i> Thakur, 1981	4996/H11	DSIN183-22, DSIN184-22
67	Isoptera	<i>Odontotermes horai</i> Roonwal & Chhotani, 1962	4638/H11	DSIN185-22
68	Isoptera	<i>Odontotermes parvidens</i> (John, 1926)	5027/H11	DSIN186-22
69	Isoptera	<i>Odontotermes bengalensis</i> sp. nov.	5372/H11, 5373/H11	DSIN187-22, DSIN188-22
70	Isoptera	<i>Heterotermes indicola</i> (Wasmann, 1902)	5374/H11	DSIN189-22
71	Isoptera	<i>Hypotermes xenotermitis</i> (Wasmann, 1896)	4994/H11	DSI215-21
72	Isoptera	<i>Microcerotermes cameroni</i> Snyder, 1934	5445/H11	DSI216-21
73	Isoptera	<i>Nasutitermes</i> sp.	5446/H11	DSI217-21
74	Isoptera	<i>Coptotermes heimi</i> (Wasmann, 1902)	5447/H11	DSI218-21
75	Isoptera	<i>Labioacpritermes distortus</i> (Silvestri, 1922)	ZSI/WGRC/293	DSI285-22
76	Isoptera	<i>Odontotermes guptai</i> (Silvestri, 1922)	5300/H11	DSI286-22

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
77	Isoptera	<i>Macrotermes aleemi</i> Akhtar, 1975	5021/H11, 4826/H11	DSI287-22, DSI288-22
78	Isoptera	<i>Odontotermes horni</i> (Wasmann, 1902)	4830/H11	DSI289-22
79	Isoptera	<i>Odontotermes assmuthi</i> Holmgren, 1913	5288/H11, 5289/H11	DSI290-22, DSI291-22
80	Isoptera	<i>Coptotermes ceylonicus</i> Holmgren, 1911	5290/H11	DSI292-22
81	Isoptera	<i>Odontotermes profeae</i> Akhtar, 1975	5291/H11, 5292/H11	DSI293-22, DSI294-22
82	Isoptera	<i>Microtermes unicolor</i> Snyder, 1933	5229/H11	DSI295-22
83	Isoptera	<i>Microtermes obesi</i> Holmgren, 1912	5294/H11, 5295/H11, 5237/H11	DSI296-22, DSI297-22, DSI301-22
84	Isoptera	<i>Microcerotermes cameroni</i> Snyder, 1934	5296/H11	DSI298-22
85	Isoptera	<i>Microcerotermes beesoni</i> Snyder, 1933	5297/H11	DSI299-22, DSI300-22
86	Isoptera	<i>Nasutitermes emersoni</i> Snyder, 1934	5200/H11 to 5201/H11	DSI302-22 to DSI304-22
87	Isoptera	<i>Microcerotermes annandalei</i> Silvestri, 1923	5202/H11, 5203/H11	DSI305-22 to DSI306-22
88	Isoptera	<i>Nasutitermes jalpaiguriensis</i> Prashad and Sen-Sarma, (1959)	5207/H11, 5205/H11	DSI307-22, DSI308-22
89	Isoptera	<i>Odontotermes feae</i> (Wasmann, 1896)	4972/H11, 5307/H11	DSI309-22, DSI310-22
90	Isoptera	<i>Odontotermes bellahunisensis</i> Holmgren & Holmgren, 1917	4986/H11	DSI311-22
91	Isoptera	<i>Microcerotermes fletcheri</i> Holmgren & Holmgren, 1917	5306/H11	DSI312-22
92	Isoptera	<i>Microcerotermes ajodhya</i> sp. nov.	5287/H11	DSI313-22, DSI314-22
93	Thysanoptera	<i>Microcephalothrips abdominalis</i> (Crawford DL, 1910)	TH-3384	AAI0410
94	Thysanoptera	Phlaeothripidae	TH_3465	AAM8067
95	Thysanoptera	<i>Megalurothrips usitatus</i> (Bagnall, 1913)	TH-3412, TH-3417	AAN6623
96	Thysanoptera	Thysanoptera	TH-3414, TH-3416	AAP7680

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
97	Thysanoptera	<i>Thrips alatus</i> Bhatti, 1980	TH-3388	AAP7681
98	Thysanoptera	<i>Thrips apicatus</i> Priesner, 1934	TH-3427	AAY6262
99	Thysanoptera	<i>Thrips hawaiiensis</i> (Morgan, 1913)	TH-3421, TH-3413	AAZ8516
100	Thysanoptera	Thysanoptera	TH-3415	AAZ8619
101	Thysanoptera	<i>Franklinothrips vespiformis</i> (Crawford DL, 1909)	TH-3447	ACD8336
102	Thysanoptera	<i>Arorathrips mexicanus</i> (Crawford DL, 1909)	TH-3395	ACD8493
103	Thysanoptera	<i>Neohydatothrips gracilipes</i> (Hood, 1924)	TH-3426, TH-3435	ACG8261
104	Thysanoptera	Thysanoptera	TH-3391	ACI7059
105	Thysanoptera	<i>Taeniothrips bharokariensis</i> Kumar & Tyagi, 2014	TH-3408	ACP1595
106	Thysanoptera	Thysanoptera	TH-3446	ACW7213
107	Thysanoptera	<i>Ecacanthothrips tibialis</i> (Ashmead, 1905)	TH-3420	ACY2298
108	Thysanoptera	<i>Arrhenothrips ramakrishnae</i> Hood, 1919	TH-3392	ACY2300
109	Thysanoptera	Thysanoptera	TH-3437, TH-3442	ACY2300
110	Thysanoptera	<i>Caliothrips indicus</i> (Bagnall, 1913)	TH-3381	ACY7911
111	Thysanoptera	<i>Thrips formosanus</i> Priesner, 1934	TH-3410	ACY7915
112	Thysanoptera	<i>Frankliniella schultzei</i> (Trybom, 1910)	TH-3386, TH-3385	ACY9272
113	Thysanoptera	Thysanoptera	TH-3436	ACY9997
114	Thysanoptera	<i>Ayyaria chaetophora</i> Karny, 1926	TH-3393, TH-3394	ACZ0116
115	Thysanoptera	<i>Craspedothrips minor</i> (Bagnall, 1921)	TH-3422	ADM2505
116	Thysanoptera	Thysanoptera	TH-3444	ADO3366
117	Thysanoptera	Phlaeothripinae	TH-3425	ADS0746
118	Thysanoptera	Thysanoptera	TH-3379, TH-3380, TH-3387	ADX7560
119	Thysanoptera	Thysanoptera	TH-3448	AEC1785
120	Thysanoptera	Thysanoptera	TH-3397, TH-3398, TH-3399, TH-3411	AEC5615
121	Thysanoptera	Thysanoptera	TH-3323	AES3373

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
122	Thysanoptera	Thysanoptera	TH-3396	AES5942
123	Thysanoptera	Phlaeothripinae	TH-3424	AES9272
124	Thysanoptera	<i>Aeolothrips indicus</i> Bhatti, 1924	TH-3418, TH-3419	AET0765
125	Thysanoptera	Thysanoptera	TH-3430, TH-3433	AET4155
126	Thysanoptera	<i>Panchaetothrips noxius</i> Priesner, 1937	TH-3429, TH-3428	AET5146
127	Thysanoptera	Thysanoptera	TH-3432	AET6310
128	Thysanoptera	Thysanoptera	TH-3431	AET6311
129	Thysanoptera	Thysanoptera	TH-3449	AEU0332
130	Thysanoptera	Thysanoptera	TH-3390	AEU1427
131	Thysanoptera	<i>Thilakothrips babuli</i> Ramakrishna, 1928	TH_3463, TH_3464	AEW3548
132	Hemiptera	Hemiptera		AET9924, AAZ2263
133	Hymenoptera	<i>Tetramorium lanuginosum</i> Mayr, 1870	ZSI/SRC I_601	OP183490
134	Hymenoptera	<i>Polyrhachis paracamponota</i> Wang & Wu, 1991	ZSI/SRC I_599	OP183491
135	Hymenoptera	<i>Tetraponera binghami</i> (Forel, 1902)	CDT_ANT_1, CDT_ANT_2, CDT_ANT_4, CDT_ANT_6	ADL8053
136	Hymenoptera	<i>Aenictus brevicornis</i> (Mayr, 1879)	CDT_ANT_511	AEV4696
137	Hymenoptera	<i>Aenictus ceylonicus</i> (Mayr, 1866)	CDT_ANT_478 to CDT_ANT_482	AEW1500, AEW5147, AEW1499
138	Hymenoptera	<i>Aenictus doryloides</i> Wilson, 1964	CDT_ANT_494	AEW1498
139	Hymenoptera	<i>Aenictus pachycerus</i> (Smith, 1858)	CDT_ANT_505, CDT_ANT_507, CDT_ANT_508	AEV1683, AEV1684
140	Hymenoptera	<i>Aenictus peguensis</i> Emery, 1895	CDT_ANT_490	AEV1682
141	Hymenoptera	<i>Anoplolepis gracilipes</i> (Smith, 1857)	CDT_ANT_22, CDT_ANT_23, CDT_ANT_25, CDT_ANT_26, CDT_ANT_27, CDT_ANT_111, CDT_ANT_112, CDT_ANT_113, CDT_ANT_114, CDT_ANT_115, CDT_ANT_116	AAA9474

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
142	Hymenoptera	<i>Brachyponera luteipes</i> (Mayr, 1862)	CDT_ANT_337, CDT_ANT_338, CDT_ANT_339, CDT_ANT_340, CDT_ANT_383, CDT_ANT_384, CDT_ANT_385, CDT_ANT_386, CDT_ANT_387	AED4209, ACW2353
143	Hymenoptera	<i>Camponotus basalis</i> Smith, 1878	CDT_ANT_355	AEV7630
144	Hymenoptera	<i>Camponotus compressus</i> (Fabricius, 1787)	CDT_ANT_166, CDT_ANT_167, CDT_ANT_168, CDT_ANT_169, CDT_ANT_170, CDT_ANT_247, CDT_ANT_248, CDT_ANT_249, CDT_ANT_250, CDT_ANT_251	AAQ0512, ADH8401
145	Hymenoptera	<i>Camponotus parius</i> Emery, 1889	CDT_ANT_144 to CDT_ANT_148, CDT_ANT_353, CDT_ANT_364 to CDT_ANT_367, CDT_ANT_435 to CDT_ANT_439	AEH3381, AEW4115, ABU7270, AEW4534
146	Hymenoptera	<i>Camponotus rufoglaucus</i> (Jerdon, 1851)	CDT_ANT_101 to CDT_ANT_103, CDT_ANT_106 to CDT_ANT_109	AEV2122, AEW4115
147	Hymenoptera	<i>Camponotus sericeus</i> (Fabricius, 1798)	CDT_ANT_134, CDT_ANT_135, CDT_ANT_136, CDT_ANT_137, CDT_ANT_138	AEW6096
148	Hymenoptera	<i>Crematogaster anthracina</i> Smith, 1857	CDT_ANT_308, CDT_ANT_309, CDT_ANT_310, CDT_ANT_311, CDT_ANT_312	ADL7150
149	Hymenoptera	<i>Crematogaster dalyi</i> Forel, 1902	CDT_ANT_434	AEH3460
150	Hymenoptera	<i>Dorylus labiatus</i> Shuckard, 1840	CDT_ANT_456	AEV9205
151	Hymenoptera	<i>Dorylus orientalis</i> Westwood, 1835	CDT_ANT_445, CDT_ANT_446, CDT_ANT_447, CDT_ANT_448, CDT_ANT_449	ABX1544
152	Hymenoptera	Formicidae	CDT_ANT_176, CDT_ANT_177, CDT_ANT_178, CDT_ANT_179, CDT_ANT_180	AEV0651
153	Hymenoptera	<i>Leptogenys peuqueti</i> (Andre, 1887)	CDT_ANT_341	AEW2928
154	Hymenoptera	<i>Meranoplus bicolor</i> (Guerin-Meneville, 1844)	CDT_ANT_87, CDT_ANT_88, CDT_ANT_89, CDT_ANT_90	ACW7208

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155	Hymenoptera	<i>Monomorium dichroum</i> Forel, 1902	CDT_ANT_12, CDT_ANT_13, CDT_ANT_15, CDT_ANT_16, CDT_ANT_17	AET2081
156	Hymenoptera	<i>Monomorium latinode</i> Mayr, 1872	CDT_ANT_265, CDT_ANT_266, CDT_ANT_267, CDT_ANT_268, CDT_ANT_269	AAA8462
157	Hymenoptera	<i>Myrmicaria brunnea</i> Saunders, 1842	CDT_ANT_192, CDT_ANT_198 to CDT_ANT_200, CDT_ANT_256 to CDT_ANT_260	ADS9678, ABA3582
158	Hymenoptera	<i>Oecophylla smaragdina</i> (Fabricius, 1775)	CDT_ANT_58, CDT_ANT_61, CDT_ANT_62, CDT_ANT_63, CDT_ANT_373, CDT_ANT_374, CDT_ANT_375, CDT_ANT_376, CDT_ANT_377	AAA5848
159	Hymenoptera	<i>Paratrechina longicornis</i> (Latreille, 1802)	CDT_ANT_46, CDT_ANT_47, CDT_ANT_49 to CDT_ANT_51, CDT_ANT_327 to CDT_ANT_331	AAA1675, AAA1676
160	Hymenoptera	<i>Plagiolepis jerdonii</i> Forel, 1894	CDT_ANT_424, CDT_ANT_425, CDT_ANT_426, CDT_ANT_427, CDT_ANT_428	AEV9133
161	Hymenoptera	<i>Polyrhachis dives</i> Smith, 1857	CDT_ANT_77 to CDT_ANT_80	ACV2306, AAG4257
162	Hymenoptera	<i>Polyrhachis rastellata</i> (Latreille, 1802)	CDT_ANT_274, CDT_ANT_275, CDT_ANT_276, CDT_ANT_277, CDT_ANT_278	ADK0157
163	Hymenoptera	<i>Pseudoneoponera rufipes</i> (Jerdon, 1851)	CDT_ANT_121, CDT_ANT_123	AEU8167
164	Hymenoptera	<i>Solenopsis geminata</i> (Fabricius, 1804)	CDT_ANT_34, CDT_ANT_36, CDT_ANT_37, CDT_ANT_39, CDT_ANT_40, CDT_ANT_237, CDT_ANT_238, CDT_ANT_239, CDT_ANT_240, CDT_ANT_241, CDT_ANT_393	AAA5030
165	Hymenoptera	<i>Tapinoma indicum</i> Forel, 1895	CDT_ANT_414, CDT_ANT_415, CDT_ANT_416, CDT_ANT_417, CDT_ANT_418	AEW2682
166	Hymenoptera	<i>Technomyrmex albipes</i> (Smith, 1861)	CDT_ANT_254, CDT_ANT_255, CDT_ANT_342, CDT_ANT_343, CDT_ANT_344	AAA3359
167	Hymenoptera	<i>Tetraponera allaborans</i> (Walker, 1859)	CDT_ANT_318, CDT_ANT_319, CDT_ANT_320, CDT_ANT_321, CDT_ANT_322,	AEL3249

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168	Hymenoptera	<i>Tetraponera nigra</i> (Jerdon, 1851)	CDT_ANT_307	AEV4907
169	Hymenoptera	<i>Tetraponera rufonigra</i> (Jerdon, 1851)	CDT_ANT_188, CDT_ANT_189, CDT_ANT_190, CDT_ANT_190A, CDT_ANT_191	AEV5209
170	Hymenoptera	<i>Trichomyrmex criniceps</i> (Mayr, 1879)	CDT_ANT_124, CDT_ANT_125, CDT_ANT_126, CDT_ANT_127, CDT_ANT_128, CDT_ANT_356, CDT_ANT_357, CDT_ANT_358, CDT_ANT_360, CDT_ANT_379	ABU7166
171	Hymenoptera	<i>Trichomyrmex glaber</i> (André, 1883)	CDT_ANT_208, CDT_ANT_209, CDT_ANT_210, CDT_ANT_211	AEV7152
172	Hymenoptera	<i>Macroteleia lamba</i> Saraswat, 1978	-	AEL5177
173	Hymenoptera	<i>Habroteleia flavipes</i> Kieffer, 1905	-	ACW7321
174	Hymenoptera	<i>Duta bicolor</i> Rajmohana, 2014	HM_23, HM_25	AEY6426, DSIN451-22, DSIN452-22
175	Hymenoptera	<i>Baeoneurella</i> sp.	-	ACS4364
176	Hymenoptera	<i>Gryon</i> sp.	-	AEY4290
177	Hymenoptera	<i>Gryon</i> sp.	-	AEY5155
178	Hymenoptera	Scelioninae	-	AEU3309
179	Hymenoptera	<i>Isolia indica</i> Buhl, 2008	-	AET3560
180	Hymenoptera	<i>Isolia bhima</i> Veenakumari and Buhl, 2019	HM_175	AES4674, DSIN142-22
181	Hymenoptera	<i>Trimorus</i> sp.	-	AER8581
182	Hymenoptera	<i>Idris dunensis</i> (Mani, 1975)	-	ACP5223
183	Hymenoptera	Scelioninae	-	AET1519
184	Hymenoptera	<i>Idris</i> sp.	-	AES7829
185	Hymenoptera	<i>Idris</i> sp.	-	AEU3309
186	Hymenoptera	<i>Opisthacantha</i> sp.	-	AES3758
187	Hymenoptera	<i>Scelio</i> sp.	-	AES6200
188	Hymenoptera	<i>Macroteleia lamba</i> Saraswat, 1978	HM_15 to HM_17	DSIN447-22 to DSIN449-22
189	Hymenoptera	<i>Habroteleia flavipes</i> Kieffer, 1905	HM_18	DSIN450-22

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190	Hymenoptera	<i>Baeoneurella</i> sp.1	HM_26	DSIN453-22
191	Hymenoptera	<i>Gryon</i> sp.1	HM_28	DSIN454-22
192	Hymenoptera	<i>Gryon</i> sp.2	HM_30	DSIN455-22
193	Hymenoptera	<i>Gryon</i> sp.3	HM_32	DSIN456-22
194	Hymenoptera	<i>Macroteleia indica</i> Sharma, 1978	HM_159	DSI073-21
195	Hymenoptera	<i>Microthoron shompen</i> Veenakumari, 2016	HM_162	DSI074-21
196	Hymenoptera	<i>Opisthacantha</i> sp.1	HM_164	DSI075-21
197	Hymenoptera	<i>Idris dunensis</i> (Mani, 1975)	HM_165, HM_184	DSI076-21, DSIN144-22
198	Hymenoptera	<i>Gryon</i> sp.4	HM_166	DSI077-21
199	Hymenoptera	<i>Neoceratobaeus gibbus</i> Rajmohana, 2014	HM_172	DSIN140-22
200	Hymenoptera	<i>Isolia indica</i> Buhl, 2008	HM_173	DSIN141-22
201	Hymenoptera	<i>Trimorus</i> sp.1	HM_183	DSIN143-22
202	Hymenoptera	<i>Odontocolous</i> sp.1	HM_185	DSIN145-22
203	Hymenoptera	<i>Idris</i> sp.1	HM_186	DSIN146-22
204	Hymenoptera	<i>Opisthacantha</i> sp.2	HM_187	DSIN147-22
205	Hymenoptera	<i>Idris</i> sp.2	HM_188	DSIN148-22
206	Hymenoptera	<i>Scelio</i> sp.4	HM_189	DSIN149-22
207	Coleoptera	<i>Peschetius nilssoni</i> (Sayali et. Al., 2021)	FBRC-ZSI-INS-3299	OP720970
208	Coleoptera	<i>Peschetius quadricostatus</i> (Aubé, 1838)	FBRC-ZSI-INS-3300	OP720971
209	Coleoptera	<i>Dineutus indicus</i> (Aube, 1838)	FBRC-ZSI-INS-3339, FBRC-ZSI-INS-1518, FBRC-ZSI-INS-1127, FBRC-ZSI-INS-2071, FBRC-ZSI-INS-1813, FBRC-ZSI-INS-2350	OP858669, OP881912 to OP881916
210	Coleoptera	<i>Dineutus unidentatus</i> (Aube, 1838)	FBRC-ZSI-INS-2228, FBRC-ZSI-INS-3341, FBRC-ZSI-INS-2228	OP858670, OP889355 to OP889356
211	Coleoptera	<i>Dineutus spinosus</i> (Fabricius, 1781)	FBRC-ZSI-INS-3340, FBRC-ZSI-INS-3341	OP858671, OP881917
212	Coleoptera	<i>Dineutus unidentatus</i> (Aube, 1838)	FBRC-ZSI-INS-3343, FBRC-ZSI-INS-2272	OP881918, OP881919

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213	Coleoptera	<i>Dineutus indicus</i> (Aube, 1838)	FBRC-ZSI-INS-1518, FBRC-ZSI-INS-1127, FBRC-ZSI-INS-2071, FBRC-ZSI-INS-1813, FBRC-ZSI-INS-2350, FBRC-ZSI-INS-1519	OP889346 to OP889351
214	Coleoptera	<i>Dineutus spinosus</i> (Fabricius, 1781)	FBRC-ZSI-INS-3343, FBRC-ZSI-INS-2272, FBRC-ZSI-INS-2699	OP889352 to OP889354
215	Coleoptera	<i>Copelatus deccanensis</i> (Sheth & Ghate & Hájek, 2018)	FBRC-ZSI-INS-2034	OP889704
216	Coleoptera	<i>Cybister tripunctatus</i> (Olivier, 1795)	FBRC-ZSI-INS-2031	OP889705
217	Coleoptera	<i>Copelatus bacchusi</i> (Wewalka, 1981)	FBRC-ZSI-INS-3383, FBRC-ZSI-INS-3383i	OQ152222, OQ152223
218	Coleoptera	<i>Copelatus mysorensis</i> (Vazirani, 1970)	FBRC-ZSI-INS-3429, FBRC-ZSI-INS-3429i	OQ152224, OQ152225
219	Coleoptera	<i>Copelatus neelumae</i> (Vazirani, 1973)	FBRC-ZSI-INS-2268i	OQ152226
220	Coleoptera	<i>Diplonychus rusticus</i> (Fabricius, 1871)	FBRC-ZSI-INS-2774	ON357573
221	Coleoptera	<i>Harmonia dimidiata</i> (Fabricius, 1781)	ZSI_NRC_DNA_April22_2	ON310580
222	Lepidoptera	<i>Abisara bifasciata</i> Moore, 1877	ZSI/ANRC/T/16671	OF59400
223	Lepidoptera	<i>Acytolepis puspa</i> (Horsfield, [1828])	Ph. D. Student collection	OQ439751
224	Lepidoptera	<i>Albulina lehanus</i> (Moore, 1878)	Ph. D. Student collection	OQ152457
225	Lepidoptera	<i>Amathusia andamanensis</i> Fruhstorfer, 1899	ZSI/ANRC/T/15225	OF59385
226	Lepidoptera	<i>Appias albina</i> (C. & R. Felder, [1865])	ZSI/ANRC/T/15477	OF59287
227	Lepidoptera	<i>Arhopala centaurus coruscans</i> Wood-Mason & de Niceville, 1880	ZSI/ANRC/T/14606	OF59373
228	Lepidoptera	<i>Aricia agestis</i> (Denis & Schiffermüller, 1775)	Ph. D. Student collection	ON145587
229	Lepidoptera	<i>Aulocera brahminus</i> (Blanchard, 1853)	HARC_ZSI_DNA66_I_8566, HARC_ZSI_DNA69_I_8566	OQ685291, OQ685292
230	Lepidoptera	<i>Aulocera swaha</i> (Kollar, [1844])	HARC_ZSI_DNA67_I_8565	OQ134387

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231	Lepidoptera	<i>Azonus ubaldus</i> (Stoll, [1782])	Ph. D. Student collection	ON032910
232	Lepidoptera	<i>Castalius rosimon</i> (Fabricius, 1775)	Ph. D. Student collection, ZSI/ANRC/T/16871, ZSI/ANRC/T/16659	OQ152404, OF59420, OF59380
233	Lepidoptera	<i>Catochrysops strabo</i> (Fabricius, 1793)	Ph. D. Student collection	OQ152105
234	Lepidoptera	<i>Catopsillia scylla</i> (Fabricius, 1787)	ZSI/ANRC/T/16980	OF59277
235	Lepidoptera	<i>Cepora nadina</i> (Swinhoe, 1889)	ZSI/ANRC/T/16864, ZSI/ANRC/T/16880	OF59408, OF59438
236	Lepidoptera	<i>Cepora nerissa</i> (Moore, 1877)	ZSI/ANRC/T/14794, ZSI/ANRC/T/15211	OF59209, OF59410
237	Lepidoptera	<i>Cethosia biblis</i> (Drury, [1773])	ZSI/ANRC/T/15473	OF59285
238	Lepidoptera	<i>Cirrochroa nicobarica</i> (Wood Mason & de Niceville, 1881)	ZSI/ANRC/T/15448, ZSI/ANRC/T/15419	OF59266, OF59365
239	Lepidoptera	<i>Colias fieldii</i> Ménétriés, 1855	HARC_ZSI_DNA89_I_8559, HARC_ZSI_DNA90_I_8780	OQ134391, OQ134392
240	Lepidoptera	<i>Cruitis saroris</i> Moore, 1877	ZSI/ANRC/T/15460	OF59278
241	Lepidoptera	<i>Cupido argiades</i> Pallas, 1771	Ph. D. Student collection	OQ152454
242	Lepidoptera	<i>Cupido lacturnus</i> (Godart, [1824])	Ph. D. Student collection	OQ439805
243	Lepidoptera	<i>Cyrestis tabula</i> de Niceville, 1883	ZSI/ANRC/T/16976, ZSI/ANRC/T/15455, ZSI/ANRC/T/15475	OF59262, OF59275, OF59286
244	Lepidoptera	<i>Danaus chrysippus</i> (Linnaeus, 1758)	ZSI/ANRC/T/16645	OQ423205
245	Lepidoptera	<i>Deudorix epijarbas</i> (Moore, 1858)	Ph. D. Student collection	OQ410425
246	Lepidoptera	<i>Deudorix epijarbas</i> (Moore, 1858)	ZSI/ANRC/T/15213	OF59446
247	Lepidoptera	<i>Doleschallia bisaltide andamanensis</i> Fruhstorfer, 1899	ZSI/ANRC/T/15248	OF59405
248	Lepidoptera	<i>Elymnia hypermenstra cottonis hypermenstra cottonis</i> (Hewitson, 1874)	ZSI/ANRC/T/15226	OF59431

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249	Lepidoptera	<i>Elymnia hypermenstra cottonis</i> (Hewitson, 1874)	ZSI/ANRC/T/15227, ZSI/ANRC/T/14787, ZSI/ANRC/T/16865	OF59398, OF59202, OF59411
250	Lepidoptera	<i>Elymnias hypermenstra cottonis cottonis</i> (Hewitson, 1874)	ZSI/ANRC/T/14792, ZSI/ANRC/T/14796	OF59207, OF59211
251	Lepidoptera	<i>Elymnias panthera mimus</i> Wood Mason & de Niceville, 1881	ZSI/ANRC/T/15079	OF59274
252	Lepidoptera	<i>Euchrysops cnejus</i> (Fabricius, 1798)	Ph. D. Student collection	OQ152577
253	Lepidoptera	<i>Euploea andamanensis</i> (Atkinson, 1874)	ZSI/ANRC/T/14791, ZSI/ANRC/T/15223, ZSI/ANRC/T/16882	OF59206, OF59404, OF59440
254	Lepidoptera	<i>Euploea scherzeri</i> Wood-Mason & de Niceville, 1881	ZSI/ANRC/T/15479, ZSI/ANRC/T/15418, ZSI/ANRC/T/15058	OF59289, OF59364, OF59370
255	Lepidoptera	<i>Euthelia teuta</i> Doubleday, 1848	ZSI/ANRC/T/15235, ZSI/ANRC/T/15236	OF59384, OF59388
256	Lepidoptera	<i>Fabriciana adippe</i> (Denis & Schiffermüller, 1775)	HARC_ZSI_DNA84_I_8557	OQ134389
257	Lepidoptera	<i>Freyeria putli</i> (Kollar, [1844])	Ph. D. Student collection	OQ152483
258	Lepidoptera	<i>Graphium agaememnon</i> (Lathy, 1907)	ZSI/ANRC/T/14770, ZSI/ANRC/T/16881	OF59185, OF59439
259	Lepidoptera	<i>Graphium antiphates</i> (Cramer, 1775)	ZSI/ANRC/T/16647	OQ592667
260	Lepidoptera	<i>Graphium eurypylus macronius</i> (Jordan, 1909)	ZSI/ANRC/T/14801	OF59216
261	Lepidoptera	<i>Hebomoia roepstorffii</i> Wood-Mason, 1880	ZSI/ANRC/T/14802, ZSI/ANRC/T/14803	OF59217, OF59218
262	Lepidoptera	<i>Heliophorus sena</i> (Kollar, 1844)	Ph. D. Student collection	OQ410298
263	Lepidoptera	<i>Herona marathus andamana</i> Moore, 1877	ZSI/ANRC/T/15237, ZSI/ANRC/T/16984, ZSI/ANRC/T/16875, ZSI/ANRC/T/15238	OF59407, OF59413, OF59426, OF59401
264	Lepidoptera	<i>Hypolimnas anomala</i> (Wallace, 1869)	ZSI/ANRC/T/15053, ZSI/ANRC/T/15450, ZSI/ANRC/T/15077	OF59361, OF59268, OF59273
265	Lepidoptera	<i>Hypolimnas bolina</i> (Drury, 1773)	ZSI/ANRC/T/15445	OF59263

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266	Lepidoptera	<i>Hyponephele pulchra</i> (C. & R. Felder, [1867])	HARC_ZSI_DNA78_I_8779,	OQ134388, OQ685293 to OQ685296
267	Lepidoptera	<i>Idea agarmarchana caddli</i> (Wood Mason & de Niceville, 1880)	ZSI/ANRC/T/15224	OF59399
268	Lepidoptera	<i>Ixias pyrene andamana</i> Moore, 1877	ZSI/ANRC/T/14780, ZSI/ANRC/T/15355, ZSI/ANRC/T/15206	OF59195, OF59378, OF59415
269	Lepidoptera	<i>Junonia almana</i> (Linnaeus, 1758)	ZSI/ANRC/T/15453, ZSI/ANRC/T/15054, ZSI/ANRC/T/16663, ZSI/ANRC/T/16906, ZSI/ANRC/T/16907, ZSI/ANRC/T/16909	OF59271, OF59362, OF59390, OF59466, OF59467, OF59470
270	Lepidoptera	<i>Junonia atlites</i> (Linnaeus, 1763)	ZSI/ANRC/T/15451, ZSI/ANRC/T/15452, ZSI/ANRC/T/15469, ZSI/ANRC/T/15239, ZSI/ANRC/T/16914, ZSI/ANRC/T/16991, ZSI/ANRC/T/16992, ZSI/ANRC/T/16915, ZSI/ANRC/T/16916, ZSI/ANRC/T/15570, ZSI/ANRC/T/16917 to ZSI/ANRC/T/16926, ZSI/ANRC/T/16993, ZSI/ANRC/T/16994, ZSI/ANRC/T/16927 to ZSI/ANRC/T/16930, ZSI/ANRC/T/16932, ZSI/ANRC/T/16995, to ZSI/ANRC/T/16998, ZSI/ANRC/T/16933 to ZSI/ANRC/T/16937, ZSI/ANRC/T/15146	OF59269, OF59270, OF59283, OF59294 to OF59316, OF59318 to OF59332, OF59334, OF59338 to OF59360, OF59368, OF59393 to OF59396, OF59447 to OF59455, OF59461 to OF59465, OF59469, OF59471, OF59472

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
			ZSI/ANRC/T/16939 to ZSI/ANRC/T/16943, ZSI/ANRC/T/16948 to ZSI/ANRC/T/16949 to ZSI/ANRC/T/16968, ZSI/ANRC/T/16999, ZSI/ANRC/T/17000, ZSI/ANRC/T/16971 to ZSI/ANRC/T/16669, ZSI/ANRC/T/16899, ZSI/ANRC/T/14872 to ZSI/ANRC/T/14874, ZSI/ANRC/T/16900, ZSI/ANRC/T/16988, ZSI/ANRC/T/14876, ZSI/ANRC/T/14877, ZSI/ANRC/T/16901, ZSI/ANRC/T/14878, ZSI/ANRC/T/16903, ZSI/ANRC/T/16989, ZSI/ANRC/T/16904, ZSI/ANRC/T/16905, ZSI/ANRC/T/16908, ZSI/ANRC/T/16990, ZSI/ANRC/T/16910	
271	Lepidoptera	<i>Junonia hierita</i> (Evans, 1926)	ZSI/ANRC/T/16911 to ZSI/ANRC/T/16913, ZSI/ANRC/T/16931, ZSI/ANRC/T/16944 to ZSI/ANRC/T/16947, ZSI/ANRC/T/16664, ZSI/ANRC/T/14868 to ZSI/ANRC/T/14871, ZSI/ANRC/T/16902, ZSI/ANRC/T/15243, ZSI/ANRC/T/16911, ZSI/ANRC/T/16665, ZSI/ANRC/T/16670	OF59291 to OF59293, OF59317, OF59333, OF59335 to OF59337, OF59391, OF59456 to OF59460, OF59468, OF59473, OF59392, OF59397
272	Lepidoptera	<i>Junonia iphita</i> (Cramer, 1779)	Ph. D. Student collection	OQ504369
273	Lepidoptera	<i>Junonia lemonias</i> (Linnaeus, 1758)	Ph. D. Student collection	OQ504367
274	Lepidoptera	<i>Kallima albobfasciata</i> Moore, 1877	ZSI/ANRC/T/15246, ZSI/ANRC/T/15247	OF59437, OF59381

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275	Lepidoptera	<i>Kallima inachus</i> (Boisduval, 1836)	Ph. D. Student collection	OQ504329
276	Lepidoptera	<i>Kaniska canace</i> (Linnaeus, 1763)	HARC_ZSI_DNA37_I_8295, Ph. D. Student collection	OP295498, OQ504370
277	Lepidoptera	<i>Lampides boeticus</i> (Linnaeus, 1767)	Ph. D. Student collection	ON026165
278	Lepidoptera	<i>Leptotes plinius</i> (Fabricius, 1793)	Ph. D. Student collection	OQ160332
279	Lepidoptera	<i>Lethe europa</i> (Fabricius, 1787)	ZSI/ANRC/T/15461	OQ592684
280	Lepidoptera	<i>Lethe europa nudgara</i> Fruhstorfer, 1911	ZSI/ANRC/T/16863	OF59406
281	Lepidoptera	<i>Lethe tamuna</i> de-Niceville, 1887	ZSI/ANRC/T/15461	OF59279
282	Lepidoptera	<i>Losaria rhodifer</i> (Butler, 1876)	ZSI/ANRC/T/14783, ZSI/ANRC/T/14785, ZSI/ANRC/T/16874, ZSI/ANRC/T/15201	OF59198, OF59200, OF59425, OF59428
283	Lepidoptera	<i>Loxura</i> sp.	ZSI/ANRC/T/16648	OQ592674
284	Lepidoptera	<i>Loxura atymus</i> (Moore, 1877)	ZSI/ANRC/T/14790, ZSI/ANRC/T/14795, ZSI/ANRC/T/14804, ZSI/ANRC/T/16862, ZSI/ANRC/T/15533	OF59205, OF59210, OF59219, OF59403, OF59430
285	Lepidoptera	<i>Luthrodes pandava</i> (Horsfield, [1829])	Ph. D. Student collection	ON067494, OQ457070
286	Lepidoptera	<i>Lycaena phlaeas</i> (Linnaeus, 1761)	HARC_ZSI_DNA96_I_8788, Ph. D. Student collection	OQ685860, OQ380943
287	Lepidoptera	<i>Megisba malaya</i> (Horsfield, [1828])	Ph. D. Student collection	OQ439629
288	Lepidoptera	<i>Melanitis constantia</i> Cramer, 1779	ZSI/ANRC/T/16651	OQ592783
289	Lepidoptera	<i>Melanitis leda</i> (Linnaeus, 1758)	ZSI/ANRC/T/15480	OF59290
290	Lepidoptera	<i>Mycalesis mineus mineus</i> (Linnaeus, 1758)	ZSI/ANRC/T/14610	OF59376

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291	Lepidoptera	<i>Mycalesis perseoides</i> (Moore, [1892])	ZSI/ANRC/T/15462	OQ592724
292	Lepidoptera	<i>Mycalesis radza</i> Moore, 1877	ZSI/ANRC/T/16879, ZSI/ANRC/T/15228	OF59436, OF59444
293	Lepidoptera	<i>Mycalesis visala andamana</i> (Moore, [1892])	ZSI/ANRC/T/16987	OF59432
294	Lepidoptera	<i>Neopithecops zamola andamana</i> Eliot & Kawazoe, 1983	ZSI/ANRC/T/16869, ZSI/ANRC/T/16870, ZSI/ANRC/T/16884	OF59418, OF59419, OF59443
295	Lepidoptera	<i>Nephele hespera</i> (Fabricius, 1775)	HARC_ZSI_DNA32_I_8296	OP295497
296	Lepidoptera	<i>Nepelis hylas andamana</i> Moore, 1877	ZSI/ANRC/T/14773, ZSI/ANRC/T/14793, ZSI/ANRC/T/16978, ZSI/ANRC/T/15464, ZSI/ANRC/T/15356, ZSI/ANRC/T/16985, ZSI/ANRC/T/16868, ZSI/ANRC/T/15229, ZSI/ANRC/T/14774	OF59188, OF59208, OF59267, OF59280, OF59379, OF59414, OF59417, OF59433, OF59189
297	Lepidoptera	<i>Neptis sappho</i> Pallas, 1771	ZSI/ANRC/T/15464	OQ592806
298	Lepidoptera	<i>Orsotriaena medus medus</i> Evans, 1932	ZSI/ANRC/T/14611	OF59377
299	Lepidoptera	<i>Pachliopta aristolochiae goniopeltis</i> (Rothschild, 1938)	ZSI/ANRC/T/14775, ZSI/ANRC/T/14609	OF59190, OF59375
300	Lepidoptera	<i>Pachliopta aristolochiae kondulana</i> (Evans, 1932)	ZSI/ANRC/T/15076, ZSI/ANRC/T/15467, ZSI/ANRC/T/16982, ZSI/ANRC/T/15420	OF59272, OF59281, OF59291, OF59366
301	Lepidoptera	<i>Pamiria omphisa</i> (Moore, [1875])	Ph. D. Student collection	OQ155254
302	Lepidoptera	<i>Papilio</i> sp.	ZSI/ANRC/T/16646	OQ456444
303	Lepidoptera	<i>Papilio mayo</i> (Atkinson, 1874)	ZSI/ANRC/T/14764, ZSI/ANRC/T/14765, ZSI/ANRC/T/14786	OF59179, OF59180, OF59201
304	Lepidoptera	<i>Papilio memnon</i> Linnaeus, 1758	ZSI/ANRC/T/15057	OF59369

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305	Lepidoptera	<i>Papilio polytes</i> Evans, 1912	ZSI/ANRC/T/14776, ZSI/ANRC/T/14778, ZSI/ANRC/T/14779, ZSI/ANRC/T/15204, ZSI/ANRC/T/15202, ZSI/ANRC/T/15203, ZSI/ANRC/T/16872	OF59191, OF59193, OF59194, OF59383, OF59409, OF59422, OF59423
306	Lepidoptera	<i>Papilio polytes nikobarus</i> Felder & Felder, 1862	ZSI/ANRC/T/15055	OF59367
307	Lepidoptera	<i>Parantica aglea</i> (Moore, 1877)	ZSI/ANRC/T/14772	OF59187
308	Lepidoptera	<i>Parantica agleooides</i> (C. & R. Felder, 1860)	ZSI/ANRC/T/15468, ZSI/ANRC/T/15447	OF59282, OF59265
309	Lepidoptera	<i>Pareronia ceylanica naraka</i> (Moore, 1877)	ZSI/ANRC/T/14771, ZSI/ANRC/T/14782, ZSI/ANRC/T/14788, ZSI/ANRC/T/14797, ZSI/ANRC/T/14598, ZSI/ANRC/T/16660, ZSI/ANRC/T/15209, ZSI/ANRC/T/16873, ZSI/ANRC/T/15208, ZSI/ANRC/T/16878	OF59186, OF59197, OF59203, OF59212, OF59372, OF59382, OF59416, OF59424, OF59434, OF59435
310	Lepidoptera	<i>Pareronia hippie</i> (Fabricius, 1787)	ZSI/ANRC/T/15379	OQ592728
311	Lepidoptera	<i>Parthenos sylvia roepstorffii</i> Moore, [1897]	ZSI/ANRC/T/14766, ZSI/ANRC/T/14767, ZSI/ANRC/T/14777, ZSI/ANRC/T/14784, ZSI/ANRC/T/14789, ZSI/ANRC/T/14607, ZSI/ANRC/T/16662, ZSI/ANRC/T/16672, ZSI/ANRC/T/16983, ZSI/ANRC/T/15232	OF59181, OF59182, OF59192, OF59199, OF59204, OF59374, OF59387, OF59402, OF59412, OF59421
312	Lepidoptera	<i>Phalanta alcippe andamana</i> (Fruhstorfer, 1904)	ZSI/ANRC/T/16885, ZSI/ANRC/T/14781, ZSI/ANRC/T/16661, ZSI/ANRC/T/15230, ZSI/ANRC/T/16883	OF59445, OF59196, OF59386, OF59441, OF59442
		<i>Phalanta alcippe fraterna</i> Moore, 1900	ZSI/ANRC/T/16979, ZSI/ANRC/T/15470, ZSI/ANRC/T/15478	OF59276, OF59284, OF59288
313	Lepidoptera	<i>Pieris brassicae</i> (Linnaeus, 1758)	HARC_ZSI_DNA85_I_8558,	OQ134390, OQ685856 to OQ685858

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314	Lepidoptera	<i>Pieris canidia</i> (Linnaeus, 1768)	HARC_ZSI_DNA91_I_8787, HARC_ZSI_DNA99_I_8790	OQ685859, OQ685861
315	Lepidoptera	<i>Plebejus samudra</i> (Moore, [1875])	Ph. D. Student collection	OQ161574
316	Lepidoptera	<i>Pontia daplidice</i> (Linnaeus, 1758)	HARC_ZSI_DNA01_I_8297	OP295496
317	Lepidoptera	<i>Pseudozizeeria maha</i> (Kollar, [1844])	Ph. D. Student collection	OQ147023
318	Lepidoptera	<i>Spodoptera pectin</i> Guenee, 1852	ZSI_NRC_DNA_April22_3	ON310796
319	Lepidoptera	<i>Taenicia cibraits</i> Linnaeus, 1758	ZSI/ANRC/T/15234, ZSI/ANRC/T/16876, ZSI/ANRC/T/16877	OF59389, OF59427, OF59429
320	Lepidoptera	<i>Talica nyseus</i> (Guérin-Méneville, 1843)	Ph. D. Student collection	ON026071
321	Lepidoptera	<i>Troides helena</i> (Moore, 1877)	ZSI/ANRC/T/14768	OF59183
322	Lepidoptera	<i>Troides helena heliconoides</i> (Moore, 1877)	ZSI/ANRC/T/14798, ZSI/ANRC/T/14799, ZSI/ANRC/T/14800	OF59213, OF59214, OF59215
323	Lepidoptera	<i>Vanessa cardui</i> (Linnaeus, 1758)	Ph. D. Student collection	OQ504371
324	Lepidoptera	<i>Vindula erota</i> Staudinger, 1885	ZSI/ANRC/T/14769	OF59184
325	Lepidoptera	<i>Zizina ube</i> (Fabricius, 1787)	Ph. D. Student collection, ZSI/ANRC/T/16977	ON075497, OF59264
326	Lepidoptera	<i>Zizula hylax</i> (Fabricius, 1775)	Ph. D. Student collection	OQ152474
327	Diptera	<i>Aedes albopictus</i> (Skuse, 1895)	ALKK-1, ALKK-2, ALKK-3	OP364995 to OP364998
328	Diptera	<i>Atherigona orientalis</i> Schiner, 1868	D247	AAW9285
329	Diptera	<i>Bibio defectus</i> Brunetti, 1911	D219	AAU6717
330	Diptera	<i>Blepharipha</i> sp.	D228	AE06671
331	Diptera	<i>Chrysomya bezziana</i> Villeneuve, 1914	D217	MTBFF026-22
332	Diptera	<i>Chrysomya megacephala</i> (Fabricius, 1794)	D242	AAA5667
333	Diptera	<i>Chrysomya rufifacies</i> (Macquart, 1843)	D243	AAA5667

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334	Diptera	<i>Dicranosepsis bicolor</i> (Wiedemann, 1830)	D220	ACY5185
335	Diptera	Diptera	-	AAA1831
336	Diptera	Diptera	-	AAA8931
337	Diptera	Diptera	-	AAB4497
338	Diptera	Diptera	-	AAE4423
339	Diptera	Diptera	-	AAE5566
340	Diptera	Diptera	-	AAF5305
341	Diptera	Diptera	-	AAQ0773
342	Diptera	Diptera	-	AAX3121
343	Diptera	Diptera	-	AAX3130
344	Diptera	Diptera	-	AAZ1114
345	Diptera	Diptera	-	AAZ4279
346	Diptera	Diptera	-	ABX9963
347	Diptera	Diptera	-	ABX9967
348	Diptera	Diptera	-	ACA1194
349	Diptera	Diptera	-	ACG9820
350	Diptera	Diptera	-	ACI1304
351	Diptera	Diptera	-	ACV2691
352	Diptera	Diptera	-	AE08333
353	Diptera	Diptera	-	AET5854
354	Diptera	Diptera	-	AEU2362
355	Diptera	Diptera	-	AEV0881
356	Diptera	<i>Eristalinus polychromata</i> (Brunetti, 1923)	D223	ACQ3085
357	Diptera	<i>Eristalis tenax</i> (Linnaeus, 1758)	D222	AEO6409
358	Diptera	<i>Eupeodes (metasyrphus) corollae</i> Fabricius, 1794	DP_9, DP_13	ADJ8357
359	Diptera	<i>Haematobia irritans</i> (Linnaeus, 1758)	D112	AAC7987
360	Diptera	<i>Hemipyrellia ligurriens</i> (Wiedemann, 1830)	D246	AAB3064
361	Diptera	<i>Hermetia illucens</i> (Linnaeus, 1758)	D250, D249	AAD0622, AAU6670
362	Diptera	Hydrophorinae	D223	MTBFF063-22

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363	Diptera	<i>Hydrotaea chalcogastor</i> (Wiedemann, 1824)	DP_34	AAW9286
364	Diptera	<i>Ischidon scutellaris</i> (Fabricius, 1805)	D229	AEM1114
365	Diptera	<i>Lycastris flavohirta</i> Brunetti, 1907	D224	ACV1957
366	Diptera	<i>Megaselia scleris</i> (Loew, 1866)	D240	AAU6670
367	Diptera	<i>Megistocera</i> sp.	D218	ACH3313
368	Diptera	Micropezidae	D334	MTBFF077-22
369	Diptera	<i>Musca domestica</i> Linnaeus, 1758	D244	AAA6020
370	Diptera	<i>Musca sorbens</i> Wiedemann, 1830	D245	AAW9285
371	Diptera	Muscidae	DP_114	AEM1118
372	Diptera	<i>Ochthera</i> sp.	D217	AEQ5060
373	Diptera	<i>Physiphora clausa</i> (Macquart, 1843)	D225	AEO6409
374	Diptera	<i>Plecia mallochi</i> Hardy, 1948	D299, D298	ACA0480, MTBFF062-22
375	Diptera	<i>Plecia</i> sp.	D221	ACV1957
376	Diptera	<i>Plecia</i> sp.	D226	AEP7268
377	Diptera	<i>Sarcophaga</i> (<i>Boettecherisca</i>) <i>peregrina</i> Roy, Dasgupta & Chowdhuri, 1976	DP_76	ACH5421
378	Diptera	<i>Sarcophaga</i> (<i>liosarcophaga</i>) <i>dux</i> Thomson, 1869	DP_167	AAC4540
379	Diptera	<i>Sarcophaga alba</i> (Schiner, 1868)	D241	AAC4540
380	Diptera	<i>Sarcophaga calcifera</i> (Boettcher, 1992)	D239	ACH5421
381	Diptera	<i>Sarcophaga dux</i> Thomson, 1869	D248, D238	AAC4540, ACH5421
382	Diptera	<i>Sarcophaga hainanensis</i> Ho, 1936	DIPT247, DIPT255	ACW2759, AEW0598
383	Diptera	<i>Sarcophaga misera</i> Walker, 1849	DIPT246, DIPT259, DIPT254	AAB4496, AAE9461

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384	Diptera	<i>Sarcophaga perigrina</i> (Robineau-Desvoidy, 1830)	DIPT295, DIPT256, DIPT267	AAU6717, ACH5421
385	Diptera	<i>Sepedon</i> sp.	D227	ACV1957
386	Diptera	<i>Stomorphina discolor</i> (Fabricius, 1794)	D306	MTBFF067-22
387	Diptera	Syrphidae		AEU4889
388	Diptera	<i>Tabanus straitus</i> Fabricius, 1787	D216, D215	ADD4494, AEP5150
389	Diptera	Tipulidae	D197	BFNB019-22
390	Diptera	<i>Toxopoda</i> sp.	DP_108	ACV1957
391	Collembolla	<i>Lepidocyrtus (Acrocyrtus) cryptocephalus</i> Handschin, 1929	-	AEV7606, AET5674
392	Collembolla	<i>Lepidocyrtus (Cinctocyrtus) medius</i> Schaffer, 1898	-	AEA5314
393	Collembolla	<i>Callyntrura (Handschinphysa) lineata</i> (Parona, 1892)	-	AEW2541, AET0430, AES6170
394	Collembolla	<i>Cyphoderus indicus</i> Mandal, Suman and Bhattacharya, 2016	-	AET9242
395	Collembolla	<i>Salina (Salina) indica</i> (Imms, 1912) Yosii, 1960	-	ACW2787, AEW5761, AEV5911
396	Collembolla	<i>Seira arunachala</i> Mitra, 1975	-	ACP4087
397	Collembolla	<i>Isotomurus balteatus</i> (Reuter, 1876) Handschin, 1929	-	AAA5273
398	Collembolla	<i>Lepidocyrtus (Lepidocyrtus) robustus</i> Imms, 1912	-	AET5674
399	Crustacea	<i>Barytelphusa guerini</i> (H.Milne Edwards, 1853)	FBRC-ZSI-INV-3500, , BRC-ZSI-INV-3501 FBRC-ZSI-INV-3501i, FBRC-ZSI-INV-3502, FBRC-ZSI-INV-3502i, FBRC-ZSI-INV-3503, FBRC-ZSI-INV-3503i	ON357574, ON357575, ON357576, ON357577, ON357578, ON357579, ON357580
400	Crustacea	<i>Barytelphusa cunicularis</i> (Westwood, in Westwood & Sykes, 1836)	FBRC-ZSI-INV-3504	ON357581

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401	Crustacea	<i>Simocephalus acutirostratus</i> (King, 1853)	FBRC-ZSI-INV-3508	ON357586
402	Crustacea	<i>Cyclestheria hislopi</i> (Baird, 1859)	FBRC-ZSI-INV-3754, FBRC-ZSI-INV-3755, FBRC-ZSI-INV-3756, FBRC-ZSI-INV-3757, FBRC-ZSI-INV-3758, FBRC-ZSI-INV-3759, FBRC-ZSI-INV-3760, FBRC-ZSI-INV-3761, FBRC-ZSI-INV-3762, FBRC-ZSI-INV-3763	OQ257013 to OQ257022
403	Crustacea	<i>Calappa exanthematos</i> Alcock & Anderson 1894	ZSI/SRC C-862	OQ644504
404	Crustacea	<i>Charybdis feriata</i> (Linnaeus, 1758)	ZSI/SRC C-864	OQ644505
405	Crustacea	<i>Scylla serrata</i> (Forskål, 1775)	ZSI/SRC C-865	OQ644506
406	Crustacea	<i>Monomia gladiator</i> (Fabricius, 1798)	ZSI/SRC C-866	OQ644507
407	Crustacea	<i>Portunus reticulatus</i> (Herbst, 1799)	ZSI/SRC C-867	OQ644508
408	Crustacea	<i>Portunus sanguinolentus</i> (Herbst, 1783)	ZSI/SRC C-868	OQ644509
409	Crustacea	<i>Portunus pelagicus</i> (Linnaeus, 1758)	ZSI/SRC C-869	OQ644510
410	Tardigrada	<i>Paramacrobiotus bengalensis</i> sp. nov.	(ZSI-HQ/GNC/T1/1)	ON923868, ON923866, OP531839
411	Mollusca	<i>Physella acuta</i> (Draparnaud, 1805)	FBRC-ZSI-INV-/3505, FBRC-ZSI-INV-3506	ON357582, ON357583
412	Mollusca	<i>Indoplanorbis exustus</i> (Deshayes, 1833)	FBRC-ZSI-INV-3507, FBRC-ZSI-INV-3507i	ON357584, ON357585
413	Mollusca	<i>Parreysia corrugata</i> (Müller, 1774)	FBRC-ZSI-INV-3765	OQ271410
414	Mollusca	<i>Lamellidens marginalis</i> (Lamarck, 1819)	ZSI/EBRC/F14813	OQ402603
415	Mollusca	<i>Turbinella rapa</i> Lamarck, 1816		ZSIWF100-22
416	Pisces	<i>Maculabatis gerrardi</i> (Gray, 1851)	ZSI/EBRC/F13894	ON714597
417	Pisces	<i>Acanthocobitis botia</i> (Hamilton, 1822)	FBRC-ZSI-F-4023	OP038560

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418	Pisces	<i>Acentrogobius viridipunctatus</i> (Valenciennes, 1837)	ZSI/EBRC/F14852	OQ536130
419	Pisces	<i>Ailia coila</i> (Hamilton, 1822)	FBRC-ZSI-F-3909	OP493144
420	Pisces	<i>Alepes djedaba</i> (Fabricius, 1775)	ZSI/EBRC/F14487	OP897726
421	Pisces	<i>Ambassis ambassis</i> (Lacepede, 1802)	ZSI/EBRC/F14486	OP897723
422	Pisces	<i>Ambassis dussumieri</i> Cuvier, 1828	ZSI/EBRC/F14222	OP497983
423	Pisces	<i>Amblyceps mangois</i> (Hamilton, 1822)	FBRC-ZSI-F-5248	OQ472415
424	Pisces	<i>Anguilla bengalensis</i> (Gray, 1831)	FBRC-ZSI-F-4002	OP493141
425	Pisces	<i>Badis badis</i> (Hamilton, 1822)	FBRC-ZSI-F-4029, FBRC-ZSI-F-5249	OP038550, OQ472416
426	Pisces	<i>Bagarius bagarius</i> (Hamilton, 1822)	FBRC-ZSI-F-4001, FBRC-ZSI-F-4009	OP038551, OP297836
427	Pisces	<i>Balitora laticauda</i> (Bhoite, Jadhav & Dahanukar, 2012)	FBRC-ZSI-F-3997	OP038548
428	Pisces	<i>Botia lohachata</i> (Chaudhuri, 1912)	FBRC-ZSI-F-5240, FBRC-ZSI-F-5241	OQ472407, OQ472408
429	Pisces	<i>Botia striata</i> (Narayan Rao, 1920)	FBRC-ZSI-F-5242	OQ472409
430	Pisces	<i>Caranx sexfasciatus</i> Quoy & Gaimard, 1825	ZSI/EBRC/F14588	OQ121792
431	Pisces	<i>Channa gachua</i> (Hamilton, 1822)	FBRC-ZSI-F-4006, FBRC-ZSI-F-5128	OP038554, OP715793
432	Pisces	<i>Channa marulius</i> (McClelland, 1845)	FBRC-ZSI-F-4007	OP038555
433	Pisces	<i>Channa punctata</i> (Bloch, 1793)	ZSI/EBRC/F14599	OQ131135
434	Pisces	<i>Channa striata</i> (Bloch, 1793)	FBRC-ZSI-F-4804	ON564835
435	Pisces	<i>Chelonodontops patoca</i> (Hamilton, 1822)	ZSI/EBRC/F14797	OQ535725
436	Pisces	<i>Clupisoma bastari</i> (A. K. Datta & A. K. Karmakar, 1980)	FBRC-ZSI-F-4760, FBRC-ZSI-F-4774, FBRC-ZSI-F-4000	ON564840, ON564843, OP493140

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437	Pisces	<i>Crenimugil buehanani</i> (Bleeker, 1853)	ZSI/EBRC/F14360	OP715787
438	Pisces	<i>Crossocheilus latius</i> (Hamilton, 1822)	FBRC-ZSI-F-4862	ON564846
439	Pisces	<i>Dawkinsia filamentosa</i> (Valenciennes, 1844)	FBRC-ZSI-F-3908, FBRC-ZSI-F-5130	OP297843, OP715794
440	Pisces	<i>Dawkinsia uttata</i> (Katwate, Apte & Raghavan, 2020)	FBRC-ZSI-F-3907	OP297844
441	Pisces	<i>Devario devario</i> (Hamilton, 1822)	FBRC-ZSI-F-4016	OP038557
442	Pisces	<i>Elops machnata</i> (Fabricius, 1775)	ZSI/EBRC/F14226	OP520929
443	Pisces	<i>Epinephelus coioides</i> (Hamilton, 1822)	ZSI/EBRC/F14488	OP897728
444	Pisces	<i>Esomus danrica</i> (Hamilton, 1822)	FBRC-ZSI-F-4830	ON810372
445	Pisces	<i>Etroplus suratensis</i> (Bloch, 1790)	ZSI/EBRC/F14699, ZSI/EBRC/F14700	OQ339204, OQ339221
446	Pisces	<i>Favonigobius rechei</i> (Bleeker, 1854)	ZSI/EBRC/F14853, ZSI/EBRC/F14854	OQ536127, OQ536157
447	Pisces	<i>Gagata itchkeea</i> (Sykes, 1839)	FBRC-ZSI-F-5245, FBRC-ZSI-F-5246	OQ472412, OQ472413
448	Pisces	<i>Garra deccanensis</i> (Jadhav et. Al., 2022)	FBRC-ZSI-F-4386, FBRC-ZSI-F-4386i, FBRC-ZSI-F-4385, FBRC-ZSI-F-4385i, FBRC-ZSI-F-4385ii, FBRC-ZSI-F-4385iii	ON098247, ON098248, ON098249, ON098250, ON098251, ON098252
449	Pisces	<i>Garra mullya</i> (Sykes, 1839)	FBRC-ZSI-F-4838, FBRC-ZSI-F-5133, FBRC-ZSI-F-5243	ON810373, OP715797, OQ472410
450	Pisces	<i>Glossogobius giuris</i> (Hamilton, 1822)	FBRC-ZSI-F-4012, ZSI/EBRC/F14225, ZSI/EBRC/F14898	OP297839, OP520896, OQ674501
451	Pisces	<i>Glyptothorax lonah</i> (Sykes, 1839)	FBRC-ZSI-F-5028, FBRC-ZSI-F-5027	OP493138, OP493139
452	Pisces	<i>Haludaria fasciata</i> (Jerdon, 1849)	FBRC-ZSI-F-5131, FBRC-ZSI-F-5132, FBRC-ZSI-F-4712	OP715795, OP715796, ON357587
453	Pisces	<i>Heteropneustes fossilis</i> (Bloch, 1794)	FBRC-ZSI-F-4028	OP493146
454	Pisces	<i>Hippocampus kuda</i> Bleeker, 1852		ZSIWF158-23
455	Pisces	<i>Hipposideros lankadiva</i> (Kelaart, 1850)	FBRC-ZSI-VER-101	OP854888

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456	Pisces	<i>Hipposideros speoris</i> (Schneider, 1800)	FBRC-ZSI-VER-102	OP854889
457	Pisces	<i>Hypselobarbus mussullah</i> (Sykes, 1839)	FBRC-ZSI-F-4025	OP493145
458	Pisces	<i>Labeo boggut</i> (Sykes, 1839)	FBRC-ZSI-F-4783, FBRC-ZSI-F-4715	ON564836, ON564838
459	Pisces	<i>Lagocephalus guentheri</i> Miranda Ribeiro, 1915	ZSI/EBRC/F14592	OQ130593
460	Pisces	<i>Lagocephalus lunaris</i> (Bloch & Schneider, 1801)	ZSI/EBRC/F14361	OP715865
461	Pisces	<i>Laubuka laubuca</i> (Hamilton, 1822)	FBRC-ZSI-F-4836	ON810379
462	Pisces	<i>Leptomelanosoma indicum</i> (Shaw 1804)	ZSI/EBRC/F13895	ON715440
463	Pisces	<i>Lutjanus argentimaculatus</i> (Forsskal, 1775)	ZSI/EBRC/F14743	OQ338833
464	Pisces	<i>Lutjanus fulviflamma</i> (Forsskal, 1775)	ZSI/EBRC/F14484	OP897047
465	Pisces	<i>Lutjanus indicus</i> Allen, White & Erdmann, 2013	ZSI/EBRC/F14595	OQ130693
466	Pisces	<i>Lutjanus johnii</i> (Bloch, 1792)	ZSI/EBRC/F14596	OQ130702
467	Pisces	<i>Macrogathus aral</i> (Bloch & Schneider, 1801)	ZSI/EBRC/F14597	OQ131099
468	Pisces	<i>Macrogathus armatus</i> (Lacepède, 1800)	FBRC-ZSI-F-5135, FBRC-ZSI-F-4794	OP854860, ON564837
469	Pisces	<i>Minous monodactylus</i> (Bloch & Schneider, 1801)	ZSI/EBRC/F14089	OP197907
470	Pisces	<i>Monodactylus kottelati</i> Pethiyagoda, 1991	ZSI/EBRC/F14601	OQ132616
471	Pisces	<i>Mugil cephalus</i> Linnaeus, 1758	ZSI/EBRC/F14128, ZSI/EBRC/F14156	OP271306, OP310986
472	Pisces	<i>Muraenichthys alboventriculus</i> sp. nov.	ZSI/EBRC/F14075	OP114397
473	Pisces	<i>Mystus cavasius</i> (Hamilton, 1822)	FBRC-ZSI-F-5211	OQ271421
474	Pisces	<i>Mystus gulio</i> (Hamilton, 1822)	ZSI/EBRC/F14598	OQ131123
475	Pisces	<i>Mystus malabaricus</i> (Jerdon, 1849)	FBRC-ZSI-F-4004, FBRC-ZSI-F-4005, FBRC-ZSI-F-5214	OP038553, OP297842, OQ271422

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476	Pisces	<i>Mystus vittatus</i> (Bloch, 1794)	FBRC-ZSI-F-5126, FBRC-ZSI-F-5244	OP715791, OQ472411
477	Pisces	<i>Nandus nandus</i> (Hamilton, 1822)	FBRC-ZSI-F-4024	OP038561
478	Pisces	<i>Nematalosa nasus</i> (Bloch, 1795)	ZSI/EBRC/F14589, ZSI/EBRC/F14590	OQ130542, OQ130574
479	Pisces	<i>Notopterus notopterus</i> (Pallas, 1769)	FBRC-ZSI-F-4021	OP038558
480	Pisces	<i>Osteobrama peninsularis</i> (Silas, 1952)	FBRC-ZSI-F-4835	ON810378
481	Pisces	<i>Osteobrama vigorsii</i> (Sykes, 1839)	FBRC-ZSI-F-4822, FBRC-ZSI-F-4834, FBRC-ZSI-F-4837	ON564841, ON810377, ON810380
482	Pisces	<i>Osteomugil perusii</i> (Valenciennes, 1836)	ZSI/EBRC/F14358, ZSI/EBRC/F14362	OP715578, OP715863
483	Pisces	<i>Pachypterus atherinoides</i> (Bloch, 1794)	FBRC-ZSI-F-5239	OQ472406
484	Pisces	<i>Pampus candidus</i> (Cuvier, 1829)	ZSI/EBRC/F14357, ZSI/EBRC/F14359	OP714527, OP715642
485	Pisces	<i>Paracanthocobitis botia</i> (Hamilton, 1822)	FBRC-ZSI-F-4831	ON810374
486	Pisces	<i>Paraschistura montana</i> (McClelland, 1838)	HARC_ZSI_DNA19_F1043	OP235281
487	Pisces	<i>Pethia longicauda</i> (Katwate, Paingankar, Raghavan & Dahanukar, 2014)	FBRC-ZSI-F-3998	OP297835
488	Pisces	<i>Pethia phutunio</i> (Hamilton, 1822)	FBRC-ZSI-F-4827	ON564847
489	Pisces	<i>Pethia ticto</i> (Hamilton, 1822)	FBRC-ZSI-F-5133	OP854858
490	Pisces	<i>Pisodonophis kalinga</i> Mohanty, Behera, Acharya, Patnaik, Ray, Seth, Patro, Mishra, Mohapatra, 2023	ZSI/EBRC/F14593, ZSI/EBRC/F14594	OQ134472, OQ134471
491	Pisces	<i>Planiliza macrolepis</i> (Smith, 1846)	ZSI/EBRC/F14223, ZSI/EBRC/F14463, ZSI/EBRC/F14464	OP498355, OP894053, OP897029
492	Pisces	<i>Platycephalus indicus</i> (Linnaeus, 1758)	ZSI/EBRC/F14462	OP891565
493	Pisces	<i>Plotosus canius</i> Hamilton, 1822	ZSI/EBRC/F14481	OP897041
494	Pisces	<i>Poecilia reticulata</i> (Peters, 1859)	FBRC-ZSI-F-4003	OP493142

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495	Pisces	<i>Pristipomoides multidens</i> (Day, 1871)	ZSI/EBRC/F14851	OQ535728
496	Pisces	<i>Psammogobius biocellatus</i> (Valenciennes, 1837)	ZSI/EBRC/F14899	OQ674771
497	Pisces	<i>Psettodes erumei</i> (Bloch & Schneider, 1801)	ZSI/EBRC/F14126	OP264079
498	Pisces	<i>Pseudapocryptes elongatus</i> (Cuvier, 1816)	ZSI/EBRC/F14485	OP897718
499	Pisces	<i>Puntius amphibius</i> (Valenciennes, 1842)	FBRC-ZSI-F-5136	OP854861
500	Pisces	<i>Puntius chola</i> (Hamilton, 1822)	FBRC-ZSI-F-5137	OP854862
501	Pisces	<i>Puntius sophore</i> (Hamilton, 1822)	FBRC-ZSI-F-4828, FBRC-ZSI-F-5127, FBRC-ZSI-F-5134	ON564848, OP715792, OP854859
502	Pisces	<i>Rasbora dandia</i> (Valenciennes, 1844)	FBRC-ZSI-F-4022	OP038559
503	Pisces	<i>Rhabdosargus sarba</i> (Gmelin, 1789)	ZSI/EBRC/F14479	OP897032
504	Pisces	<i>Rita chrysea</i> (Day, 1877)	FBRC-ZSI-F-4019	OP493143
505	Pisces	<i>Rita gogra</i> (Sykes, 1839)	FBRC-ZSI-F-4010	OP297837
506	Pisces	<i>Rita kuturnee</i> (Sykes, 1839)	FBRC-ZSI-F-4015	OP297841
507	Pisces	<i>Salmostoma novacula</i> (Valenciennes, 1840)	FBRC-ZSI-F-4833	ON810376
508	Pisces	<i>Scatophagus argus</i> (Linnaeus, 1766)	ZSI/EBRC/F14224	OP516331
509	Pisces	<i>Schistura savona</i> (Hamilton, 1822)	FBRC-ZSI-F-4832	ON810375
510	Pisces	<i>Siganus javus</i> (Linnaeus, 1766)	ZSI/EBRC/F14127	OP268217
511	Pisces	<i>Sperata aor</i> (Hamilton, 1822)	FBRC-ZSI-F-4014	OP297840
512	Pisces	<i>Sperata seenghala</i> (Sykes, 1839)	FBRC-ZSI-F-4820, FBRC-ZSI-F-4768, FBRC-ZSI-F-4768i, FBRC-ZSI-F-3999, FBRC-ZSI-F-4011	ON564842, ON564844, ON564845, OP038549, OP297838
513	Pisces	<i>Sphyræna jello</i> Cuvier 1829	ZSI/EBRC/F14227	OP520932
514	Pisces	<i>Stolephorus dubiosus</i> Wongratana, 1983	ZSI/EBRC/F14482, ZSI/EBRC/F14483	OP897043, OP897044

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515	Pisces	<i>Stolephorus mercurius</i> Hata, Lavoué & Motomura, 2021	ZSI/EBRC/F14103	OP256415
516	Pisces	<i>Strongylura leiura</i> (Bleeker, 1850)	ZSI/EBRC/F14355, ZSI/EBRC/F14356	OP714404, OP715914
517	Pisces	<i>Systomus sarana</i> (Hamilton, 1822)	FBRC-ZSI-F-4829, FBRC-ZSI-F-5247, FBRC-ZSI-F-4784	ON564849, OQ472414, ON564839
518	Pisces	<i>Taenioides anguillaris</i> (Linnaeus, 1758)	ZSI/EBRC/F14600	OQ132696
519	Pisces	<i>Takifugu oblongus</i> (Bloch, 1786)	ZSI/EBRC/F14591	OQ130584
520	Pisces	<i>Terapon jarbua</i> (Fabricius, 1775)	ZSI/EBRC/F14850	OQ520260
521	Pisces	<i>Tor putitora</i> (Hamilton, 1822)	FBRC-ZSI-F-4030	OP038552
522	Pisces	<i>Wallago attu</i> (Bloch & Schneider, 1801)	FBRC-ZSI-F-4008	OP038556
523	Pisces	<i>Xiphophorus helleri</i> (Heckel, 1848)	FBRC-ZSI-F-4713	ON357588
524	Amphibia	<i>Sylvirana lacrima</i> Sheridan and Stuart, 2018	ZSI/V/APRC/A-313	ON493539
525	Amphibia	<i>Amolops</i> sp.	SIJU-1	OM174172
526	Amphibia	<i>Duttaphrynus</i> sp.	WRC-245	OM174257
527	Amphibia	<i>Duttaphrynus</i> sp.	WRC-193	OM174259
528	Amphibia	<i>Duttaphrynus</i> sp.	PPM-1200	OM174261
529	Amphibia	<i>Duttaphrynus</i> sp.	WRC-291	OM174263
530	Amphibia	<i>Euphlyctis</i> cf. <i>kalasgramensis</i> Howlader, Nair, Gopalan & Merilä, 2015	V-22470	OQ404815
531	Amphibia	<i>Euphlyctis cyanophlyctis</i> (Schneider, 1799)	TrTR-Am-5	OQ404811
532	Amphibia	<i>Fejervaya</i> sp.	PPM-1627, PPM-1625	OQ404809, OQ404813
533	Amphibia	<i>Indosylvirana nicobariensis</i> (Stoliczka, 1870)	PPM-1628	OQ404819
534	Amphibia	<i>Microhyla</i> cf. <i>nilphamariensis</i> Howlader, Nair, Gopalan & Merilä, 2015	A-17	OQ404817
535	Amphibia	<i>Minervarya pierrei</i> (Dubois, 1975)	V-21236, V/21788	OM943774 to OM943779

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536	Amphibia	<i>Minervarya</i> sp.	EGFS-AM-09	OQ404833
537	Amphibia	<i>Minervarya</i> sp.	V-21779 (B)	OM936856
538	Amphibia	<i>Minervarya</i> sp.	V-21780 (b)	OM936857
539	Amphibia	<i>Minervarya syhadrensis</i> (Annandale, 1919)	TrTR-Am-2	OQ404835
540	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176582
541	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176583
542	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176584
543	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176585
544	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-196	OM176580
545	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-196	OM176581
546	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176586
547	Amphibia	<i>Nyctibatrachus</i> sp.	WRC-302	OM176587
548	Amphibia	<i>Polypedates maculatus</i> (J.E.Gray, 1830)	V/21777, EGFS-AM-06	OM176660, OM176661, OQ404831
549	Amphibia	<i>Polypedates</i> sp.	WRC-301	OM176658
550	Amphibia	<i>Polypedates</i> sp.	WRC-301	OM176659
551	Amphibia	<i>Polypedates teraiensis</i> (Dubois, 1987)	A-16	OQ404821
552	Amphibia	<i>Quasipaa</i> sp.	SESSA-1	OM936172
553	Amphibia	<i>Quasipaa</i> sp.	SESSA-1	OM936173
554	Amphibia	<i>Raorchestes</i> sp.	WRC-236	OM911937
555	Amphibia	<i>Raorchestes</i> sp.	WRC-236	OM911938
556	Amphibia	<i>Raorchestes</i> sp.	WRC-234	OM911939
557	Amphibia	<i>Raorchestes</i> sp.	WRC-234	OM911940
558	Amphibia	<i>Raorchestes</i> sp.	WRC-202	OM911941
559	Amphibia	<i>Raorchestes</i> sp.	WRC-202	OM911942
560	Amphibia	<i>Sphaerotheca breviceps</i> (Schneider, 1799)	A-11	OQ404827
561	Amphibia	<i>Sphaerotheca maskeyi</i> (Schleich and Anders, 1998)	V-21782(A), V-21782(A), V/21783 (b), V/21783 (b), V-21781(A), V-21781(A), V-21779- V/21783	OM936858, OM936859, OM936860, OM936861, OM936862, OM936863, OM936856 to OM936863, OM176695 to OM176700
562	Amphibia	<i>Uperodon globulosus</i> (Günther, 1864)	A-06	OQ404829
563	Reptilia	<i>Calliophis</i> sp.	V/3777	OP854863

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564	Reptilia	<i>Calliophis</i> sp.	V/3777	OP854864
565	Reptilia	<i>Cnemaspis monticola</i> Manamendra-arachchi, Batuwita & Pethiyagoda, 2007	WRC-336, WRC-335, WRC-343, WRC-336, WRC-335	OP849641, OP849643, OP849645, OP849642, OP849644
566	Reptilia	<i>Cnemaspis mysoriensis</i> (Jerdon, 1853)	WRC-427	OP849649, OP849650
567	Reptilia	<i>Cnemaspis</i> sp.	WRC-260	OP849647
568	Reptilia	<i>Cnemaspis gracilus</i> (Beddome, 1870)	WRC-389	OP849639, OP849640
569	Reptilia	<i>Dasia olivacea</i> Gray, 1839	ZSI/ANRC T- 3676, ZSI/ANRC T- 3848, ZSI/ANRC/T/15600, ZSI/ANRC/T/15601, ZSI/ANRC/T/15624 to ZSI/ANRC/T/15626, ZSI/ANRC/T/15628, ZSI/ANRC/T/15629	OF59232, OF59233, OF59244, OF59245, OF59251 to OF59253, OF59255, OF59256
570	Reptilia	<i>Dibamus nicobaricus</i> (Steindachner, 1867)	ZSI/ANRC/T/15635	OF59262
571	Reptilia	<i>Eutropis andamanensis</i> (Atkinson, 1874)	ZSI/ ANRC/T/9343, ZSI/ANRC/T/14253, ZSI/ANRC/T/14297, ZSI/ANRC/T/14307, ZSI/ANRC/T/14309	OF59223, OF59234, OF59236, OF59240, OF59242
572	Reptilia	<i>Eutropis carinata</i> (Schneider, 1801)	WRC-311	OP854882, OP854883
573	Reptilia	<i>Eutropis macularia</i> (Blyth, 1853)	WRC-297	OP854880, OP854881
574	Reptilia	<i>Eutropis multifasciata</i> (Kuhl, 1820)	ZSI/ANRC/T/13948, ZSI/ANRC/T/11363, ZSI/ANRC/T/13949, ZSI/ANRC/T/13947, ZSI/ANRC/T/14314, ZSI/ANRC/T/15622, ZSI/ANRC/T/15630	OF59224 to OF59226, OF59231, OF59243, OF59249, OF59257
575	Reptilia	<i>Eutropis rugifera</i> (Stoliczka, 1870)	ZSI/ANRC/T/14301, ZSI/ANRC/T/15620, ZSI/ANRC/T/15621, ZSI/ANRC/T/15623	OF59237, OF59247, OF59248, OF59250
576	Reptilia	<i>Hemidactylus brookii</i> Gray, 1845	WRC-290, WRC-291	OP849618, OP849619
577	Reptilia	<i>Hemidactylus falviviridis</i> Rüppell, 1835	WRC-287	OP849620, OP849621

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578	Reptilia	<i>Hemidactylus frenatus</i> Duméril & Bibron, 1836	WRC-317	OP849622, OP849623
579	Reptilia	<i>Hemidactylus platyurus</i> (Schneider, 1797)	WRC-003	OP849616, OP849617
580	Reptilia	<i>Indotyphlops bhaminus</i> (Daudin, 1803)	WRC-295	OP854851, OP854852
581	Reptilia	<i>Laudakia tuberculata</i> (Gray, 1827)	HARC/R 247, HARC/R 248	OP450851, OP450853
582	Reptilia	<i>Lipinia macrotyimpanum</i> (Stoliczka, 1873)	ZSI/ANRC/T/15627, ZSI/ANRC/T/15634	OF59254, OF59261
583	Reptilia	<i>Lissemys punctata andersonii</i> Webb, 1980	HARC/R84	ON868768, ON868769
584	Reptilia	<i>Lissemys punctata punctata</i> (Bonnaterre, 1789)	HARC/R84	ON868767, ON868766
585	Reptilia	<i>Lygosoma punctata</i> (Bonnaterre 1789)	WRC-286	OP854854, OP854855
586	Reptilia	<i>Lygosoma</i> sp.	WRC-296	OP854856
587	Reptilia	<i>Lygosoma</i> sp.	WRC-296	OP854857
588	Reptilia	<i>Mochlus fernandi</i> (Burton, 1836)	WRC-334	OP854848, OP854849
589	Reptilia	<i>Monilesaurus montanus</i> Pal, Vijayakumar, Shanker, Jayarajan & Deepak, 2018	WRC-375	OP854846, OP854847
590	Reptilia	<i>Nilssonina nigricans</i> (Anderson, 1875)	-	ZSIWF098-22, ZSIWF099-22
591	Reptilia	<i>Pangshura tecta</i> (Gray, 1831)	-	ZSIWF159-23
592	Reptilia	<i>Phrynocephalus theobaldi</i> (Blyth, 1863)	HARC/R256, HARC/R209,	OP450852, OP450850, OP450849
593	Reptilia	<i>Scincella macrotis</i> (Steindachner, 1867)	ZSI/ANRC/T/14308	OF59241
594	Reptilia	<i>Sphenomorphus maculatus</i> (Blyth, 1853)	ZSI/ANRC T/5785, ZSI/ANRC T/4573, ZSI/ANRC/T/13955, ZSI/ANRC/T/13956, ZSI/ANRC/T/14266, ZSI/ANRC/T/14302, ZSI/ANRC/T/14306, ZSI/ANRC/T/15602, ZSI/ANRC/T/15631, ZSI/ANRC/T/15632, ZSI/ANRC/T/15633	OF59227 to OF59230, OF59235, OF59238, OF59239, OF59246, OF59258 to OF59260

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
595	Reptilia	<i>Teretrurus travancoricus</i> (Beddome, 1867)	WRC-390	OP854865, OP854866
596	Aves	<i>Pavo cristatus</i> Linnaeus, 1758	ZSI_NRC_DNA_May22	ON527520
597	Aves	<i>Amaurornis phoenicurus</i> (Pennant, 1769)		ZSIWF108-22 to ZSIWF115-22
598	Mammalia	<i>Hipposideros nicobarulae</i> Miller, 1902	ZSI/WGRC/V.3630 to ZSI/WGRC/V.3635	OP129713-OP129718
599	Mammalia	<i>Suncus niger</i> (Horsfield, 1851)	ZSI/WGRC/V.3624 and ZSI/WGRC/V.3625	OQ596434, OQ600602
600	Mammalia	<i>Neophocaena</i> sp.	ZSI/WGRC/V.3626 and ZSI/WGRC/V.3627	OQ473442, OQ473443, OQ476223, OQ476224
601	Mammalia	<i>Cynopterus brachyotis</i> (Müller, 1838)	V/3807	OM169263
602	Mammalia	<i>Funambulus palmarum</i> (Linnaeus, 1766)	V/3781, M/892	OM169255, OM169257
603	Mammalia	<i>Funambulus tristriatus</i> (Waterhouse, 1837)	V/3814	OM169259
604	Mammalia	<i>Mus booduga</i> (Gray, 1837)	M/869	OM169266
605	Mammalia	<i>Mus terricolor</i> Blyth, 1851	V/3688	OM169211, OM169268
606	Mammalia	<i>Platacanthomys</i> sp.	WRC-397	OM180014
607	Mammalia	<i>Funambulus</i> sp.	M/907	OM943819
608	Mammalia	<i>Funambulus</i> sp.	M/907	OM943820
609	Mammalia	<i>Funambulus pennantii</i> Wroughton, 1905	V/3818	OM943823, OM943824
610	Mammalia	<i>Rhinolophus indorouxii</i> Chattopadhyay, Garg, Kumar, Doss, Ramakrishnan, & Kandula, 2012	V/3630	OM180016
611	Mammalia	<i>Rousettus</i> sp.	V/3635	OM169261
612	Mammalia	<i>Rousettus</i> sp.	V/3635	OM169225
613	Mammalia	<i>Suncus murinus</i> (Linnaeus, 1766)	WRC-403	OM169213, OM180010, OM180012
614	Mammalia	<i>Suncus niger</i> Horsfield, 1851	V/3779	OM180008

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
615	Mammalia	<i>Neophocaena phocaenoides</i> (Cuvier, 1829)	ISOLATED	ON318877
616	Mammalia	<i>Macaca mulatta</i> (Zimmermann, 1780)	ZSI/SRC RH1, ZSI/SRC RH5-RH8, ZSI/SRC RH11- RH15, ZSI/SRC RH17-RH19, ZSI/SRC RH645- RH649, ZSI/SRC RH661- RH665, ZSI/SRC RH26, ZSI/SRC RH30, ZSI/SRC RH63- RH64, ZSI/SRC RH623, ZSI/SRC RH581, ZSI/SRC RH41, ZSI/SRC RH60, ZSI/SRC RH587, ZSI/SRC RH44, ZSI/SRC RH48 MZ475727	MZ475736-MZ475743, ON501088-ON501094, ON501073-ON501087, ON834579-ON834580, MZ475736-MZ475743, OQ513808-OQ513834, OQ674824-OQ675010
617	Mammalia	<i>Macaca assamensis</i> (McClelland, 1840)	ZSI/SRC B-405	OQ689744
618	Mammalia	<i>Axis axis</i> (Erxleben, 1777)	ZSI/SRC B-475, ZSI/SRC B-471, ZSI/SRC B-480, ZSI/SRC B-188, ZSI/SRC B-194, ZSI/SRC B-200, ZSI/SRC B-493, ZSI/SRC B-622	ON862939-ON862945
619	Mammalia	<i>Gazella bennettii</i> (Sykes, 1831)	ZSI/SRC B-575	ID2688091
620	Mammalia	<i>Ovis aries</i> Linnaeus, 1758	ZSI/SRC B-574, ZSI/SRC B-662	ID2688080
621	Mammalia	<i>Boselaphus tragocamelus</i> (Pallas, 1766)	ZSI/SRC B-582, ZSI/SRC B-620	OQ689737
622	Mammalia	<i>Antelope cervicapra</i> (Linnaeus, 1758)	ZSI/SRC B-513-515, ZSI/SRC B-618-619, ZSI/SRC B-634, ZSI/SRC B-637, ZSI/SRC B-606-608, ZSI/SRC B-624, ZSI/SRC B-626-630, ZSI/SRC B-564, ZSI/SRC B-567, ZSI/SRC B-647 ZSI/SRC B-646, ZSI/SRC B-599, ZSI/SRC B-650, ZSI/SRC B-660, ZSI/SRC B-656, ZSI/SRC B-582, ZSI/SRC B-651, ZSI/SRC B-664, ZSI/SRC B-582	MZ475727-MZ475743, OQ102565-OQ102601, OQ110737-OQ110801, OQ110802-OQ110804, OQ689738-OQ689743
623	Mammalia	<i>Moschus chrysogaster</i> (Hodgson, 1839)	-	ZSIVP236-23 to ZSIVP238-23
624	Mammalia	<i>Budorcas taxicolor</i> Hodgson, 1850	-	ZSIVP239-23, ZSIVP240-23
625	Mammalia	<i>Capra sibirica</i> (Pallas, 1776)	-	ZSIV177-22 to ZSIV229-22

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
626	Mammalia	<i>Manis</i> sp.	-	ZSIV230-23 to ZSIV268-23
627	Mammalia	<i>Manis pentadactyla</i> (Linnaeus, 1758)	-	ZSIV269-23 to ZSIV311-23
628	Mammalia	<i>Manis crassicaudata</i> É. Geoffroy Saint-Hilaire, 1803	-	ZSIV312-23 to ZSIV323-23
629	Mammalia	<i>Capra hircus</i> Linnaeus, 1758	-	ZSIWF094-22 to ZSIWF096-22, ZSIWF140-22
630	Mammalia	<i>Panthera pardus</i> (Linnaeus, 1758)	-	ZSIWF097-22, ZSIWF101-22, ZSIWF121-22, ZSIWF122-22, ZSIWF145-22, ZSIWF151-23 to ZSIWF154-23
631	Mammalia	<i>Bos frontalis</i> Lambert, 1804	-	ZSIWF141-22
632	Mammalia	<i>Bubalus bubalis</i> (Linnaeus, 1758)	-	ZSIWF102-22
633	Mammalia	<i>Canis aureus</i> Linnaeus, 1758	-	ZSIWF152-23
634	Mammalia	<i>Elephas maximus</i> Linnaeus, 1758	-	ZSIWF140-22
635	Mammalia	<i>Felis chaus</i> Schreber, 1777	-	ZSIWF116-22, ZSIWF117-22, ZSIWF136-22 to ZSIWF139-22, ZSIWF146-22
636	Mammalia	<i>Moschus leucogaster</i> Hodgson, 1839	-	ZSIWF148-23
637	Mammalia	<i>Muntiacus vaginalis</i> (Boddaert, 1785)	-	ZSIWF149-23, ZSILG779-22 to ZSILG804-22
638	Mammalia	<i>Naemorhedus goral</i> (Hardwicke, 1825)	-	ZSIWF103-22, ZSIWF104-22
639	Mammalia	<i>Paradoxurus hermaphroditus</i> (Pallas, 1777)	-	ZSIWF118-22 to ZSIWF120-22, ZSIWF147-22, ZSIWF155-23 to ZSIWF157-23
640	Mammalia	<i>Prionailurus bengalensis</i> (Imaizumi, 1967)	-	ZSIWF143-22

Sl. No.	Faunal Group	Species Name	Registration Number	BOLD ID / NCBI Accession Number
641	Mammalia	<i>Prionailurus viverrinus</i> (Bennett, 1833)	-	ZSIWF105-22 to ZSIWF107-22
642	Mammalia	<i>Ursus thibetanus</i> G. Cuvier, 1823	-	ZSIWF144-22, ZSILG860-23 to ZSILG863-23
643	Mammalia	<i>Urva auropunctata</i> (Hodgson, 1836)	-	ZSIWF133-22 to ZSIWF135-22
644	Mammalia	<i>Viverricula indica</i> Geoffroy Saint-Hilaire, 1803	-	ZSIWF123-22 to ZSIWF127-22, ZSIWF130-22 to ZSIWF132-22
645	Mammalia	<i>Funambulus</i> sp.	-	ZSIWF128-22 to ZSIWF129-22
646	Mammalia	<i>Hemitragus jemlahicus</i> (C.H. Smith, 1826)	-	ZSILG670-22 to ZSILG705-22
647	Mammalia	<i>Panthera pardus</i> (Linnaeus, 1758)	-	ZSILG864-23, ZSILG865-23
648	Mammalia	<i>Balaenoptera musculus</i> musculus Linnaeus, 1758	ZSI/WGRC/V.3628 and ZSI/WGRC/V.3629	OQ704238, OQ718808







Capacity Building

ZSI is regularly organising Training programmes, Symposia, Seminars etc. on different topics for researchers, students, forest personnels, and faculties of in-house as well as other Institutes.

Capacity Building

Under the capacity building programme, ZSI is organizing a series of training programmes, workshops, symposia, seminars, etc. on different thematic areas for the benefit of students, researchers, academicians, policy makers etc.

This year 78 Workshops/Webinars/Training programmes/Seminar/ organized by ZSI Headquarters and Regional Centres (ZSI Headquarters and all Regional Centres celebrated Hindi Pakhwada).

More than 10,000 participants were benefited by these outreach activities.

Trainings organized during 2022 -23

Sl. No.	Title	Date/Period	Organized by
1	International Earth Day	22 nd April 2022	ZSI, HQ
2	International Day for Biological Diversity	26 th May 2022	ZSI, HQ
3	World Environment Day	5 th June 2022	ZSI, HQ
4	Karyasahala Workshop on Taxonomy, Ecology and Genetic Analysis of Indian Scyphozoans (Jellyfishes)	20 th July 2022	ZSI,HQ (DST-SERB funded)
5	World Ozone Day	16 th September 2022	ZSI, HQ
6	Online training on Population monitoring of Common Leopard and Black bear in Himachal Pradesh	27 th to 30 th September 2022	ZSI, HQ
7	Training Workshop on “Skill and Techniques of Taxidermy”	15-17 th November, 2022	ZSI, HQ
8	Online workshop on ‘Ecological Paradigms an Applied Perspective (Phase I- Ecosystem)’	1 st to 19 th December 2022	ZSI,HQ
9	“Capacity building workshop for frontline staff of west bengal forest department on identification of scheduled animals	16-17 th January, 2023	ZSI, HQ
10	High End Karyashala on Demonstrating SOPs to combat illegal wildlife trade & strengthening wildlife forensic capabilities in India	25 th July to 31 st July 2022.	ZSI, HQ (DST-SERB funded)
11	High-End workshop on Taxonomy, Ecology and Genetic Analysis of Indian Scyphozoans	18 th July to 24 th July 2022	ZSI, HQ (DST-SERB funded)
12	One day Seminar on Unlocking the Mystery of the DNA Molecule and the secrets of the GIS Technology	16 th August 2022	ZSI, HQ
13	An international webinar was organized on the theme ‘Building a Shared Future for All Life’ to observe ‘International Day for Biological Diversity’	24 th May 2022	ZSI, HQ
14	A national webinar was organized to observe World Wildlife Day along with commemorating 50 years of CITES	3 rd March 2023	ZSI, HQ
15	One day seminar on “Basic tools and Concepts in Aquaculture management”	25 th May 2022	MARC, Digha

Sl. No.	Title	Date/Period	Organized by
16	One day training programme for “Marine fauna collection, preservation and identification”	29 th November 2022	MARC, Digha
17	One day training programme entitled “Marine Biodiversity and Conservation with special reference through DNA Bar-coding techniques” and also conducted Mission LiFE awareness programme on "Conserve water & Save Energy"	26 th February 2023	MARC, Digha
18	One day training on “Indian Marine Fauna and Biodiversity, along with fauna present at aquarium and museum”	1 st March 2023	MARC, Digha
19	National webinar on Wildlife of India to observe world wildlife day	3 rd March 2023	ZSI,HQ
20	One day training programme entitled “Taxonomy, habitat, behaviour and conservation of Marine Life”	14 th March 2023	MARC, Digha
21	One day training programme for “Intertidal fauna collection, preservation and identification at Digha Mohana beach”	17 th March 2023	MARC, Digha
22	One day training and demonstration session on “Marine fauna and their faunal resources from India”	26 th March 2023	MARC, Digha
23	Training on Research Methodologies to 20 Research Scholars of Jai Prakash University, Chhapra, Bihar	21 st July 2022	GPRC, Patna
24	Seminar on Island Biodiversity of A & N Islands on World Environment Day 2022	5 th June 2022	ANRC, Port Blair
25	One day workshop to highlight the idea of ‘Clean coast, Safe sea’	6 th September 2022	ANRC, Port Blair & Vigyan Prasar (VP), Department of Science & Technology, Ministry of Science and Technology, Government of India
26	One day workshop on World Ozone Day	16 th September 2022	ANRC, Port Blair
27	One day training workshop on Biodiversity Conservation of Andaman and Nicobar Islands	19 th October 2022	ANRC, Port Blair
28	Five-day training on Bird Identification and Basic Ornithology sponsored by Department of Environment and Forests, A & N Islands	7 th – 11 th November 2022	ANRC, Port Blair
29	Two-week workshop on Bird Identification and Basic Ornithology under the Accelerate Vigyan Scheme (AV)	15 th – 29 th November 2022	ANRC, Port Blair
30	Five-day training on Para-taxonomy including Preparation of People’s Biodiversity Register (PBR) sponsored by Department of Environment and Forests, A & N Islands	13 th – 17 th December 2022	ANRC, Port Blair

Sl. No.	Title	Date/Period	Organized by
31	Three-day workshop on Coastal and marine biodiversity of island ecosystems under the “Training of Personnel of Other Stakeholders” sponsored by the Ministry of Environment, Forest and Climate Change, Government of India	8 th December 2022	ANRC, Port Blair
32	Workshop on Biodiversity and Conservation of Andaman and Nicobar Islands	4 th – 5 th December 2022	ANRC, Port Blair
33	One day training on Biodiversity of Andaman and Nicobar Islands and its challenges	27 th January 2023	ANRC, Port Blair
34	One day training on Biodiversity of Andaman and Nicobar Islands	13 th February 2023	ANRC, Port Blair
35	National Webinar of ‘the sacred groves of Meghalaya: a bastion of biodiversity conservation’	23 rd June 2022	NERC, Shillong and Sankardev College Shillong
36	One day training programme on Documentation of fauna in the PBRs	10 th November 2022	NERC, Shillong
37	World Environment Day	5 th June 2022	CZRC, Jabalpur
38	International Day of Yoga organized in which the speaker Ms. Seema Ramesh Kothari, Yoga instructor from Pune delivered a lecture on “Yoga in and along daily life”	22 nd June	CZRC, Jabalpur
39	Hindi Pakhwara celebration	8 th September 2022	CZRC, Jabalpur
40	Hindi Karayashala	28 th September 2022	HARC, Solan
41	Hands-on training to 77 students of B.Sc. final year of government degree college, Solan on insect and vertebrate collections	12 th December 2022	HARC, Solan
42	Webinar on “Diversity of Bees in India and their conservation” on World Bee Day	20 th May 2022	DRC, Jodhpur
43	Webinar on “Faunal diversity of Desert Ecosystem of Rajasthan & Quiz Competition” on International Day for Biological Diversity	22 th May 2022	DRC, Jodhpur
44	Webinar on “Importance of World Environment Day and Biodiversity Conservation for Humanity” on World Environment Day	5 th June 2022	DRC, Jodhpur
45	Workshop on <i>Role of Faunal Diversity for Sustainable Environment</i>	20 th -22 nd March 2023	DRC, Jodhpur
46	Capacity Building and Training Programme collaboration with Andhra Pradesh State Biodiversity Board (APSBB), Botanical Survey of India (BSI) and National Bureau of Plant Genetic Resources (NBPGR) at Maredumilli, Alluri Seetharamaraju district, Andhra Pradesh	2 nd September 2022	FBRC, Hyderabad

Sl. No.	Title	Date/Period	Organized by
41- 52	Field Workshops/ on various sites: Awareness programmes: 12 field workshops/outreach activities/on-spot awareness programmes were conducted at the village/ community/ district level in Arunachal Pradesh, Himachal Pradesh, Uttarakhand, Jammu & Kashmir and Ladakh, during the period, regarding the conservation and utilization of indigenous mountain pollinators with special reference to Himalayan bees. Pamphlets of Advice have been distributed to more than 300 local stakeholders/farmers/growers/ tribal people/students of the surveyed area and simultaneously demonstrated pollination management strategy for improved practice in pollination in their orchards and crops.	i) 19.05.2022 ii) 20.05.2022 iii) 30.05.2022 iv) 08.06.2022 v) 01.07.2022 vi) 09.07.2022 vii) 27.07.2022 viii)18.08.2022 ix) 20.08.2022 x)25.08.2022 xi)27.08.2022 xii)10.09.2022	ZSI, Jodhpur
53	“ANUSANDAN”, a summer camp training programme	25 th May to 5 th June 2022.	WRC, Pune
54	Organised a National workshop on “Capacity Building for Young Lepidopterologist: Insight into the Biology and Conservation of Lepidoptera with emphasis on moths”	18 th July to 24 th July 2022.	WRC, Pune (sponsored by The Department of Science & Technology, Government of India under the Science & Engineering Research Board’s scheme on Accelerate Vigyan.)
55	Online lecture on the topic “Emergency preparedness and response”. Dr.Ranee Prakash, Senior Curator of Flowering Plants and a member of the Salvage Team at the Natural History Museum delivered the talk	25 th July 2022	ZSI,HQ
56	Organized Capacity Building Workshop for staff of JSW on monitoring wildlife and conservation issues	25 th July 2022	WRC, Pune
57	Collection preservation and identification of Crustacean and Ichthyofauna fauna	27 th and 29 th September 2022	EBRC, ZSI
58	Faunal diversity and their conservation in India	17 th May 2022	NRC, ZSI
59	Faunal diversity studies	24 th May 2022	NRC, ZSI
60	International webinar (online) on the theme ‘Building a Shared Future for All Life’ to observe ‘International Day for Biological Diversity’	24 th May 2022	ZSI,HQ
61	Value added Certificate Course on Animal Taxonomy- Lepidoptera	22 th to 29 th July, 2022	NRC, ZSI in collaboration with Dolphin (PG) Institute of Biomedical and Natural Medical Sciences, Dehradun
62	Seminar on Celebration of Himalayan Day	9 th September 2022	NRC, ZSI
63	Seminar on Faunal Diversity of India	12 th October, 2022	NRC, ZSI

Sl. No.	Title	Date/Period	Organized by
64	Hands on Training on Animal Taxonomy	16 th to 21 th January, 2023	NRC, ZSI
65	Seminar on Dr. Vijay Veer Foundation Lecture	5 th January, 2023	NRC, ZSI
66	Training and Skill Internship (VRITIKA) on Taxonomy, Diversity and Seasonality of Coastal Microzooplankton (Marine Protozoans) assemblages from the Indian waters	13 th January 2023	ZSI,HQ
67	A seminar on Biodiversity of Arunachal Pradesh on National Science Day	28 th February 2023	APRC, ZSI
68	Short Summer Internship training on “Field Surveys, Collection, Preservation and Basic Identification of Fauna” conducted for M.Sc students of CHRIST Deemed University, Bengaluru	6 th to 27 th June 2022	APRC,ZSI
69	National Wildlife Week	2 nd to 8 th October 2022	WGRC,ZSI
70	One day Hands on Training workshop on <i>Animal Taxonomy</i>	14 January 2023	WGRC, ZSI
71	Organized a lecture on Cyber-forensics by Dr. P. Vinod Bhattathiripad	18 January, 2023.	WGRC, ZSI
72	Training on identification of Aquatic Coleoptera to the Technical Staff of Central Pollution Control Board, Research & Division, Kolkata	1 st Feb to 3 rd Feb 2023	ZSI,HQ
73	One day webinar jointly organized with Amity University, Noida to celebrate World Pangolin Day & delivered a talk on “Safeguarding pangolins”.	16 th Feb 2023	ZSI, HQ
74	One Day Capacity Building Workshop on Implementation of Provisions of CITES	20 th January 2023	Organized by MoEFCC and hosted by Zoological Survey of India
75	‘Orientation Programme for Newly Joined Senior Zoological Assistant’	20 th December to 30 th December, 2022	ZSI, HQ
76	‘Career Progression Mandatory Training for Senior Zoological Assistant’	24 th January to 10 th February, 2023	ZSI, HQ
77	National Webinar on Role of Biodiversity Conservation in Ecosystem Functioning	December 14, 2022	ZSI, HQ in collaboration with Jointly Organised by Department of Zoology, Dr Harisingh Gour Vishwavidyalaya (A Central University), Sagar
78	Hands on Training on different faunal groups by Scientists and Technical Staff to the MSc Zoology students as a part of two internship programs on Animal Taxonomy	from 20 th June to 5 th July, 2022 and 8 th July to 23 rd July, 2022	SRC, Canning

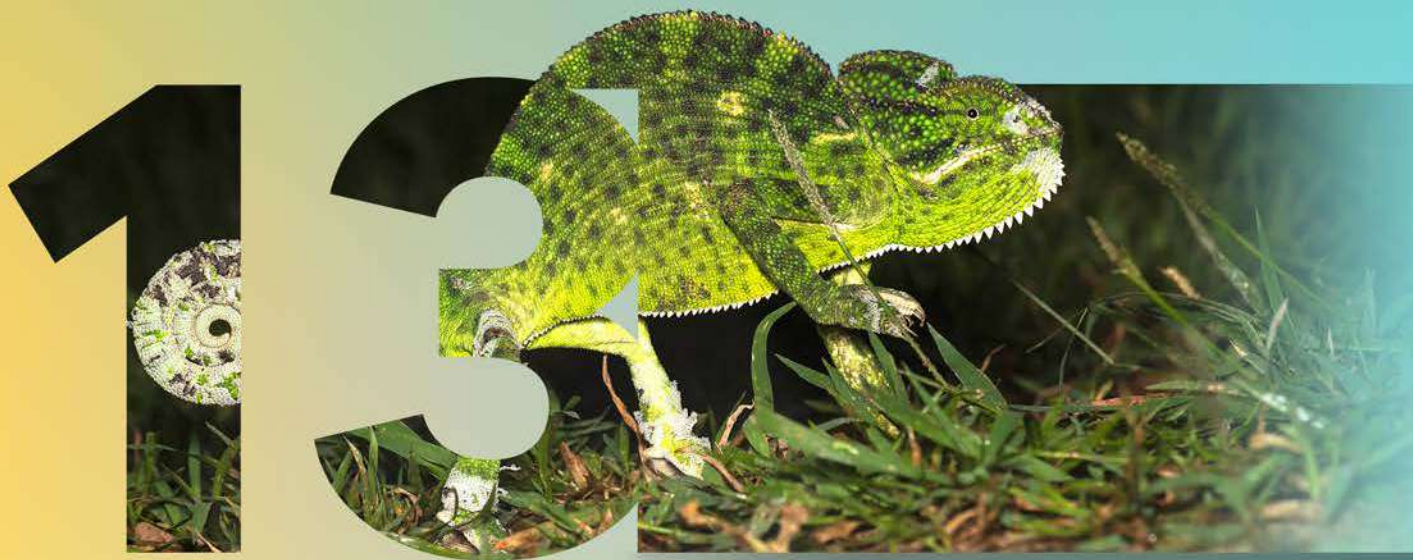


MoU with different National Bodies

During the period, Eight National MoU have been signed.

Sl. No.	Institute	Purpose	Date
1.	Shivaji University, Kolhapur	Academic and educational cooperation	30.04.2022
2.	Harishsingh Gour Central University, Bhopal, Madhya Pradesh	Cooperation in the field of science and education	25.05.2022
3.	West Bengal State University, West Bengal	Collaboration on various inter-disciplinary research & education	01.07.2022
4.	University of Calicut, Kerala	Collaboration on various inter-disciplinary research & education	08.08.2022
5.	Dr. Gafoor Memorial MES Mampad College, Malappuram, Kerala	Collaboration on various inter-disciplinary research & education	08.08.2022
6.	MoU between ZSI and Fakir Mohan University, Vyasa Vihar, Balasore	Academic and educational cooperation	20.10.2022
7.	National Museum of Natural History, New Delhi	Collective effort to develop and organize awareness and educational programmes and activities to sensitive young minds towards importance of biodiversity, nature, and environment.	19.01.2023
8.	MoU between ZSI and Patna University, Patna	Collaboration on various inter-disciplinary research & education	14.02.2023





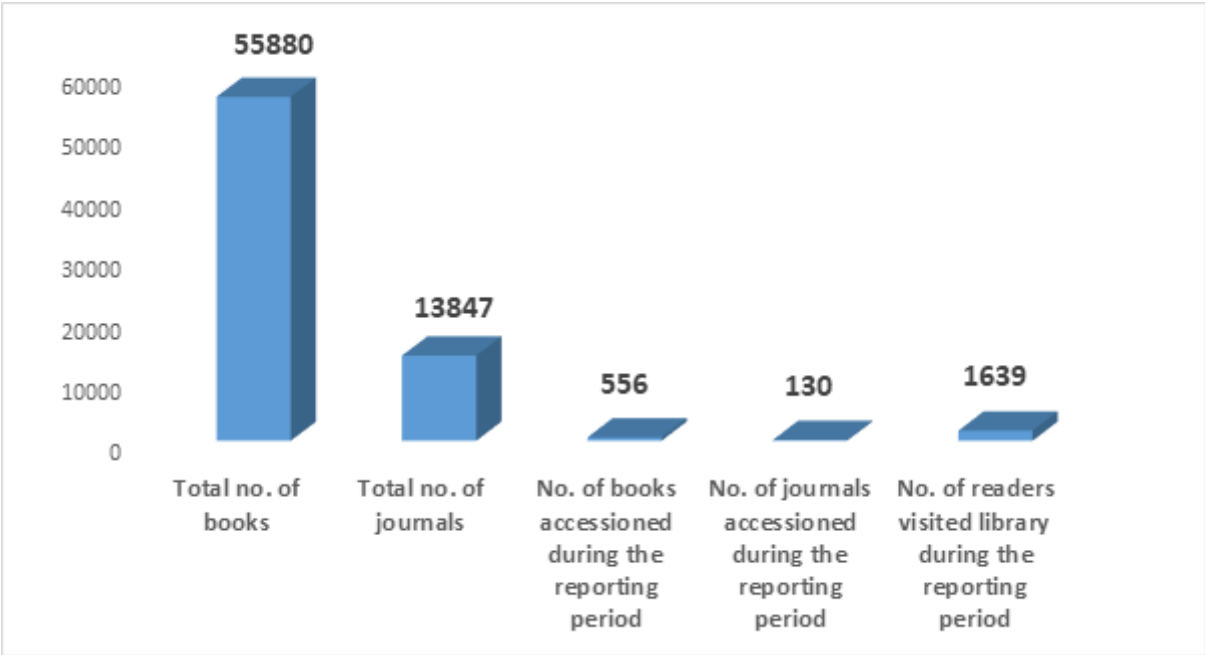
Library & Publication Division

The Library of Zoological Survey of India is one of the largest and eminent special libraries in Asia. Perhaps, in Asia, it is the largest special library of its own kind on the subject Zoology and its different branches of studies.

LIBRARY DIVISION

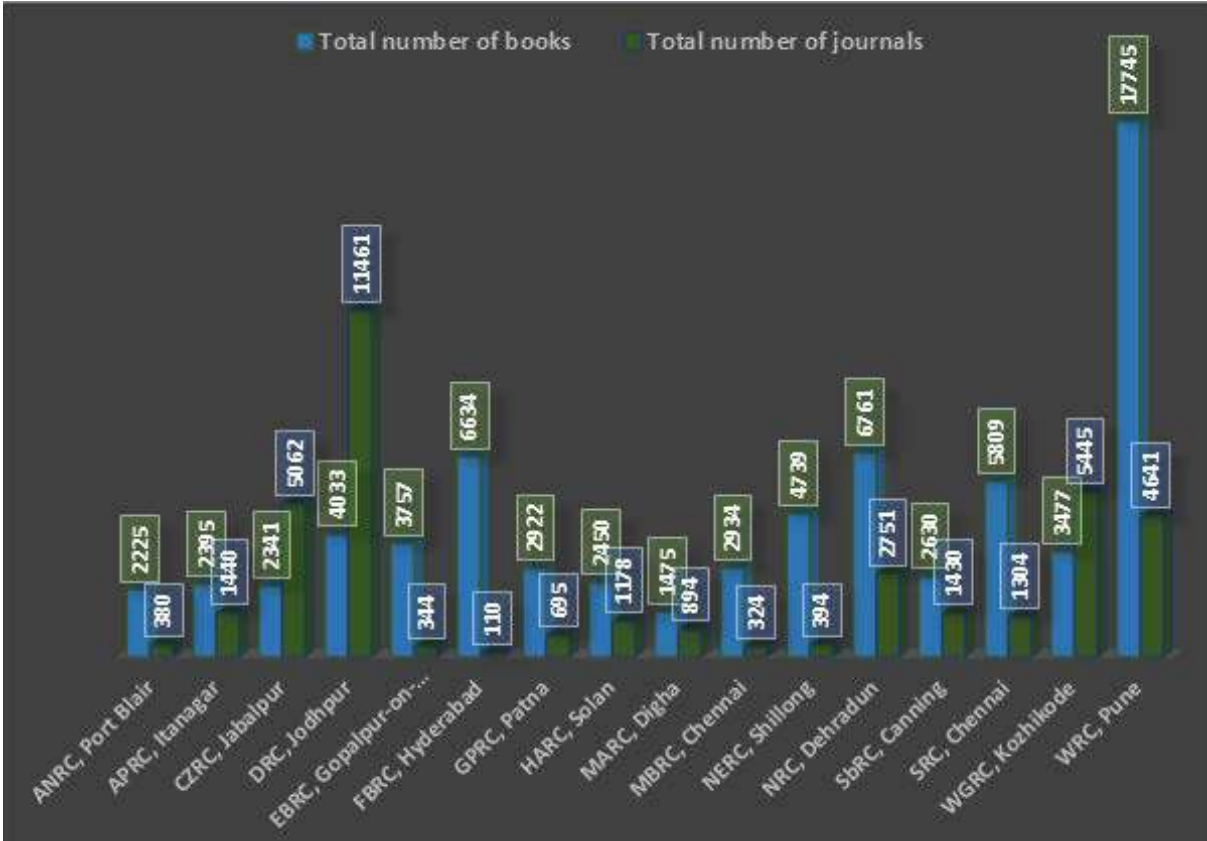
The library of Zoological Survey of India started its journey on 1st July, 1916 as an integral part of the parent organization. During its long and rich journey towards the development, the organization has grown remarkably in various aspects of science and other fields. The library enriched with valuable rare and modern scientific literature with time. The holding of library includes 55880 books and 13847 Journals (bound vols.). The collection of the library is enriched with more than 400 rare books and journals.

Total holding of Library of ZSI HQ, Kolkata

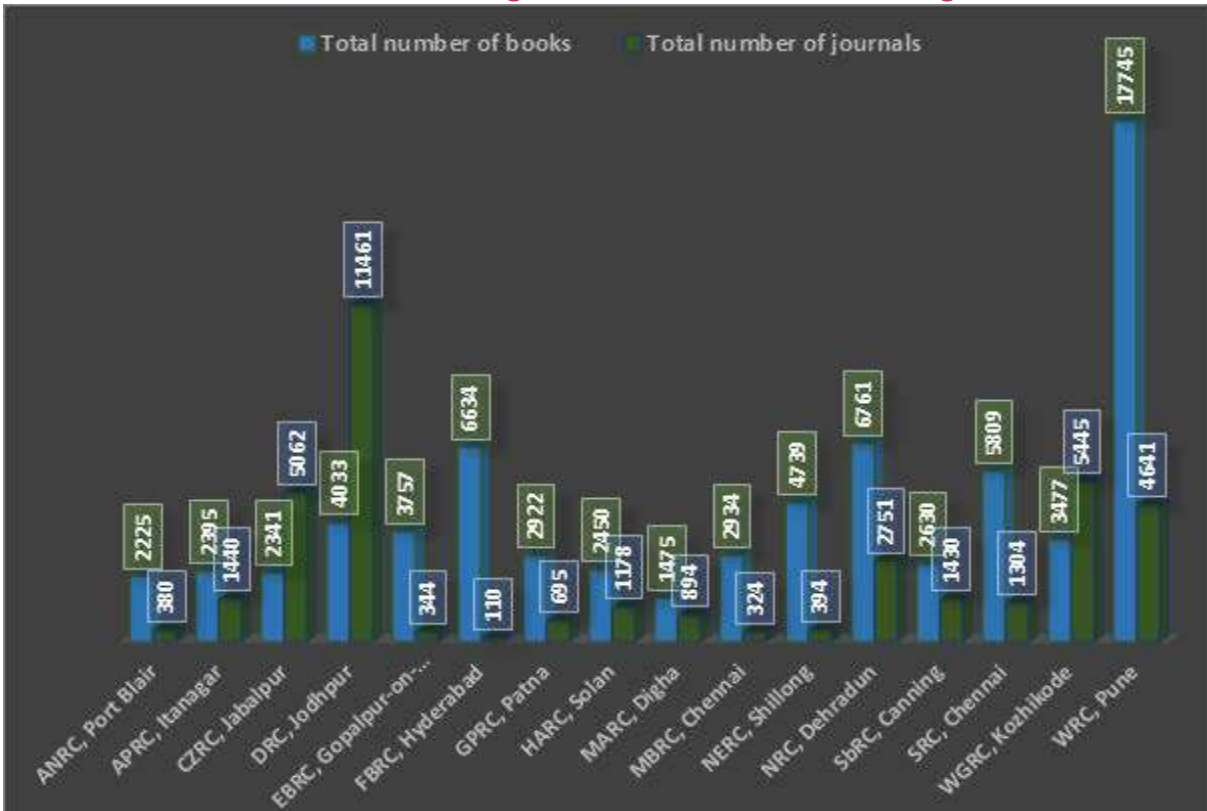


Visit of Shri Bhupender Yadav, Hon'ble Minister of Environment, Forest and Climate Change to the Library of Zoological Survey of India, Kolkata

Total holdings of Libraries of Regional Centres of ZSI



Books and Journals added at Regional Centre Libraries during 2022-23.



PUBLICATION DIVISION

About the Publications of ZSI

The Research contributions of scientists and researchers from ZSI and other institutes are being published regularly by the Publication Division of ZSI.

Records of the Zoological Survey of India

The *Records of the Zoological Survey of India* provides media opportunity for zoological communications dealing with taxonomy, faunistics, biology, ecology and population of any taxon, and acts as a journal of Indian Zoology. This is a quarterly publication. It was started in the year 1907 from the Zoological Section of Indian Museum as *Records of the Indian Museum* in order to publish result of faunistic surveys conducted by the scientists.

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18. Faunal Diversity of Satkosia and Baisipalli Wildlife Sanctuaries, Satkosia Tiger Reserve, Conservation Area Series 73
19. Faunal Diversity of Coringa Wildlife Sanctuary, Andhra Pradesh, Conservation Area Series 74

E-Newsletter

13. Monthly E-Newsletter from Zoological Survey of India, April, 2022, volume 38, pp. 13.
14. Monthly E-Newsletter from Zoological Survey of India, May, 2022, volume 39, pp. 20.

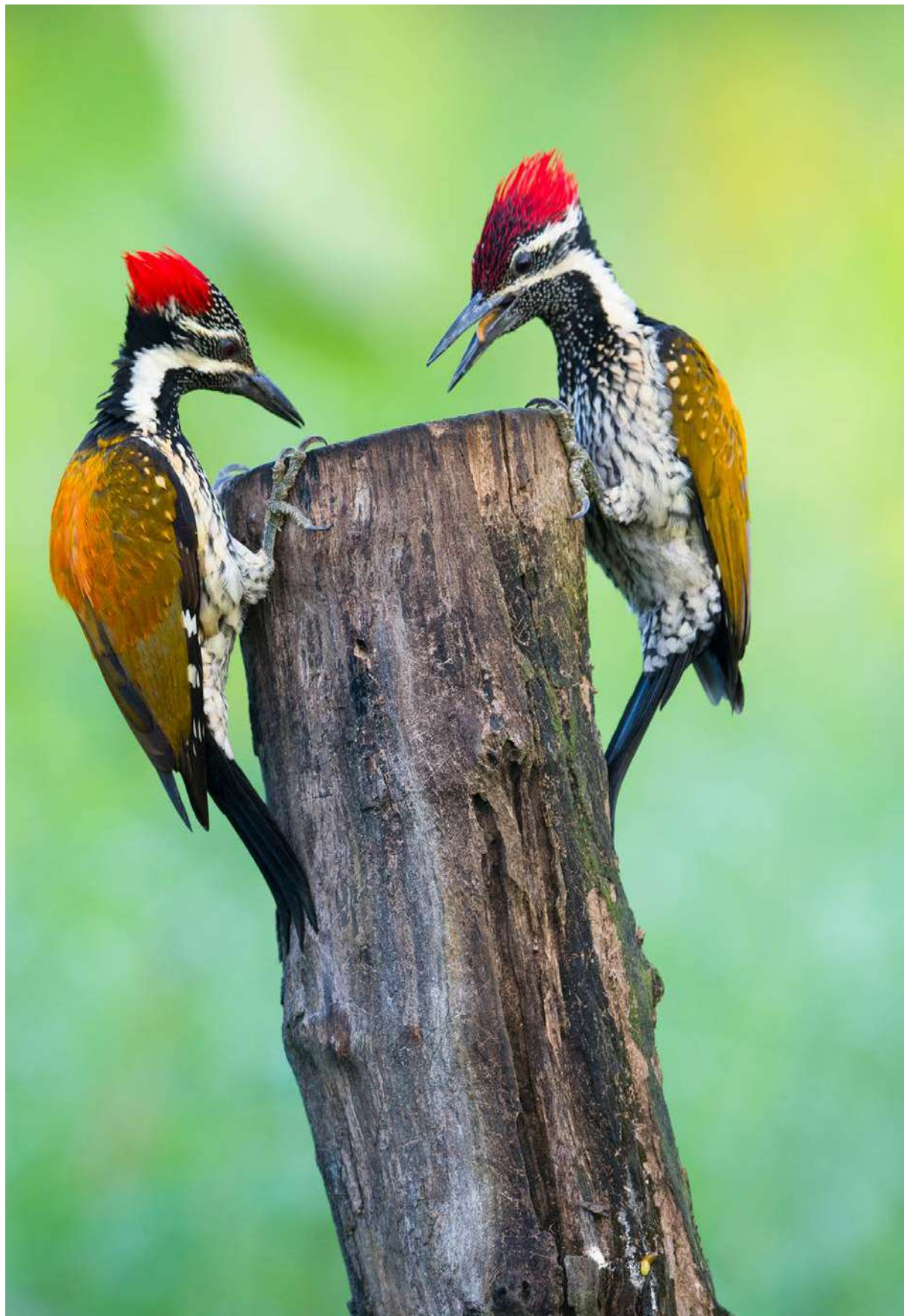
15. Monthly E-Newsletter from Zoological Survey of India, June, 2022, volume 40, pp. 15.
16. Monthly E-Newsletter from Zoological Survey of India, July, 2022, volume 41, pp. 20.
17. Monthly E-Newsletter from Zoological Survey of India, July, 2022, volume 42, pp. 20
18. Monthly E-Newsletter from Zoological Survey of India, September, 2022, volume 43, pp. 17.
19. Monthly E-Newsletter from Zoological Survey of India, October, 2022, volume 44, pp. 14.
20. Monthly E-Newsletter from Zoological Survey of India, November, 2022, volume 45, pp. 19.
21. Monthly E-Newsletter from Zoological Survey of India, December, 2022, volume 46, pp. 15.
22. Monthly E-Newsletter from Zoological Survey of India, January, 2023, volume 47, pp. 25.

23. Monthly E-Newsletter from Zoological Survey of India, February, 2023, volume 48, pp. 28.
24. Monthly E-Newsletter from Zoological Survey of India, March, 2023, volume 49

Journal: Records of Zoological Survey of India

1. Records of Zoological Survey of India Volume 122, Issue 3, 2022 (Articles 11)
2. Records of Zoological Survey of India Volume 122, Issue 2, 2022 (Articles 12)
3. Records of Zoological Survey of India Volume 122, Issue 1, 2022 (Articles 11, Short Communications)





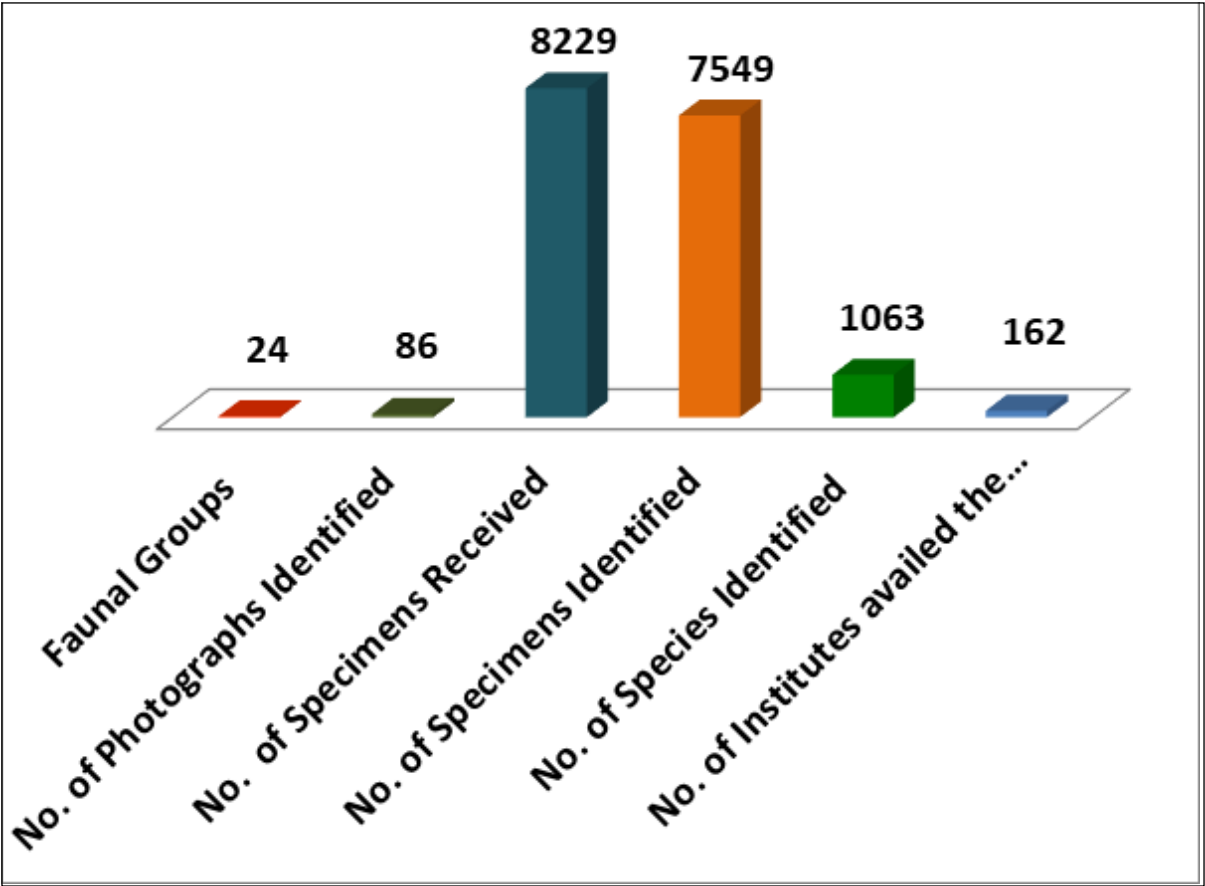


Identification & Advisory Services

The ZSI continued its task of rendering Identification and Advisory services to research and teaching institutions in India, Central and State Government/ Agencies, NGO's, Industries and also to individuals on zoological specimens and related matters.

A total of 7549 specimens and 86 photographs were identified belonging to 1063 species received from 162 Institutes/colleges.

Summary: Identification and Advisory Services rendered by the Scientists during 2022-23



Details of Identification and Advisory Services rendered by the Scientists during 2022-23

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
1	Mite	08	08	1. <i>Histiostoma feroniarum</i> Dufour, 1839 2. <i>Eotetranychus Carapini</i> Oudemans, 1905 3. <i>Trachygamasus medianus</i> Tichomirov, 1977	Kavita Taneja, University of Panipat, Haryana
2	Mite	05	05	1. <i>Erythraeus acis</i> Berlese, 1882 2. <i>Trombidium fuliginosum</i> Hermann, 1804	Ms. Shivani, Shoolini University, H.P.
3	Mite	01	01	1. <i>Laelaps piloscutuli</i> Hunter, 1961	C. Dhanonjoy Singh, District Epidemiologist, Manipur
4	Tick	55	55	1. <i>Rhipicephalus (Boophilus) microplus</i> Canestrini, 1888 2. <i>Rhipicephalus (Boophilus) annulatus</i> Say, 1821 3. <i>Haemaphysalis bispinosa</i> Neumann, 1897	Ashif Ahamed, P.D Women's College. Jalpaiguri
5	Acarii	15	15	1. <i>Trachyoribates ovulum</i> (Berlese, 1908) 2. <i>Scheloribates curvialatus</i> Hammer, 1961 3. <i>Protoribates magnus</i> Aoki, 1982 4. <i>Cosmolaelaps busolii</i> Moreira, Klompen & Moraes, 2014 5. <i>Scheloribates curvialatus</i> Hammer, 1961 6. <i>Scheloribates curvialatus</i> Hammer, 1961 7. <i>Bdella</i> sp. 8. <i>Epilohmannia minuta aegyptica</i> Bayoumi & Mahunka, 1976 9. <i>Mahunkania hallensis</i> Rack, 1975 10. <i>Rhizoglyphus echinopus</i> Fumouze and Robin, 1868 11. <i>Rhizoglyphus echinopus</i> Fumouze and robin, 1868 12. <i>Scheloribates thermophilus</i> Hammer, 1961 13. <i>Epilohmannia minuta aegyptica</i> Bayoumi & Mahunka, 1976 14. <i>Mahunkania secunda</i> Rack, 1975	Ms. Kavita Taneja, Sector-11/12, Panipat (Haryana) 132103
6	Fish	03	03	1. <i>Amblypharyngodon mola</i> (Hamilton, 1822)	Modern College of Arts, Commerce and Science, Pune
7	Fish	01	01	1. <i>Cirrhinus mrigala</i> (Hamilton, 1822)	Modern College of Arts, Commerce and Science, Pune
8	Fish	01	01	1. <i>Devario aequipinnatus</i> (McClelland, 1839)	Modern College of Arts, Commerce and Science, Pune
9	Fish	01	01	1. <i>Rasbora daniconius</i> (Hamilton, 1822)	Yashwantrao Chavan Institute of Science, Satara, Maharashtra
10	Fish	07	07	1. <i>Garra mulya</i> (Sykes, 1839) 2. <i>Systomus sarana</i> (Hamilton, 1822) 3. <i>Hypselobarbus kolus</i> (Sykes, 1839) 4. <i>Salmostoma bacaila</i> (Hamilton, 1822) 5. <i>Chanda nama</i> Hamilton, 1822 6. <i>Hyporhamphus limbatus</i> (Valenciennes, 1847) 7. <i>Oreochromis mossambicus</i> (Peters, 1852)	Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Pune

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
11	Fish	02	02	1. <i>Salmostoma boopis</i> (Day, 1874)	Modern College of Arts, Commerce and Science, Pune
12	Fish	02 photographs	2 photographs	1. <i>Labeo catla</i> (Hamilton, 1822)	Solapur University, Nagar panchayat, Tal. Malsiras Dist.Solapur, Maharastra.
13	Fish	01 photographs	01 photographs	1. <i>Oreochromis mossambicus</i> (Peters, 1852)	Dept. of Zoology, G.M. Momin Womens College
14	Fish	01 photographs	01 photographs	1. <i>Labeo catla</i> (Hamilton, 1822)	Dept. of Zoology, G.M. Momin Womens College
15	Fish	04 photographs	04 photographs	1. <i>Labeo catla</i> (Hamilton, 1822)	Dept. of Zoology, G.M. Momin Womens College
16	Fish	90	90	1. <i>Amblypharyngodon mola</i> (Hamilton, 1822) 2. <i>Chanda nama</i> Hamilton, 1822 3. <i>Channa marulius</i> (Hamilton, 1822) 4. <i>Channa punctata</i> (Bloch, 1793) 5. <i>Cirrhinus reba</i> (Hamilton, 1822) 6. <i>Clarias gariepinus</i> (Burchell, 1822) 7. <i>Glossogobius giuris</i> (Hamilton, 1822) 8. <i>Heteropneustes fossilis</i> (Bloch, 1794) 9. <i>Hyporhamphus limbatus</i> (Valeciennes, 1847) 10. <i>Hypselobarbus kolus</i> (Sykes, 1839) 11. <i>Labeo calbasu</i> (Hamilton, 1822) 12. <i>Labeo catla</i> (Hamilton, 1822) 13. <i>Labeo rohita</i> (Hamilton, 1822) 14. <i>Macrornathus pancalus</i> (Hamilton, 1822) 15. <i>Mastacembelus armatus</i> (Lacepede, 1800) 16. <i>Mystus cavasius</i> (Hamilton, 1822) 17. <i>Mystus vittatus</i> (Bloch, 1794) 18. <i>Nandus nandus</i> (Hamilton, 1822) 19. <i>Notopterus synurus</i> (Bloch & Schneider, 1801) 20. <i>Ompok bimaculatus</i> (Bloch, 1794) 21. <i>Oreochromis mossambicus</i> (Peters, 1852) 22. <i>Osteobrama peninsularis</i> (Silas, 1952) 23. <i>Osteobrama vigorsii</i> (Sykes, 1839) 24. <i>Parambassis lala</i> (Hamilton, 1822) 25. <i>Parambassis ranga</i> (Hamilton, 1822) 26. <i>Pethia ticto</i> (Hamilton, 1822) 27. <i>Piaractus brachypomus</i> (G.Cuvier, 1818) 28. <i>Pterygoplichthys pardalis</i> (Castelnau, 1855) 29. <i>Puntius chola</i> (Hamilton, 1822) 30. <i>Puntius sophore</i> (Hamilton, 1822) 31. <i>Puntius vittatus</i> (Day, 1865) 32. <i>Salmostoma bacaila</i> (Hamilton, 1822) 33. <i>Salmostoma phulo</i> (Hamilton, 1822) 34. <i>Sysydomus sarana</i> (Hamilton, 1822) 35. <i>Xenentodon cancila</i> (Hamilton, 1822)	Modern College of Arts, Commerce and Science, Pune
17	Fish	12	12	1. <i>Labeo rohita</i> (Hamilton, 1822) 2. <i>Oreochromis mossambicus</i> (Peters, 1852) 3. <i>Garra mullya</i> (Sykes, 1839) 4. <i>Mastacembelus armatus</i> (Lacepede, 1800) 5. <i>Mystus malabaricus</i> (Jerdon, 1849) 6. <i>Rasbora daniconius</i> (Hamilton, 1822) 7. <i>Ompok bimaculatus</i> (Bloch, 1793) 8. <i>Clarias gariepinus</i> Burchell, 1822 9. <i>Labeo catla</i> (Hamilton, 1822) 10. <i>Channa gachua</i> (Hamilton, 1822)	P.V.P. College of Arts, Commerce and Science, Pravarnagar, Dist. Ahmednagar, Maharashtra

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
18	Coleoptera	69	66	1. <i>Hydroglyphus flammulatus</i> (Sharp, 1882) 2. <i>Laccophilus cf elegans</i> Sharp, 1882 3. <i>Laccophilus flexuosus</i> Aubé, 1838 4. <i>Laccophilus elegans</i> Sharp, 1882 5. <i>Peschetius quadricostatus</i> (Aubé, 1838) 6. <i>Rhantaticu congestus</i> (Klug, 1833) 7. <i>Laccophilus</i> sp. 8. <i>Hydaticus</i> sp. 9. <i>Laccophilus cfellipticus</i> Régimbart, 1889 10. <i>Berosus indicus</i> Motschulsky, 1861 11. <i>Berosus pulchellus</i> MacLeay, 1825 12. <i>Amphiops</i> sp. 13. <i>Sternolophus rufipes</i> Fabricius, 1972 14. <i>Helochares cf pallen</i> (MacLeay, 1825) 15. <i>Helochares</i> sp. 16. <i>Amphiops cf simplex</i> Sharp, 1890 17. <i>Berosus indicus</i> Motschulsky, 1861 18. <i>Paracymus</i> sp. 19. <i>Dineutus unidentatus</i> Aubé, 1838 20. <i>Dineutus spinosus</i> Fabricius, 1781 21. <i>Gyrinus convexus</i> Macleay, 1871 22. <i>Orectochilus negletus</i> Ochs, 1925 23. <i>Orectochilus orissaensis</i> Vazirani, 1958 24. <i>Canthydrus flavus</i> (Motschulsky, 1855)	Mr. K. Prathap Mathan, St. Xavier's College, Tirunelveli
19	Aquatic Hemiptera	136	136	1. <i>Diplonychu srusticus</i> Fabricius, 1781 2. <i>Laccotrephes griseus</i> Guérin-Meneville, 1844 3. <i>Ranatra filiformis</i> Fabricius, 1790 4. <i>Ranatra varipesatropa</i> Montandon, 1903 5. <i>Ranatra elongata</i> Fabricius, 1790 6. <i>Ranatra</i> sp. 7. <i>Cercotmetus fumosus</i> Distant, 1904 8. <i>Heleocoris indicus</i> Montandon, 1897 9. <i>Heleocoris</i> sp. 10. <i>Anisops breddini</i> Kirkaldy, 1901 11. <i>Anisops kuroiwae</i> Matsumura, 1915 12. <i>Anisops exiguus</i> Horvath, 1919 13. <i>Corixa</i> sp. 14. <i>Micronecta scutellaris scutellaris</i> Stal, 1858 15. <i>Paraplea frontalis</i> Fieber, 1844 16. <i>Mesovelgia vittigera</i> Horvath, 1895 17. <i>Limnogonus fossarum fossarum</i> Fabricius, 1795 18. <i>Limnogonus nitidus</i> Mayr, 1865 19. <i>Limnometra fluviorum</i> Fabricius, 1798 20. <i>Gerris nepalensis</i> Distant, 1910 21. <i>Neogerris parvulus</i> Stal, 1859 22. <i>Metrocoris communis</i> Distant, 1910 23. <i>Lethocerus indicus</i> Le Peletier & Serville, 1825 24. <i>Limnogonus nitidus</i> Mayr, 1865 25. <i>Ranatra</i> sp. 26. <i>Enithares ciliata</i> Fabricius, 1798 27. <i>Micronecta</i> sp. 28. <i>Microvelia laveillei laveillei</i> Lethierry, 1877 29. <i>Mesovelgia horvathi</i> Lunblad, 1834 30. <i>Mesovelgia vittigera</i> Horvath, 1895	Savitri Bhai Phule Pune University

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
20	Mollusca	04 photographs	04 Photographs	1. <i>Panaxis sulcatus</i> (Born, 1778)	Department of Marine Biology, Karnataka University
21	Mollusca	13 photographs	13 photographs	1. <i>Nodilittorina pyramidalis</i> (Quoy & Gaimard, 1833) 2. <i>Littoraria undulata</i> (Gray, 1839) 3. <i>Littoraria scabra</i> (Linnaeus, 1758)	PG & Research Department of Zoology, Sree Narayan College, Kollam, Kerala
22	Gastropoda & Bivalvia	24	24	1. <i>Melo melo</i> (Lightfoot, 1786) (Indian Volute Shell) 2. <i>Tonna dolium</i> (Linnaeus, 1758) (Spotted Tun) 3. <i>Pleuroploca trapezium</i> (Linnaeus, 1758) (Trapezium Horse Conch) 4. <i>Paratectonatica tigrina</i> (Röding, 1798) (Tiger Moon Snail) 5. <i>Murex carbonnieri</i> (Jousseaume, 1881) (Carbonnier's Murex) 6. <i>Volegalea carnaria</i> (Röding, 1798) (Melongena shell) 7. <i>Tibiainsulae chorab</i> Röding, 1798 (Arabia Tibia) 8. <i>Chicoreus ramosus</i> (Linnaeus, 1758) (Ramosae/Branches Murex) 9. <i>Chicoreus virgineus</i> (Röding, 1798) (Virgin Murex) 10. <i>Harpago chiragra</i> (Linnaeus, 1758) (Chiragra Spider Conch) 11. <i>Lotoria triangularis</i> (Perry, 1811) (Washing Bath Triton) 12. <i>Tridacna crocea</i> Lamarck, 1819 (Burrowing Giant Clam) 13. <i>Tridacna maxima</i> (Röding, 1798) Juvenile (Maximal Small Giant Clam)	Digha Science Centre and Science Museum
23	Gastropoda	21	21	1. <i>Stenothyra blanfordiana</i> G. Nevill, 1880 2. <i>Stenothyra soluta</i> Annandale & Prashad, 1919 3. <i>Stenothyra minima</i> (G.B. Sowerby I, 1837) 4. <i>Bithynia pulchella</i> (W.H. Benson, 1836).	National Centre for Coastal Research, Chennai.
24	Mollusca	09	09	1. <i>Filopaludina bengalensis</i> (Lamarck, 1822) 2. <i>Parreysia favidens</i> (Benson, 1862) 3. <i>Corbicula striatella</i> Deshayes, 1836 4. <i>Tarebia lineata</i> (Gray, 1828) 5. <i>Idiopomadis similis</i> (O.F. Mueller, 1774)	SFRI, Jabalpur
25	Hemiptera	28	28	1. <i>Aphis nerii</i> Fonscolombe, 1841 2. <i>Leptocorisa acuta</i> (Thunberg, 1783) 3. <i>Dysdercus koenigii</i> (Fabricius, 1775) 4. <i>Aphis gossypii</i> Glover, 1877 5. <i>Cochlochila bullita</i> Stal, 1864 6. <i>Brachycorynella asparagi</i> (Mordvilko, 1929) 7. <i>Liorhyssus hyalinus</i> (Fabricius, 1794) 8. <i>Bagrada hilaris</i> (Burmeister, 1835) 9. <i>Maestas dorsalis</i> (Motschulsky, 1859) 10. <i>Phenacoccus solenopsis</i> Tinsley, 1898 11. <i>Paracoccus burnerae</i> (Brain, 1915)	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
26	Coleoptera	07	07	1. <i>Coccinella transversalis</i> Fabricius, 1781 2. <i>Leptocentrus taurus</i> (Fabricius, 1775) 3. <i>Monolepta signata</i> (Olivier, 1808) 4. <i>Coccinella septumpunctata</i> (Fabricius, 1781) 5. <i>Zygogramma bicolorata</i> Pallister, 1953	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
27	Lepidoptera	11	09	1. <i>Euris cupreoviridis</i> (Walker, 1862) 2. <i>Danaus genutia</i> (Cramer, [1779]) 3. <i>Acraea terpsicore</i> (Linnaeus, 1758) 4. <i>Ariadne merione</i> (Cramer, [1777]) 5. <i>Eurema hecabe</i> (Linnaeus, 1758) 6. <i>Parnara guttatus</i> (Bremer & Gerey, [1858]) 7. <i>Deudorix epijarbus</i> (Moore, [1858]) 8. <i>Amata cyssea</i> (Stoll, [1782])	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
28	Orthoptera	01	01	1. <i>Atractomorpha crenulata</i> (Fabricius, 1793)	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
29	Diptera	01	01	1. <i>Mesembrius bengalensis</i> (Wiedemann, 1819)	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
30	Hymenoptera	02	02	1. <i>Delta conoideum</i> (Gmelin, 1790) 2. <i>Delta esuriens</i> (Fabricius, 1787)	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
31	Odonata	03	03	1. <i>Anax guttatus</i> (Burmeister, 1839) 2. <i>Crocthemis servilla</i> (Drury, 1773) 3. <i>Lestes viridulus</i> Rambur, 1842	Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur
32	Fish	01	01	1. <i>Scomberomorus commerson</i> (Lacepède, 1800),	Dr. Amthul Azeez, Vice Principal, PG & Research Department of Zoology, Justice Basheer Ahmed Sayeed College for Woman, Chennai
33	Turtle Carapace	03	03	1. <i>Lissemys punctata</i> (Bonnaterre, 1789)	Debasis Jana, IFS, Additional Principal Chief Conservator of Forest & Director (I/C), Advanced Institute for Wildlife Conservation, (Research, Training & Education), Vandalur, Chennai
34	Marine Sponges	22	22	1. <i>Clathria frondifera</i> (Bowerbank, 1875) 2. <i>Callyspongia fistularis</i> (Topsent, 1892), 3. <i>Fasciospongia cavernosa</i> (Schmidt, 1862) 4. <i>Callyspongia ceylonica</i> (Dendy, 1905) 5. <i>Hyattella intestinalis</i> (Lamarck, 1814) 6. <i>Orina sagittaria</i> (Sollas, 1902) 7. <i>Callyspongia fibrosa</i> (Ridley and Dendy, 1886) 8. <i>Halichondria</i> (<i>Halichondria</i>) <i>glabrata</i> Keller, 1891 9. <i>Clathria frondifera</i> (Bowerbank, 1875) 10. <i>Haliclona pigmentifera</i> (Dendy, 1905) 11. <i>Clathria procera</i> (Ridley, 1884) 12. <i>Haliclona</i> (<i>Gellius</i>) <i>fibulata</i> (Schmidt, 1862)	Department of Zoology, Madras Christian College, Chennai.

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
35	Fishes	05	05	1. <i>Carangoides malabaricus</i> (Bloch & Schneider, 1801) 2. <i>Alepes vari</i> (Cuvier, 1833) 3. <i>Carangoides talamparoides</i> Bleeker, 1852 4. <i>Cheilopogon cyanopterus</i> (Valenciennes, 1847)	Dr. C. Arulvasu, Associate Professor, Department of Zoology, University of Madras, Guindy Campus, Chennai.
36	Mollusca	09	09	1. <i>Mauritia arabica</i> (Linnaeus, 1758) 2. <i>Volegalea cochlidium</i> (Linnaeus, 1758) 3. <i>Chicoreus virgineus</i> (Röding, 1798) 4. <i>Laevistrombus canarium</i> (Linnaeus, 1758) 5. <i>Lambis lambis</i> (Linnaeus, 1758) 6. <i>Angaria delphinus</i> (Linnaeus, 1758) 7. <i>Babylonia spirata</i> (Linnaeus, 1758) 8. <i>Marmorofusus nicobaricus</i> (Röding, 1798) 9. <i>Haustellum haustellum</i> (Linnaeus, 1758)	Mr. G. R. Harsath Ram, M. Tech. Biopharmaceutical Technology, University College of Engineering, AV-BIT Campus, Trichi, Tamil Nadu.
37	Squids	01	01	1. <i>Uroteuthis chinensis</i> (Gray, 1849)	Department of Zoology, Justice Basheer Ahmed College for Women, Chennai.
38	Marine Sponges	21	21	1. <i>Reniera fibulata</i> Schmidt 1862 2. <i>Mycale crassissima</i> Dendy, 1905 3. <i>Reniera fibulata</i> Schmidt, 1862 4. <i>Siphonochalina pumila</i> Lendenfeld, 1887 5. <i>Hyaletta intestinalis</i> Lamarck, 1814	Dept. of Biotechnology, SRM institute of Science and Technology, Chennai.
39	Sicklefin Chimeara. (Fish)	01	01	1. <i>Neoharriotta pinnata</i> (Schnakenbeck, 1931)	M/S. Aasha Biochem, Vatakara, Kerala.
40	Pisces	25	25	1. <i>Amblyceps apangi</i> Nath&Dey 1989 2. <i>Devario aequipinnatus</i> (McClelland 1839) 3. <i>Schizothorax richardsonii</i> (Gray 1832) 4. <i>Neolissochilus hexagonolepis</i> (McClelland 1839) 5. <i>Garra annandalei</i> Hora, 1921 6. <i>Garra kemp</i> Hora, 1921 7. <i>Barilius bendelisis</i> (Hamilton, 1807) 8. <i>Aborichthys uniobarensis</i> Nanda <i>et al.</i> , 2021 9. <i>Schistura multifasciata</i> (Dey, 1878) 10. <i>Chagunius chagunio</i> (Hamilton, 1822) 11. <i>Cyprinion semiplotum</i> (McClelland 1839) 12. <i>Psilorhynchus balitora</i> (Hamilton, 1822) 13. <i>Puntius sophore</i> (Hamilton 1822) 14. <i>Garra birostris</i> Nebeshwar&Vishwanath 2013 15. <i>Schistura beavani</i> (Günther, 1868)	M.Sc. Final Year Students of Himalayan University, Itanagar, Arunachal Pradesh
41	Orthoptera	15	15	1. <i>Euoptacra praeformosa</i> (Walker, 1870) 2. <i>Diabolocatantops innotabilis</i> (Walker, 1870) 3. <i>Elimaia securigera</i> Brunner von Wattenwyl, 1878 4. <i>Xiphidiopsis straminula</i> (Walker, 1871) 5. <i>Tristria pulvinata</i> (Uvarov, 1921)	Dept. of Zoology, Himalayan University, Itanagar, Arunachal Pradesh

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
42	Mollusca	50	50	1. <i>Brotia costula</i> (Rafinesque, 1833) 2. <i>Brotia binodosa</i> (Blandford, 1903) 3. <i>Paludomus conica</i> (Gray, 1833) 4. <i>Paludomus ornatus</i> Benson, 1856 5. <i>Filopaludina bengalensis</i> (Lamarck, 1822) 6. <i>Idiopoma dissimilis</i> (Müller, 1774) 7. <i>Cipangopaludina leythis</i> (Benson, 1836) 8. <i>Indoplanorbis exustus</i> (Deshayes, 1833) 9. <i>Scabies crispata</i> (Gould, 1843) 10. <i>Lamellidens generosus</i> (Gould, 1847) 11. <i>Lamellidens phenchaoganjensis</i> Preston, 1912 12. <i>Parreysia caerulea</i> (Lea, 1831) 13. <i>Physa</i> sp.	St. Joseph University, Dimapur, Nagaland
43	Lepidoptera	01	01	1. <i>Euchloe daphalis</i> (Moore, 1865)	Sh Ahsaan Ali, Ph.D. Student, Panjab University, Chandigarh
44	Lepidoptera	04	04	1. <i>Papilio machan</i> Linnaeus, 1758 2. <i>Vanessa cashmirensis</i> (Kollar, 1848) 3. <i>Melanitis leda</i> (Linnaeus, 1758) 4. <i>Neptis hylas</i> (Linnaeus, 1758)	Miss Neeraj, Research Scholar, Department of Zoology, Punjabi University, Patiala
45	Lepidoptera (Moth)	06	06	1. <i>Micraloa lineola</i> Fabricus, 1793 2. <i>Cyana bellissima</i> (Moore, 1878) 3. <i>Agathia lycaenaria</i> Kolkar, 1848 4. <i>Lomographa distans</i> (Warren, 1894) 5. <i>Abraxas martaria</i> Guenee, 1857	Ms. Neha Sharna, Himalayan Forest Research Institute, Panthaghatti, Shimla
46	Lepidoptera (Moth)	01	01	1. <i>Anarsia pallullela</i> Walker, 1864	Mrs. Renuka B Hirekurubar, Assistant Professor, Department of Entomology, K.R.C. College of Horticulture, Arabhavi, Bagalakot, Karnataka
47	Lepidoptera	01	01	1. <i>Chilasa clytia</i> Linnaeus, 1758,	Dr. V. K. Walia, Panjab University, Chandigarh
48	Lepidoptera	11	11	1. <i>Rapala airbus</i> (Fabricius, 1787) 2. <i>Deudorix epijarbus</i> (Moore, 1857) 3. <i>Spindasis ictis</i> (Hewitson, 1865) 4. <i>Lycaena phlaeas</i> (Linnaeus, 1761) 5. <i>Heliophorus androcles</i> (Westwood 1851) 6. <i>Catopsilia pyranthe</i> (Linnaeus, 1758) 7. <i>Junonia lemonias</i> (Linnaeus, 1758) 8. <i>Junonia iphita</i> (Cramer, 1779) 9. <i>Lassiommata schakra</i> Kollar, 1844 10. <i>Papilio polytes</i> Linnaeus, 1758 11. <i>Pontia daplidice</i> (Linnaeus, 1758)	Miss Jyoti Thakur, Ph.D. Student, Punjabi University, Patiala (Punjab)
49	Lepidoptera	02	02	1. <i>Papilio polyctor</i> Boisduval, 1836 2. <i>Belenois aurota</i> (Fabricius, 1793)	Miss Jaspreet Kaur, Ph.D. student Baru Sahib University, HP
50	Lepidoptera (Moth)	03	03	1. <i>Lomographa distans</i> (Warren, 1894) 2. <i>Abraxas martaria</i> Guenee, 1857	Dr. Pawan Rana, Scientist, Himalayan Forest Research Institute, Panthaghatti, Shimla
51	Lepidoptera (Moth)	01 photographs	01 photographs	1. <i>Dudua aprobola</i> Meyrick, 1886	Dr. Sandeep Singh, Punjab Agricultural University, Ludhiana

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52	Lepidoptera	14	14	1. <i>Aglais cashmirensis</i> (Kollar, 1848) 2. <i>Junonia iphita</i> (Cramer, 1779) 3. <i>Kallima inachus</i> (Doyère, 1840) 4. <i>Danaus chrysippus</i> (Linnaeus, 1758) 5. <i>Vanessa indica</i> (Herbst, 1794) 6. <i>Euploea core</i> (Cramer, 1780) 7. <i>Euloea mulciber</i> (Cramer, 1777) 8. <i>Symbrenthia lilaea</i> (Hewitson, 1864) 9. <i>Aporia agathon</i> (Gray, 1832) 10. <i>Parantica aglea</i> (Stoll, 1782) 11. <i>Euthalia patala</i> Kollar, [1844] 12. <i>Danaus genutia</i> (Cramer, 1779) 13. <i>Kaniska canace</i> (Linnaeus, 1763) 14. <i>Neptis hylas</i> (Linnaeus, 1758)	Miss Neeraj, Ph.D. Student, Punjabi University, Patiala (Punjab)
53	Lepidoptera (Moth)	04	04	1. <i>Spoladea recurvalis</i> (Fabricius, 1775) 2. <i>Abraxas martaria</i> Guenee, 1857 3. <i>Odontoptera obliquaria</i> Moore, 1867	Dr. Pawan Rana, Scientist, Himalayan Forest Research Institute, Panthaghatti, Shimla
54	Lepidoptera	02	02	1. <i>Lycaena phlaeas</i> (Linnaeus, 1761) 2. <i>Satryium sassanides</i> (Kollar 1850)	Miss Diksha Chopra, Ph.D. Student, Punjabi University, Patiala (Punjab)
55	Lepidoptera	03	03	1. <i>Aulocera swaha</i> Kollar, 1844 2. <i>Aulocera brahminus</i> (E. Blanchard, 1853) 3. <i>Hyponephele pulchra</i> (C. & R. Felder, [1867])	Miss Jyoti Thakur, Ph.D. Student, Punjabi University, Patiala (Punjab)
56	Lepidoptera	01	01	1. <i>Vanessa cardu</i> (Linnaeus, 1758),	Miss Neeraj, Ph.D. Student, Punjabi University, Patiala (Punjab)
57	Lepidoptera (Moth)	01 photographs	01 photographs	1. <i>Cydia pomonella</i> (Linnaeus, 1758)	Dr. Rajesh Kumar, Scientist, Central Silk board, Pampore, Srinagar
58	Lepidoptera (Moth)	03	03	1. <i>Cretonotos gangis</i> (Linnaeus, 1763) 2. <i>Anomis flava</i> (Fabricius, 1775)	Dr. Pawan Kumar, Himalayan Forest Research Institute, Panthaghatti, Shimla
59	Lepidoptera	06	06	1. <i>Pieris canidia</i> (Sparrman, 1768) 2. <i>Pieris brassicae</i> (Linnaeus, 1758) 3. <i>Pieris rapae</i> (Linnaeus, 1758) 4. <i>Pontia daplidice</i> (Linnaeus, 1758) 5. <i>Colias fieldii</i> Menetries, 1855 6. <i>Colias erat</i> (Esper, 1805)	Miss Aman, Research Scholar, Punjabi University, Patiala (Punjab)
60	Lepidoptera (Moth)	01 photographs	01 photographs	1. <i>Parasa lepida</i> (Cramer, 1799)	Dr. K.S.Suri, Professor of Entomology, Punjab Agricultural University, Ludhiana, Punjab
61	Lepidoptera (Moth)	05 photographs	05 photographs	1. <i>Thysanoplusia orichalecea</i> Fabricius, 1775 2. <i>Cretonotos gangis</i> (Linnaeus, 1763) 3. <i>Plutella xylostella</i> Linnaeus, 1758	Dr. Vivekanand Sharma, Assistant Professor, Govt PG College, Sarkaghat, Mandi, HP
62	Lepidoptera (Moth)	04	04	1. <i>Spirama retorata</i> Clerck, 1764 2. <i>Hyposidra talaca</i> Walker, 1860	Dr. Vivekanand Sharma, Assistant Professor, Govt PG College, Sarkaghat, Mandi, HP.
63	Orthoptera	06	06	1. <i>Acrida exaltata</i> (Walker, 1859) 2. <i>Oxya fuscovittata</i> (Marschall, 1836)	Ms. Samara Sultana, PhD Scholar from Lovely professional university, Phagwara (Punjab)

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64	Lepidoptera (Moth)	02	02	1. <i>Spolladea recurvalis</i> Fabricius, 1775	Dr P.K. Chhuneja, Professor of Entomology, Punjab Agricultural University, Ludhiana, Punjab).
65	Lepidoptera (Moth)	02	02	1. <i>Helicoverpa armigera</i> Hubner [1808]	Dr. V. Sharma, Assistant Professor, Govt. PG College, Sarkaghat, Mandi, HP).
66	Orthoptera	03	03	1. <i>Gastrimargus africanus africanus</i> (Saussure, 1888)	Ms. Samara Sultana, PhD Scholar from Lovely professional university, Phagwara (Punjab).
67	Orthoptera	01 photographs	01 photographs	1. <i>Heteracris nobilis</i> (Uvarov, 1942).	Mr. Rakesh Kapoor, Reserach Scholar, Himachal Pradesh University, Shimla.
68	Lepidoptera (Moth)	05	05	1. <i>Trigonodes hyppasia</i> (Walker, 1779) 2. <i>Leucania loreyi</i> (Duponchal, 1827) 3. <i>Scirpophaga incertulas</i> (Walker, 1863) 4. <i>Bradina diagonalis</i> (Guenée, 1854) 5. <i>Ostrinia nubilalis</i> (Hubner, 1796)	Dr. Hijam Shila Devi, Assistant Professor, Department of Entomology, School of Agricultural Sciences and Rural Development (SASRD), Nagaland University, Medziphema-797106
69	Hemiptera	02 photographs	02 photographs	1. <i>Eriosoma lanigerum</i> Hausmann	Dr V.K. Dilawari, Professor of Entomology (Retd.), Punjab Agricultural University, Ludhiana, Punjab).
70	Lepidoptera	04	04	1. <i>Deudorix epijarbas</i> (Moore, 1857) 2. <i>Lycaena phalaena</i> (Linnaeus, 1758) 3. <i>Horaga onyx</i> (Moore, 1858) 4. <i>Arhopala ganesa</i> (Moore, 1858)	Miss Diksha, Research scholar Punjabi University, Patiala.
71	Lepidoptera (Moth)	02 photographs	02 photographs	1. <i>Plutella xylostella</i> Linnaeus, 1758	Dr Paramjit Kaur, Associate Professor, Punjab Agricultural University, Ludhiana, Punjab).
72	Lepidoptera (Moth)	03 photographs	03 photographs	1. <i>Agrioglypta ityalis</i> Walker, 1859 2. <i>Scirpophaga incertulas</i> (Walker, 1863) 3. <i>Scirpophaga innotata</i> Walker, 1863	Ms. Imtiena Changkilari, Ph. D student, Department of Entomology, School of Agricultural Sciences and Rural Development (SASRD), Nagaland University, Medziphema-797106).
73	Lepidoptera	05	05	1. <i>Vanessa cardui</i> (Linnaeus, 1758) 2. <i>Kaniska canace</i> (Linnaeus, 1763) 3. <i>Kallima inachus</i> (Doyere, 1840) 4. <i>Junonia lemonias</i> (Linnaeus, 1758) 5. <i>Junonia iphita</i> (Cramer, 1782)	Miss Neeraj, Research scholar Punjabi University, Patiala.
74	Lepidoptera	02	02	1. <i>Achroia grisella</i> (Fabricius, 1794) 2. <i>Galleria mellonella</i> (Linnaeus, 1758)	Ph.D. student of Lovely University, Jalandhar.
75	Lepidoptera (Moth)	02 photographs	02 photographs	1. <i>Scirpophaga incertulas</i> (Walker, 1863)	Dr. Hijam Shiela Devi, Assistant Professor, Department of Entomology, School of Agricultural Sciences and Rural Development (SASRD), Nagaland University, Medziphema-797106).

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76	Lepidoptera (Moth)	02 photographs	02 photographs	1. <i>Plutella xylostella</i> Linnaeus, 1758	Dr. V. Sharma, Assistant Professor, Govt. PG College, dharampur, Mandi, HP).
77	Lepidoptera (Moth)	03 photographs	03 photographs	1. <i>Spilosoma obliqua</i> Walker, 1855	Dr. V. Sharma, Assistant Professor, Govt. PG College, Dharampur, Mandi, HP).
78	Lepidoptera (Moth)	01 photographs	01 photographs	1. <i>Spodoptera litura</i> Fabricius, 1775	Dr. Hijam Shiela Devi, Assistant Professor, Department of Entomology, School of Agricultural Sciences and Rural Development (SASRD), Nagaland University, Medziphema-797106).
79	Hymenoptera	24	24	1. <i>Bombus rufofasciatus</i> Smith, 1852 2. <i>Bombus melanurus</i> Lepeletier, 1835 3. <i>Bombus semenovianus</i> Skorikov, 1914 4. <i>Bombus jacobsoni</i> Skorikov, 1912 5. <i>Bombus tunicatus</i> Smith, 1853 6. <i>Andrena cineraria</i> (Linnaeus, 1758)	Punjab University Chandigarh
80	Hymenoptera	62	62	1. <i>Bombus simillimus</i> Smith, 1852 2. <i>Bombus eurythorax</i> Wang, 1982 3. <i>Bombus albopleuralis</i> Friese, 1916 4. <i>Bombus tunicatus</i> Smith, 1853 5. <i>Bombus melanurus</i> Lepeletier, 1835	Sher-e- Kashmir University of Agricultural Sciences and Technology, Kashmir
81	Hymenoptera	04	04	1. <i>Apis florea</i> Fabricius, 1787 2. <i>Apis dorsata</i> Fabricius, 179 3. <i>Xylocopa fenestrata</i> (Fabricius, 1798)	Mr. Kamlesh Kumar Verma, Asst. Professor, Zoology, Government P.G. College, Jhalawar
82	Lepidoptera	25	25	1. <i>Spilarctia lutea</i> (Hufnagel, 1766) 2. <i>Parapoynx cf. fluctuosalis</i> (Zeller, 1852) 3. <i>Pyrausta phoenicealis</i> (Hubner, 1818) 4. <i>Hyposidra talaca</i> (Walker, 1860) 5. <i>Prasinocyma rhodocyclus</i> Prout, 1917 6. <i>Perina nuda</i> (Fabricius, 1787) 7. <i>Spodoptera littoralis</i> (Boisduval, 1833) 8. <i>Eupithecia orphnata</i> Bohatsch, 1883 9. <i>Amyra axis</i> (Guenée, 1852) 10. <i>Agapeta zoegana</i> (Linnaeus, 1767) 11. <i>Agrotis ipsilon</i> (Hufnagel, 1766) 12. <i>Arna bipunctapex</i> (Hampson, 1891) 13. <i>Opogona sacchari</i> (Bojer, 1856) 14. <i>Eilema caniola</i> (Hubner, 1808) 15. <i>Parapoynx diminutalis</i> Snellen, 1880 16. <i>Mythima impura</i> Hubner, 1808 17. <i>Gymnoscelis imparatalis</i> Walker 1865 18. <i>Helicoverpa armigera</i> (Hubner, 1808) 19. <i>Cretonotos transiens</i> (Walker, 1855) 20. <i>Spodoptera litura</i> (Fabricius, 1775) 21. <i>Syntomoides imaon</i> (Cramer, [1779]) 22. <i>Isturgia disputaria</i> (Guenée, [1858]) 23. <i>Pima boisduvaliella</i> (Guenée, 1845) 24. <i>Euproctis lunata</i> Walker, 1855 25. <i>Sesamia inferens</i> (Walker, 1856)	Mr. Kamlesh Kumar Verma, Asst. Professor, Zoology, Government P.G. College, Jhalawar

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83	Mollusca (Gastropoda, Bivalvia)	28	28	1. <i>Agaronia gibbosa</i> (Born, 1778) 2. <i>Bursa spinosa</i> (Schumacher, 1817) 3. <i>Bursa tuberculata</i> (Broderip, 1833) 4. <i>Murex trapa</i> Röding, 1798 5. <i>Nassarius</i> sp. 6. <i>Natica vitellus</i> (Linnaeus, 1758) 7. <i>Nerita violacea</i> Gmelin, 1791 8. <i>Phalium canaliculatum</i> Bruguiere 1792 9. <i>Siliqua radiata</i> (Linnaeus, 1758) 10. <i>Telescopium telescopium</i> (Linnaeus, 1758) 11. <i>Thais lacera</i> (Born, 1778) 12. <i>Tibia curta</i> (G. B. Sowerby II, 1842) 13. <i>Trochus radiatus</i> Gmelin, 1791 14. <i>Turbo marmoratus</i> Linnaeus, 1758 15. <i>Turricula javana</i> (Linnaeus, 1767) 16. <i>Turritella attenuata</i> Reeve, 1849 17. <i>Anadara granosa</i> (Linnaeus, 1758) 18. <i>Anadara indica</i> (Gmelin, 1791) 19. <i>Crassostrea madrasensis</i> (Preston, 1916) 20. <i>Lingula</i> sp. 21. <i>Mactra achatina</i> Holten, 1802 22. <i>Mactra violacea</i> Gmelin, 1791 23. <i>Marcia recens</i> (Holten, 1802) 24. <i>Perna indica</i> Kuriakose & Nair, 1976 25. <i>Perna viridis</i> (Linnaeus, 1758) 26. <i>Psammobia radiata</i> Dunker, 1845 27. <i>Siliqua radiata</i> (Linnaeus, 1758) 28. <i>Tridacna</i> sp.	Ms. Athira, Dept. of Zoology, Govt. College Payyanur, Kerala
84	Hymenoptera (Paper Wasp)	01	01	1. <i>Ropalidia marginata</i> (Lepeletier, 1836)	Mr. Mohankumar K., Research Scholar, Hindustan College of Arts & Science, Coimbatore, Tamil Nadu.
85	Hymenoptera (Mud-dauber Wasp)	01	01	1. <i>Chalybion bengalense</i> (Dahlbom, 1845)	Ms. Bincy Benny, M.Sc. Forensic Science & Criminology, SMS College of Arts & Science, Sivakasi, Tamil Nadu.
86	Mollusca (Bivalvia)	12	12	1. <i>Anadara granosa</i> (Linnaeus, 1758) 2. <i>Anadara indica</i> (Gmelin, 1791) 3. <i>Crassostrea madrasensis</i> (Preston, 1916) 4. <i>Lingula</i> sp. 5. <i>Mactra achatina</i> Holten, 1802 6. <i>Mactra violacea</i> Gmelin, 1791 7. <i>Marcia recens</i> (Holten, 1802) 8. <i>Perna indica</i> Kuriakose & Nair, 1976 9. <i>Perna viridis</i> (Linnaeus, 1758) 10. <i>Psammobia radiata</i> Dunker, 1845 11. <i>Siliqua radiata</i> (Linnaeus, 1758) 12. <i>Tridacna</i> sp.	Ms. Athira, Dept. of Zoology, Govt. College Payyanur, Kerala
87	Mammalia (Cetacea)	01	01	1. <i>Neophocaena phocaenoides</i> (Cuvier, 1829)	Kerala Forests and Wildlife Department, Kozhikode
88	Mammalia (Cetacea)	01	01	1. <i>Baleonoptera</i> sp.	Kerala Forests and Wildlife Department, Kozhikode

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89	Hymenoptera (Mutillidae)	03	03	1. <i>Karlissaidia sexmaculata</i> (Swederus, 1787) 2. <i>Orientilla jabalpurensis</i> Das & Girish Kumar, 2016 3. <i>Spilomutilla consolidata</i> (Cameron, 1900)	University of Patan, Gujarat
90	Hymenoptera (Vespidae, Eucharitidae, Crabronidae, Sphecidae)	13	13	1. <i>Ropalidia montana</i> Carl, 1934 2. <i>Allorhynchium argentatum</i> (Fabricius, 1804) 3. <i>Antodynerus punctatipennis</i> (de Saussure, 1853) 4. <i>Labus pusillus</i> van der Vecht, 1963 5. <i>Schizaspidia sabariensis</i> (Mani & Dubey, 1974) 6. <i>Carinostigmus aterrimus</i> (Turner, 1917) 7. <i>Ammophila clavus</i> Fabricius, 1775 8. <i>Chalybion bengalense</i> (Dahlbom, 1845)	Kannur University
91	Freshwater prawns	01	01	1. <i>Macrobrachium rosenbergii</i> (De Man, 1879)	Punyashlok Ahilyadevi Holkar Solapur University, Solapur, Maharashtra
92	Hymenoptera (Vespidae)	01 photograph	01 photographs	1. <i>Delta conoideum</i> (Gmelin, 1790)	Punjab Agricultural University
93	Hymenoptera (Vespidae, Scoliidae, Crabronidae, Sphecidae)	14	14	1. <i>Antepipona sibilans</i> (Cameron, 1903) 2. <i>Delta conoideum</i> (Gmelin, 1790) 3. <i>Eumenes macrops</i> de Saussure, 1852 4. <i>Oreumenoides edwardsi</i> (de Saussure, 1852) 5. <i>Xenorhynchium nitidulum</i> (Fabricius, 1798) 6. <i>Ropalidia jacobsoni</i> (du Buysson, 1908) 7. <i>Ropalidia marginata</i> (Lepeletier, 1836) 8. <i>Polistes (Polistella) stigma tamulus</i> (Fabricius, 1798) 9. <i>Vespa affinis continentalis</i> Bequaert, 1936 10. <i>Phalerimeris madurensis</i> (Betrem, 1928) 11. <i>Scolia (Discolia) picteti</i> de Saussure, 1855 12. <i>Philanthus basalis</i> Smith, 1856 13. <i>Chalybion bengalense</i> (Dahlbom, 1845) 14. <i>Sceliphron madraspatanum</i> 15. (Fabricius, 1781)	NBAIIR, Bengaluru
94	Hymenoptera (Vespidae)	05 photographs	05 photographs	1. <i>Delta dimidiatipenne</i> (de Saussure, 1852) 2. <i>Eumenes affinissimus</i> de Saussure, 1852 3. <i>Katamenes flavigularis</i> (Blüthgen, 1951) 4. <i>Ancistrocerus antilope antilope</i> (Panzer, 1798) 5. <i>Antepipona kashmirensis</i> Giordani Soika, 1977	Department of Zoology, University of Kashmir

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95	Hymenoptera (Vespidae)	18 photographs	18 photographs	1. <i>Antepipona pruthii</i> Giordani Soika, 1882 2. <i>Delta esuriens esuriens</i> (Fabricius, 1787) 3. <i>Delta pyriforme pyriforme</i> (Fabricius, 1775) 4. <i>Eumenes affinissimus</i> de Saussure, 1852 5. <i>Eumenes assamensis</i> Meade-Waldo, 1910 6. <i>Eumenes kangrae</i> Dover, 1925 7. <i>Eumenes persimilis</i> Giordani Soika, 1960 8. <i>Eumenes placens</i> Nurse, 1903 9. <i>Eumenes punctatus</i> de Saussure, 1852 10. <i>Allorhynchium argentatum</i> (Fabricius, 1804) 11. <i>Allorhynchium metallicum</i> (de Saussure, 1852) 12. <i>Ancistrocerus antoni</i> (Cameron, 1900) 13. <i>Ancistrocerus rufoluteus</i> Gusenleitner, 1996 14. <i>Ancistrocerus xanthozonus</i> (Cameron, 1908) 15. <i>Antepipona excelsa pallida</i> Giordani Soika, 1982 16. <i>Antepipona pruthii</i> Giordani Soika, 1882 17. <i>Antepipona sibilans</i> (Cameron, 1903) 18. <i>Cyrtolabulus punctatus</i> (Meade-Waldo, 1910)	Himachal Pradesh Agricultural University, Palampur
96	Hymenoptera (Vespidae)	03 photographs	03 photographs	1. <i>Allorhynchium argentatum</i> (Fabricius, 1804) 2. <i>Ropalidia brevita</i> Das & Gupta, 1989 3. <i>Delta pyriforme pyriforme</i> (Fabricius, 1775)	Department of Zoology, PSMO College, Thirurangadi, Kerala.
97	Hymenoptera (Vespidae, Sphecidae)	14	14	1. <i>Delta conoideum</i> (Gmelin, 1790) 2. <i>Chalybion bengalense</i> (Dahlbom, 1845) 3. <i>Antepipona ceylonica</i> (de Saussure, 1867) 4. <i>Ropalidia brevita</i> Das & Gupta, 1989 5. <i>Ammophila laevigata</i> Smith, 1856	Chittur Government College, Palakkad
98	Hemiptera	14	14	1. <i>Halys dentatus</i> (Fabricius, 1775) 2. <i>Coridius janus</i> (Fabricius, 1775) 3. <i>Carbula scutellata</i> Distant 1887 4. <i>Nezara viridula</i> (Linnaeus, 1758) 5. <i>Degonetes serratus</i> (Distant, 1887) 6. <i>Carbula insocia</i> (Walker, 1868) 7. <i>Erthesina fullo</i> (Thunberg, 1783) 8. <i>Cyclopelta siccifolia</i> (Westwood, 1837) 9. <i>Plautia crossota</i> (Dallas, 1851) 10. <i>Tessarotoma papillosa</i> (Drury 1770) 11. <i>Dysdercus cingulatus</i> (Fabricius, 1775)	KTHM College, Nashik – 422002, Maharashtra
99	Dung Beetles	02	02	1. <i>Oryctes rhinoceros</i> (Linnaeus, 1758)	Department of Zoology, Prof. Ramkrishna More Arts, Commerce and Science College, Akurdi, Pune (M.S.)

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
100	Aquatic beetles	222	222	1. <i>Hydroglyphus flammulatus</i> Sharp, 1854 2. <i>Sandracottus dejeanii</i> Aube, 1838 3. <i>Laccophilus inefficiens</i> Walker, 1859 4. <i>Sandracottus mixtus</i> Blanchard, 1843 5. <i>Hyphydrus lyratus flavicans</i> Regimbart, 1892 6. <i>Hydaticus vittatus</i> (Fabricius, 1775) 7. <i>Hydaticus fabricii</i> M'Leay, 1833 8. <i>Laccophilus flexuosus</i> Aube, 1938 9. <i>Hyphydrus intermixtus</i> Walker, 1858 10. <i>Hydaticus luczonicus</i> Aube, 1838 11. <i>Copelatus neelumae</i> Vazirani, 1793 12. <i>Dineutus indicus</i> Aube, 1838 13. <i>Allocotocerus soesilae</i> Makhan, 2007 14. <i>Sternolophus rufipes</i> (Fabricius, 1792) 15. <i>Enochrus esuriens</i> Walker, 1858 16. <i>Coelostoma vitalisi</i> Orchymont, 1936 17. <i>Berosus pulchellus</i> M'Leay, 1825 18. <i>Sternolophus inconspicuus</i> Nietner, 1856 19. <i>Helochares anchoralis</i> Sharp, 1890 20. <i>Canthydrus angularis</i> Sharp, 1882 21. <i>Canthydrus laetabilis</i> Walker, 1858 22. <i>Canthydrus morsbachi</i> (Wehncke, 1876)	Ph. D student, Mrs. Pallavi Takawane from Prof. Ramakrishna More Arts, Commerce and Science College.
101	Diptera	44	44	1. <i>Asphondylia pongamiae</i> Felt, 1921 2. <i>Lasioptera</i> sp.1 3. <i>Lasioptera</i> sp.2 4. <i>Procontarinia</i> sp.	Ms. Keerthana Haridas, PhD Student, University of Calicut, Kerala
102	Insecta: Coleoptera.	07	07	1. <i>Sitophilus oryzae</i> (Linnaeus, 1763)	Dr. Shakera Inamdar, Head, Department of Zoology, Modern College of Arts, Science, and Commerce, Ganeshkhind, Pune
103	Crabs	3	3	1. <i>Calappa lophos</i> (Herbst, 1782) 2. <i>Podophthalmus vigil</i> (Fabricius, 1798) 3. <i>Charybdis feriata</i> (Linnaeus, 1758)	Berhampur University
104	Fish	108	108	1. <i>Uroconger lepturus</i> (Richardson, 1845) 2. <i>Upeneus moluccensis</i> (Bleeker, 1855) 3. <i>Uroconger lepturus</i> (Richardson, 1845) 4. <i>Uroconger lepturus</i> (Richardson, 1845) 5. <i>Neeenchelys buitendijki</i> Weber & deBeaufort, 1916 6. <i>Xiphasia setifer</i> Swainson 1839 7. <i>Daetichthys albomaculatus</i> (Kaup 1858) 8. <i>Gymnothorax reticularis</i> Bloch, 1795 9. <i>Acanthurus mata</i> (Cuvier, 1829) 10. <i>Zebrias altipinnis</i> (Alcock, 1890) 11. <i>Aesopia cornuta</i> Kaup, 1858 12. <i>Aluterus monoceros</i> (Linnaeus, 1758) 13. <i>Triacanthus nieuhofii</i> Bleeker 1851 14. <i>Pomadasys maculatus</i> (Bloch, 1793) 15. <i>Antennarius hispidus</i> (Bloch & Schneider, 1801) 16. <i>Rachycentron canadum</i> (Linnaeus, 1766) 17. <i>Ostorhinchus fasciatus</i> (Shaw 1790) 18. <i>Jaydia smithi</i> Kottaus 1970 19. <i>Trypauchenichthys sumatrensis</i> Hardenberg 1931	Fakir Mohan University, Balasore

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				20. <i>Pomadasys kaakan</i> (Cuvier, 1830) 21. <i>Neenchelys buitendijki</i> Weber & deBeaufort, 1916 22. <i>Terapon jarbua</i> (Fabricius 1775) 23. <i>Pisodonophis cancrivorus</i> (Richardson, 1848) 24. <i>Parachaeturichthys polynema</i> (Bleeker, 1853) 25. <i>Fistularia petimba</i> Lacepede 1803 26. <i>Bregmaceros maclellandi</i> Thompson 1840 27. <i>Coilia dussumieri</i> Valenciennes, 1848 28. <i>Stolephorus indicus</i> (van Hasselt, 1823) 29. <i>Cynoglossus lida</i> (Bleeker, 1851) 30. <i>Uranoscopus cognatus</i> Cantor, 1849 31. <i>Trypauchenichthys sumatrensis</i> Hardenberg 1931 32. <i>Neenchelys cheni</i> (Chen and Weng 1967) 33. <i>Congresox talabonoides</i> (Bleeker 1852) 34. <i>Congresox talabon</i> (Cuvier, 1829) 35. <i>Brevitrygon imbricata</i> (Bloch & Schneider, 1801) 36. <i>Setipinna taty</i> (Valenciennes, 1848) 37. <i>Setipinna phasa</i> (Hamilton, 1822) 38. <i>Parastromateus niger</i> (Bloch, 1795) 39. <i>Megalaspis cordyla</i> (Linnaeus, 1758) 40. <i>Ariosoma gnanadossi</i> Talwar & Mukherjee 1977 41. <i>Bathymyrus echinorhynchus</i> Alcock, 1889 42. <i>Ariosoma majus</i> (Thunberg, 1791) 43. <i>Ophichthus sanguensis</i> (Ji and Kim 2011) 44. <i>Gymnothorax prolatus</i> Sasaki and Amaoka 1991 45. <i>Gazza minuta</i> (Bloch, 1795) 46. <i>Platycephalus indicus</i> (Linnaeus 1758) 47. <i>Grammoplites scaber</i> (Linnaeus 1758) 48. <i>Nemipterus japonicus</i> (Bloch 1791) 49. <i>Insidiator macracanthus</i> (Bleeker 1869) 50. <i>Dagetichthys commersonii</i> (Lacepède, 1802) 51. <i>Lepturacanthus savala</i> (Cuvier, 1829) 52. <i>Trachinocephalus trachinus</i> (Temminck & Schlegel, 1846) 53. <i>Johnius borneensis</i> (Bleeker, 1851) 54. <i>Lagocephalus lunaris</i> (Bloch & Schneider, 1801) 55. <i>Lagocephalus spadiceus</i> (Richardson, 1845) 56. <i>Photopectoralis bindus</i> (Valenciennes, 1835) 57. <i>Mene maculata</i> (Bloch & Schneider, 1801) 58. <i>Upeneus guttatus</i> (Day, 1868) 59. <i>Alepes djedaba</i> (Forsskal, 1775)	

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				60. <i>Nuchequula blochii</i> (Valenciennes, 1835) 61. <i>Taenioides buehanani</i> (Day, 1873) 62. <i>Sillago indica</i> McKay, Dutt & Sujatha, 1985 63. <i>Podophthalmus vigil</i> (Fabricius, 1798) 64. <i>Arius maculatus</i> (Thunberg, 1792) 65. <i>Saurida tumbil</i> (Bloch 1795) 66. <i>Chiloscyllium griseum</i> Müller & Henle 1838 67. <i>Deveximentum insidiator</i> (Bloch 1787) 68. <i>Hydrophis schistosus</i> (Daudin, 1803) 69. <i>Hydrophis schistosus</i> (Daudin, 1803) 70. <i>Maculabatis gerrardi</i> (Gray, 1851) 71. <i>Gymnura poecilura</i> (Shaw, 1804) 72. <i>Plotosus canius</i> Hamilton, 1822 73. <i>Kurtus indicus</i> Bloch, 1786 74. <i>Leiognathus longimana</i> (Bloch & Schneider, 1801) 75. <i>Lutjanus fulviflamma</i> (Forsskl, 1775) 76. <i>Muraenesox bagio</i> (Hamilton, 1822)	
105	Diptera	1	1	1. <i>Culex quinquefasciatus</i> Say, 1823	Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra
106	Diptera	1	1	1. <i>Anopheles vagus</i> Dönitz, 1902	District Malaria Officer, Suri, WB
107	Fish	2	2	1. <i>Gymnothorax tamilnaduensis</i> Kodeeswaran, Kantharajan, Mohapatra, Ajith Kumar, Sarkar, 2023	NBFGR, Kochi
108	Fish	58	58	1. <i>Ophichthus machidai</i> McCosker, Ide & Endo 2012 2. <i>Acanthocephala abbreviata</i> (Valenciennes, 1835) 3. <i>Alepes djedaba</i> (Fabricius 1775) 4. <i>Escualosa thoracata</i> (Valenciennes, 1847) 5. <i>Atropus atropos</i> (Bloch & Schneider 1801) 6. <i>Caranx ignobilis</i> (Forsskal, 1775) 7. <i>Sphyræna pinguis</i> Günther, 1874 8. <i>Leiognathus equula</i> (Forsskal 1775) 9. <i>Turris coeruleopinnatus</i> (Rüppell 1830) 10. <i>Platyranx malabaricus</i> (Bloch & Schneider 1801) 11. <i>Epinephelus coioides</i> (Hamilton 1822) 12. <i>Platycephalus indicus</i> (Linnaeus 1758) 13. <i>Megalaspis cordyla</i> (Linnaeus 1758) 14. <i>Harpodon nehereus</i> (Hamilton, 1822) 15. <i>Ariomma indica</i> (Day 1871) 16. <i>Lagocephalus suezensis</i> Clark & Gohar, 1953 17. <i>Sardinella longiceps</i> Valenciennes, 1847	

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				18. <i>Polynemus paradiseus</i> Linnaeus, 1758 19. <i>Osteogeneiosus militaris</i> (Linnaeus, 1758) 20. <i>Upeneus guttatus</i> (Day 1868) 21. <i>Thryssa dussumieri</i> (Valenciennes 1848) 22. <i>Scoliodon laticaudus</i> Müller & Henle 1838 23. <i>Osteomugil perusii</i> (Valenciennes 1836) 24. <i>Otolithoides pama</i> (Hamilton, 1822) 25. <i>Leptomelanosoma indicum</i> (Shaw, 1804) 26. <i>Scomberomorus guttatus</i> (Bloch & Schneider, 1801) 27. <i>Pterolithus maculatus</i> (Cuvier, 1830) 28. <i>Glaucostegus younholeei</i> Habib & Islam, 2021 29. <i>Siganus javus</i> (Linnaeus, 1766) 30. <i>Johnius dussumieri</i> (Cuvier, 1830) 31. <i>Rhizoprionodon acutus</i> (Rüppell, 1837) 32. <i>Gerres filamentosus</i> Cuvier, 1829 33. <i>Chirocentrus nudus</i> Swainson 1839 34. <i>Brevitrygon imbricata</i> (Bloch & Schneider 1801) 35. <i>Cynoglossus monopus</i> (Bleeker 1849) 36. <i>Cynoglossus macrostomus</i> Norman 1923 37. <i>Abudefduf bengalensis</i> (Bloch 1787) 38. <i>Cynoglossus quadrilineatus</i> (Bleeker 1851)	Fakir Mohan University, Balasore
109	Molluscs	10	10	1. <i>Lambis lambis</i> (Linnaeus, 1758)	Department of Environment & Forests, Andaman & Nicobar Islands
110	Reptilia	01	01	Red-eared Slider an American turtle	PCCF (Wildlife) Jharkhand
111	Lepidoptera	02	02	1. <i>Spilarctia</i> sp.	Patna University
112	Freshwater crab	5	5	1. <i>Maydelliathelphusa falcidigitis</i> (Alcock, 1909) 2. <i>Indochinamon beieri</i> (Pretzmann, 1966)	Nagaland University, Nagaland
113	Chiroptera	01 photograph	01 photograph	1. <i>Rhinolophus perniger</i> Hodgson	Dr. Bashida Masser, St Anthony's College, Shilong
114	Chiroptera	01 photograph	01 photograph	1. <i>Megaderm spasma</i> (Linnaeus)	Sh. Addi Gude, Amateur Photographer and conservationist, Aurangabad
115	Reptilia	01 photograph	01 photograph	1. <i>Ptyas mucosa</i> (Linnaeus)	Dr. M. L. Thakur, Himachal Pradesh State Biodiversity Board.
116	Chiroptera	02 photographs	02 photographs	1. <i>Rhinopoma microphyllum</i> (Brünnich) 2. <i>Taphozous</i> sp.	Dr. T Seenivasagan, Scientist E, DRDO, Gwalior
117	Chiroptera	01 photograph	01 photograph	1. <i>Rhinolophus perniger</i> Hodgson	Dr. Khlor Mukhim, Lady Keane College, Shillong

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
118	Pisces	09	09	1. <i>Opsarius barna</i> (Hamilton, 1822) 2. <i>Devario aequipinnatus</i> (McClelland, 1839) 3. <i>Garra gotyla</i> (Gray, 1830) 4. <i>Tariqilabeo latius</i> (Hamilton, 1822) 5. <i>Neolissochilus hexagonolepis</i> (McClelland, 1839) 6. <i>Balitora brucei</i> Gray, 1830 7. <i>Glyptothorax striatus</i> 8. <i>Bagarius bagarius</i> (Hamilton, 1822)	Ms. Baihun Lartang, Ph.D. scholar, North Eastern Hill University, Shillong.
119	Pisces	723	723	1. <i>Notopterus notopterus</i> (Pallas, 1769) 2. <i>Gudusia chapra</i> (Hamilton, 1822) 3. <i>Tenuilosa ilisha</i> (Hamilton, 1822) 4. <i>Amblypharyngodon mola</i> (Hamilton, 1822) 5. <i>Devario aequipinnatus</i> (McClelland, 1839) 6. <i>Devario devario</i> (Hamilton, 1822) 7. <i>Securicula gora</i> (Hamilton, 1822) 8. <i>Opsarius bendelisis</i> (Hamilton, 1807) 9. <i>Opsarius barna</i> (Hamilton, 1822) 10. <i>Opsarius tileo</i> (Hamilton, 1822) 11. <i>Opsarius shacra</i> (Hamilton, 1822) 12. <i>Barilius barila</i> (Hamilton, 1822) 13. <i>Raiamas bola</i> (Hamilton, 1822) 14. <i>Salmostoma bacaila</i> (Hamilton, 1822) 15. <i>Salmostoma phulo</i> (Hamilton, 1822) 16. <i>Cabdio morar</i> (Hamilton, 1822) 17. <i>Esomus danrica</i> (Hamilton, 1822) 18. <i>Rasbora daniconius</i> (Hamilton, 1822) 19. <i>Rasbora rasbora</i> (Hamilton, 1822) 20. <i>Laubuka laubuca</i> (Hamilton, 1822) 21. <i>Labeo bata</i> (Hamilton, 1822) 22. <i>Labeo gonius</i> (Hamilton, 1822) 23. <i>Labeo pangusia</i> (Hamilton, 1822) 24. <i>Labeo dyocheilus</i> (McClelland, 1839) 25. <i>Labeo calbasu</i> (Hamilton, 1822) 26. <i>Labeo rohita</i> (Hamilton, 1822) 27. <i>Catla catla</i> (Hamilton, 1822) 28. <i>Chagunius chagunio</i> (Hamilton, 1822) 29. <i>Systomus sarana</i> (Hamilton, 1822) 30. <i>Cirrhinus mrigala</i> (Hamilton, 1822) 31. <i>Cirrhinus reba</i> (Hamilton, 1822) 32. <i>Cyprinus carpio</i> Linnaeus, 1758 33. <i>Pethia ticto</i> (Hamilton, 1822) 34. <i>Pethia conchoni</i> (Hamilton, 1822) 35. <i>Puntius chola</i> (Hamilton, 1822) 36. <i>Puntius sophore</i> (Hamilton, 1822) 37. <i>Osteobrama cotio</i> (Hamilton, 1822) 38. <i>Tariqilabeo latius</i> (Hamilton, 1822) 39. <i>Neolissochilus hexagonolepis</i> (McClelland, 1839) 40. <i>Neolissochilus hexastichus</i> (McClelland, 1839) 41. <i>Tor mosal</i> (Hamilton, 1822) 42. <i>Tor putitora</i> (Hamilton, 1822) 43. <i>Tor tor</i> (Hamilton, 1822) 44. <i>Garra annandalei</i> Hora, 1921 45. <i>Garra gotyla</i> (Gray, 1830)	Prof. D. Kar (rtd), Department of Life Sciences, Assam University, Silchar

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				46. <i>Garra naganensis</i> Hora, 1921 47. <i>Garra lissorhynchus</i> (McClelland, 1842) 48. <i>Psilorhynchus nudithoracicus</i> Tilak & Hussain, 1980 49. <i>Lepidocephalichyys guntea</i> (Hamilton, 1822) 50. <i>Canthophrys gongota</i> (Hamilton, 1822) 51. <i>Botia dario</i> (Hamilton, 1822) 52. <i>Botia rostrata</i> Gunther, 1868 53. <i>Paracanthocobitis botia</i> (Hamilton, 1822) 54. <i>Schistura fasciata</i> Lokeshwor & Vishwanath, 2011 55. <i>Mystus vittatus</i> (Bloch, 1794) 56. <i>Mystus bleekeri</i> (Day, 1877) 57. <i>Mystus tengara</i> (Hamilton, 1822) 58. <i>Mystus cavasius</i> (Hamilton, 1822) 59. <i>Hemibagrus menoda</i> (Hamilton, 1822) 60. <i>Sperata seenghala</i> (Sykes, 1869) 61. <i>Sperata aor</i> (Hamilton, 1822) 62. <i>Rita rita</i> (Hamilton, 1822) 63. <i>Glyptothorax botius</i> (Hamilton, 1822) 64. <i>Glyptothorax cavia</i> (Hamilton, 1822) 65. <i>Glyptothorax striatus</i> (McClelland, 1842) 66. <i>Glyptothorax telchitta</i> (Hamilton, 1822) 67. <i>Gagata cenia</i> (Hamilton, 1822) 68. <i>Bagarius bagarius</i> (Hamilton, 1822) 69. <i>Gogangra viridescens</i> (Hamilton, 1822) 70. <i>Nangra assamensis</i> Sen & Biswas, 1994 71. <i>Clupisoma garua</i> (Hamilton, 1822) 72. <i>Ailia coila</i> (Hamilton, 1822) 73. <i>Eutropiichthys murius</i> (Hamilton, 1822) 74. <i>Eutropiichthys vacha</i> (Hamilton, 1822) 75. <i>Ompok bimaculatus</i> (Bloch, 1794) 76. <i>Pachypterus atherinoides</i> (Bloch, 1794) 77. <i>Erethistes pusillus</i> Muller & Troschel, 1849 78. <i>Pseudolaguvia shawi</i> (Hora, 1921) 79. <i>Heteropneustes fossilis</i> (Bloch, 1794) 80. <i>Chaca chaca</i> (Hamilton, 1822) 81. <i>Macrogathus pancalus</i> (Hamilton, 1822) 82. <i>Macrogathus aral</i> (Bloch & Schneider, 1801) 83. <i>Mastacembelus armatus</i> (Lacepede, 1800) 84. <i>Xenentodon cancila</i> (Hamilton, 1822) 85. <i>Rhinomugil corsula</i> (Hamilton, 1822) 86. <i>Minimugil cascasia</i> (Hamilton, 1822) 87. <i>Nandus nandus</i> (Hamilton, 1822) 88. <i>Parambassis ranga</i> (Hamilton, 1822) 89. <i>Parambassis lala</i> (Hamilton, 1822) 90. <i>Chanda nama</i> Hamilton, 1822 91. <i>Badis badis</i> (Hamilton, 1822) 92. <i>Johnius coitor</i> (Hamilton, 1822)	

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				93. <i>Oreochromis mossambicus</i> (Peters, 1852) 94. <i>Glossogobius giuris</i> (Hamilton, 1822) 95. <i>Anabas testudineus</i> (Bloch, 1792) 96. <i>Trichogaster fasciata</i> Bloch & Schneider, 1801 97. <i>Trichogaster chuna</i> (Hamilton, 1822) 98. <i>Trichogaster lalius</i> (Hamilton, 1822) 99. <i>Channa stewartii</i> (Playfair, 1867) 100. <i>Channa punctata</i> (Bloch, 1793) 101. <i>Channa gachua</i> (Hamilton, 1822) 102. <i>Channa striata</i> (Bloch, 1793) 103. <i>Leiodon cutcutia</i> (Hamilton, 1822)	
120	Amphibia	11	11	1. <i>Duttaphrynus melanostictus</i> (Schneider, 1799) 2. <i>Humerana humeralis</i> (Boulenger, 1887) 3. <i>Minervarya teraiensis</i> (Dubois, 1984) 4. <i>Minervarya nepalensis</i> (Dubois, 1975) 5. <i>Hylarana tytleri</i> Theobald, 1868 6. <i>Duttaphrynus</i> sp. 7. <i>Minervarya nepalensis</i> (Dubois, 1975)	Gauhati University, Guwahati (Jilmani Sarma, Ph. D. Scholar)
121	Orthoptera	02	02	1. <i>Paraconophyma scabra</i> (Walker, 1870) 2. <i>Atractomorpha crenulata</i> (Fabricius, 1793)	Department of Zoology, Kumaon University, Nainital, Uttarakhand.
122	Order- Odonata	63	63	1. <i>Acisoma panorpoides</i> Rambur, 1842 2. <i>Brachythemis contaminata</i> (Fabricius, 1793) 3. <i>Bradinopyga geminata</i> (Rambur, 1842) 4. <i>Crocothemis servilia</i> (Drury, 1773) 5. <i>Neurothemis fulvia</i> (Drury, 1773) 6. <i>Orthetrum glaucum</i> (Brauer, 1865) 7. <i>Orthetrum triangulare</i> (Selys, 1878) 8. <i>Orthetrum sabina</i> (Drury, 1770) 9. <i>Orthetrum pruinsum</i> (Burmeister, 1839) 10. <i>Palpopleura sexmaculata</i> (Fabricius, 1787) 11. <i>Orthetrum taeniolatum</i> (Schneider, 1845) 12. <i>Trithemis aurora</i> (Burmeister, 1839) 13. <i>Trithemis festiva</i> (Rambur, 1842) 14. <i>Trithemis kirbyi</i> Selys, 1891 15. <i>Trithemis pallidinervis</i> (Kirby, 1889) 16. <i>Pantala flavescens</i> (Fabricius, 1798) 17. <i>Diplacodes trivialis</i> (Rambur, 1842) 18. <i>Diplacodes lefebvrii</i> (Rambur, 1842) 19. <i>Ophiogomphus reductus</i> Calvert, 1898 20. <i>Paragomphus lineatus</i> (Selys, 1850) 21. <i>Anax immaculifrons</i> Rambur, 1842 22. <i>Calicnemia eximia</i> (Selys, 1863) 23. <i>Calicnemia erythromelas</i> (Selys, 1891) 24. <i>Calicnemia carminea</i> Lieftinck, 1984 25. <i>Coeliccia renifera</i> (Selys, 1886) 26. <i>Neurobasis chinensis</i> (Linnaeus, 1758) 27. <i>Dysphaea ethela</i> Fraser, 1924 28. <i>Pseudagrion rubriceps</i> Selys, 1876 29. <i>Ceragrion coromandelianum</i> (Fabricius, 1798) 30. <i>Ichnura rubilio</i> Selys, 1876 31. <i>Aristocypha trifasciata</i> (Selys, 1853)	M.B.Govt.P.G. College. Haldwani, Kumaun University.

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
123	Lepidoptera	86	86	1. <i>Athyma selenopara</i> (Kollar,1844) 2. <i>Junonia orithya</i> (Linnaeus, 1758) 3. <i>Parantica sita</i> (Kollar,1844) 4. <i>Euthalia aconthea</i> (Cramer,1777) 5. <i>Ariadne merione</i> (Cramer,1777) 6. <i>Euploea core</i> (Cramer,1780) 7. <i>Vanessa indica</i> (Herbst,1794) 8. <i>Junonia iphita</i> (Cramer,1779) 9. <i>Junonia lemonias</i> (Linnaeus, 1758) 10. <i>Cyrestis thydamas</i> Boisduval,1836 11. <i>Charaxes bharata</i> C. & R. Felder,1867 12. <i>Neptis clinia</i> Moore,1872 13. <i>Junonia lemonias</i> Linnaeus, 1758 14. <i>Junonia hierta</i> (Fabricius,1798) 15. <i>Junonia almana</i> (Linnaeus,1758) 16. <i>Junonia atlite</i>, (Linnaeus,1763) 17. <i>Parantica aglea</i> (Stoll,1782) 18. <i>Euripus consimilis</i> (Westwood,1851) 19. <i>Kallima inachus</i> (Doyère,1840) 20. <i>Danaus chrysippus</i> (Linnaeus, 1758) 21. <i>Danaus genutia</i> (Cramer,1779) 22. <i>Euthalia lubentina</i> (Cramer,1777) 23. <i>Aglais caschmirensis</i> (Kollar,1844) 24. <i>Ideopsis similis</i> (Linnaeus,1758) 25. <i>Elymnias hypermnestra</i> (Linnaeus,1763) 26. <i>Hypolimnias bolina</i> (Linnaeus) 27. <i>Euploea mulciber</i> (Cramer,1777) 28. <i>Cupha erymanthis</i> (Drury,1773) 29. <i>Ypthima baldus</i> Fabricius , 1775 30. <i>Phalantha phalantha</i> Drury,1773 31. <i>Graphium sarpedon</i> (Linnaeus,1758) 32. <i>Graphium doson</i> (C. & R. Felder,1864) 33. <i>Papilio clytia</i> Linnaeus,1758 34. <i>Papilio polytes</i> Linnaeus,1758 35. <i>Papilio machaon</i> Linnaeus, 1758 36. <i>Papilio protenor</i> Cramer,1775 37. <i>Pachliopta aristolochiae</i> (Fabricius,1775) 38. <i>Papilio demoleus</i> Linnaeus,1758 39. <i>Talica nyseus</i> (Guérin-Méneville,1843) 40. <i>Acytolepis puspa</i> (Horsfield,1828) 41. <i>Heliophorus sena</i> (Kollar,1844) 42. <i>Heliophorus brahma</i> (Moore,1858) 43. <i>Belenois aurota</i> (Fabricius, 1793) 44. <i>Cepora nerissa</i> (Fabricius,1775) 45. <i>Catopsila pomona</i> (Fabricius,1775) 46. <i>Catopsila pyranthe</i> (Linnaeus,1758) 47. <i>Pareronia hippia</i> (Fabricius,1787) 48. <i>Pieris canidia</i> (Linnaeus,1768) 49. <i>Pieris rapae</i> Linnaeus,1758 50. <i>Pieris brassicae</i> (Linnaeus, 1758) 51. <i>Colias fieldii</i> Ménériés,1855 52. <i>Eurema hecabe</i> (Linnaeus) 53. <i>Eurema blanda</i> (Boisduval,1836) 54. <i>Eurema brigitta</i> (Stoll,1780) 55. <i>Eurema sp.</i>	M.B.Govt.P.G. College. Haldwani, Kumaun University.

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
				56. <i>Abisara fylla</i> (Westwood, 1851) 57. <i>Zemerus flegyas</i> (Cramer, 1780) 58. <i>Pelopidas mathias</i> (Fabricius, 1798) 59. <i>Borbo cinnara</i> (Wallace, 1866)	
124	Hymenoptera	35	35	1. <i>Vespa auraria</i> Smith, 1852 2. <i>Vespa tropica</i> (Linnaeus, 1758) 3. <i>Vespa basalis</i> Smith, 1852 4. <i>Bombus haemorrhoidalis</i> Smith 1852 5. <i>Bombus festivus</i> Smith, 1861 6. <i>Apis dorsata</i> Fabricius, 1793 7. <i>Apis florea</i> Fabricius (1787) 8. <i>Apis cerana</i> Fabricius, 1793 <i>Apis mellifera</i> Linnaeus, 1758 9. <i>Nomia crassipes</i> (Fabricius, 1789) 10. <i>Nomia iridescens</i> Smith, 1853 11. <i>Xylocopa fenestrata</i> (Fabricius 1798) 12. <i>Ceratina binghami</i> Cockerell, 1908 13. <i>Sceliphron madraspatanum</i> (Fabricius, 1781) 14. <i>Campsomeriella collaris</i> (Fabricius, 1775)	Department of Zoology, Kumaon University, Nainital, Uttarakhand.
125	Reptilia	04 photographs	04 photographs	1. <i>Cnemaspis</i> sp.	Sehgal Foundation Centre for Biodiversity and Conservation, Bangalore
126	Mammalia	01	01	1. Four-toed hedgehog, (<i>Atelerix albiventris</i>) (Wagner, 1841)	Forest department, Pondicherry
127	Thysanoptera	13	02	1. <i>Megalurothrips usitatus</i> (Bagnall)	C. P. College of Agriculture, SDAU Banaskantha, Gujarat
128	Thysanoptera	41	07	1. <i>Holarthrothrips indicus</i> Bhatti & Ananthakrishnan	Department of Entomology, S.K. Rajasthan Agriculture University, Bikaner.
129	Thysanoptera	21	05	1. <i>Dolichothrips indicus</i> (Hood)	ICAR-AICRP on Fruits, Ludhiana, Punjab
130	Thysanoptera	02	02	1. <i>Mallothrips indica</i> Ramakrishna, 1928	AICRP on Arid Zone, MPKV, Rahuri
131	Thysanoptera	54	06	1. <i>Mecynothrips simplex</i> Bagnall	Syed Md. Ibrahim. S., College of Agriculture, Vellayani, Trivandrum, Kerala
132	Thysanoptera	20	03	1. <i>Psephenothrips machili</i> Moulton	D. M. Firake, ICAR-DFR, Pune, Maharashtra
133	Thysanoptera	10	02	1. <i>Selenothrips rubrocinctus</i> (Giard)	Aswathy S. S., Kerala Agricultural University, Kerala
134	Crabs	04	04	1. <i>Macrophthalmus</i> (<i>Macrophthalmus</i>) <i>transversus</i> (Latreille, 1817) 2. <i>Dotilla fraternalis</i> Mitra, Trivedi & Mendoza, 2020	Singur Government College, Hooghly
135	Anomuran crab	03	03	1. <i>Clibanarius longitarsus</i> (De Haan, 1849)	Calcutta University
136	Diptera	05	05	1. <i>Megaselia</i> (<i>Megaselia</i>) <i>scalaris</i> (Leow, 1866) 2. <i>Poecilosomella varians</i> (Duda, 1925) 3. <i>Sciara</i> sp. 4. Family: Sphaeroceridae	Dr. Sunil Kumar Thakur, Head, Dept. of Animal Sciences, Central University of Himachal Pradesh
137	Diptera	04	04	1. <i>Tabanus subcinerascens</i> Rie, 1911 2. <i>Stomoxys calcitrans</i> (Linnaeus, 1758) 3. <i>Stomoxys</i> sp.	Mr P.Thirumurugan, SRRC, Mannavur, Kodaikanal

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
138	Diptera	30	30	1. <i>Drosophila (Sophophora) ananassae</i> Doleschall, 1858	Dr. Manoj Kumar Z. Chopda, Moolji Jaitha College, Jalgaon 425003
139	Diptera	15	15	1. Family: Platystomatidae 2. Family: Chironomidae 3. <i>Morellia</i> sp. 4. <i>Sciara</i> sp. 5. <i>Culex</i> sp. 6. <i>Lauxania</i> sp. 7. <i>Alheriglossa</i> sp. 8. Family: Agromyzidae 9. Family : Sciaridae	Mr. Somnath Roy, TRA, Tocklai, Jorjat, Assam
140	Diptera	04 (Larvae)	04	Family: Chironomidae	Dr. C. Dhananjay Singh. CMO Ukhrul, Manipur-795142
141	Diptera	08	08	1. <i>Sciara</i> sp. 2. <i>Sphaerocera</i> sp. 3. <i>Leptocera</i> sp. 4. <i>Megaselia (Megaselia) scalaris</i> (Loew, 1866)	Dr. S.K.Thakur, Head, Dept. of Animal Science, Central University of Himachal Pradesh
142	Diptera	07	07	1. <i>Sciara</i> sp. 2. <i>Melanostoma orientale</i> (Wiedemann, 1824) 3. Family: Anthomyiidae 4. Family: Drosophilidae	Dr. J.M.Julka, Director, PSU, Solan, HP-173212
143	Diptera	05	05	1. <i>Chironomus</i> sp.	Mr. Toge Riba, Head, Dept. of Agricultural Entomology, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Bihar, W.B.
144	Diptera	20	20	Family: Chironomidae	Dr. Moni Thomas, Principal Scientist & Principal Investigator, JNKUU, Jabalpur, M.P.- 482004.
145	Diptera	08	08	1. <i>Spogostylum</i> sp. 2. Family: Muscidae 3. <i>Musca</i> Sp. 4. Family: Tachinidae 5. <i>Lophosiosoma</i> sp. 6. <i>Philodicus jagannathi</i> Rao, 1969 7. Family: Calliphoridae	Dr. Sutirtha Dutta, Scientist- D, Dept. of Animal Ecology & Conservation Biology, Wildlife Institute of India, Dehradun.
146	Diptera	07	07	1. Family: Sciomyzidae 2. <i>Sepedon plumbella</i> Wiedemann, 1830	Dr. Md. Wasim Reza, Assistant Professor, RRS, Kharibari, Darjeeling.
147	Diptera	17	17	1. <i>Scaeva latimaculatus</i> (Brunetti, 1923) 2. <i>Eristalis (Eristalis) tenax</i> (Linnaeus, 1758) 3. <i>Episyrphus (Episyrphus) balteatus</i> (DeGeer, 1776) 4. <i>Eristalis (Eoseriatalis) cerealis</i> (Fabricius, 1805) 5. <i>Chrysotoxum convexum</i> Brunetti, 1915 6. <i>Eopeodes (Metasyrphus) luniger</i> (Meigen, 1822) 7. <i>Chrysomya phaonis</i> (Seguy, 1928) 8. <i>Tachina</i> sp. 9. <i>Tachina (Servillia)</i> sp. 10. <i>Bombylius erectus</i> Brunetti, 1909 11. <i>Anthrax aperta</i> Walker, 1852 12. <i>Physocephala aurantiaca</i> Brunetti, 1923 13. <i>Sarcophaga (Bercaea) pernix</i> (harris, 1780)	Mr. Ahsan Ali, Dept. of Zoology, Punjab University, Chandigarh.

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148	Diptera	12	12	1. <i>Tabanus</i> sp. 2. <i>Chrysomya megacephala</i> (Fabricius, 1794) 3. <i>Sarcophaga (Parasarcophaga) hirtips</i> (Wiedemann, 1830) 4. <i>Mesembrius (Mesembrius) bengalensis</i> (Wiedemann, 1819) 5. <i>Mesembrius</i> sp.	Dr. Punarbasu Chaudhuri, Assistant Professor, University of Calcutta.
149	Diptera	08	08	1. <i>Chrysomya megacephala</i> (Fabricius, 1794) 2. <i>Calliphora (Calliphora) vicina</i> Robineau-Desvoidy, 1830 3. <i>Sarcophaga (Parasarcophaga) albiceps</i> , Meigen, 1826 4. <i>Musca sorbens</i> Wiedemann, 1830	Ms. Muskan, Ph.D. Scholar, Dept. of Forensic Science, Lovely Professional University, Punjab.
150	Diptera	15	15	1. <i>Physiphora aenea</i> (Fabricius, 1794) 2. <i>Sarcophaga</i> sp. 3. <i>Orthellia lauta</i> (Wiedemann, 1830) 4. <i>Lispe orientalis</i> Wiedemann, 1824 5. <i>Musca</i> sp. 6. <i>Phytomia (Phytomia) errans</i> (Fabricius, 1787) 7. <i>Episyrphus (Episyrphus) balteatus</i> (DeGeer, 1776) 8. <i>Odomtomyia kashmirensis</i> Brunetti, 1920 9. <i>Oplodontha rubrithorax</i> (Macqart, 1838) 10. Family: Tachinidae	Dr. S. K. Singh, Head, Dept. of Entomology, College of Agriculture, H.P.
151	Freshwater Fishes	06	06	1. <i>Notopterus notopterus</i> (Pallas 1769) 2. <i>Mystus gulio</i> (Hamilton 1822) 3. <i>Mastacembelus armatus</i> (Lacepede 1800) 4. <i>Macrognathus aral</i> (Bloch & Schneider 1801) 5. <i>Heteropneustes fossilis</i> (Bloch 1794) 6. <i>Xenentodon cancila</i> (Hamilton 1822)	Bharathidarsan University
152	Freshwater Fishes	02	02	1. <i>Channa punctata</i> (Bloch 1793) 2. <i>Channa gachua</i> (Hamilton 1822)	University Department of Zoology Ranchi University
153	Freshwater Fishes	03	03	1. <i>Periophthalmus novemradiatus</i> (Hamilton 1822)	Dept. Mahishadal Raj college Purba Medinipur
154	Freshwater Fishes	04	04	1. <i>Periophthalmus novemradiatus</i> (Hamilton 1822)	Dept. Mahishadal Raj college Purba Medinipur
155	Freshwater Fishes	02	02	1. <i>Gambusia affinis</i> (Baird & Girard 1853)	Dept of Zoology Vishvabharti, Shatntiniketan
156	Freshwater Fishes	04	04	1. <i>Devario aequipinnatus</i> (McClelland 1839) 2. <i>Mystus malabaricus</i> (Jerdon 1849) 3. <i>Dawkinsia filamentosa</i> (Valenciennes 1844)	University Department of Zoology Dapoli Urban Bank Senior Science College Dapoli District Ratnagiri

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
157	Earthworms	113	113	1. <i>Amyntas morrissi</i> (Beddard, 1892) 2. <i>Amyntas alexandri</i> (Beddard, 1900) 3. <i>Amyntas corticis</i> (Kinberg, 1867) 4. <i>Amyntas gracilis</i> (Kinberg, 1867) 5. <i>Amyntas robustus</i> (Perrier, 1872) 6. <i>Aporrectodea caliginosa caliginosa</i> (Savigny, 1826) 7. <i>Aporrectodea caliginosa trapezoides</i> (Dugès, 1828) 8. <i>Aporrectodea rosea rosea</i> (Savigny, 1826) 9. <i>Drawida nepalensis</i> Michaelsen, 1907 10. <i>Eisenia fetida</i> (Savigny, 1826) 11. <i>Eudrilus eugeniae</i> (Kinberg, 1867) 12. <i>Eutyphoeus nainianus</i> Michaelsen, 1907 13. <i>Eutyphoeus waltoni</i> Michaelsen, 1907 14. <i>Metaphire anomala</i> (Michaelsen, 1907) 15. <i>Metaphire birmanica</i> (Rosa, 1888) 16. <i>Metaphire houlleti</i> (Perrier, 1872) 17. <i>Metaphire posthuma</i> (Vaillant, 1868) 18. <i>Octolasion tyrtaeum</i> (Savigny, 1826)	Dr. Satpal Singh Bisht Professor & Head Department of Zoology, Kumaun University Nainital 263002
158	Leeches	04	04	1. <i>Haemadipsa zeylanica cochoniana</i> Moore, 1927 2. <i>Haemadipsa dussumieri</i> Blanchard, 1917	The Officer In-charge SRRC (CSWRI) Mannavanur Kodaikanal 624103 Tamil Nadu
159	Earthworms	1149	1149	1. <i>Aporrectodea caliginosa trapezoides</i> (Dugès, 1828) 2. <i>Aporrectodea rosea rosea</i> (Savigny, 1826) 3. <i>Eisenia fetida</i> (Savigny, 1826) 4. <i>Octolasion tyrtaeum</i> (Savigny, 1826) 5. <i>Dendrodrilus rubidus</i> (Savigny, 1826) 6. <i>Amyntas alexandri</i> (Beddard, 1900) 7. <i>Amyntas corticis</i> (Kinberg, 1867) 8. <i>Amyntas morrissi</i> (Beddard, 1892) 9. <i>Amyntas</i> sp. 10. <i>Metaphire anomala</i> (Michaelsen, 1907) 11. <i>Metaphire birmanica</i> (Rosa, 1888) 12. <i>Metaphire houlleti</i> (Perrier, 1872) 13. <i>Perionyx excavatus</i> Perrier, 1872 14. <i>Perionyx</i> sp. 15. <i>Drawida japonica</i> (Michaelsen, 1892) 16. <i>Eutyphoeus</i> sp.	Dr. Satpal Singh Bisht Professor & Head Department of Zoology, Kumaun University Nainital 263002
160	Earthworms	386	386	1. <i>Lampito mauritii</i> Kinberg, 1867 2. <i>Perionyx excavatus</i> Perrier, 1872 3. <i>Drawida calebi</i> Gates, 1945 4. <i>Drawida limella</i> Gates, 1934 5. <i>Drawida willsi</i> Michaelsen, 1907 6. <i>Deccania alba</i> Gates, 1949 7. <i>Lennogaster pusillus</i> (Stephenson, 1920) 8. <i>Octochaetona compta</i> (Gates, 1945) 9. <i>Octochaetona surensis</i> (Michaelsen, 1910) 10. <i>Pellogaster bengalensis</i> (Michaelsen, 1910) 11. <i>Ramiella sundargarhensis</i> Julka, 1978 12. <i>Pontoscolex corethrurus</i> (Muller, 1857)	Dr. Sunanda Sahoo Lecturer, School of Life Sciences, Sambalpur University Jyoti Vihar 768019, Odisha

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161	Porifera	07	06	1. <i>Spongilla alba</i> Carter, 1849 2. <i>Ephydatia meyeri</i> (Carter, 1849) 3. <i>Radiospongilla cerebellata</i> (Bowerbank, 1863)	Dr. D. Bhattacharya, PDF, Bose Institute, Kolkata
162	Earthworms	19	19	1. <i>Metaphire planata</i> (Gates, 1926) 2. <i>Drawida nepalensis</i> Michaelsen, 1907	Dr. Arvind Kumar Goyal, Assistant Professor Department of Biotechnology, Bodoland University, Kokrajhar-783370, Assam
163	Earthworms	04	04	1. <i>Eisenia fetida</i> (Savigny, 1826) 2. <i>Eudrilus eugeniae</i> (Kinberg, 1867)	Assistant Director of Agriculture, O/o Additional Director of Agriculture, At./Po./ District Bilaspur-495001 (Chhattisgarh)
164	Earthworms	31	31	1. <i>Eisenia fetida</i> (Savigny, 1826) 2. <i>Eudrilus eugeniae</i> (Kinberg, 1867) 3. <i>Perionyx sansibaricus</i> Michaelsen, 1891	M/s. Laxmi Organics, Mahespur, Chhattisgarh
165	Earthworms	24	24	1. <i>Eisenia fetida</i> (Savigny, 1826) 2. <i>Eudrilus eugeniae</i> (Kinberg, 1867) 3. <i>Perionyx sansibaricus</i> Michaelsen, 1891	M/s Maa Aadi Shakti Seeds and Biotech Industries Madan Nagar, Dharampur, Pratappur, Surajpur – 497223, Chhattisgarh
166	Earthworms	17	17	1. <i>Eisenia fetida</i> (Savigny, 1826) 2. <i>Eudrilus eugeniae</i> (Kinberg, 1867) 3. <i>Perionyx sansibaricus</i> Michaelsen, 1891	M/s Mangalakankshi Mahila Mandal F-01, Sai Vatika, Devpuri, Raipur- 492001, Chhattisgarh
167	Earthworms	208	196	1. <i>Drawida calebi</i> Gates, 1945 2. <i>Drawida limella</i> Gates, 1934 3. <i>Drawida willsi</i> Michaelsen, 1907 4. <i>Lampito mauritii</i> Kinberg, 1867 5. <i>Perionyx excavatus</i> Perrier, 1872 6. <i>Octochaetona compta</i> (Gates, 1945) 7. <i>Octochaetona surensis</i> (Michaelsen, 1910) 8. <i>Pellogaster bengalensis</i> (Michaelsen, 1910) 9. <i>Ramiella sundargarhensis</i> Julka, 1978 10. <i>Lenogaster chittagongensis</i> (Stephenson, 1917) 11. <i>Lenogaster dashi</i> Julka et al. 1990	Dr. (Mrs.) Sunanda Sahoo Asst. Professor School of Life Sciences Sambalpur University Jyoti Vihar – 768019 Burla, Sambalpur
168	Hemiptera	05	05	1. <i>Telingana canescens</i> (Buckt, 1903) 2. <i>Leptocoris augur</i> (Fabricius, 1781) 3. <i>Kalidasa nigromaculata</i> (Gray, 1832) 4. <i>Leptocoris acuta</i> (Thunberg, 1783) 5. <i>Graptostethus servus</i> (Fabricius, 1787)	Prof. Gautam Aditya, Department of Zoology, University of Calcutta, 35 Ballygunge Circular Road, Kolkata 700019
169	Aquatic Hemiptera	30	30	1. <i>Micronecta siva</i> (Kirkaldy, 1897) 2. <i>Paraplea frontalis</i> (Fieber, 1844) 3. <i>Sigara distorta</i> Distant, 1910 4. <i>Anisops kuroiwae</i> Matsumura, 1915 5. <i>Microvelia albomaculata</i> Distant, 1909 6. Nymph	Prof. Gautam Aditya, Department of Zoology, University of Calcutta, 35 Ballygunge Circular Road, Kolkata 700019

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170	Hemiptera	18	18	1. <i>Ptyelus nebulosus</i> (Fabricius, 1794) 2. <i>Cletus punctulatus</i> (Westwood, 1842) 3. <i>Kolla atramentaria</i> (Motschulsky, 1859) 4. <i>Geocoris ochropterus</i> (Fabricius, 1798) 5. <i>Agonoscelis nubile</i> (Fabricius, 1775) 6. <i>Clovioa conifer</i> (Walker, 1851) 7. <i>Charagochilus longicornis</i> (Reuter, 1885) 8. <i>Gargara flavolineata</i> Distant, 1908	Somnath Roy, In-charge Entomology Department, Tocklain Tea Research Institutes, Tea Research Association, Jorhat, Assam
171	Hemiptera	23	23	1. <i>Tessaratoma javanica</i> (Thunberg, 1783) 2. <i>Cantao ocellatus</i> (Thunberg, 1784) 3. <i>Scutellera fuscata</i> (Panz, 1798) 4. <i>Chrysocoris purpureus</i> (Westwood, 1837) 5. <i>Placosternum taurus</i> (Fabricius, 1781) 6. <i>Acanthaspis micrographa</i> Walker, 1873 7. <i>Leptocoris oratoria</i> (Fabricius, 1794) 8. <i>Polididus armatissimus</i> Stal, 1859 9. <i>Acanthaspis fulviceps</i> Dallas, 1850 10. <i>Triatoma rubrofasciata</i> (De Geer, 1773) 11. <i>Spilostethus saxatilis</i> (Scopoli, 1763) 12. <i>Lethocerus indicus</i> (Lepeletier & Serville, 1825) 13. <i>Diplonychus annulatus</i> (Fabr., 1781) 14. <i>Diplonychus rusticus</i> (Fabr., 1781) 15. <i>Laccotrephes ruber</i> (Linnaeus, 1764) 16. <i>Laccotrephes griseus</i> (Guérin-Ménéville, 1835) 17. Nymphs	Dr. Seema Keshari, Assistant Professor, Department of Zoology, Ranchi University, Jharkhand
172	Aquatic Hemiptera	10	10	1. <i>Diplonychus</i> sp 2. <i>Laccotrephes griseus</i> (Guerin-Meneville, 1844)	Dr Anjali Rawani Assistant Professor, Dept. of Zoology, University of Gour Banga, Malda- 732103
173	Hemiptera	05	05	1. <i>Leptocoris oratoria</i> (Fabr., 1794) 2. <i>Leptocoris acuta</i> (Thumb., 1783) 3. <i>Cletus bovis</i> Distant, 1918 4. <i>Cletus bipunctatus</i> (Herrich-Schaffer 1840)	Mr. Toge Riba, P.hd student, Department of Agricultural Entomology, Uttar Banga Krishi Viswavidyalaya, Pundibari Cooch Behar, West Bengal
174	Hemiptera	03	03	1. <i>Anoplocnemis phasiana</i> (Fabr., 1781) 2. <i>Leptocoris oratoria</i> (Fabr., 1794)	Dr. S. K. Singh, Department of Entomology, Banda University of Agriculture & Technology, Banda 210001 (UP)
175	Aquatic Hemiptera/ Hemiptera	04	04	1. <i>Diplonychus molestus</i> (Dufour, 1863) 2. <i>Laccotrephes ruber</i> Linnaeus, 1764 3. <i>Ranatra filiformis</i> Fabr., 1790 4. <i>Coridius singhalanus</i> (Dist., 1900)	Lamvahemm Kipgen Animal Physiology laboratory Department of Life science (Zoology) Manipur university, Canchipur-795003 Imphal
176	Hemiptera	10	10	1. <i>Coridius chinensis</i> (Dallas, 1851) 2. <i>Coridius nigriventris</i> (Westwood, 1837) 3. <i>Coridius nepalensis</i> (Westwood, 1837) 4. <i>Coridius singhalanus</i> (Distant, 1900)	Prof. Jharna Chakravorty, Department of Zoology, Rajiv Gandhi University, Rono Hills, Itanagar – 791112, Arunachal Pradesh

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
177	Hemiptera	05	05	1. <i>Physopelta gutta</i> (Burmeister, 1834) 2. <i>Physopelta gutta</i> (Burmeister, 1834) 3. <i>Dalpada nigricollis</i> (Westwood, 1837) 4. <i>Acanthocoris scabrator</i> (Fabr., 1803) 5. <i>Dalpada nigricollis</i> (Westwood, 1837)	Dr. Amaninder Kaur, Department of Biosciences (Zoology), Lovely Professional University, Phagwara, Punjab.
178	Hemiptera	01	01	1. <i>Aleurodicus rugioperculatus</i> Martin, 2004	Dept. of Zoology, Mahishadal Raj College, Purba Medinapur, West Bengal.
179	Hemiptera: Aleyrodidae	01	01	1. <i>Zaphanera publicus</i> (Singh, 1938)	Kerala Forest Research Institute, Kerala
180	Hemiptera: Aleyrodidae	06	05	1. <i>Aleuroclava aucubae</i> Kuwana, 1911 2. <i>Aleuroclava nachiensis</i> Takahashi, 1963 3. <i>Aleuroclava meliosmae</i> Takahashi, 1932 4. <i>Aleuroclava euryae</i> Kuwana, 1911 5. <i>Aleuroclava hikosannsis</i> Takahashi, 1938 6. + <i>Aleurocanthus</i> sp.	The United Graduate School of Agricultural Science (UGSAS), Gifu University, Gifu City 501-1193, JAPAN.
181	Hemiptera: Aleyrodidae	13	08	1. <i>Aleuroclava aucubae</i> Kuwana, 1911 2. <i>Aleuroclava euryae</i> Kuwana, 1911 3. <i>Aleuroclava meliosmae</i> Takahashi, 1932 4. <i>Aleurolobus styraci</i> Takahashi, 1954 5. <i>Aleurolobus shiiae</i> Takahashi, 1957 6. <i>Aleurolobus taonabae</i> Kuwana, 1911 7. <i>Aleurolobus rhododendri</i> Takahashi, 1934 8. <i>Aleurolobus japonicas</i> Takahashi, 1954	Prof. Akihide Koguchi, 2345-6 Obatta, Nagassakacho, Hokuto-shi, Yamanashi, 408-0034, JAPAN.
182	Hemiptera: Aleyrodidae	10	10	1. <i>Aleuroclava asmine</i> Takahshi, 1932 2. <i>Aleurothrixux floccosus</i> (Maskell, 1896) 3. <i>Aleurotuba jelinekii</i> (Fraunfeld, 1867) 4. <i>Aleurcerus palmae</i> Russell, 1986 5. <i>Crenidorsum aroidephagus</i> (Martin and Aguiar, 2001) 6. <i>Dialeurodes citri</i> (Ashmead, 1885) 7. <i>Orchamoplatus mammaeferus</i> (Quaintance and Baker, 1917) 8. <i>Siphoninus phillyreae</i> (Haliday, 1835) 9. <i>Singhiella simplex</i> (Singh, 1931) 10. <i>Trialeurodes vaporariorum</i> (Westwood, 1856)	Guatemala, Italy, Netherlands, Costa Rica intercepted are identified for Netherlands Food and Consumers Product Safety Authority (NVWA), Ministry of Agriculture, Netherlands.
183	Isoptera	23	23	1. <i>Odontotermes gurdaspurensis</i> Holmgren and Holmgren, 1917 2. <i>Odontotermes globicola</i> (Wasmann, 1902) 3. <i>Odontotermes brunneus</i> (Hagen, 1858) 4. <i>Odontotermes obesus</i> (Rambur, 1842)	Dr. Surendra Kumar Singh, Professor & Head, Department of Entomology, College of Agriculture, Banda University of Agriculture & Technology, Banda- 210001 (Uttar Pradesh)

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
184	Isoptera	19	19	1. <i>Odontotermes anamallensis</i> Holmgren and Holmgren, 1917 2. <i>Odontotermes obesus</i> (Rambur, 1842) 3. <i>Odontotermes bellahunisensis</i> Holmgren and Holmgren, 1917 4. <i>Odontotermes globicola</i> (Wasmann, 1902) 5. <i>Microtermes obesi</i> Holmgren, 1912 6. <i>Microcerotermes pakistanicus</i> Akhtar, 1974	Dr. Mohammed Shareef K.P., Professor, Department of Zoology, PSMO College, Tirurangadi, Malappuram-DT, Kerala-676306
185	Isoptera	10	10	1. <i>Coptotermes ceylonicus</i> Holmgren, 1911 2. <i>Odontotermes obesus</i> (Rambur, 1842) 3. <i>Odontotermes bellahunisensis</i> Holmgren and Holmgren, 1917 4. <i>Odontotermes anamallensis</i> Holmgren and Holmgren, 1917 5. <i>Odontotermes feae</i> (Wasmann, 1896) 6. <i>Microcerotermes pakistanicus</i> Akhtar, 1974	Dr. S.V. Krishnamoorthy, Professor & Head, Department of Agricultural Entomology, Centre for Plant Protection Studies, Coimbatore- 641 003 (Tamil Nadu)
186	Isoptera	10	10	1. <i>Odontotermes feae</i> (Wasmann, 1896) 2. <i>Odontotermes obesus</i> (Rambur, 1842) 3. <i>Odontotermes assmuthi</i> Holmgren, 1913 4. <i>Odontotermes brunneus</i> (Hagen, 1858)	Dr. Anilkumar Pardeshi, Professor and Head, Department of Zoology, Deogiri College, Aurangabad-431005
187	Isoptera	24	24	1. <i>Microcerotermes crassus</i> Synder 2. <i>Nasutitermes matangensisiformis</i> Haviland 3. <i>Nasutitermes matangensis</i> (Haviland) 4. <i>Nasutitermes fuscipennis</i> Haviland 5. <i>Nasutitermes longinasus</i> Holmgren	Dr. Srikumar Koda Kkadan, Plant Health Department APRIL FIBER R & D, Indonesia
188	Isoptera	08	08	1. <i>Angulitermes tilaki</i> Roonwal and Chhotani, 1971 2. <i>Odontotermes parvidens</i> Holmgren and Holmgren, 1917	Dr. J. M. Julka, Director Planning, Shoolni University, Solan, Himachal Pradesh 173212
189	Isoptera	27	27	1. <i>Microtermes obesi</i> Holmgren, 1912 2. <i>Odontotermes feae</i> (Wasmann, 1896) 3. <i>Odontotermes giriensis</i> Roonwal and Chhotani, 1962	Dr. Somnath Roy, In-Charge, Entomology Department, Tocklai Tea Research Institute, Tea Research Association, Jorhat, Assam
190	Isoptera	02	02	1. <i>Odontotermes wallonensis</i> (Wasmann, 1902)	Dr. Shoeb Ahmad, Research Guide, Department of Zoology, Prof. Ramakrishna More Arts, Commerce and Science College, Akurdi, Pune- 411 044
191	Isoptera	06	06	1. <i>Odontotermes parvidens</i> Holmgren and Holmgren, 1917	Sonia Rathour, Assistant Professor (Zoology), Govt. College Jukhala, Bilaspur (Himachal Pradesh) 174033.
192	Lepidoptera	04	02	1. Family Lycaenidae 2. Family Erebidæ	In-Charge, Entomology Department, TOCKLAI, Tea Research Institute, Assam

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193	Lepidoptera	01	01	1. <i>Dudua aprobala</i> (Meyrick, 1886)	Asst. Director, Central Integrated Pest Management Centre, Kolkata, West Bengal-700097
194	Lepidoptera	14	01	1. Family Gracillariidae	Head, Department of Agricultural Entomology, Uttar Banga Krishi Vishwavidyalaya, Cooch Behar, West Bengal
195	Lepidoptera	16	16	1. <i>Catopsilia pyranthe</i> (Linnaeus, 1758) 2. <i>Leptosia nina</i> (Fabricius, 1793) 3. <i>Eurema hecabe</i> (Linnaeus, 1758) 4. <i>Lampides boeticus</i> (Linnaeus, 176 5. <i>Curetis thetis</i> (Drury, [1773]) 6. <i>Spindasis vulcanus</i> (Fabricius, 177 7. <i>Ariadne merione</i> (Cramer, [1777]) 8. <i>Neptis soma</i> Moore, 1858 9. <i>Danaus chrysippus</i> (Linnaeus, 1758) 10. <i>Junonia lemonias</i> Linnaeus, 1758 11. <i>Argina astrea</i> (Drury, 1773) 12. <i>Amyna axis</i> (Guenée, 1852)	Dr. Punarbasu Choudhuri, Asst. Professor, Dept. of Environmental Science, University of Calcutta Kolkata- 700019 (W.B.)
196	Lepidoptera	127	127	1. <i>Brunia antica</i> (Walker, 1854) 2. <i>Olene mendosa</i> Huebner, 1823 3. <i>Hypocala deflorata</i> (Fabricius, 1794) 4. <i>Spodoptera litura</i> (Fabricius, 1775) 5. <i>Hyposidra talaca</i> (Walker, 1860) 6. <i>Barsine</i> sp. 7. <i>Miresa</i> sp. 8. <i>Miltochrista</i> sp. 9. <i>Ganisa plana</i> Walker, 1855 10. <i>Thosea</i> sp. 11. <i>Eupterote</i> sp. 12. <i>Macroglossum</i> sp. 13. <i>Euproctis</i> sp. 14. <i>Ophiura</i> sp. 15. <i>Cyana pregrina</i> (Walker, 1854) 16. <i>Cleora</i> sp. 17. <i>Odontodes aleuco</i> Guenée, 1852 18. <i>Hypomecis</i> sp. 19. <i>Spirama retorta</i> Clerck, 1794 20. <i>Rajendra biguttata</i> (Walker, 1855) 21. <i>Cretonotos transeiens</i> (Walker, 1855) 22. <i>Micronia aculeate</i> Guenée, 1857 23. <i>Botyodes asialis</i> Guenée, 1854 24. <i>Rajendra</i> sp. 25. <i>Miltochrista conjunctana</i> (Walker, 1866) 26. <i>Cyana bianca</i> (Walker, 1856) 27. <i>Stigmatophora palmate</i> (Moore, 1878) 28. <i>Miltochrista</i> sp.1 29. <i>Dolgoma</i> sp. 30. <i>Miltochrista</i> sp.2 31. <i>Barsine</i> sp. 32. <i>Birhamoides juncture</i> Walker, 1865 33. <i>Aphendala unicolor</i> (Moore, 1879) 34. <i>Cretonotos gangis</i> (Linnaeus, 1763) 35. <i>Tridrepana fulvata</i> (Snellen, 1876) 36. <i>Cania sericea</i> Walker, 1855 37. <i>Aemene</i> sp.	Director, Institute of Forest Productivity (ICFRE), NH-23, Gumla Road, Lalgutwa, Ranchi- 835303 (Jharkhand)

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				38. <i>Acontia marmoralis</i> (Fabricius, 1794) 39. <i>Neocerura</i> sp. 40. <i>Cyclidia subsigmaria</i> (Huebner, 1831) 41. <i>Hypopyra</i> sp. 42. <i>Nepita confirta</i> (Walker, 1854) 43. <i>Fodina</i> sp. 44. <i>Catephia linteola</i> Guenee, 1852 45. <i>Herpetogramma</i> sp. 46. <i>Tyspanodes linealis</i> Moore, 1867 47. <i>Pelagodes</i> sp. 48. <i>Eucyclodes gavissima</i> (Walker, 1861) 49. <i>Pingasa</i> sp. 50. <i>Catopsilia pomona</i> (Fabricius, 1775) 51. <i>Neptis hylas</i> (Linnaeus, 1758) 52. <i>Acraea terpsicore</i> (Linnaeus, 1758) 53. <i>Abisara echerius</i> (Stoll[1790]) 54. <i>Catopsilia pyranthe</i> (Linnaeus, 1758) 55. <i>Pseudozizeeria maha</i> (Kollar, [1844]) 56. <i>Athyma nefta</i> (Cramer, 1780) 57. <i>Mycalis mineus</i> (Linnaeus, 1758) 58. <i>Matapa aria</i> (Moore, 1865)	
197	Lepidoptera	05	05	1. <i>Eurema hecabe</i> (Linnaeus, 1758) 2. <i>Catochrysops starbo</i> (Fabricius, 1793) 3. <i>Junonia orithya</i> (Linnaeus, 1758) 4. <i>Borbo cinnara</i> (Wallace, 1866) 5. <i>Diaphania indica</i> (Saunders, 1851)	Dr. Surendra Kumar Singh, Professor & Head, College of Agriculture & Technology, Banda- 210001 (U.P.)
198	Lepidoptera	01	01	1. <i>Aglais cashmirensis</i> (Kollar, 1848)	Dr. Biswajit patra, Asstt. Professor, Regional Research Station, Uttar Banga Krishi Vishwavidyalaya, Kalimpong, West Bengal- 734301
199	Insecta (Ephemeroptera)	12	12	1. <i>Cloeonbicolor</i> (Kimmins 1947)	Professor Dr. Gautam Aditya, Dept. of Zoology, University of Calcutta
200	Insecta (Ephemeroptera)	12	12	1. <i>Iron suspicatus</i> Braasch, 2006 2. <i>Epeorus psi</i> Eaton, 1885 3. <i>Choroterpes (ch.) kaegies</i> Selvakumar et al. 2017 4. <i>Tenuibaetis kangi</i> Kubendran et al 2022 5. <i>Platybaetis selvai</i> Kubendran et al 2021 6. <i>Epeorus petersi</i> Sivaruban et al 2013 7. <i>Asronurus asaamensis</i> Braasch 2011 8. <i>Notocanthorus</i> sp. 9. <i>Compsomuria</i> sp. 10. <i>Thalerosphyrus megalayensis</i> Selvakumar et al 2017 11. <i>Baetiella spathae</i> Shi & Tong 2004	Mr. Nisar Ahmad Paray, Ph.D scholar, University of Kashmir
201	Insecta (Odonata)	08	08	1. <i>Crocothemis servilia</i> Drury, 1770 2. <i>Orthetrum sabina</i> Drury, 1770	Dr. Surendra Kumar Singh, Banda University of Agriculture and Technology, U.P.
202	Insecta (Odonata)	04	04	1. <i>Rhyothemis variegata</i> Linnaeus, 1763 2. <i>Crocothemis servilia</i> Drury, 1770 3. <i>Orthetrum sabina</i> Drury, 1770	Dr. Moulita Chatterjee, Assistant Prof. Uttar
203	Insecta (Odonata)	01	01	1. <i>Rhyothemis variegata</i> Linnaeus, 1763	Institute of Forest Productivity Ranchi, Gumla Road, Jharkhand

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204	Araneae (spider)	01	01	1. <i>Linyphia</i> sp.	Lovely Professional University, Phagwara, Punjab
205	Araneae (spider)	02	02	1. <i>Ctenus</i> sp. 2. <i>Hippasa</i> sp.	Assam Don Bosco University, Assam
206	Araneae (spider)	71	71	1. <i>Neoscona theisi</i> (Walckenaer, 1841) 2. <i>Thyene imperialis</i> (Rossi, 1846) 3. <i>Neoscona mokerjei</i> Tikader, 1980 4. <i>Parawixia dehaani</i> (Doleschall, 1859) 5. <i>Hippasa agelenoides</i> (Simon, 1884) 6. <i>Pardosa sumatrana</i> (Thorell, 1890) 7. <i>Wadicosa fidelis</i> (O. Pickard-Cambridge, 1872) 8. <i>Oxyopes javanus</i> Thorell, 1887 9. <i>Lycosa</i> sp. 10. <i>Pardosa</i> sp.	Punjab Agricultural University, Ludhiana, Punjab
207	Araneae (spider)	11	11	1. <i>Argiope pulchella</i> Thorell, 1881 2. <i>Pardosa pseudoannulata</i> (Bösenberg & Strand, 1906) 3. <i>Oxyopes shweta</i> Tikader, 1970 4. <i>Thiania bhamoensis</i> Thorell, 1887	Tocklai Tea Research Institute, Jorhat, Assam
208	Araneae (spider)	27	27	1. <i>Myrmarachne kuwagata</i> Yaginuma, 1967 2. <i>Myrmarachne melanocephala</i> MacLeay, 1839 3. <i>Myrmarachne kuwagata</i> Yaginuma, 1967 4. <i>Telamonia dimidiata</i> (Simon, 1899) 5. <i>Carrhotus viduus</i> (C. L. Koch, 1846) 6. <i>Hyllus semicupreus</i> (Simon, 1885) 7. <i>Rhene flavigera</i> (C.L. Koch, 1846) 8. <i>Myrmarachne prava</i> (Karsch, 1880) 9. <i>Myrmarachne</i> sp. 10. <i>Phintella</i> sp.	Aligarh Muslim University, Aligarh, UP
209	Araneae (spider)	34	34	1. <i>Hippasa holmerae</i> Thorell, 1895 2. <i>Eriovixia laglaizei</i> (Simon, 1877) 3. <i>Myrmarachne melanocephala</i> MacLeay, 1839 4. <i>Leucauge decorata</i> (Blackwall, 1864) 5. <i>Guizygiella melanocrania</i> (Thorell, 1887) 6. <i>Tetragnatha</i> sp. 7. <i>Rhene flavicomans</i> Simon, 1902 8. <i>Nesticodes rufipes</i> (Lucas, 1846) 9. <i>Trochosa ruricoloides</i> Schenkel, 1963 10. <i>Cheiracanthium</i> sp.	Ramakrishna Mission Vivekananda Centenary College, Rahara
210	Araneae (spider)	01	01	1. <i>Arachnura</i> sp.	Victoria Institution (College), Kolkata
211	Araneae (spider)	02	02	1. <i>Draposa subhadrae</i> (Patel & Reddy, 1993)	University of Calcutta
212	Formicidae	01	01	1. <i>Pseudoneoponera rufipes</i> (Jerdon, 1851)	University of North Bengal.
213	Formicidae	07	07	1. <i>Cataglyphis setipes</i> (Forel, 1894) 2. <i>Monomorium indicum</i> Forel, 1902 3. <i>Camponotus mitis</i> (Smith, F., 1858)	Wildlife Institute of India.

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214	Formicidae	53	53	1. <i>Paratrechina longicornis</i> (Latreille, 1802) 2. <i>Nylanderia</i> sp. 3. <i>Camponotus parius</i> Emery, 1889 4. <i>Diacamma indicum</i> Santschi, 1920 5. <i>Crematogaster anthracina</i> Smith, 1857 6. <i>Lepisiota sericea</i> (Forel) 7. <i>Solenopsis geminata</i> (Fabricius, 1804) 8. <i>Camponotus compressus</i> (Fabricius, 1787) 9. <i>Camponotus thoracicus</i> (Fabricius, 1804)	West Bengal State University.
215	Formicidae	1528	1528	1. <i>Pseudoneoponera rufipes</i> (Jerdon, 1851) 2. <i>Camponotus sericeus</i> (Fabricius, 1798) 3. <i>Crematogaster rogenhoferi</i> Mayr, 1879 4. <i>Lophomyrmex</i> sp. 5. <i>Monomorium</i> sp. 6. <i>Plagiolepis dichroa</i> Forel, 1902 7. <i>Pheidole indica</i> Mayr, 1879 8. <i>Camponotus parius</i> Emery, 1889 9. <i>Crematogaster artifex</i> Mayr, 1879 10. <i>Monomorium dichroum</i> Forel, 1902 11. <i>Meranoplus bicolor</i> (Guerin-Meneville, 1844) 12. 1844) 13. <i>Tetramorium mixtum</i> Forel, 1902 14. <i>Iridomyrmex anceps</i> (Roger, 1863) 15. <i>Bothroponera sulcata</i> (Mayr, 1867) 16. <i>Leptogenys processionalis</i> (Jerdon, 1851) 17. <i>Leptogenys chinensis</i> (Mayr, 1870) 18. <i>Oecophylla smaragdina</i> (Fabricius, 1775) 19. <i>Camponotus sericeus</i> (Fabricius, 1798) 20. <i>Paratrechina longicornis</i> (Latreille, 1802) 21. <i>Centromyrmex feae</i> (Emery, 1889) 22. <i>Myrmecaria brunnea</i> Saunders, 1842 23. <i>Crematogaster</i> sp. 24. <i>Camponotus</i> sp. 25. <i>Trichomyrmex</i> sp. 26. <i>Lepisiota</i> sp. 27. <i>Leptogenys</i> sp. 28. <i>Iridomyrmex</i> sp. 29. <i>Pheidole</i> sp. 30. <i>Meranoplus</i> sp. 31. <i>Bothroponera</i> sp.	Sambalpur University.
216	Chalcididae	02	02	1. <i>Brachymeria jambolana</i> Gahan, 1942 2. <i>Brachymeria burksi</i> Chhotani, 1966	Tocklai Tea Research Institute
217	Chalcididae	02	02	1. <i>Dirhinus anthracia</i> Walker 1846	Central Tasar Research & training Institute.
218	Formicidae	01	01	1. <i>Polyrhachis</i> sp.	College of Agriculture, BUAT, Banda
219	Formicidae	08	08	1. <i>Paratrechina longicornis</i> (Latreille, 1802) 2. <i>Camponotus compressus</i> (Fabricius, 1787) 3. <i>Trichomyrmex mayri</i> (Forel)	RKMVC, Rahara
220	Formicidae	08	08	1. <i>Aphaenogaster</i> sp.	Uttar Banga Krishi Viswavidyalaya, W.B.

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
221	Formicidae	03	03	1. <i>Oecophylla smaragdina</i> (Fabricius, 1775)	Victoria Institution College, Kolkata
222	Chalcididae	03	03	1. <i>Brachymeria lasus</i> (Walker) 2. <i>Brachymeria euploaeae</i> (Westwood) 3. <i>Brachymeria jambolana</i> Gahan	Uttar Banga Krishi Viswavidyalaya, W.B.
223	Coleoptera	163	163	1. <i>Apogonia</i> sp. 2. <i>Onthophagus quadridentipes</i> (Fabricius, 1798) 3. <i>Onthophagus cervus</i> (Fabricius, 1798) 4. <i>Scarites</i> sp. 5. <i>Oxylobus</i> sp. 6. <i>Onthophagus kchatriya</i> Boucomont, 1914 7. <i>Pheropsophus</i> sp. 8. <i>Scarites</i> sp. 9. <i>Siagona</i> sp. 10. <i>Sisyphus longipes</i> (Olivier, 1789) 11. <i>Chlaenius</i> sp. 12. <i>Alissonotum piceum</i> (Arrow, 1910) 13. <i>Adoretus</i> sp. 14. <i>Omphra</i> sp. 15. <i>Alissonotum</i> sp. 16. <i>Eophileurus platipterus</i> (Wiedemann, 1823) 17. <i>Brachinus</i> sp.	Dr. (Mrs.) Sunanda Sahoo, Asstt. Professor, School of Life Sciences, Sambalpur University, Jyoti Vihar, Odisha, Pin-768019
224	Coleoptera	01	01	1. <i>Epuraea (Haptoncus) motschulskyi</i> (Reitter, 1873)	Dr. Nithyachandran, Scientist, Division of Entomology, IARI, New Delhi.
225	Coleoptera	01	01	1. <i>Carpophilus</i> sp.	Dr. Nithyachandran, Scientist, Division of Entomology, IARI, New Delhi.
226	Coleoptera	08	08	1. Curculionidae: Conoderinae	Dr. Pabel Mazumder, Assistant Director (PP), Regional Central Integrated Pest Management Centre, F.B. Block, Sector III, Salt Lake, Kolkata-700097.
227	Coleoptera	15	15	1. <i>Micraspis univittata</i> (Hope, 1831) 2. <i>Aulocaphora</i> sp. 3. <i>Apion</i> sp. 4. <i>Aulocaphora</i> sp. 5. <i>Cryptogonus orbiculus</i> (Glynhall, 1808) 6. <i>Scymnus (Neopullus) fuscatus</i> Boheman, 1859 7. <i>Panilurius</i> sp. 8. <i>Pachnephorus lewisi</i> Baly, 1878 9. <i>Zabrotes</i> sp. 10. <i>Scymnus (Pullus) posticalis</i> Sicard, 1913	Mr. Somnath Roy, In-Charge, Entomology Dept., Tocklai Tea Research Institutes, Tea Research Association, Cinnamara, Jorhat- 785008, Assam, India

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
228	Coleoptera	37	37	1. <i>Adoretus</i> sp. 2. <i>Anomala bengalensis</i> Blanchard, 1851 3. <i>Aspidimorpha miliaris</i> (Fab., 1775) 4. <i>Chalaenius</i> sp. I 5. <i>Chalaenius</i> sp. II 6. <i>Cicindela</i> sp. 7. <i>Cryptocephalus</i> sp. 8. <i>Cybister guerini</i> Aube, 1838 9. <i>Cybister lateralis</i> Fab., 1798 10. <i>Cybister</i> sp. 11. <i>Dicheros bimacula</i> (Wiedemann, 1823) 12. <i>Dysdercus</i> sp. 13. <i>Gametis versicolor</i> (Fabricius, 1775) 14. <i>Heteronychus lioderes</i> Redtenbacher, 1868 15. <i>Heterorhina elegans</i> (Fab., 1781) 16. <i>Holotrichia</i> sp. 17. <i>Hybosorus orientalis</i> Westwood, 1846 18. <i>Hydrophilus olivaceous</i> Müller, 1764 19. <i>Mylabris</i> sp. 20. <i>Passandra trigemina</i> (Newman, 1839) 21. <i>Pheropsophus</i> sp. 22. <i>Platynotus</i> sp. 23. <i>Protaetia alboguttata</i> (Vigors, 1826) 24. <i>Stromatium barbatum</i> (Fab., 1775)	Dr. Seema Keshari, Assistant Professor, University Department of Zoology, Ranchi University, Ranchi
229	Coleoptera	37	37	1. <i>Henosepilachna</i> sp. 2. <i>Pimelia</i> sp. 3. <i>Harmonia</i> sp. 4. <i>Rhytinota</i> sp. 5. <i>Chlaenius</i> sp. 6. <i>Onthophagus</i> sp. 1 7. <i>Onthophagus</i> sp. 2 8. <i>Adoretus</i> sp. 9. <i>Brumoides suturalis</i> Fab., 1798 10. <i>Oxycara</i> sp.	Mr. Anshuman Pati, Researcher, Wildlife Institute of India, Post Box. 18, Chandrabani, Dehradun-248001, Uttarakhand
230	Coleoptera	01	01	1. <i>Aspidimorpha santaecrucis</i> (Fabricius, 1792)	Dr. Bapi Ray Sarkar, Associate Professor & Head, Dept. of Pharmaceutical Technology, University of North Bengal, P.O. North Bengal University, Raja Rammohunpur, Dist. Darjeeling, West Bengal, Pin-734013
231	Coleoptera	25	25	1. <i>Popillia</i> sp. 2. <i>Lagria</i> sp. 3. <i>Leptopus</i> sp. 4. <i>Myllocerus</i> sp. 5. <i>Apoderus</i> sp.	Mr. Toga Riba, PhD Student, Dept. of Agricultural Entomology, Uttar Banga Krishi Viswavidyalaya (UBKV), Pundibari, Cooch Behar, West Bengal
232	Coleoptera	33	33	1. <i>Sitophilus oryzae</i> (Linnaeus, 1763) 2. <i>Callosobruchus maculatus</i> (Fabricius, 1775)	Dr. Seema Keshari, Assistant Professor, University Department of Zoology, Ranchi University, Ranchi

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
233	Coleoptera	05	05	1. <i>Ips</i> sp.	Dr. O. Tarunkumar Singh, Deputy Director (E), Regional Plant Quarantine Station, F.B. Block, Sector-III, Salt Lake, Kolkata-700097
234	Coleoptera	06	06	1. <i>Xylotrupes gideon</i> (Linnaeus, 1767) 2. <i>Apogonia</i> sp. 3. <i>Hycleus</i> sp. 4. <i>Cordylocera</i> sp. 5. <i>Calathus kollari</i> Putzeys, 1873	Miss Samara Sultana, PhD Scholar of Dr. Amaninder Kaur, Dept. of Biosciences (Zoology), Lovely Professional University, Phagwara, Punjab-144411
235	Coleoptera	03	03	1. <i>Hycleus phaleratus</i> (Pallas, 1781)	Dr. A. Soren, Assistant Director (H), S-3, Officer-in-charge, Dr. Anjali Chatterji Regional Research Institute for Homeopathy (Under CCRH, Ministry of AYUSH, Govt. of India, 50, Rajendra Chatterjee Road, Kolkata-700035.
236	Coleoptera	02	02	1. <i>Sclerotia aquatilis</i> (Thancharoen, 2007) 2. <i>Abscondita terminalis</i> (Olivier, 1883)	Dr. Subhamoy Das, Associate Professor and HOD, PG and UG Department of Zoology, Mahishadal Raj College, Mahishadal, Purba Medinipur, Pin-721628, West Bengal.
237	Coleoptera	08	08	1. <i>Holotrichia cavifrons</i> Brenske, 1892 2. <i>Mimela princeps</i> Hope, 1841 3. <i>Cyphochilus</i> sp.	Prof. Jharna Chakravorty, Dept. of Zoology, Rajiv Gandhi University, Rono Hills, Itanagar- 791112.
238	Coleoptera	23	23	1. <i>Cybister ventralis</i> Sharp, 1882	Ms. Dipika Doloi, PhD Scholar, Kahilipara, Lutuma, 4 th APBN, Nam Ghar Path, H. No. 17, P.O.- Binovanagar, Guwahati-781018, Assam
239	Coleoptera	01	01	1. <i>Menochilus sexmaculatus</i> (Fabricius, 1781)	Dr. Subhamoy Das, Associate Professor and HOD, PG and UG Department of Zoology, Mahishadal Raj College, Mahishadal, Purba Medinipur- 721628.
240	Coleoptera	08	08	1. <i>Sitophilus</i> sp.	Ms. Shaizee, Research Scholar, IIRC-07, 4 th floor, Central Auditorium building, Dept. of Biosciences, Integral University, Dasauli, Kursi Road, Lucknow-226026.
241	Hymenoptera	12	12	1. <i>Ceratina</i> (<i>Ceratinidia</i>) sp. 2. <i>Lasioglossum</i> sp. 3. <i>Apanteles</i> sp. 4. <i>Cotesia</i> sp. 5. Family- Torymidae	Entomology Department, Tocklai Tea Research Institute, Jorhat, Assam

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
242	Hymenoptera	31	21	1. <i>Vespa affinis</i> (Linnaeus, 1764) 2. <i>Allorhynchium metallicum</i> (Saussure, 1853) 3. <i>Sceliphron madraspatnam madraspatnam</i> (Fabricius, 1781) 4. <i>Micromeriella marginella marginella</i> (Klug, 1810) 5. <i>Ceratina (Pithitis) binghami</i> Cockerell, 1908	University of Calcutta, West Bengal
243	Hymenoptera	07	07	1. <i>Amegilla (Zonamegilla) cf. zonata</i> (Linnaeus, 1758) 2. <i>Xylocopa (biluna) auripennis</i> Lepeletier, 1841	Jhargram Raj College, West Bengal
244	Hymenoptera	20	20	1. <i>Apis cerana indica</i> (Fabricius, 1798)	Hutatma Rajguru Mahavidyalaya, Pune, Maharashtra.
245	Marine & Esturine Fish	38	38	1. <i>Thryssa polybranchialis</i> (Wongratana 1983) 2. <i>Setipinna phasa</i> (Hamilton 1822) 3. <i>Sillago sihama</i> (Fabricius 1775) 4. <i>Mugil cephalus</i> (Linnaeus 1758) 5. <i>Polynemus paradiseus</i> (Linnaeus 1758) 6. <i>Eleutheronema tetradactylum</i> (Shaw 1804) 7. <i>Otolithoides biauritus</i> (Cantor 1849) 8. <i>Paranibea semiluctuosa</i> (Cuvier 1830) 9. <i>Ilisha megaloptera</i> (Swainson 1838) 10. <i>Sillaginopsis domina</i> (Cuvier 1816) 11. <i>Terapon jarbua</i> (Fabricius 1775) 12. <i>Pomadasyss maculatus</i> (Bloch 1793) 13. <i>Coilia dussumieri</i> (Valenciennes 1848) 14. <i>Coilia ramcarati</i> (Hamilton 1822) 15. <i>Upeneus sulphureus</i> (Cuvier 1829) 16. <i>Otholithes cuvieri</i> (Treawavas 1974) 17. <i>Johnnieops dussumieri</i> (Cuvier 1830) 18. <i>Johnius borneensis</i> (Bleeker 1851) 19. <i>Protonibea</i> sp.	Raja Narendra Lal Khan Womens College, Midnapur, West Bengal
246	Marine & Esturine Fish	04	04	1. <i>Boleophthalmus boddarti</i> (Pallas 1770)	Calcutta University
247	Marine & Esturine Fish	22	22	1. <i>Johnnieops macrorhynchus</i> (Lal Mohan 1976) 2. <i>Johnius belangerii</i> (Cuvier 1830) 3. <i>Nemapteryx nenga</i> (Hamilton 1822) 4. <i>Arius sumatranus</i> (Ann[Bennett]1830) 5. <i>Coilia ramcarati</i> 6. <i>Polynemus paradiseus</i> Linnaeus 1758 7. <i>Harpadon nehereus</i> (Hamilton 1822) 8. <i>Dendrophysa russelli</i> (Cuvier 1830) 9. <i>Otolithoides biauritus</i> (Cantor 1850)	Lady Brabourn College, Kolkata
248	Marine & Esturine Fish	02	02	1. <i>Scartelaos histophorus</i> (Valenciennes 1837) 2. <i>Scartelaos</i> sp.	Government General Degree College, Singur

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
249	Marine & Estuarine Fish	15	15	1. <i>Otolithoides biauritus</i> (Cantor 1850) 2. <i>Escualosa thoracata</i> (Valenciennes 1847) 3. <i>Nuchequula blochii</i> (Valenciennes 1835) 4. <i>Pseudapocryptes elongates</i> (Cuvier 1816) 5. <i>Planiliza melinoptera</i> (Valenciennes 1836) 6. <i>Periophthalmus novemradiatus</i> (Hamilton 1822) 7. <i>Stigmatogobius sadanundio</i> (Hamilton 1822) 8. <i>Platycephalus indicus</i> (Linnaeus 1758) 9. <i>Acanthopagrus berda</i> (Fabricius 1775)	Government General Degree College, Singur
250	Mammalia Aves Reptilia Fish Radhanagar Excavations (2010-2013), Dharmasala, Jaipur, Odisha	610 fragments of bones and teeth	189	1. <i>Bos indicus</i> Linn 1758 2. <i>Bubalus arnee</i> (Kerr) 1792 3. <i>Bubalus bubalis</i> (Linn) 1758 4. <i>Sus domesticus</i> Erxleben 1777 5. <i>Gallus domesticus</i> (Linn) 1758 6. <i>Chitra indica</i> (Gray) 1831 7. <i>Equus</i> sp. 8. <i>Capra hircus</i> Linn 1758 9. <i>Batagur</i> sp. 10. <i>Ovis</i> sp. 11. <i>Lissemys punctata</i> Lacepede 1788 12. <i>Axis axis</i> Erxleben 1777 13. <i>Canis familiaris</i> Linn 1758 14. <i>Trionyx gangeticus</i> (Cuv.) 1825 15. <i>Rattus</i> sp. Fish (species not confirmed)	Odisha Institute of Maritime & South East Asian Studies (OIMSEAS), Government of Odisha, Bhubaneswar.
251	Mammalia collected from Haliday Island, Sundarban	02 skeletal fragments	02	<i>Orcaella brevirostris</i> (Owen in Gray) Broken skull and atlas vertebra of Irrawaddy Dolphin	Dr. P. Chowdhury, Associate professor, Dept. of Environmental Science, University of Calcutta.
252	Mammals, Birds, Reptiles, fish and Crustacea Gobardhanpur village at Patharpratima Island, South 24 Parganas	93	17	1. <i>Rhinoceros</i> sp. 2. <i>Equus</i> sp. 3. <i>Bos indicus</i> Linn 4. <i>Bubalus arnee</i> (Kerr) 5. <i>Bubalus bubalis</i> (Linn) 6. <i>Axis axis</i> (Erxleben) 7. Other deer species (Species not yet determined) 8. <i>Sus scrofa</i> (?) 9. <i>Canis</i> sp. 10. Family Felidae 11. Dolphins 12. Order Galliformes 13. <i>Batagur baska</i> (Gray) 14. <i>Trionyx</i> sp. 15. <i>Lissemys punctata</i> (Lac.) 16. Different fish 17. Different crabs	Director, Sundarban Programme - WWF India
253	Mammalia collected from Haliday Island, Sundarban, South 24 Parganas, W.B	01	01	1. <i>Neophocaena phocaenoides</i> (Cuvier) Broken skull of Finless porpoise	Dr. P. Chowdhury, Associate Professor, Dept. of Environmental Science, University of Calcutta
254	Collembola	26	26	1. <i>Proisotoma minuta</i> (Tullberg, 1871) Börner, 1903	Aligarh Muslim University, Aligarh, U.P.

Sl. No.	Faunal Groups	Number of specimens received	Number of specimens identified	Name of the identified species	Name of the Institution availed the service
255	Collembola & Diplura	25	25	1. Family Tullbergiidae 2. Family Isotomidae 3. <i>Cyphoderus</i> sp. 4. <i>Lepidocyrtus</i> sp. 5. <i>Seira</i> sp. 6. Family Entomobryidae 7. Class: Diplura	Dept. of Zoology, Ranchi University, Ranchi.
256	Collembola	05	05	1. Family Neanuridae 2. Family Tullbergiidae 3. <i>Proisotoma minuta</i> (Tullberg, 1871) 4. <i>Cyphoderus</i> sp.	Dept. Of Zoology, Lovely Professional University, Punjab.
		8229 specimens and 86 photographs	7549 specimens and 86 photographs	1063 species	162 Institutes/colleges





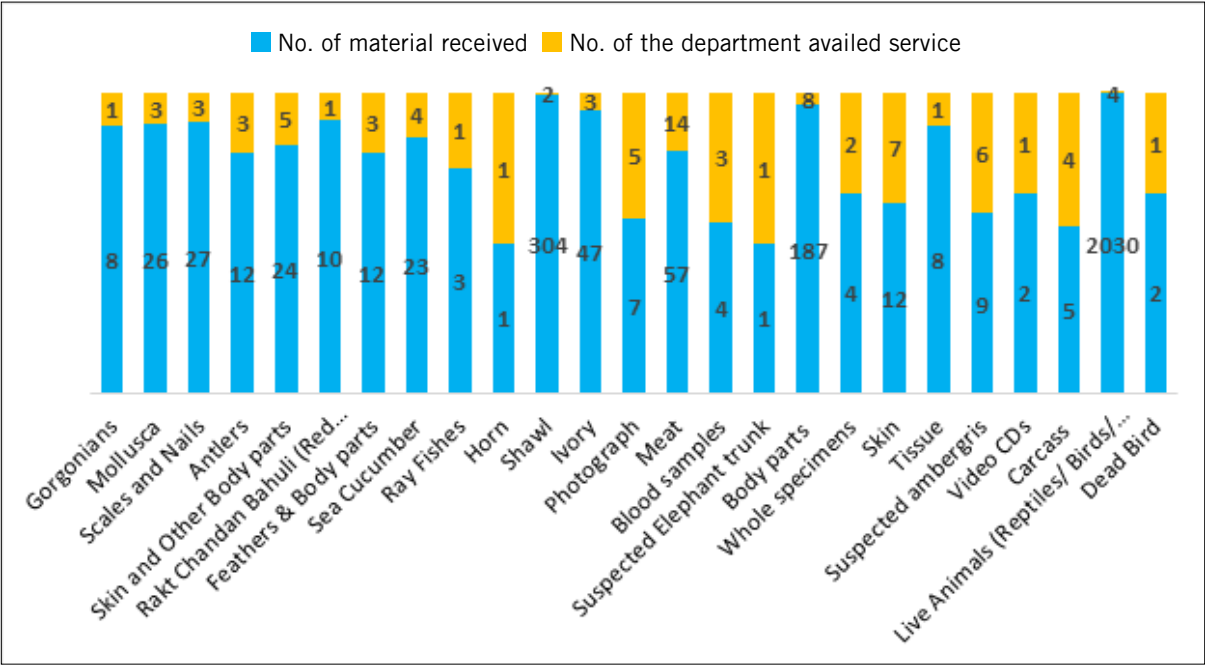


Identification of Confiscated Wildlife Materials

Identification of Confiscated Wildlife Material of different animals or body parts are being regularly provided to different law enforcement agencies and thus contributing in the control of wild life crime

During the reporting period a total of 2499 specimens were identified belonging to 62 species received from 71 Agencies.

Summary: Confiscated Wildlife Materials Identified by the Scientists during 2022-223



Details of Identification of Confiscated Wildlife Materials by the Scientist during 2022-23

A total of 2499 specimens were identified belonging to 62 species for 71 Agencies.

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Horny Corals (Gorgonians)	08 photographs	08 photographs	1. Gorgonians WPA part IV A. Group identification is enough for confiscation.	Mr. Adimalliah, Wild life Inspector, Wildlife Crime Control Bureau, Mumbai division.
Mollusca (Gastropoda) Dead Shells	08	08	1. <i>Turbinella pyrum</i> (Linnaeus, 1767) Not listed 2. <i>Chicoreus ramosus</i> (Linnaeus, 1758)- Not listed 3. <i>Cyprea</i> sp. Not listed 4. <i>Volegalea cochlidium</i> (Linnaeus, 1758) Not listed	Range Forest Officer and Taluka Wildlife Warden, Near to Court, Hospital Road, Dwarka, Gujrat 361 335
Carapace	04	04	1. <i>Melanochelys tricarnata</i> (Blyuth,1856) 2. <i>Lissemys punctata</i> (Bonnaterre,1789)	Institute for Wildlife Conservation, Vandalur, Chennai

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Processed sea cucumber	01	01	1. <i>Holothuria (Metriatyla) scabra</i> Jaeger, 1833 Schedule I (Part IV-C)	Veluchamy, RFO, Sivagangai District, Tamil
Processed sea cucumber	03	03	1. <i>Holothuria (Metriatyla) scabra</i> Jaeger, 1833 2. <i>Actinopyga miliaris</i> (Quoy & Gaimard, 1834) Schedule I (Part IV-C)	Mr. Raghuvaran, RFO, Thoothukudi, Tamil Nadu
Processed sea cucumber	01	01	1. <i>Holothuria (Metriatyla) scabra</i> Jaeger, 1833 Schedule I (Part IV-C)	Mr. Raghuvaran, RFO, Thoothukudi, Tamil Nadu
Processed sea cucumber	02	02	1. <i>Holothuria (Theelothuria) spinifera</i> Théel, 1886 Schedule I (Part IV-C)	Mr. Raghuvaran, RFO, Thoothukudi, Tamil Nadu
Processed sea cucumber	03	03	1. <i>Bohadschia marmorata</i> Jaeger, 1833 2. <i>Actinopyga miliaris</i> (Quoy & Gaimard, 1834) Schedule I (Part IV-C)	Mr. P. Syed Shail KoyaRFO (HQ) & AO, U.T. of Lakshadweep Administration, Department of Environment and Forest, Kavratti Island, UT of Lakshadweep.
Live specimen	04	04	1. <i>Manis pentadactyla</i> Linnaeus 1758 (Schedule I)	Wildlife Division, Forest and Environment Department, Govt. of Meghalaya
Dried scale	Several Kg	All	1. <i>Manis pentadactyla</i> Linnaeus 1758 (Schedule I)	Wildlife Division, Forest and Environment Department, Govt. of Meghalaya
Live specimens	20	20	1. <i>Gekko gecko</i> (Linnaeus, 1758) (Schedule IV)	Wildlife Division, Forest and Environment Department, Govt. of Meghalaya
Antler	01	01	1. <i>Rusa unicolor</i> (Kerr, 1792) Schedule III	Police Upnirikshak, Dattawadi Police Station, Pune
Antlers	06	06	1. <i>Antelope cervicapra</i> (Linnaeus, 1758) Schedule I	Police Upnirikshak, Chakan Police Station, Pune
Flat skin and paws	05	05	1. <i>Panthera tigris</i> (Linnaeus, 1758) Schedule I	Van Parikshetra Adhikari, Khapa, Savner Taluka, Nagpur District
Antlers	02	02	1. <i>Rusa unicolor</i> (Kerr, 1792) Schedule III	Mahila Police Upnirikshak, Rajapur Police Thane, Taluka Rajapur, Ratnagiri District, Maharashtra

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Leopard skin, skull and antlers	04	04	1. <i>Panthera pardus</i> (Linnaeus, 1758): 1 Flat Skin Schedule I 2. <i>Panthera</i> sp.: 1 skull Schedule I 3. <i>Rusa unicolor</i> (Kerr, 1792): 2 antlers Schedule III	Range Forest Officer, Ratnagiri, Maharashtra
Ivory tusk	01	01	<i>Hippopotamus</i> sp.: 1 Incisor	Range Forest Officer, Ratnagiri, Maharashtra
Leopard skin	01	01	<i>Panthera pardus</i> (Linnaeus, 1758) Schedule I	Vankshetrapal tatha Tapasni Adhikari, Savantwadi, District Sindhudurg, Maharashtra
Siyarshingi (Jackal horn), Manjarvar, Salindar kate / (Porcupine quill), Sambar shinge (Antler), Kasturi	6	5	1. Jackal, <i>Canis aureus</i> Linnaeus, 1758 Schedule-II 2. Indian Crested Porcupine, <i>Hystrix indica</i> Kerr, 1792 Schedule IV 3. Sambar, <i>Rusa unicolor</i> (Kerr, 1792) Schedule III 4. Indian Crested Porcupine, <i>Hystrix indica</i> Kerr, 1792 Schedule IV 5. Jackal, <i>Canis aureus</i> Linnaeus, 1758 Schedule-II	Range forest Officer, Karveer, Kolhapur, Maharashtra
Wild animal nails, teeth, Vanya Prani nakhya, Vanyapran Dat, Vanya Prani Sheput, Randukrache Dat, Vaghacha Panja, Wild animal hairs, Siyar shinge, Vanya Prani Var	12	11	1. Wild Boar, <i>Sus</i> sp. Schedule III 2. Jackal, <i>Canis aureus</i> Linnaeus, 1758 Schedule-II 3. Wild Boar, <i>Sus</i> sp. Schedule III 4. Wild Boar, <i>Sus</i> sp. Schedule III 5. Jackal, <i>Canis aureus</i> Linnaeus, 1758 Schedule-II	Range Forest Officer, Karveer, Kolhapur, Maharashtra

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Piece of Skin Case referred to DZSI, Kolkata for identification	01	01	Water buffalo, <i>Bubalus bubalis</i> (Linnaeus, 1758) Schedule: Not Listed Identification Received from ZSI, Kolkata	Range forest Officer, Thane, Maharashtra
Randukrache Dat, Salindar Kate (Porcupine quill), Siyar shingi (Jackal horn), Rakt Chandan Bahuli (Red Sandalwood)	165	155	1. Wild Boar, <i>Sus</i> sp. Schedule III 2. Indian Crested Porcupine, <i>Hystrix indica</i> Kerr, 1792 Schedule IV	Range forest Officer, Sangli, Maharashtra
Flat skin of Leopard, Ayakruti Songtya	05	05	1. <i>Panthera pardus</i> (Linnaeus, 1758) Schedule I	Police Sub Inspector, Lanja Police Thane, Ratnagiri district
Flat skin of Leopard, A piece of Leopard skin	02	02	1. <i>Panthera pardus</i> (Linnaeus, 1758) Schedule I 2. <i>Panthera pardus</i> (Linnaeus, 1758) Schedule I	Mahila Police Upnirikshak, Rajapur Police Thane, Ratnagiri district
One plastic bag with Pangolin scales (100 gram weight)	26	26	1. <i>Manis</i> sp. Schedule I	Assistant Police Inspector, Turbhe Police Thane, Navi Mumbai, Maharashtra
Body part (Image)	01	01	1. <i>Sus scrofa</i> (Linnaeus, 1758) Schedule III	Forest Range Officer, Ratnagiri, Maharashtra
Feathers	01 lot	01 lot	1. <i>Pavo cristatus</i> Linnaeus, 1758 Schedule I	Forest Range Officer, Ratnagiri, Maharashtra
Bird (Image)	02	02	1. <i>Ortygornis pondicerainus</i> (Gmelin, 1789) Schedule IV	Range Forest Officer, Rajpur, Akole, Ahamed nagar district
Turtle (Image)	01	01	1. <i>Lissemys punctata</i> Lacepede, 1788 Schedule I	Deputy Conservator of Forests, Aurangabad, Maharashtra
Birds (Feathers & Body parts)	01	01	1. <i>Pavo cristatus</i> Linnaeus, 1758 Schedule I	Forest Range Officer, Nandgaon, Nashik district, Maharashtra

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Body parts of Monitor Lizard	05	05	1. <i>Varanus bengalensis</i> (Daudin, 1802) Schedule I	Range Forest Officer, Karveer, Kolhapur, Maharashtra
Leg of Birds	01	01	1. Leg of Rallid birds (Aves: Rallidae)	Range Forest Officer, Karveer, Kolhapur, Maharashtra
Antlers	03	03	1. <i>Rusa unicolor</i> (Kerr, 1792) Schedule III	Asst. Police Inspector, Crime Branch Unit-6, Pune, Maharashtra
Body parts	02	02	1. <i>Varanus bengalensis</i> (Daudin, 1802) Schedule I	Range Forest Officer, Sangli district, Maharashtra
Sea Cucumber	13	13	1. <i>Holothuria atra</i> Jager, 1833 2. <i>Holothuria scabra</i> Jager, 1833 3. <i>Actinopyga mauritiana</i> (Quoy & Gaimard, 1833) (Schedule I (IV- C)	Department of Environment & Forests, A & N Islands
Mollusca	01	07	1. <i>Rochia nilotica</i> (Linnaeus, 1767) (Schedule IV)	Department of Environment & Forests, A & N Islands
Mollusca	11	11	1. <i>Pleuroploca trapezium</i> (Linnaeus, 1758) (Schedule IV) 2. <i>Rochia nilotica</i> (Linnaeus, 1767) 3. <i>Harpago chiragra chiragra</i> (Linnaeus, 1758) (Schedule IV)	Department of Environment & Forests, A & N Islands
Mollusca	05	05	1. <i>Cassis cornuta</i> (Linnaeus, 1758) Sch I (Part IVB) 2. <i>Nautilus pompilius</i> Linnaeus, 1758 Schedule I (Part IVB)	Department of Environment & Forests, A & N Islands
Ray Fishes	3	3	1. <i>Himantura leoparda</i> Manjaji-Matsumoto & Last, 2008 Schedule I (Part II A)	Ray Fishes
Horn	1	1	1. <i>Rhinoceros unicornis</i> Linnaeus, 1758 (Greater One-horned Rhinoceros) Schedule- I	Forest department, Jaldapara National Park, West Bengal
Shawl	2	2	1. <i>Pantholops hodgsonii</i> (Abel, 1826) (Tibetan Antelope) Schedule- I	Customs department, Air cargo export, New Delhi

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Shawl	5	5	1. <i>Pantholops hodgsonii</i> (Abel, 1826) (Tibetan Antelope) Schedule- I	Customs department, Air cargo export, New Delhi
Ivory	45	45	1. <i>Elephas maximus</i> Linnaeus, 1758 (Asiatic Elephant) Schedule- I	Directorate of Revenue Intelligence, Kolkata, WB
Shawl	1	0	Species identity could not be determined	Customs department, Air cargo export, New Delhi
Ivory	1	1	1. <i>Elephas maximus</i> Linnaeus, 1758 (Asiatic Elephant) Schedule- I	Deputy Regional Director, WCCB, ER, Kolkata
Photograph	1	1	Gangetic Dolphin Schedule- I	Range officer, Berhampore (S) Murshidabad
Meat	01	01	1. <i>Sus scrofa domesticus</i> Erxleben, 1777 (Pig) Not listed under IWPA, 1972.	Divisional Forest Officer, Gorumara Wildlife Division, Jalpaiguri, West Bengal, India. PIN- 735101
Meat	01	01	1. <i>Bos frontalis</i> Lambert, 1804 (Mithun) Not listed under IWPA, 1972.	Divisional Forest Officer, Gorumara Wildlife Division, Jalpaiguri, West Bengal, India. PIN- 735101
Skin piece	01	01	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule I of IWPA, 1972	Divisional Forest Officer, Gorumara Wildlife Division, Jalpaiguri, West Bengal, India. PIN- 735101
Raw Meat	01	01	1. <i>Bubalus bubalis</i> (Linnaeus, 1758) (Water Buffalo) Not listed under IWPA, 1972.	The Forest Range Officer, Ramganga range, 24Pgs (S), West Bengal, India. PIN- 743371
Meat	01	01	1. <i>Elephas maximus</i> Linnaeus, 1758 (Asiatic Elephant) listed under Schedule I of IWPA, 1972	Deputy Field Director, Buxa Tiger Reserve (West), Aliporeduar court, West Bengal, India. PIN-736122
Suspected skin, & lungs	07	07	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule I and 2. <i>Muntiacus muntjak</i> (Zimmermann, 1780) (Barking Deer) listed under Schedule III of IWPA, 1972.	Divisional Forest Officer, Darjeeling Wildlife Division, Meadow Bank Road, Darjeeling, West Bengal, India. PIN-734101

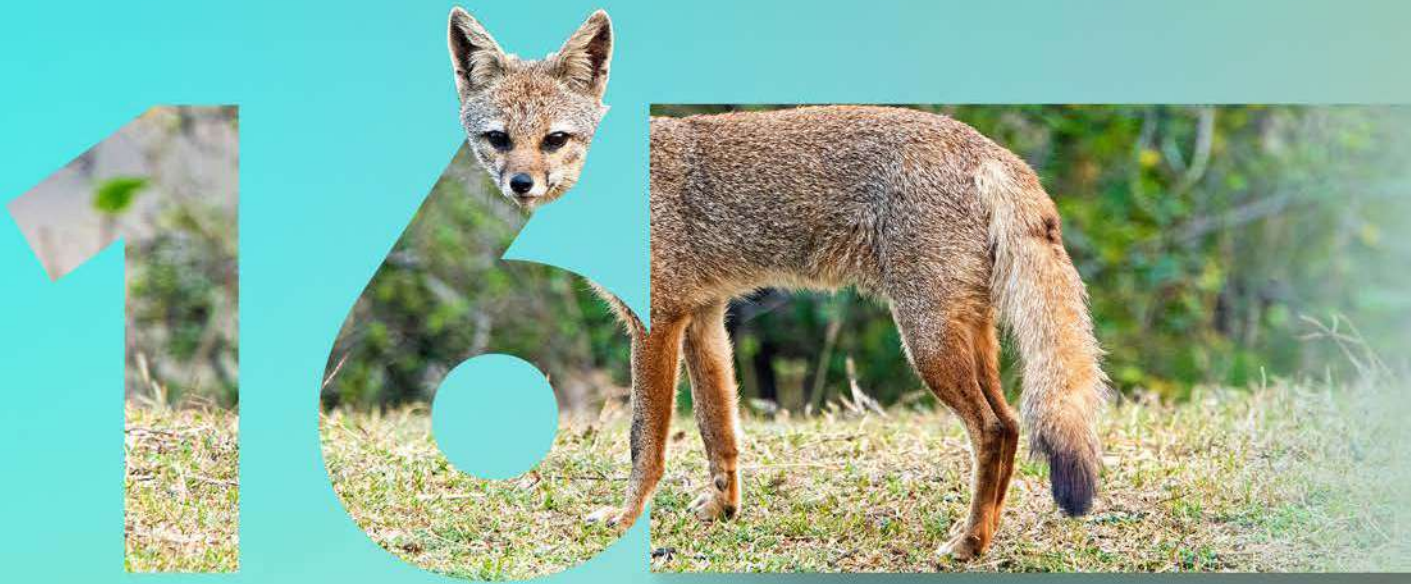
Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Blood samples	02	02	1. <i>Trachypithecus laotum</i> (Thomas, 1911) (Laotian langur) 2. <i>Trachypithecus auratus</i> É. Geoffroy, 1812 (East Javan langur) Not listed under IWPA, 1972.	Forest Range Officer Calcutta-I Range, Wildlife Crime Control Cell & Data Management Unit, India. PIN-700091.
Suspected elephant trunk	01	01	1. <i>Elephas maximus</i> Linnaeus, 1758 (Asiatic Elephant) listed under Schedule I of IWPA, 1972	Divisional Forest Officer, Gorumara Wildlife Division, Jalpaiguri, West Bengal, India. PIN-735101
Raw flesh, hair & skin	01	01	1. <i>Axis axis</i> (Erxleben, 1777) (Chital Deer) listed under Schedule III of IWPA, 1972.	Divisional Forest Officer, Kharagpur Division, Hijli, Kharagpur, West Bengal, India. PIN-721306
Ambergris	01	01	1. <i>Balaenoptera edeni</i> Anderson, 1879 (Brady's whale) listed under the Schedule I of IWPA, 1972	Sr. Inspector of Police, D.C.B, CID, UNIT-3, Crime Branch, N.M. Joshi Marg, Lower Parel, Mumbai, India. PIN- 400013
Meat sample	01	01	1. <i>Semnopithecus entellus</i> Dufresne, 1797 (Grey Langur) listed under the Schedule II of IWPA, 1972.	Divisional Forest Officer, Boudh Forest. (T) Division, At/Po: Malisahi, Boudh, Odisha, India. PIN-762014
Seized carcass	01	01	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under the Schedule I of IWPA, 1972	Deputy Field Director, Buxa Tiger Reserve (East) Division, Alipurduar court, Alipurduar, West Bengal, India. PIN-736122
Body parts	02	02	1. <i>Platanista gangetica</i> (Lebeck, 1801) (Gangetic Dolphin) listed under the Schedule I of IWPA, 1972	Deputy Field Director, Cooch Behar Division, East Kameswari Road, PO & Dist. Cooch Behar, West Bengal, India. PIN-736101
Whole specimens	03	03	1. Badri Birds (Budgerigar), 2. Small Chirping (Munia/Spice Finch), 3. Cockatiel Birds 4. Rabbit listed under the Schedule IV of IWPA, 1972	Nabin Das, SI of Police and I.O of the case, District Enforcement Branch, Government Railway Police, Howrah, West Bengal,

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Pangolin skin	01	01	1. <i>Manis pentadactyla</i> Linnaeus, 1758 (Chinese Pangolin) listed under the Schedule I of IWPA, 1972.	Assistant Wildlife Warden (WBFS), Jaldapara National Park, Madarihat, Alipurduar, West Bengal, PIN-735220
Meat sample	01	01	1. <i>Axis axis</i> (Erxleben, 1777) (Chital) listed under the Schedule III of IWPA, 1972	The Deputy Conservator of Forest, Wildlife Division, Haddo, Port Blair, Andaman and Nicobar Islands, India. PIN-744102
Meat	01	01	1. <i>Felis chaus</i> Schreber, 1777 (Jungle Cat) listed under Schedule II of IWPA, 1972.	Forest Range Officer Kantamal(T) Range, Kantamal, At/PO/PS- Kantamal, Boudh, Odisha, India. PIN-762017.
Meat	03	03	1. <i>Ziphius cavirostris</i> Cuvier, 1823 (Cuvier's beaked whale) listed under Schedule I of IWPA, 1972	The Divisional Forest Officer 24 Parganas (South) Division, Alipore, Kolkata, West Bengal, PIN-700027
Meat	01	01	1. <i>Bos frontalis</i> Lambert, 1804 (Mithun) domesticated form of Indian Bison <i>Bos gaurus</i> (Smith, 1827). Not protected under IWPA, 1972	Assistant Wildlife Warden, Rajnagar Wildlife Range, Belonia, South Tripura, India. PIN-799150
Meat	01	01	1. <i>Sus scrofa</i> Linnaeus, 1758 (Pig) Not protected under IWPA, 1972	The Deputy Conservator of Forest, Wildlife Division, Haddo, Port Blair, Andaman and Nicobar Islands, India. PIN-744102
Meat	01	01	1. <i>Balaenoptera brydei</i> (Bryde's whale) listed under the Schedule I of IWPA, 1972	Divisional Forest Officer, 24 Parganas (South) Division, Alipore, Kolkata-700027
Skin	04	04	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule I of IWPA, 1972	Divisional Forest Officer, Gorumara Wildlife Division, Aranya Bhawan, Jalpaiguri, West Bengal, India.
Skin	01	01	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule Schedule I of IWPA, 1972	Deputy Field Director, Buxa Tiger Reserve (East) Division, Alipueduar, West Bengal, India. PIN- 736122
Skin	01	01	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule I of IWPA, 1972	Divisional Forest Officer, Boudh Forest Division, Boudh, Odisha.

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Tissue	06	02	1. <i>Capra hircus</i> Linnaeus, 1758 (Goat) not protected under IWPA, 1972 and 2. <i>Turbinella rapa</i> Linnaeus, 1767 (Marine gastropod) not protected under IWPA, 1972	Officer in-Charge, Marine Biology Regional Centre Zoological Survey of India, Chennai.
Tissue	02	01	1. <i>Nilssonia nigricans</i> (Anderson, 1875) (Black Shoft-shelled Turtle) not protected under IWPA, 1972	Divisional Forest Officer, Cooch Behar Division, West Bengal
Skins	02	02	1. <i>Panthera pardus</i> (Linnaeus, 1758) (Common leopard) listed under Schedule I of IWPA, 1972	Divisional Forest Officer, Boudh Forest Division, Boudh, Odisha.
Meat	01	01	1. <i>Bubalus bubalis</i> (Linnaeus, 1758) (Water buffalo) not protected under IWPA, 1972	Range Forest Officer, Thane, Maharashtra
Suspected ambergris	02	02	1. Vomit of whale (Ambergris). Fake product	Office of the, Dy. Commissioner of Police (Detection), Crime Branch, C.I.D., Mumbai, India. (FI-104)
Suspected ambergris	01	01	1. Vomit of whale (Ambergris). Fake product	Office of the, Dy. Commissioner of Police, Zone – X, M.I.D.C., Mumbai, India. (FI-113)
Suspected ambergris	02	02	1. Vomit of whale (Ambergris). Fake product	Dy. Commissioner of police Office of the commissioner of police, 3 rd floor, Near Kalwakrick Bridge, Cidco road, Thane (West), Thane 400601. (FI-114)
Suspected ambergris	02	02	1. Vomit of whale (Ambergris). Fake product	The Asst. Inspector of police, Goregaon Police Station Raigad, Maharashtra, India (FI-119)
Suspected ambergris	01	01	1. Vomit of whale (Ambergris). Fake product	Office of the, Dy. Commissioner of Police Zone 3, Worli Police Station, Mumbai-30, India. (FI-121)

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Blood sample	01	01	1. Identification of lion-hybrid origin not listed under IWPA, 1972.	The Enquiry Officer cum Forest Range Officer, WCCC & DMU, Under Deputy Conservator of Forests, Wildlife (Headquarters) Division Salt Lake City, Kolkata 700 064 West Bengal
Suspected pangolin scales & nails	01	01	1. Examination of pangolin scales, Listed under Schedule I of IWPA, 1972.	Officer-in-charge, Wildlife & environment offences, Detective department, Kolkata (FI-118)
Suspected shawl	296	16	1. Shatoosh, Listed under Schedule I of IWPA, 1972.	Forest range officer, Kolkata-II, Wildlife crime control cell & data management unit(FI-145)
Meat	03	03	1. <i>Paradoxurus hermaphroditus</i> (Pallas, 1777) (Asian Palm Civet) listed under Schedule II of IWPA, 1972	The Forest Range Officer, Howrah Rural S.F. Range. Howrah Division, Uluberia, Howrah 711315, West Bengal, India
Meat	03	03	1. <i>Felis chaus</i> Schreber, 1777 (Jungle cat) Listed under Schedule I of IWPA, 1972.	Forest Range Officer, Kandi Forest Range Murshidabad - 742149 West Bengal, India
Meat	28	08	1. <i>Amaurornis phoenicurus</i> Pennant, 1769 (White-breasted waterhen) listed under Schedule IV of IWPA, 1972.	Divisional Forest Officer Gorumara Wildlife Division "Aranya Bhawan" , Jalpaiguri West Bengal, India, PIN-700106
Meat	03	03	1. <i>Prionailurus viverrinus</i> (Bennett, 1833) (Fishing cat) listed under Schedule I of IWPA, 1972.	Enquiry Officer-cum-Range Officer, Howrah Rural S.F. Range, Howrah Division, Uluberia, Howrah, West Bengal, India 711315
Meat	06	03	1. <i>Naemorhedus goral</i> (Hardwicke, 1825) (Himalayan goral) listed under Schedule III of IWPA, 1972	The Divisional Forest Officer, Kurseong Division, Downhill, Darjeeling, West Bengal ,India, PIN-734204
Blood	01	01	1. Rescued Blue & Gold Macaw (identified gender), not listed under IWPA, 1972	The Director, Zoological Garden, Alipore, Kolkata 700027, West Bengal
Whole specimen	01	01	1. Bengal Monitor Lizard, listed under Schedule I of IWPA, 1972.	Shri Debadarshan Roy, Assistant Wildlife Warden, Jalapara National Park, Madarihat, West Bengal

Material Type	No. of material received	No. of material identified	Species involved along with their Schedule in W(P)A, 1972 (Species with Scientific name and authors)	Name of the Department availed the services
Marine Mollusca	01	01	1. <i>Lambis truncata</i> (Lightfoot, 1786) under Schedule IV, WPA 1972	Mr. Pradeep Kumar, HPS DSP, Samalkha, Panipath, Haryana
Video CDs	02	02	1. <i>Gekko gecko</i> (Linnaeus, 1758) (Tokay Gecko) IWPA Schedule IV	West Bengal Forest Dept
Carcass of Monitor Lizard	01	01	1. <i>Varanus bengalensis</i> (Daudin, 1802) (Land / Bengal Monitor Lizard) IWPA Schedule I	West Bengal Forest Dept
Two photos of Fresh-water Turtle	02	01	1. <i>Lissemys punctate</i> (Bonnaterre, 1789) (Indian Flap-shell Turtle) IWPA Schedule I	West Bengal Forest Dept.
Bird Feather	10	--	Could not be identified	Regional Deputy Director, Wildlife Crime Control Bureau, ER, Kolkata
Whole Bird carcass	02	02	1. Woolly-necked Stork, <i>Ciconia episcopus</i> (Boddaert, 1783) 2. Intermediate Egret, <i>Ardea intermedia</i> Wagler, 1827	Forest Range Officer, Barasat Range, 24 Parganas (N) Division
Whole Bird carcass	01	01		DFO, North 24 Parganas, Directorate of Forest, Government of West Bengal
Live Birds	2000	2000	1. <i>Melopsittacus undulates</i> (Shaw, 1805) (Budgerigar) 2. <i>Taeniopygia castanotis</i> (Gould, 1837) (Australian Zebra Finch) 3. <i>Lonchura oryzivora</i> (Linnaeus, 1758) (Java Sparrow) 4. <i>Agapornis canus</i> (J.F. Gmelin, 1788) (Grey-headed Love Bird)	West Bengal Forest Department.
Live Birds	02	02	1. <i>Psittacula krameri</i> (Scopoli, 1769) (Rose-ringed Parakeet)	West Bengal Forest Department.
Dead Bird	02	02	Could not be identified.	Murshidabad forest range of West Bengal Forest department
Live Bird	02	02	1. <i>Gracula religiosa</i> Linnaeus, 1758 (Common Hill Myna)	Range Officer, West Bengal Forest Department.
Live Bird	02	02	1. <i>Psittacula eupatria</i> (Linnaeus, 1766) (Alexandrine Parakeet)	Range Officer, West Bengal Forest Department.
	2825 (11 photo and 2 video CDs)	2499 (10 photo and 2 video CDs)	62	71



Meetings, Conferences, Workshops & Seminars

During the year, scientists of ZSI have been actively involved in many important scientific activities like attending webinars, providing talks/ lectures workshops, meetings etc.

Meetings and Events attended by the Director, ZSI, Dr. Dhriti Banerjee

1. Inaugurated Molecular Systematic Laboratory and released a book entitled- '*Fauna of Himachal Pradesh*' at HARC, Solan on 5th April, 2022.
2. Attended a proposal meeting with the CITES Cell, Wildlife Division, Ministry of Environment, Forest and Climate Change to amend the CITES Appendices for CITES CoP 19 on 13th April, 2022.
3. Attended an agenda meeting of *Rajadhani Rythu Parirakshana Samithi* regarding development of the project on the land allotted in Amaravati, Andhra Pradesh on 13th April, 2022.
4. Attended the 121st Annual General Meeting of Bharat Chamber of Commerce on 17th April, 2022.
5. Attended World Earth Day with Sorooptimist International South Kolkata & Sorooptimist International Bangalore and delivered lecture on "*Women, Empowerment & Environment*" on 22nd April, 2022.
6. Addressed on the inaugural session of a one-day seminar on "Break the barriers- Gender equality and Gender Mainstreaming" organized by Andaman and Nicobar Police at Port Blair on 26th April, 2022.
7. Virtually attended and discussed the Agenda of 66th meeting of Expert Committee on Access and Benefit Sharing organized by National Biodiversity Authority, Chennai on 27th April, 2022.
8. Discussed the List of Sustainable Development Goals (SDG) indicators with MoSPI, Ministry of Environment, Forest and Climate Change on 28th April, 2022.
9. Signed a Memorandum of Understanding with Shivaji University, Kolhapur, Maharashtra for promoting scientific and academic education and research on Zoology and allied fields, on 30th April, 2022.
10. Attended Pension Adalat, 2022 on 5th May, 2022 conducted by Deputy Secretary, Ministry of Personnel, P.G. & Pensions, and Department of Pension & Pensioners Welfare.
11. Addressed and Presented Annual Progress Report of ZSI for the year 2021-22 on 10th May, 2022.
12. Attended Pre-PhD Committee Meeting on 19th May, 2022 at Department of Zoology, University of Calcutta.
13. Attended a panel discussion on the topic of 'The Power of Museums' under the aegis of Azadi Ka Amrit Mahotsav, the Ministry of Culture on the occasion of the International Museum Day (IMD) on 18th May, 2022 at Indian Museum, Kolkata.
14. Observed 21st May as Anti-Terrorism Day and the anti-terrorism pledge was taken by all officials of ZSI, Headquarters, Kolkata.
15. Inaugurated an Annual Wildlife Photography Exhibition Cum Contest "MOTHER EARTH 2022" organized by Akhone Aranyak Magazine at Gallery Gold, Kolkata on and from 20th to 22nd May, 2022.
16. Attended International Day for Biological Diversity (IBD) celebration organized by the Ministry of Environment, Forest and Climate Change and the National Biodiversity authority (NBA) in association with National Centre for Sustainable Coastal Management, Wetland Authority, National Tiger Conservation Authority, Tamil Nadu State Biodiversity Board at Kalaivanar Arangam, Chepauk, Chennai on 22nd May, 2022.
17. Addressed an International Webinar on International Day for Biological Diversity organized by ENVIS Centre on Biodiversity (Fauna), ZSI on 24th May, 2022.
18. Chief Guest at Celebration of International Day for Biological Diversity 2022 organized by THE ASIATIC SOCIETY on 24th May, 2022.
19. Inaugurated Molecular Biology Laboratory at Central National Herbarium (CNH), Botanical Survey of India (BSI), Howrah on 24th May, 2022.
20. Signed an MoU with Shri Harisingh University (Sagar), Madhya Pradesh on 25th May, 2022.
21. Celebrated International Day for Biological Diversity 2022 and conducted Inter-College Elocution Competition by Training & Extension Division, ZSI at ZSI Headquarters, Kolkata on 26th May, 2022.
22. Attended the meeting of the Departmental Promotion Committee (DPC) at Union Public

- Service Commission (UPSC), New Delhi on 30th May, 2022.
23. Meeting on 1st June, 2022 regarding finalizing modalities and exploring options to display the exhibits (Specimens) with different organizations under Ministry of Environment, Forest and Climate Change at National Museum of Natural History (NMNH).
 24. Meeting with RO Delhi, Adviser Environment, PU-PIU Sohna and Chaitnya Projects Consultancy Pvt. Ltd. on 2nd June, 2022 for reviewing of the Draft Report on Animal Movement and Wildlife Corridor of Alignment Paniyala to Barodameo in Rajasthan at ZSI, Kolkata.
 25. ZSI in collaboration with the Indian Museum, Kolkata, Ministry of Culture, GoI organised one day programme on 5th June, 2022 at Indian Museum, Kolkata to sensitize the common mass on the occasion of World Environment Day-2022.
 26. Addressed one-day National Seminar on 'Island Biodiversity on Andaman and Nicobar Islands' organized by ANRC, ZSI, Port Blair on 5th June, 2022.
 27. Addressed an event organized by the WRC, Pune for culmination of the 10 days long ANUSANDHAN camp involving students of three Kendriya Vidyalayas of Pune on 5th June, 2022.
 28. Attended a Meeting and Workshop on National Institution for Research & Application of Natural Resources to Transform, Adapt and Build Resilience (NIRANTAR) at India International Centre, New Delhi on 6th & 7th June, 2022.
 29. Discussed and Finalized the Schedule Species list of Wildlife (Protection) Act with scientists of ZSI on 8th June, 2022.
 30. Attended Environment Day-2022 Celebration organised by People's Association for Science and Environment (PASE), Indian National Science Academy (INSA) and NSS Unit, West Bengal University of Animal & Fishery Sciences at WBUAFS Belgachia Campus, Kolkata on 9th June, 2022.
 31. Attended First Inventory Discussion meeting under the NERAQ Project among ZSI, Institute of Inland Fisheries in Potsdam-Sacrow (IFB Potsdam), Manipur University (MU), Guwahati University (GU), Kohima Science College (KSC), MSFRTI and GIZ NERAQ Team on 10th June, 2022.
 32. Attended 9th meeting of the Recruitment, Assessment and Promotion Committee (RAPC) of Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore in virtual mode on 11th June, 2022.
 33. Celebrated International Yoga Day-2022 with the theme of "Yoga for Humanity" at Zoological Survey of India Headquarters and 16 regional centres across India and organised a special programme on 21st June, 2022.
 34. Addressed a National Webinar on *Sacred Groves of Meghalaya: A Bastion for Faunal Conservation* organised by the Department of Zoology, Sankardev College, Shillong & North Eastern Regional Centre, ZSI, Shillong on 23rd June, 2022.
 35. Inaugurated a Photography & Art Exhibition on wildlife - "Back to Wild" organized by Mayabious Art on 27th June, 2022, at Indian Council for Cultural Relations (ICCR), Kolkata.
 36. Attended the Inaugural function as Chief Guest of "The APMEN- Mohanlal Sukhadia University 3rd International Malaria Vector Surveillance for Elimination (MVSE) Course" held from 03rd to 15th July, 2022 hosted by Laboratory of Public Health Entomology Department, Department of Zoology, University College of Science, Mohanlal Sukhadia University, Udaipur, Rajasthan, India on 04th July, 2022.
 37. Attended a virtual meeting under the chairmanship of Additional Secretary (TK) for review of the process of filling up the posts of scientist of the ZSI and BSI on 5th July, 2022.
 38. Inaugurated Sustainability Education Programme (2022-23) EARTHIAN PARYAVARAN MITRA Teachers' Orientation Workshop on 16th July, 2022, at Auditorium, Sahapur Harendranath Vidyapith, Kolkata.
 39. Inaugurated LEPIDOPTERA KARYASHALA (National Workshop/Karyashala) on "Capacity Building for Young Lepidopterologist: Insight into the Biology and Conservation of Lepidoptera with emphasis on moths" as Chief Guest on 18th July, 2022, at the Western Regional Centre (WRC), Akurdi, Pune.
 40. Organised a National Workshop/Karyashala on "Taxonomy, Ecology and Genetic Analysis of Indian Scyphozoans (Jellyfishes)" in collaboration with DST-SERB, GoI scheme on Accelerate Vigyan (AV) from 18th to 24th July, 2022 at ZSI Headquarters.

41. Organised ZSI-SERB KARYASHALA 2022 on “Demonstrating Standard Operating Procedures (SOPs) to combat illegal wildlife trade & strengthening wildlife forensic capabilities in India” from 25th July to 31st July, 2022 in ZSI Headquarters, Kolkata.
42. Attended a meeting with the official of Natural History Museum (NHM), London on 25th July, 2022.
43. Inaugurated a Photography Exhibition organized on the occasion of International Tiger Day at ITC, Sonar, Kolkata on 29th July, 2022.
44. Celebrating Azadi ka Amrit Mahotsav and on completion of 107 years of Zoological Survey of India Dr. Dhriti Banerjee, Director, ZSI flagged off the first ever Women Scientist Expedition to remote high altitude Himalayan Ecosystem of Lahaul valley, Himachal Pradesh at the Atal Tunnel, Rohtang at an altitude of 10,171 feet on 1st August, 2022.
45. Chief Guest in the 4th Prof. T.N. Anathakrishnan Foundation Award and Lecture organized by ZSI, Chennai on 6th August, 2022.
46. Attended a book release and MoU signing function on 8th August, 2022 at WGRC, Kozhikode.
47. Attended a meeting of MACP-DPC on 11th August, 2022.
48. “Har Ghar Tiranga” campaign held under the aegis of Azadi Ka Amrit Mahotsav on 12th August, 2022, distributed our National Flag to the staff of ZSI, Headquarters, Kolkata.
49. Addressed One Day Seminar on “Unlocking the Mystery of the DNA Molecule and the Secrets of the GIS Technology” at ZSI, Headquarters on 16th August, 2022.
50. Attended a meeting on the data on vacancies to be filled up by the Organisation under the Ministry of Environment, Forest and Climate Change on 24th October, 2022.
51. Visited National History Museum, London on 07th September, 2022 and took a one-day tour to some sections of the museum like Zoological Collections (including the Tank Room).
52. Attended the National Conference of all Ministers of Environment, Forest and Climate Change at Ekta Nagar, District of Narmada, Gujrat on 23-24th September, 2022.
53. Attended First meeting of the Project Advisory Committee (PAC) on Organismal and Evolutionary Biology (OEB) on 28-30th September, 2022 at University of Hyderabad.
54. Attended 18th Meeting of Committee XII -'Geoscience for Sustainable Development of the Central Geological Programming Board (CGPB), GSI held on 04th October, 2022 at Khanij Kaksh, Shastri Bhawan, New Delhi.
55. Attended a meeting on 07th October, 2022 under the chairmanship of the Additional General of Forest (Project Tiger) and CITES Management Authority at Ministry of Environment, Forest and Climate Change, New Delhi regarding CITES (CoP19) – Country Position to be held on 14th November, 2022 in Panama City
56. Conducted a visit of Kushal Karthik S., Deputy Director, Indian Audit and Accounts department at ZSI Headquarters on 13th October, 2022.
57. Attended the Entomological Society of India (ESI) Annual Workshop at the Water Technology Centre (WTC) Auditorium, Indian Agricultural Research Institute, New Delhi on 14th October, 2022.
58. Virtual Meeting with Phil Gaubert, Evolution and Biological Diversity Laboratory (EDB), Paul Sabatier University on 14th October, 2022.
59. Chaired the 3rd World Environment Summit 2022 organized by Environment and Social Development Association as International Conference (ESDACon-2022) Delhi held on 15-16th October, 2022 (HYBRID MODE) at Convention Centre, Jawaharlal Nehru University, New Delhi.
60. Meeting regarding coordination between FSI, BSI and ZSI on 17th October, 2022.
61. Meeting to review land records on Government Land Information System on 17th October, 2022.
62. Signed a MoU between ZSI and Department of Zoology, Fakir Mohan University, Balasore, Odisha regarding the Research collaboration and several other aspects on 20th October, 2022.
63. Attended a meeting to discuss Biodiversity & Habitat (BDH) indicators under the chairmanship of senior Economic Advisor on 28th October, 2022.
64. Celebrated with all ZSI officers and staff of Headquarters and Regional centres Rashtriya Ekta Diwas (National Unity Day) on the occasion of birth anniversary of Sardar Vallabh Bhai Patel on 31st October, 2022 at ZSI Headquarters and pledged to preserve the unity, integrity and security of the nation.
65. Attended a meeting to consider the de-novo aspect of the application submitted for Deemed

- to be University status by IIFM, Bhopal organised by UGC New Delhi on 31st October, 2022.
66. Attended 16th Research Advisory and Monitoring Committee (RAMC) and Half-Yearly Meeting of Senior Officers of Regional Centre of Zoological Survey of India was held on 2nd to 4th November, 2022 at North Eastern Regional Centre, Shillong.
 67. The 19th meeting of the Conference of the Parties (CoP19) held in Panama City, Republic of Panama, from 14th to 25th November, 2022. The 75th and 76th meetings of the Standing Committee were held at the same venue on 13th November and 25th November, 2022, respectively.
 68. Attended the 1st Group Monitoring Workshop of PAC Organismal and Evolutionary Biology – Animal Sciences during 28-29th November, 2022 at Delhi at Jawaharlal Nehru University, New Delhi.
 69. Inaugurated 21 days long National Online Workshop of Zoological Society, Kolkata as a Guest of Honour on 01st December, 2022.
 70. Launched Mission LIFE at ZSI, Kolkata on 09th December, 2022 and promoted 3Rs 'Reduce, Reuse and Recycle'.
 71. Chaired the Annual General Meeting 2022 of Recreational Club of Zoological Survey of India (RCZSI) on 09th December, 2022.
 72. Addressed a Workshop on Coastal and Marine Biodiversity of Island Ecosystem under the "Training of Personnel of Other Stakeholders" sponsored by the Ministry of Environment, Forest and Climate Change, Government of India from 8th – 10th December, 2022.
 73. Invited as Chief Guest in Sammilani Mahavidyalaya to its Silver Jubilee Celebration Ceremony on 12th December, 2022 at Dr. Triguna Sen Auditorium, Jadavpur University.
 74. Attended an online meeting under Ministry of Environment, Forest and Climate Change of Monitoring of Action Plan for filling-up vacancies and GLIS on 13th December, 2022.
 75. Virtually addressed Inaugural Session of International Conference on Biodiversity and Conservation, 2022 (ICBC-2022) cum Workshop on Traditional Medicine organised in St. Anthony's College, Shillong on 14th December, 2022.
 76. Addressed a webinar themed "Role of Biodiversity Conservation in Ecosystem Functioning" on 14th December, 2022 jointly organized by Department of Zoology Dr. Harisingh Gour Vishwavidyalaya, Sagar (Madhya Pradesh) (A Central University) and Zoological Survey of India, Kolkata.
 77. Chaired the Screening Committee of screening of applications received against Advt. no. 06/2022 for recruitment of Curator-E (Lateral Entry) in NCSM (National Council of Science Museums), Science City on 15th December, 2022.
 78. Attended a meeting for Dehang-Debang Biosphere Reserve (DDBR), Arunachal Pradesh on 20th December, 2022.
 79. Delivered a lecture as a Resource Person on a topic of "Beyond Taxonomy: A Dipterian Perspective" on 20th December, 2022 through online mode.
 80. Lectured on Beyond Taxonomy in Orientation Programme for newly joined Senior Zoological Assistant in ZSI on 2nd January, 2023.
 81. Attended the Departmental Promotion Committee (DPC) held on 3rd January, 2023 in Zoological Survey of India.
 82. Invited as Chief Guest in the Valedictory program of Women Science Congress at 108th India Science Congress, Nagpur from 3-7th January 2023 held at Rashtrasant Tukadoji Maharaj Nagpur University (RTMNU).
 83. Attended the final proposal evaluation 2nd meeting of the Project Advisory Committee (PAC) Organismal and Evolutionary Biology-Animal Sciences meeting during 10-11th January, 2023 at BITS Pilani, Goa Campus.
 84. Delivered a lecture in the valedictory session on 13th January, 2023 for a one-month long Training and Skill Internship (VRITIKA) on Taxonomy, Diversity and Seasonality of Coastal Microzooplankton (Marine Protozoans) assemblages from the Indian waters from 15th December, 2022 to 13th January 2023 at ZSI Headquarters, Kolkata conducted by Protozoology Section.
 85. Addressed a Capacity Building Workshop for frontline staff of West Bengal Forest Department on identification of scheduled animals on 16th-17th January, 2023.
 86. Attended a GLIS meeting on 17th January, 2023.
 87. Presented inaugural address in the One Day Capacity Building Workshop on Implementation of Provisions of CITES organised by Ministry of Environment, Forest & Climate Change (Ministry of Environment, Forest and Climate Change)

- hosted by Zoological Survey of India on 20th January, 2023 at Hayatt Regency, Kolkata.
88. Attended Ministry of Environment, Forest and Climate Change meeting on Reviews on Expenditure & Budget on 23rd January, 2023.
 89. Remembered Netaji Subhas Chandra Bose on his 125th birth anniversary celebration as "Parakram Diwas" on 23rd January to honour his boundless courage and valour.
 90. Address Inaugural session of Career Progression Mandatory Training for Senior Zoologist Assistant from 24th January, 2023 to 10th February, 2023.
 91. The 74th Republic Day was celebrated in Headquarters, ZSI, Kolkata. Director, ZSI also launched a web portal for Animal Taxonomy Summit 2023 to be held at Kolkata from 1-3rd July 2023. Awareness of public on save water @ Mission LiFE was also undertaken by trainees of Career Progression Mandatory Training (CPMT) as part of Republic Day Program.
 92. Organized a Field Visit to Sundarban Tiger Reserve as part of Career Progression Mandatory Training (CPMT) of Senior Zoologist Assistant for study and observation from 1-3 February, 2023.
 93. Attended 2nd International Symposium on Plant Taxonomy Ethno-Botany and Botanic Gardens (BSI ISPTBEG-2023) organized by Botanical Survey of India, Kolkata on 13th and 14th February, 2023 at Bhasa Bhawan, National Library, Kolkata.
 94. Tour to Puducherry in connection with the Book Releasing Function held on 17th February, 2023 at Raj Niwas, Puducherry. Hon. Lt Gov of Puducherry, Dr. Tamilisai Soundararajan released the book "Faunal Diversity of Puducherry" at Raj Niwas, Puducherry.
 95. Attended the 29th Convocation of Puducherry University as a special invitee on 28th February, 2023 held at Jawaharlal Nehru Auditorium, Dr. B R Ambedkar Administrative Building.
 96. Attended the status review meeting of NMHS-funded projects (Ongoing and Completed) implemented by ZSI on 2nd March, 2023 at ZSI Headquarters, Kolkata.
 97. Attended a meeting with GIZ officials and ZSI Team involving NERAQ Project at ZSI, Headquarters on 3rd March, 2023.
 98. Inaugural address by Director ZSI in a national webinar on Wildlife of India on the occasion of the World Wildlife Day organised by EIACP Centre on Biodiversity (Fauna), ZSI, Kolkata on 3rd March, 2023.
 99. Attended Women's Day celebration at Tega Industries Ltd., Kolkata on 4th March, 2023.
 100. Attended the 135th meeting of the Governing Body of National Council of Science Museums (NCSM) as a member of the Governing Body, NCSM held on 10th March, 2023 at National Science Centre, Delhi.
 101. Attended the meeting with CPWD Chief Engineer, Executive Engineer & Staff regarding the development of the work of the National museum and State of Art auditorium held at ZSI, EBRC, Gopalpur-On-Sea from 14th & 15th March, 2023.
 102. Attended the 77th Foundation Day of ICAR-CIFRI as a Guest of Honour on 17th March, 2023 at the Institute Headquarters, Barrackpore.
 103. Felicitated by Women Achievers Award 2023 for the contribution and the achievement in the field of Sciences on the occasion of the "International Women's Day" celebration on 18th March, 2023 organised by International Benevolent Research Foundation (IBRF) held at Kolkata Press Club, Maidan Tent, Kolkata.
 104. Chief Guest at a one-day workshop on the Role of Faunal Diversity for Sustainable Environment on 21st March, 2023 at Desert Regional Centre (DRC), ZSI, Jodhpur and inaugurated the newly renovated Conference Hall at the Centre.
 105. Felicitated by the Honorary Fellowship Award-2023 for her outstanding contribution in the field of Environmental Sciences on the occasion of International Conference on Renewable Agriculture and Sustainable Environment on 25th & 26th March, 2023 organized by Society of Biological Sciences and Rural Development (SBSRD), at Vigyan Parishad Prayag, Prayagraj, Uttar Pradesh.
 106. Attended the Departmental Promotion Committee (DPC) Meeting for filling up posts in the grade of Scientist 'B' by promotion from the feeder grade of Assistant Zoologist at the UPSC, New Delhi on 28th March, 2023.
 107. Attended the Scientific Advisory Meeting (SAC) meeting with SAC members on 31st March, 2023 virtually regarding revised Staff Performance Appraisal Format (APAR) of Govind Ballabh Pant 'National Institute of Himalayan Environment' (GBP-NIHE) to bring qualitative change in R&D output/outcome.

Meetings & events attended by the Scientists

1. Dr. Kamal Saini, Assistant Zoologist participated in European Congress on Orthoptera Conservation (ECOCIII) organized by the Naturalis Biodiversity Center (Darwinweg 2, Leiden, Netherlands) from 1st & 2nd April, 2022.
2. Dr. S. Balakrishnan, Scientist- E participated in online consultative meeting on “Experimental study to analyze the impact of electronic pulse repellent in by-catch reduction” through online platform on 02nd April, 2022 organized by Bannari Amman Institute of Technology, Tamil Nadu.
3. Dr. C. Raghunathan, Scientist- F attended the 3rd Meeting of National Wetlands Committee at Ministry of Environment, Forest and Climate Change, New Delhi on 6th April, 2022.
4. Ms. Debashree Dam, Scientist- B, attended and conducted the program of the DNA lab inauguration function at HARC, ZSI, Solan on 06th April, 2022 which was inaugurated by the Director, ZSI and conducted the Fauna of Himachal Pradesh Book Function at Governor House, Shimla on 07th April, 2022 in which the Honourable Governor of HP released the book in presence of Director, ZSI, O/C, HARC, ZSI, Solan and other scientists
5. All the scientist of HARC, ZSI, Solan attended the book release function of the book on Fauna of Himachal Pradesh (Part1&2) released by Honourable Governor of Himachal Pradesh, Sh. Shri Rajendra Vishwanath Arlekar on 7th April, 2022 at Raj Bhwan, Shimla.
6. Dr. Gopal Sharma, Scientist- E attended a joint meeting with ADG Central Zoo Authority, New Delhi and the CWLW Bihar before the Hon’ble Union Minister of Environment Forest and Climate Change, Govt. of India Shri Bhupendra Yadav at Sate Guest House Patna on 8th April, 2022.
7. All the scientist of headquarter attended the 98th Death anniversary of first director of ZSI, Dr. T.N. Annandale on his 98th Death Anniversary at Scottish Church Cemetery, Kolkata on 10th April, 2022.
8. Dr. C. Raghunathan, Scientist-F attended the 37th Meeting of Lakshadweep Coastal Zone Management Authority held on 18th April, 2022.
9. Dr. B. Sinha, Scientist-E attended a meeting of the state level PBR quality evaluation monitoring committee of Meghalaya Biodiversity Board on 20th April, 2022.
10. Dr. Indu Sharma, Scientist-E attended 12th meeting of the *Rajasthan State Biodiversity Board* under the Chairmanship of Shri R. K. Goyal, Rajasthan State Biodiversity Board and Dr. D.N. Pandey, PCCF (HoFF), Rajasthan on 20th April, 2022 through online mode.
11. Dr. C. Raghunathan, Scientist-F attended the State Level Steering Committee Meeting for Sunderban Biosphere Reserve organized by Dept. of Forests, Government of West Bengal on 22nd April, 2022.
12. Dr. C. Sivaperuman, Scientist-E attended meeting with Additional PCCF, Department of Environment and Forests, on 22nd April, 2022 in connection with the ongoing annual research programme on Leatherback Sea Turtle.
13. Dr. S. Sambath, Scientist-E & Officer-in-Charge nominated as external member by the Director, TFRI, Jabalpur to Review meeting of DPC of Group-C employee on 22nd April, 2022 at TFRI, Jabalpur.
14. Dr. C. Raghunathan, Scientist- F, Dr. C. Sivaperuman, Scientist-E, Dr. Jasmine P., Scientist- E, Dr. Santosh Kumar, Scientist-E, Dr. Atanu Naskar, Asst. Zoologist attended the RAMC meeting from 23rd to 24th April, 2022 at ZSI ANRC, Port Blair.
15. Dr. C. Sivaperuman, Scientist-E attended meeting on Inter Agency Coordination meeting held on 25th April, 2022 at Port Blair organised by Wildlife Crime Control Bureau, Southern Region, Chennai.
16. Dr. Gaurav Sharma, Scientist-E attended as External Expert Member for Pre-Thesis Seminar and six monthly Progress Evaluation of Research Scholars organized by the Head, Forest Protection Division, Forest Research Institute, Dehradun on 25th April, 2022.
17. Ms. Debashree Dam, Scientist-B, participated and delivered a talk on “Breaking Barriers-gender equality” in a seminar on Women Empowerment organised by Andaman and Nicobar Police administration, Port Blair on 25th April, 2022.
18. Dr. C. Raghunathan, Scientist-F attended the meeting on Great Nicobar Master Plan – Niti Aayog at Ministry of Home Affairs, Government

- of India at New Delhi on 27th April, 2022 to address the observations on EIA report submitted by AECOM.
19. Dr. C. Raghunathan, Scientist-F attended the meeting with Chief Engineer, CCU, Ministry of Environment, Forest and Climate Change at New Delhi on 28th April, 2022 for preparation of building plan for Eastern Ghats Regional Centre, Amaravati, Andhra Pradesh.
 20. Dr. Deepa Jaiswal, Scientist-E and Dr. Karuthapandi, Scientist-C attended Andhra Pradesh State Biodiversity board meeting on 28th April, 2022 at Guntur.
 21. Dr. C. Raghunathan, Scientist-F attended the 38th Meeting of Lakshadweep Coastal Zone Management Authority held on 29th April, 2022.
 22. Dr. Devanshu Gupta, Scientist-D and Dr. Jhikmik Dasgupta, Senior Zoological Assistant attended the sectional visitors consisting of 36 trainees along with Officer-In-charge Shri V.S. Senthil Kumar, IFS on 2nd May, 2022 and explained them about beetles.
 23. Dr. C. Raghunathan, Scientist-F attended 49th Meeting of Expert Committee for Eco-Sensitive Zone (ESZ) of Ministry of Environment, Forest and Climate Change through virtual mode on 2nd May, 2022.
 24. Dr. C. Sivaperuman, Scientist-E attended meeting with PCCF & CCF (Wildlife) in connection with the preparation of distribution of for Saltwater Crocodiles and proposed Crocodiles census in Andaman and Nicobar Islands on 4th May, 2022.
 25. Dr. C. Raghunathan, Scientist-F, made an inspection visit to GPRC, Patna with the capacity of Chief Vigilance Officer on 4th to 6th May, 2022.
 26. All the Scientists of HQ & Regional centres attended the Annual Programme of Research Meeting of ZSI from 10th to 12th May, 2022.
 27. Dr. Gaurav Sharma, Scientist-E as an External Subject Expert Member attended meeting on evaluation of research work of Ms. Irina Das Sarkar for Fellowship upgradation from JRF to SRF organized by Nodal Officer, Wildlife Institute of India, Dehradun through virtual mode on 12th May, 2022.
 28. Dr. Kamal Saini, Assistant Zoologist actively participated two-day online training on E-Procurement, GeM& CPPP from May 13th-14th, 2022 organised by the Integrated Training & Policy Research (Training Division) New Delhi.
 29. Dr. C. Sivaperuman, Scientist-E attended meeting with Station Flight Safety Officer (SFSO), INS Utkrosh, Indian Navy on 17th May, 2022 in connection with the Bird Hazards studies.
 30. Dr. C. Sivaperuman, Scientist-E attended meeting with Prof. S.D. Biju, Professor, Department of Environmental Studies, Delhi University in connection with the proposed book on Herpetofauna of Andaman and Nicobar Islands on 17th & 18th May, 2022.
 31. Dr. C. Raghunathan, Scientist-F attended the meeting with CCU, Ministry of Environment, Forest and Climate Change at New Delhi regarding the architectural plan for proposed green building for EGRC, Amaravathi, Andhra Pradesh on 18th May, 2022.
 32. Dr. C. Raghunathan, Scientist-F attended the meeting with DG (Forests) and Special Secretary, Ministry of Environment, Forest and Climate Change to discuss the various issues related to the Project on Holistic Development of Great Nicobar on 18th May, 2022 at Ministry of Environment, Forest and Climate Change, New Delhi.
 33. Dr. Gaurav Sharma, Scientist-E and Dr. Narender Sharma, Scientist-E attended meeting of "Board of Studies on Animal Taxonomy" at Dolphin (PG) Institute of Biomedical & Natural Sciences, Dehradun on 18th May, 2022.
 34. Dr. Gopal Sharma, Scientist- E, ZSI, GPRC, Patna attended Inter-Agency Coordination Meeting organized by Wildlife Crime Control Bureau, New Delhi at VAN Bhawan in Ranchi Jharkhand on 19th May, 2022.
 35. All the scientists and staff of the ZSI, Headquarters attended the pledge taking ceremony on the occasion of Anti-Terrorism Day at ZSI Kolkata on 20th May, 2022.
 36. Dr. M. Senraj, Taxidermist participated and displayed Zoological Exhibits at Kalaivanar Arangam, Chennai on the occasion of "International Day for Biological diversity 2022" celebrated on 22nd May, 2022 and organized by National Biodiversity Authority, Chennai.
 37. Dr. Varadaraju, Scientist-D and Shri. G. Ramesh, Sr. Zoological Assistant, attended International Biological diversity day programme on 22nd May, 2022 at Kalaivanar Arangam, Chennai.
 38. Dr. Aparna S. Kalawate, Scientist-E attended a general body meet and Brainstorming session of Indian Academy of Wood Sciences held at IWST Bangalore on 23rd May, 2022 on virtual mode.

39. Dr. C. Raghunathan, Scientist-F attended the 3rd EAC meeting for Holistic Development of Great Nicobar Island at Ministry of Environment, Forest and Climate Change on 24th May, 2022.
40. Dr. C. Raghunathan, Scientist-F attended meeting at CCU for preliminary drawing of EGRC, Amaravati on 24th May, 2022.
41. Dr. Jasmine P, Scientist-E and Dr. Santosh Kumar, Scientist-E attended the in-house meeting on the finalization of the list of Schedule species under WPA on 24th & 25th May, 2022.
42. Dr. Gopal Sharma, Scientist- E ZSI, GPRC, Patna attended the meeting on “Principles of River Ecology and its application in Development of Biodiversity Park in Bihar” in Aranya Bhawan jointly organised by the Department of Environment Forest and Climate Change, Govt. of India and Yamuna Biodiversity Park, New Delhi (under Dehi University) from 24th--26th May, 2022.
43. Dr. Rajmohana K, Scientist-E organised an online PPT competition organized for postgraduate students and researchers on the theme ‘Invasive Alien Species of India’ to observe ‘International Day for Biological Diversity’ on 24th May, 2022.
44. Dr Anjum N. Rizvi, Scientist-E, Dr. Jasmine P, Scientist-E and Dr. Santosh Kumar, Scientist-E attended the MoU signing meeting with Shri. Harisingh Gur Vishwavidyalaya on 25th May, 2022.
45. Dr. Souvik Sen, Scientist-D acted as one of the members in the Jury Panel of “Intercollege Elocution Competition” organized by Training & Extension Division, ZSI to celebrate the International Day for Biological Diversity-2022 on 26th May, 2022 at ZSI, Kolkata.
46. All the Scientists and Staff attended the lecture on International Day for Biological Diversity-2022 on 26th May, 2022 under the CBD slogan of “Building a shared future for all life” organized by Training & Extension Division, ZSI Headquarters on 26th May, 2022.
47. Dr. Devanshu Gupta, Dr Jhikmik Dasgupta, Shri Ravi Kushwaha attended the visitors of Tamralipta Mahavidyalaya, Tamluk consisting of 50 P.G. students and 6 faculty members on 27th May, 2022 and guided them to various sections of the Zoological Survey of India Headquarters.
48. All the Scientists of Headquarters and Regional Centers participated the event of International Day for Biological Diversity organized by Training and Extension Division, ZSI-Headquarters, Kolkata on 27th May, 2022.
49. Dr. C. Raghunathan, Scientist-F attended meeting to draw a modality for sparing exhibits to NMNH convened by Ministry of Environment, Forest and Climate Change on 1st June, 2022.
50. Dr. Ranjana, Scientist-E attended 6th Group Monitoring Workshop (GMW) of DST SERB Project, which was held IIT, Guwahati, Assam, during 01th - 4th June, 2022.
51. All the Scientists of Headquarter & Regional Centers of ZSI celebrated “World Environment Day” (One Earth) on 05th June, 2022, organized by Training & Extension Division, Zoological Survey of India.
52. Dr. C. Sivaperuman, Scientist-E attended meeting with Deputy Conservator of Forests (Wildlife), Department of Environment and Forests, Andaman and Nicobar Islands, in connection with proposed Crocodile census in Andaman and Nicobar Islands on 6th June, 2022.
53. Dr. Temjengmongla, Scientist- D attended Reconciliation of Accounts meeting at Office of the PAO, Kolkata from 6th-7th June, 2022.
54. Dr. Uttam Saikia, Scientist- D attended a meeting of the Meghalaya State Wildlife Board on the 7th June, 2022 which was presided over by the Hon. Chief Minister of Meghalaya.
55. Dr. Basudev Tripathy, Scientist-E, WRC, and Dr. Aparna S. Kalawate, Scientist-E attended an animal expert committee meeting of the Maharashtra State Biodiversity Board, Nagpur through virtual mode on 7th June, 2022.
56. Dr. R. Babu, Scientist-E attended a meeting as a Non-Academia Member in the Board of Studies in Zoology (Post Graduate) at University of Madras as on 8th June, 2022.
57. Dr. Atanu Naskar Asst. Zoologist attended Meeting on 9th June, 2022 at Ministry of Environment, Forest and Climate Change, New Delhi.
58. Dr. C. Sivaperuman, Scientist-E attended General Body Meeting at College of Nursing, Pondicherry Institute of Medical Sciences (PIMS), Pondicherry on 9th & 10th June, 2022.
59. Dr. Gaurav Sharma, Scientist-E attended the Uttar Pradesh State Biodiversity Board meeting on 10th June, 2022, chaired by the honorable Chief Minister, Yogi Adityanath.
60. Dr. C. Sivaperuman, Scientist-E attended meeting with Executive Director, Periyar Science

- & Technology, Chennai in connection with development of Interpretation Centre in ANRC/ ZSI on 13th June, 2022.
61. Dr. C. Sivaperuman, Scientist-E attended meeting with PCCF, Andaman and Nicobar Islands in Satellite Tracking of Leatherback Turtles in Andaman and Nicobar Islands on 14th June, 2022.
 62. Dr. Gaurav Sharma, Scientist-E attended the Uttarakhand State Biodiversity Board meeting on 17th June, 2022, chaired by the honorable Chief Minister, Pushkar Singh Dhami.
 63. Dr. Avtar Kaur Sidhu, Scientist-E and Officer-in-Charge attended NARAKAS meeting as Adhyaksh of centre at Mushroom research centre on 17th June, 2022.
 64. Dr. Aengals, Scientist-E and Dr. K. A. Subramanian, Scientist-E participated in the Golden Jubilee Celebrations of the Chennai Snake Park Trust held at Hotel Ramada Plaza Chennai on 21st June, 2022.
 65. Dr. S. Balakrishnan, Scientist-E guest of honour for inaugural function of the new panel exhibition celebration Bengal entitle "Contribution of Bengali Scientist" organised by Digha Science Centre, Digha on 26th June, 2022.
 66. Dr. Avtar Kaur Sidhu, Scientist-E and O/C attended 3rd meeting of the Wildlife Board for Union Territory of Jammu & Kashmir as representative of DZSI under the chairmanship of Honourable governor of UT of Jammu & Kashmir Shri. Manoj Sinha on 26th June, 2022.
 67. Dr. Avtar Kaur Sidhu, Scientist-E attended Meeting of State Board for Wildlife, UT Chandigarh as representative of DZSI on 27th June, 2022 under the Chairmanship of Hon'ble Governor of Punjab & the Administrator, UT Chandigarh His Excellency Shri. Banwarilal Purohit.
 68. Dr. N. Marimuthu, Scientist-D attended a meeting on the subject, "Data for Sustainable Development: India's Environmental Accounts and its Role in Policy and Decision-Making" through webinar on 28th June, 2022 as per the direction of DZSI, conducted by Ministry of Statistics and Programme Implementation, Government of India.
 69. Dr. R. H. Raina, Scientist-D attended the 6th meeting of the *State Board for wildlife of the Union Territory of Ladakh* via video-conferencing on 29th June, 2022 under the chairmanship of Sh. R.K. Mathur Lt. Governor UT of Ladakh.
 70. All the scientists & Staff of ZSI celebrated the 107th foundation day programme organized by ZSI-Headquarters, Kolkata on 01st July, 2022 and attended the interactive session with the honourable Minister, Ministry of Environment, Forest and Climate Change
 71. Dr. C. Raghunathan, Scientist-F attended the meeting to the observations of 3rd Environmental Appraisal Committee regarding Holistic Development of Great Nicobar Island chaired by PCCF, Andaman and Nicobar Islands held on 4th July, 2022 through video-conferencing.
 72. Dr. C. Raghunathan, Scientist-F attended meeting with Additional Director General of Forest (WL) on the rationalization of boundary for Salt Water Crocodile Sanctuary, Andaman and Nicobar Islands held on 6th July, 2022.
 73. Dr. C. Raghunathan, Scientist-F attended the meeting on Draft national policy and action plan on invasive alien species held on 6th July, 2022 organized by IFGTB. Coimbatore.
 74. Dr. Gaurav Sharma, Scientist-E, Dr. Archana Bahuguna, Scientist-E, Dr. Narender Sharma, Scientist-E, Dr. Anil Kumar, Scientist-E, Dr. Aftab A, Scientist-D participated in Rise in Uttarakhand Mega Exhibition, for stall of ZSI from 7th to 9th Jul, 2022. Hon Chief Minister of the State Mr Pushkar Singh Dhami inaugurated the function. Many State Ministers visited the stall.
 75. Dr. A. S. Kalawate, Scientist-E attended a meeting at Narotewadi, Solapur with the villagers along with ACF and other foresters to declare the Critical Habitat in the Great Indian Bustard Sanctuary, Maldhok on 9th July, 2022 as a Technical committee expert of Maharashtra State Biodiversity Board.
 76. Dr. C. Raghunathan, Scientist-F attended the meeting of NIRANTAR chaired by Hon'ble Minister, Ministry of Environment, Forest and Climate Change at New Delhi on 14th July, 2022.
 77. Dr. C. Raghunathan, Scientist-F attended meeting for preparation of Conservation and Management plan for Coral Reefs and also safe wildlife corridors for Holistic Development of Great Nicobar project held on 14th July, 2022 at AECOM, New Delhi.
 78. Dr. C. Raghunathan, Scientist-F attended the meeting with NBA, Chennai for Pilot Capacity Building Programme for Biodiversity Management Committees (BMCs) for Effective Implementation of Biological Diversity Act 2002 on 15th July, 2022 through virtual mode.

79. Dr. Temjengmongla, Scientist-D attended Iconic Week as a part of Azadi Ka Amrit Mahotsava at Geological Survey of India, Itanagar, Arunachal Pradesh on 15th July, 2022.
80. All the scientists attended inaugural sessions of DST SERB Karyashala on 18th July & 25th July, 2022.
81. Smt J. Lyngdoh, Scientist-E attended the Governing body meeting of the Zoo implementation project on the 18th July, 2022 at the PCCF Office, Shillong.
82. Dr. Gaurav Sharma, Scientist-E visited Ministry of Environment, Forest and Climate Change 21st-26th July, 2022 in connection with the discussion of New Conference Hall at NRC, ZSI, Dehradun.
83. Dr. Gopal Sharma, Scientist E, ZSI, GPRC, Patna attended an online meeting of Nagar Rajbhasha Karyanvayan Samite Bihar on 21st July, 2022 and attended a meeting of Namami Gange organised by Jila Ganga Samiti Patna in District Magistrate Patna on 25th July, 2022.
84. Dr. Anjum N. Rizvi, Scientist- E, Dr. Avtar Kaur Sidhu, Scientist-E, Dr. Honey U. K. Pillai Scientist-E, D. Khyndriam, Scientist-D attended Lecture by Dr. Raneek Prakash, Senior Curator of Flowering Plants and a member of the Salvage Team at the Natural History Museum on "Emergency preparedness and response" on 25th July, 2022.
85. Dr. C. Raghunathan, Scientist-F attended the meeting for Capital Works budget Chaired by Additional Secretary and Financial Advisor, Ministry of Environment, Forest and Climate Change on 25th July, 2022.
86. Dr. Gopal Sharma, Scientist-E, ZSI, GPRC, Patna attended "Namai Gange Meet" at District Magistrate Office on 25th July, 2022 in Patna.
87. Dr. C. Raghunathan, Scientist-F attended the meeting for Great Nicobar Holistic Development chaired by Director General of Forest, Ministry of Environment, Forest and Climate Change on 26th July, 2022.
88. Dr. Deepa Jaiswal, Scientist E, Dr.S.S. Jadhav & Dr.Karuthapandi, Scientist-C attended Telangana State Wildlife Board meeting on 27th July, 2022 by virtual mode.
89. Dr. Aftab A, Scientist-D Participated as Exhibitor and attended inaugural function of Mega Exhibition-Aspiring Haryana on 28th July, 2022 organized by Hon'ble Member of Parliament Sh. Birender Singh. The exhibition as from 28th-30th July, 2022.
90. Dr. P. S. Bhatnagar, Scientist-E attended Chhattisgarh State Biodiversity Board meeting on 29th July, 2022 at Raipur, Chhattisgarh.
91. Dr. B. Sinha, Scientist-E attended the 1st meeting of the Project Advisory Committee for developing and designing Biodiversity Park in Meghalaya in the office of the PCCF & HoFF, Shillong on 29th July, 2022.
92. All the Scientists & Officer-in charge attended an online valedictory session of ZSI-SERB Karyashala on "Demonstrating SOPs to combat illegal wildlife trade & strengthening wildlife forensic capabilities in India" on 29th July, 2022 at ZSI-Headquarters, Kolkata.
93. Dr. Gaurav Sharma, Scientist-E Participated as Exhibitor and attended inaugural function of Mega Exhibition-Aspiring Haryana on 28th July, 2022 organized by Hon'ble Member of Parliament Sh. Birender Singh. The exhibition will be from 28th-30th July, 2022.
94. Dr. C. Raghunathan, Scientist-F attended meeting with Mr. Naresh Jaiswal, Deputy Secretary, Ministry of Environment, Forest and Climate Change regarding the administrative matters of ZSI on 1st August, 2022.
95. Dr. Anil Kumar acted as interview committee member for conducting online interview for contractual engagement of 'Project Fellows' (2 Nos) for CAMPA-Dugong Recovery Programme, conducted on 1st August, 2022 at WII, Dehradun.
96. Dr. C. Sivaperuman, Scientist-E attended the meeting in the group of TamilĀlĪṇaivōmUlakatamiĪPēriyakkam (Branches in 23 countries) on 8th August, 2022.
97. Dr. C. Sivaperuman, Scientist-E attended meeting with Chief Secretary, Andaman and Nicobar Islands on 10th August, 2022 as a courtesy call and discussed about the National Coral Reef Research Institute.
98. Dr. Anil Kumar, Scientist-E attended 'meeting to finalize the list of top research questions in Indian Ornithology', organized by NCF from 11-12 Aug 2022, at NCBS, Bengaluru.
99. Dr. Aparna S. Kalawate, Scientist-E attended a meeting on data submission to the administrative ministry with DZSI on 12th August, 2022.
100. Dr. Gaurav Sharma, Scientist-E, Dr. Narender Sharma, Scientist-E, and Dr. Anil Kumar, Scientist-E, planning meeting for evaluation of 150 National Parks and Wildlife Sanctuaries

- through Management Effectiveness valuation (MEE) Process during 2022-23 on 13th August, 2022 organized by Wildlife Institute of India.
101. Dr. J. S. Yogesh Kumar Scientist-E invited as a guest of honor for the competition program and prize distribution to the participants and winners in Canning on 15th August, 2022. The program organized by Central Bureau of Communication, Ministry of Information & Broadcasting, Chuchura, Kolkata Region.
 102. Dr. B. Sinha, Scientist-E attended a meeting of the State level PBR quality evaluation monitoring committee of Meghalaya Biodiversity Board on 16th August, 2022.
 103. Dr. C. Sivaperuman, Scientist-E attended meeting with Principal Chief Conservator of Forests, Department of Environment and Forests, Andaman and Nicobar Islands on 22nd August, 2022 in connection with the proposed publication on Mahatma Gandhi Marine National Park, South Andaman.
 104. Dr. C. Raghunathan, Scientist-F attended the meeting of standing committee on Government e-Marketplace in respect of Ministry of Environment, Forest and Climate Change held on 24th August, 2022.
 105. Dr. Kaushik Deuti, Scientist- D Participated, in the “25th National Exhibition” on the theme of “Self –Reliant India; Progress, Prosperity and Sustainability” from 24th to 27th August, 2022 at Central Park Maidan, Salt
 106. Dr. Temjengmongla, Scientist - D attended a virtual meeting with Headquarters, ZSI, Kolkatta related to procurement on GeM on 24th August, 2022.
 107. Dr. M. E. Hassan, Scientist-E attended “Discussion Meeting - Procurement in GEM Portal” on 24th August, 2022.
 108. Dr. P.G.S. Sathy, Scientist-E Participated in the “25th National Exhibition” on the theme of “Self –Reliant India; Progress, Prosperity and Sustainability” from 24th to 27th August, 2022 at Central Park Maidan, Salt Lake City, Kolkata-700064.
 109. Dr. Gaurav Sharma, Scientist-E as External Subject Expert Member attended meeting on selection of Ph.D. Research Scholars for Forest Entomology Discipline conducted by Registrar, Forest Research Institute (Deemed University), Dehradun on 25th August, 2022.
 110. Dr. Indu Sharma, Scientist-E attended the “Life Global Call for Ideas and Papers” by the Hon’ble Prime Minister Sh. Narendra Modi on 26th August, 2022 through virtual mode at the Centre.
 111. Dr. C. Raghunathan, Scientist-F visited ZSI-MARC, Digha to monitor the scientific and administrative activities and implementation of GeM on 26 & 27th August, 2022.
 112. All the scientists attended first review Webex meeting- Compiling state wise species diversity data, hosted by Director, ZSI, Headquarters, Kolkata on 1st September, 2022.
 113. All the Scientists of the ZSI, ANRC attended the online Discussion Meeting of Officers of Regional Centres and Headquarters in connection with the Special Campaign 2.0: for disposal of pending matters, on the 5th September, 2022.
 114. Dr. C. Sivaperuman, Scientist-E attended 43rd Annual General Body Meeting of the Andaman and Nicobar Islands Plantation Development Corporation Ltd., Port Blair on 7th September, 2022 as nominated by the Secretary, Ministry of Environment & Forests, Government of India.
 115. Dr. Temjengmongla, Scientist- D attended second review Webex meeting–Compiling state wise species diversity data, hosted by Director, ZSI, Headquarters, Kolkata on 8th September, 2022.
 116. Dr. C. Sivaperuman, Scientist-E attended the celebration of *Swachh Sagar, Surakshit Sagar* organized by Vigyan Prasara, Department of Science and Technology, Government of India on 9th September, 2022 at Government Engineering College, Puducherry.
 117. All the deputed scientists attended the online Meeting with the Additional Secretary, Ministry of Environment, Forest and Climate Change, Shri Tanmoy Kumar, on the 10th September, 2022 regarding the Special Campaign 2.0.
 118. Smt. Ilona J Kharkongor & Dr. G Srinivasan, Scientist-E attended the Meeting with delegates deputed by Ministry of Environment, Forest and Climate Change for Evaluation of Itanagar WLS & Eaglenest WLS, in the Office of the DFO, Itanagar Biological Park, on the 12th September, 2022.
 119. Dr. Indu Sharma, Scientist-E attended the *Rajasthan State Biodiversity Board* meeting through Video-conferencing on 13th September, 2022 under the chairmanship of Honorable Chief Minister, Sh. Ashok Gehlot, Sh. Hemaram Choudhary Minister of Environment, Forest & Climate Change, Sh. Arindam Tomar, PCCF and Chief Wildlife Warden at the Centre.

120. Dr. Deepa Jaiswal, Scientist-E attended the meeting with Mr. Vinay Yadav, IAS, Commissioner, AMRDA, Vijayawada, regarding the NOC for the building constructions at Amravati on 13th September, 2022.
121. Dr. K.A. Subramanian and Dr. R. Babu, Scientist-E attended an interaction meeting of Ph. D research guides and Vice-Chancellor, Registrar and Dean Research on 13th September, 2022 at University of Madras, Chennai.
122. All officers and staff members, MARC, Digha participated in the cleaning Drive of MARC campus as part of Swachhata Campaign 2.0 at Marine Aquarium & Regional Centre (MARC), ZSI, Digha on 15th September, 2022.
123. Dr. V.D. Hegde, Scientist-E attended the NAAC committee meeting at University of Calicut on 15th September, 2022 on Vice Chancellor's invitation.
124. Smt. Ilona J Kharkongor, Scientist-E attended the 3rd Meeting of the XXIII Board for Wildlife, Arunachal Pradesh, held in the Chief Minister's Conference Hall on the 17th September, 2022.
125. Dr. Varadaraju, Scientist-D participated in International Coastal Clean-up event on 17th September, 2022 at Elliot Beach, Besant Nagar, Chennai organized by NIOT in collaboration Ministry of Environment, Forest and Climate Change, Earth Science to commemorate 75th Azadi ka Amrit Mahotsav.
126. As a part of the celebration of International Coastal Cleanup Day the Zoological Survey of India, Dr. C. Sivaperuman, Scientist-E, ANRC, ZSI, Port Blair organized coastal cleanup on 5th September, 2022.
127. Dr. C. Sivaperuman, Scientist-E attended Executive Committee meeting of Andaman Science Association on 20th September, 2022.
128. Dr. Gaurav Sharma, Scientist-E as External Subject Expert Member attended meeting on selection of Ph.D. Research Scholars for Forest Entomology Discipline conducted by The Registrar, Forest Research Institute (Deemed University), Dehradun on 20th September, 2022.
129. Dr. C. Sivaperuman, Scientist-E attended meeting with Principal Chief Conservator of Forests, Department of Environment and Forests, Andaman and Nicobar Islands on 21st September, 2022 in connection with the proposed publication on Mahatma Gandhi Marine National Park, South Andaman and Directory of Sanctuaries and National Parks.
130. All the coordinators and experts attended Third review Webex meeting–Compiling state wise species diversity data, hosted by Director, ZSI, Headquarters, Kolkata on 21st September, 2022.
131. Dr. Aparna S. Kalawate, Scientist-E attended a meeting of Wildlife Board of Maharashtra on 21st September, 2022 with the Honorable Chief Minister of Maharashtra and PCCF at Mantralaya, Mumbai.
132. Dr. Anil Kumar Dubey, Scientist-E attended review meeting with National Informatics Centre (NIC), New Delhi on ZSI website development on 23rd September, 2022.
133. Dr. C. Raghunathan, Scientist-F attended the “*National Conference of Ministers of Environment, Forest and Climate Change*” held on 23rd & 24th September, 2022 at Ekta Nagar, District Narmada, Gujarat.
134. Dr. Aparna S. Kalawate, Scientist-E attended a meeting at Bhimashankar Wildlife Sanctuary with local people, foresters and other technical committee members regarding declaring the critical habitat in the sanctuary on 24th September, 2022.
135. Dr. C. Raghunathan, Scientist-F attended the 12th meeting of the State Board for Wildlife, West Bengal chaired by Hon'ble Minister-in-Charge, Forests, Government of West Bengal held on 26th September, 2022 at Kolkata.
136. Dr. C. Sivaperuman, Scientist-E attended meeting with Inspector General, Indian Coast Guard, Andaman and Nicobar Islands Region on 26th September, 2022 and discussed about the proposed activities in the unexplored areas in Andaman and Nicobar Islands.
137. All the Scientists & staff members of ZSI- Headquarters and Regional Centers celebrated the “World Ozone Day” on 26th September, 2022.
138. Smt J. Lyngdoh, Scientist-E attended the 30th meeting of the Governing Body of the Meghalaya Zoo Implementation Society held on the 27th September, 2022 at the Office of the PCCF & HoFF, Sylvan house, Shillong.
139. Dr. K.A. Subramanian, Scientist-E attended “Science Leadership Training Programme” organized by the Principal Scientific Advisor, Govt. of India, ISRO, Capacity Building Commission, Ahmedabad University and CITER from 27th to 30th September, 2022.
140. All the deputed scientists attended Special Campaign 2.0 Cleanliness Drive meeting

- Chaired by the Joint Secretary, Ministry of Environment, Forest and Climate Change through virtual mode on 28th September, 2022.
141. Smt. Ilona J Kharkongor & Dr. G Srinivasan, Scientist-E attended the Meeting with delegates deputed by Ministry of Environment, Forest and Climate Change for Evaluation of Itanagar WLS & Eaglenest WLS, in the Office of the DFO, Itanagar Biological Park, on the 12th September, 2022.
 142. Dr. C. Raghunathan, Scientist-F attended the meeting to discuss coordination issues between FSI, ZSI and BSI organised by Director General, FSI on 3rd October, 2022 in virtual mode and made a presentation about the activities of ZSI.
 143. Dr. Basudev Tripathy, Scientist-E, WRC attended meeting on River Rejuvenation-Bioreactor organised by Joint Commissioner, Pune on 3rd October, 2022 on virtual mode.
 144. Dr. P.C. Pathania, Scientist-E, attended Research advisory group Meeting of the Himalayan Forest Research Institute, Panthghatti, Shimla on 3rd October, 2022.
 145. Dr. Basudev Tripathy, Scientist-E, WRC attended 18th meeting of Committee XII - 'Geoscience for Sustainable Development' of the CGPB held on 4th October, 2022 on virtual mode.
 146. All the deputed scientists attended the meeting with Shri Bivash Ranjan, Addl. Director General (WL), Ministry of Environment, Forest and Climate Change on 7th October, 2022 at ZSI Kolkata.
 147. Dr. C. Raghunathan, Scientist-F attended the meeting with Additional Secretary, Ministry of Environment, Forest and Climate Change for Special Campaign 2.0 disposal of Pending Matters from 2nd October, 2022 to 31st October, 2022 held on 10th September 2022.
 148. Smt. J. Lyngdoh, Scientist-E attended the Emergent meeting of the Governing Body of the Meghalaya Zoo Implementation Society held on the 10th August, 2022 at the PCCF & HoFF, Sylvan house, Shillong.
 149. Dr. C. Sivaperuman, Scientist-E attended as Chief guest on the programme of Biodiversity Andaman and Nicobar Islands, vulnerability, & adaptation to climate change on 11th & 17th October 2022
 150. Dr. C. Raghunathan, Scientist-F attended the meeting with PCCF, Andaman and Nicobar Islands regarding the preparation of Environment Management Plan for Holistic Development of Great Nicobar Island held on 12th October, 2022 through VC mode.
 151. Dr. C. Sivaperuman, Scientist-E attended meeting of the under the DIG (Wildlife) for the fund flow and transition for the ongoing training sponsored by the Division of Research & Training, Ministry of Environment, Forest and Climate Change on 12th October, 2022.
 152. Dr. R. Babu, Scientist-E attended the Review meeting on Swachhata Campagin 2.0 under the Chairmanship of Additional Secretary, Ministry of Environment, Forest and Climate Change, New Delhi through online mode on 12th, 20th & 27th October, 2022.
 153. Dr. P.S. Bhatnagar, Scientist-E attended MP state Wildlife Board Meeting in Bhopal on 13th October, 2022.
 154. All the deputed scientists attended meeting with Shri Tanmoy Kumar, AS, Ministry of Environment, Forest and Climate Change on Vacancy position and GLIS on 13th October, 2022.
 155. Dr. P.S. Bhatnagar, Scientist-E attended Madhya Pradesh State Wildlife Board Meeting in Bhopal on 13th October, 2022.
 156. Dr. C. Sivaperuman, Scientist-E attended meeting of the under the Chairmanship of the Secretary (Tourism), for the preparation of guidelines for diving and snorkelling 14th October, 2022.
 157. Dr. Gopal Sharma, Scientist-E ZSI, GPRC, Patna attended an online meeting on Project Dolphin with DG Forest Ministry of Environment, Forest and Climate Change, New Delhi on 14th July, 2022 to organise "National Dolphin Day" on 5th October at Varanasi.
 158. Dr. V.D. Hegde, Scientist-E attended the online meeting on 14th & 17th October, 2022 regarding the Swacchata Andolan and Land Record Management.
 159. All the Scientists & staff of ZSI-Headquarters & Regional Centers of Zoological Survey of India Celebrated the Flag Hoisting Ceremony on the occasion of 76th Indian Independence Day 2022, and also distributed the Indian National Flag to Common Public for awareness to make Grand Success of "Har Ghar Tiranga" Campaign under the ageis of "Azadi Ka Amrit Mahotsav" on 15th August, 2022.
 160. Dr. C. Raghunathan, Scientist-F attended the coordination meeting of ZSI, BSI and FSI chaired by Hon'ble Minster, Ministry of

- Environment, Forest and Climate Change on 17th October 2022 through VC mode.
161. Dr. Avtar Kaur Sidhu, Scientist-E attended Research Advisory Committee on 19th October, 2022 through VC under the chairmanship of PCCF (WL) Himachal Pradesh.
 162. Dr. Temjengmongla, Scientist- D attended a VC meeting related to the celebration of FIT India Freedom Run 3.0, hosted by Ministry of Environment, Forest and Climate Change on 20th October, 2022.
 163. All the deputed scientists attended an online meeting under the chairmanship of Ms. Rajasree Ray, Economic Advisor to review the preparation of FIT India Freedom Run 3.0 on 20th October, 2022 organized by the Ministry of Environment, Forest and Climate Change.
 164. Dr. C. Raghunathan, Scientist-F attended the preparatory meeting of Parliamentary Standing Committee on Science and Technology and Environment and Climate Change, Rajya Sabha chaired by the Director General of Forests, Ministry of Environment, Forest and Climate Change on 26th October, 2022 at Ministry of Environment, Forest and Climate Change, New Delhi for Critically Endangered species.
 165. Dr. C. Raghunathan, Scientist-F attended the meeting under the Chairmanship of Additional Director General of Forests (WL) to discuss the issues of ZSI and BSI held at Ministry of Environment, Forest and Climate Change on 27th October, 2022.
 166. All the Scientists of headquarter and regional centers of Zoological Survey of India celebrated the National Unity Day (Rashtriya Ekta Diwas) on 31st October, 2022 to commemorate the birth anniversary of Sardar Vallabhbhai Patel - The Iron Man of India.
 167. All the Scientist of MARC, Digha conducted a running event along the beach lane ZSI, MARC, Digha on 31st October, 2022 as a part of "Fit India Freedom Run 3.0" campaign.
 168. All the Scientists of ZSI-Headquarters & Officer-in charge of Regional Centers attended the Half Yearly Monitoring Meeting held at NERC, Shillong 2-4th November, 2022.
 169. Dr. Anil Kumar Dubey, Scientist- E participated in ZSI website development review meeting with NIC, New Delhi on 3rd & 14th November, 2022.
 170. Dr. Jasmine P. and Dr. Santosh Kumar, Scientist-E attended the 3rd International Symposium on Ciliate Biology (ISCB 2022) on 8th November, 2022.
 171. Dr. Anil Kumar, Scientist-E participated in the 'National Symposium on Avian Biology 2022 from 9th to 11th November, 2022.
 172. Dr. C. Sivaperuman, Scientist-E attended the meeting on Management of Marine Ecosystem and Mangroves on 11th November, 2022.
 173. Dr. C. Sivaperuman, Scientist-E attended meeting of the State Coordinator Meeting, Asian Waterbird Census to be held during January 2023 on 11th November, 2022.
 174. Dr. C. Raghunathan, Scientist-F attended the meeting on Government Land Information System- Registration and updation of Land and Building Parcels organized by Ministry of Environment, Forest and Climate Change on 14th November, 2022 through VC mode.
 175. Dr. C. Raghunathan, Scientist-F attended the meeting under the chairmanship of Secretary, Department of Administrative Reforms & Public Grievances (DARPG) on 14th November, 2022 with Central Ministries and Departments on Prime Minister's Awards for Excellence in Public Administration 2022.
 176. All the deputed scientists attended a VC meeting regarding GLIS organised by the Ministry of Environment, Forest and Climate Change on 14th November, 2022.
 177. Dr. K.P. Dinesh, Scientist-E attended 'Environmental Performance Index (EPI)', meeting conducted by the Director, ZSI, Kolkata on 14th November, 2022 virtually.
 178. All the scientists of HQ attended inaugural function on 'Skill and Techniques of Taxidermy' at ZSI, Headquarters on 15th November, 2022.
 179. Dr. Jasmine P., Scientist - E participated in the 4th Research Symposium of Ocean University of Sri Lanka "Marine research for the prosperity of the nation" presented two oral presentations and one poster presentations on 17th November, 2022.
 180. Dr. Aparna S. Kalawate and Dr. K.P. Dinesh, Scientist-E and Dr. D. Vasanthakumar, Senior Zoological Assistant attended meeting with the scientist of National Institute of Virology, Pune on 17th November, 2022 to explore the possibilities of the collaboration of research between the two organizations.
 181. Dr. C. Raghunathan, Scientist-F and Dr. G. Maheswaran, Scientist-F has attended the meeting with Arunachal Pradesh Forest Department at Itanagar to submit proposal on Dihang-Dibang Biosphere Reserve on 18th November, 2022.

182. P. G. S. Sethy, Scientist-E and the Staff members of Museum & Taxidermy division of ZSI-Headquarters Celebrated the “World Heritage Week, 2022” at Kolkata along with Kolkata Centre for Creativity, Paschim Bang Sangrahalaya Samiti and Centre for studies in Museology, University of Jammu from 19th-25th November, 2022.
183. meeting with the GIZ India along with its international partner IFB, Potsdam for establishing collaboration and capacity building aspects of aquatic fauna conservation and management in India on 22nd November, 2022.
184. Dr. Anil Mohapatra, Scientist-E had Participated in the “Circle level Co-ordination meeting with local NGO’s and CBOs on Protection and conservation of Olive Ridley Sea turtles for the season 2022-23 ” organized by Divisional Forest Officer, Berhampur Division on 22nd November, 2022.
185. Dr. P.C. Pathania, Scientist-E attended one-day training programme under SERB-DST on ‘Identification and management of mites on fruits and vegetable crops’ on 22nd November, 2022 organized by Department of Entomology, PAU, Ludhiana.
186. Dr. C. Sivaperuman, Scientist-E attended as Mission Recruitment, Rozgar Mela 2 on 22nd November, 2022 organised by CISF & Andaman and Nicobar Islands administration.
187. Dr. C. Raghunathan, Scientist-F attended the Meeting regarding Implementation of a five year period for Integrated Management Action Plan for Biosphere Reserves as pilot project held at Ministry of Environment, Forest and Climate Change on 24th November, 2022.
188. Dr. P. S. Bhatnagar, Scientist-E attended Meeting in virtual mode on 26th September, 2022 with PCCF (Wildlife), Forest Department, Bhopal, Madhya Pradesh regarding permission for Annual Programme of Research and made a presentation.
189. All the Scientists participated in the Reading Preamble to the Constitution with the Director, ZSI on 26th November, 2022.
190. Dr. Gaurav Sharma, Scientist-E, participated in “*Himalayan Educators’ Summit 2022*” organized by Uttarakhand State Council for Science & Technology, Dehradun on 27th November, 2022.
191. Dr. C. Sivaperuman, Scientist-E, attended the meeting and presented a book on “An overview of biodiversity of Mahatma Gandhi Marine National Park”, published by Department of Environment and Forests, & Zoological Survey of India on 30th November, 2022.
192. Dr. S.S. Talmale, Scientist-C, attended online meeting (hybrid mode) for preparation of Goa State Biodiversity Action Plan (GSBSAP) organized by Goa State Biodiversity Board held at Panjim, Goa on 30th November, 2022.
193. Dr. Tamal Mondal, Scientist-D attended a meeting under the Chairmanship of Joint Secretary (CSII) for the discussion of ZSI & BSI related issues on 2nd December, 2022.
194. Dr. Devanshu Gupta, Scientist- D attended 25th annual SOLA scarab workers symposium on 2nd Decmber, 2022 at Universal time, hosted on Zoom.
195. Dr. C. Raghunathan, Scientist-F attended the meeting to discuss conservation plans submitted by you for Leatherback Turtle, Nicobar Megapode, Saltwater Crocodile, Corals, etc. for Great Nicobar Island organized by ANIIDCO on 6th December, 2022.
196. Dr. P.G.S. Sethy, Scientist -E attended the 31st Damoder Mela, 2022 held at Amta, West Bengal from 7th-13th December, 2022.
197. Dr. R. Babu, Scientist-E participated in Tamil Nadu Climate Summit 2022 and Launch of Tamil Nadu Climate Change Mission held on 8th & 9th December, 2022 at Chennai, organized by the Department of Environment and Forests, Govt. of Tamil Nadu.
198. Dr. Gaurav Sharma, Scientist-E participated as member in the meeting with the CCF & Senior Forest Officials, Arunachal Pradesh Forest Department along with the Chairman and Members of MEE Team 16 held at the Arunachal Pradesh Forest Department Headquarter on 10th December, 2022.
199. Dr. Narender Sharma, Scientist-E attended 18th meeting of Uttarakhand State Wildlife Board chaired by Chief Minister, Uttarakhand at Secretariat Dehradun on 10th December, 2022.
200. Dr. Aparna S. Kalawate, Scientist-E attended an annual General meeting of Coleoptera Society on 10th December, 2022.
201. Dr. Tamal Mandal, Scientist- D attended a meeting with Ministry of Environment, Forest and Climate Change on NIRANTAR on 12th December, 2022.
202. All the deputed scientists attended online meeting on 13th December, 2022 relating to Government Land Information System (GLIS) and filling up of vacant posts.

203. Dr. Kamal Saini Assistant Zoologist attended the GeM online training session organised by the Ministry of Environment, Forest and Climate Change on 13th, 20th & 27th December, 2022.
204. Dr. D.S. Suman, Scientist-E, attended Central Insecticide Board (CIB), Gol, New Delhi a meeting as an expert member to participate in the development of guideline under “Due diligence report of exercise conducted by Sub-Committee for examination of the suggestions / objections received pursuant to public notice dated 15th December, 2022.
205. Dr. Tamal Mondal, Scientist-D attended a meeting with Ministry of Environment, Forest and Climate Change on Marine Conservation Committee on 16th December, 2022.
206. Dr. P. S. Bhatnagar, Scientist-E attended NagriyaRajbhasha Vikas Samiti meeting of Jabalpur on 16th December, 2022.
207. Dr. K.K. Bineesh, Scientist-E attended a meeting of Committee on Marine Biodiversity organized by Ministry of Environment, Forest and Climate Change at 16th December, 2022.
208. Dr. C. Sivaperuman, Scientist-E attended meeting with Chief Secretary, Andaman and Nicobar Islands, and presented a book on “History of Zoology and Present status in India”, authored by Ramakrishna and C. Sivaperuman on 19th December, 2022.
209. Dr. P. S. Bhatnagar, Scientist-E attended virtual meeting of Chhattisgarh Wildlife Board chaired by Hon’ble Chief Minister on 19th December, 2022.
210. Dr. Tamal Mondal, Scientist-D attended a meeting with Ministry of Environment, Forest and Climate Change on DDBR on 20th December, 2022.
211. Dr. Gaurav Sharma, Scientist-E participated in the meeting with the Chairman, MEE Team 16 for finalization of reports of 03 reports of Wildlife Sanctuary of Arunachal Pradesh at ZSI, NRC, Dehradun on 20th December, 2022.
212. Dr. Gopal Sharma, Scientist E, attended an online meeting on AWC bird count in Bihar on 23rd December, 2022 organised by the Department of Environment Forest and Climate Change, Govt. of Bihar.
213. Dr. Gopal Sharma, Scientist E attended an online meeting of NARAKAS organized by Nagar Rajbhasha Karyanvayan Samitee, Chief Income Tax Office, Patna on 24th December, 2022.
214. Dr. M. E. Hassan, Scientist-E attended on “Quality control, testing and handling of Honey” on 9th December, 2022, organised by Integrated Beekeeping Development Centre, Kurukshetra, Haryana.
215. Dr. C. Raghunathan, Scientist-F, attended the 37th Meeting of the National Committee on Introduction of Exotic Aquatic Species convened by Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying on 2nd January, 2023 through virtual mode.
216. Dr. Anjum N. Rizvi, Scientist -E, Dr. Gurupada Mandal, Scientist-E, Dr. Bineesh. K. K, Scientist-E, Dr. Souvik Sen, Scientist-D and Ms. Debashree samm Sciencist-B participated in the 108th Indian Science Congress held at R. T. M, Nagpur University, Nagpur, Maharashtra from 2-7th January, 2023.
217. Dr. S.I. Kazmi, Scientist-E attended the meeting regarding Rajbhasha (OL) held on 04th January, 2023 at New Delhi.
218. Dr. C. Raghunathan, Scientist-F attended the meeting for PMU-TechDome content organized by C-DAC, Pune on 5th January, 2023.
219. Dr. C. Raghunathan, Scientist-F attended the meeting with CPWD officials at APRC, Shillong on 6th and 7th January, 2023 to submit the preliminary estimate for construction of Himalayan Faunal Repository and Renovation and refurbishment of office and residential buildings of APRC.
220. Dr. C. Sivaperuman, Scientist-E attended the meeting under the Chairmanship of PCCF, Andaman and Nicobar Islands in connection with the proposed Crocodile Census in Andaman and Nicobar Islands on 6th January, 2023.
221. Smt. Ilona J Kharkongor, G. Srinivasan, SD Gurumayum, Scientist- E, Dr. Temjengmongla, Scientist - D and other scientific staff of the centre attended the physical meeting between the Additional Director, ZSI, Kolkata, and the Engineers of CPWD, Itanagar, held at APRC on 6th January, 2023.
222. Dr. M. E. Hassan, Scientist-E attended online Foundation Day lecture on “Entomology in India” organised by The Entomological society of India and Division of Entomology ICAR IARI New Delhi on 6th January, 2023.
223. Dr. M. J. Palot, Scientist-B attended the review meeting at Van Bhavan, Altinho, Panaji, Goa on 6th January, 2023 and presented the progress of the project before the Committee.

224. Dr. Lalit Kumar Sharma, Scientist- D attended the NHA EAC meeting at New Delhi on 13th January, 2023.
225. Dr. Avtar Kaur Sidhu, Scientist-E attended the virtual meeting on 10th February, 2023 on Monitoring of Action Plan for filling up of vacancies and GLIS under the Chairmanship of Shri. Tanmay Kumar, Additional Secretary, Ministry of Environment, Forest and Climate Change.
226. Dr. Gopal Sharma, Scientist- E participated in the online preparatory meeting of Asian Water Birds Census 2023 on 14th January, 2023, organised by Department of Environment, Forest and Climate Change, Govt. of Bihar.
227. Dr. Basudev Tripathi and Dr. Aparna S. Kalawate, Scientist E attended G20 Summit: Jan Bhagidari Event: Lecture on 'Making Cities Future Ready' on 14th January, 2023 with VC, SPPU, Pune and other organizations.
228. All the Scientists of ZSI-Headquarters attended the inaugural session of the Training Programme on Capacity Building Workshop for frontline Staff of West Bengal Forest Department on Identification of Scheduled animals on 16th January, 2023 at Annandale hall, ZSI-Headquarters, Kolkata.
229. Dr. C. Sivaperuman, Scientist-E attended meeting with the Commanding Officer, INS Baaz in connection with the proposed Bird Hazards studies in INS Baaz air station, Campbell Bay, Great Nicobar on 17th January, 2023.
230. Dr. M. Karuthapandi, Scientist-D attended virtual meeting regarding monitoring of Action plan for filling up of vacancies and GLIS organized by Ministry of Environment, Forest and Climate Change on 17th January, 2023.
231. All the Scientist of CZRC, ZSI, participate in "Shining Madhya Pradesh" Exhibition at Ujjain 18th-23rd January, 2023 under the leadership of Dr. P. S. Bhatnagar, Scientist-E & Officer-in-Charge, received Best Display award for the ZSI stall.
232. Dr. C. Sivaperuman, Scientist-E attended meeting of the Fact-Finding committee under the Chairmanship of Dr. C. Raghunathan, Scientist-F on 19th January, 2023.
233. Dr. V.D. Hegde, Scientist-E attended the Kerala State 1st Wildlife Board meeting (online) convened by PCCF, Kerala on 19th January, 2023.
234. Dr. C. Raghunathan, Scientist-F, Dr. Souvik Sen, Scientist-D and Dr. Tamal Mondal, Scientist-D, Dr. Devanshu Gupta, Scientist- D attended CITES meeting on Capacity Building organized by Ministry of Environment, Forest and Climate Change, & ZSI at Hyatt Residency Kolkata on 20th January, 2023.
235. S.D. Gurumayum, Scientist- E had an interactive session with Dr. Firoz Ahmed, Professor & Head, Department of Zoology, Himalayan University, for collaborative research project on 23rd January, 2023 at APRC, ZSI.
236. Dr. S. Balakrishnan, Scientist- E, Guest of Honour of "Inauguration of Azadi ka Amrit Mahotsav exhibition" jointly organised Central Bureau of Communication, Ministry of Information and Broadcasting, Field Office Medinipur and Digha Science Centre, NCSM, Ministry of Culture, Government of India on 24th January, 2023.
237. Dr. Gopal Sharma, Scientist-E participate in the Sahitya Samagam on 24th January, 2023 at Gyanpith Sabhagar, Mahatma Gandhi Nagar, Patna.
238. Dr. Anjum N. Rizvi, Scientist- E, Dr. Souvik Sen Scientist-D and Dr. Tamal Mondal, Scientist-D attended a meeting under the Chairmanship of Dr. C. Raghunathan, Scientist-F related to scrutiny of New Research Proposal 2023-24 under Annual Programme of Research on 25th January, 2023.
239. Dr. Dhirti Banerjee, Director, ZSI along with the scientists and staff celebrated 74th Republic Day, 2023 on 26th January, 2023 at ZSI-Headquarters along with all the officers and staff of ZSI.
240. All the members of scientific committee participated in the meeting conducted by ZSI Headquarters to organize "Animal Taxonomy Summit-2023 (ATS 2023)" through virtual mode on 27th January, 2023.
241. A rally was organized by EIACP Centre in collaboration with local eco-club 'Saptarshi Sanskritik Sangha' on 28th January, 2023 at Sodepur, 24 PGS (N), West Bengal.
242. Dr. G. Maheswaran on 1st February, 2023 prepared a reply for the Parliamentary starred/ Unstarred question (DY.No. U1390) of Bird Census in India on Endangered bird species as instructed by the DZSI.
243. Dr. C. Raghunathan, Scientist-F attended the meeting chaired by the Chief Secretary, Andaman and Nicobar Islands regarding filing of replies to the case filed before NGT regarding GNI project held on 1st February, 2023.

244. S.D. Gurumayum, G. Srinivasan, Scientist-E, Ilona J. Kharkongor, Dr. Temjengmongla, Scientist - D attended the physical meeting with the Engineers of CPWD, Itanagar, held at APRC on 6th February, 2023, to review the Preliminary Layout & Drawings of the proposed EHFR.
245. Dr. C. Raghunathan, Scientist-F attended the 50th meeting of the Expert Committee (ESZ) to discuss the proposals for finalization of Eco-Sensitive Zone Draft notifications is held on 7th February, 2023 at Ministry of Environment, Forest and Climate Change through VC mode.
246. Dr. Gaurav Sharma, Scientist-E, Dr. P.G.S. Sethy, Scientist-D, Dr. P. Padmanaban, Assistant Zoologist and other supporting staff participated in 1st Environment and Climate Sustainability Working Group Meeting (G20) during 9th – 11th February, 2023 at Bengaluru, Karnataka. They installed displayed the live marine aquariums and supported other ZSI regional centres and Headquarters scientists. More than 85 delegates from G20 countries and other participants visited the stall.
247. Dr. G. Maheswaran on 10th February, 2023 has submitted a report on Himalayan Griffon to the West Bengal forest department as agreed upon in a meeting held in February, 2019 at Chalsa on the occasion of Vulture Conservation Breeding Programme jointly organized by the West Bengal forest department and the Bombay Natural History Society, Mumbai.
248. All the deputed scientists attended the Virtual Meeting organizations under Ministry of Environment, Forest and Climate Change regarding updation of vacancies, GLIS, etc. on the 10th February, 2023.
249. All the Scientists & Officer -in charge attended the 'Valedictory Session' of the career progression mandatory training (CPMT) programme at the Annandale Hall, ZSI-Headquarters on 10th February, 2023.
250. Dr. M.J. Palot, Scientist-B attended 35th Session of Kerala Science Congress at Kuttikkanam, Idukki district Kerala on 11th & 12th February, 2023 and received the best Science book award for the State from the Chief Minister of Kerala constituted by the Kerala State Council for Science, Technology and Environment (KCSTE), Govt. of Kerala.
251. Dr. G. Maheswaran on 13th February, 2023 has attend a meeting at Ministry of Environment, Forest and Climate Change, New Delhi on Dihang-Dibang Biosphere Reserve (DDBR) under the chairmanship of Director General of Forest and Special Secretary, Ministry of Environment, Forest and Climate Change and forest officials of DDBR, Arunachal Pradesh.
252. All the deputed scientists attended "International Symposium on Plant Taxonomy, Ethnobotany and Botanic Gardens" at Bhasha Bhawan, National Library, Alipore, Kolkata, organized by Botanical Survey of India, Kolkata on 13th-14th February, 2023.
253. Dr. C. Raghunathan, Scientist-F attended the meeting with respect to implementation of integrated management plan for Dihang-Dibang Biosphere Reserve, Arunachal Pradesh held at Ministry of Environment, Forest and Climate Change, New Delhi on 13th February 2023.
254. Dr. C. Raghunathan, Scientist-F and Dr. G. Maheswaran on 14 February, 2023 has attended meeting on the discussion on Draft Rules under Section 49M of the Wild Life (Protection) Act, 1972 under the chairmanships of Deputy Director General of Forest, Ministry of Environment, Forest and Climate Change and Inspector General of Forests, Ministry of Environment, Forest and Climate Change, New Delhi. Wherein Gazette notifications for 49M, 49N, 49O, 49H under Section 63 of Wild Life (Protection) Act, 1972 was discussed and finalized.
255. S.D. Gurumayum Scientist -E, Ilona J. Kharkongor, Dr. Temjengmongla, Scientist-D had a discussion with Vice Chancellor Himalayan University, Dr. Kuldeep Krishan Sharma for collaborative research project on 15th February, 2023.
256. Dr. C. Raghunathan, Scientist-F, Dr. C. Sivaperuman, Scientist -E, Dr. JayasreeThilak, Scientist-E, Dr. R. Venkitesan, Scientist- E, Dr. Devanshu Gupta, Scientist-D and Dr. Tamal Mandal, Scientist -D, Dr. Varadaraju, Scientist-D & Ms. Debashree Dam, Scientist-B attended book releasing programme entitled 'Faunal Diversity of Puducherry' by Hon'ble Lt. Governor of Puducherry Dr. Tamizhisai Soundararajan at Raj Nivas, Puducherry on 17th February, 2023.
257. Smt J. Lyngdoh, Scientist-E attended the Governing Body meeting of the Zoo Implementation Project on 17th February, 2023 at the Office of the PCCF & HOFF, Sylvan House, Shillong.
258. Dr. Gaurav Sharma, Scientist-E attended meeting with Government Advocate in the matter of Court Case at High Court Delhi on 18th and 25th February, 2023.

259. Dr. C. Raghunathan, Scientist-F attended a meeting on GIZ programme with the Coordinators and PIs on 21st February, 2023.
260. Dr. C. Sivaperuman, Scientist-E attended Doctoral Committee Meeting at Regional Medical Research Centre, Port Blair on 21st February, 2023.
261. Smt. J. Lyngdoh, Scientist- E attended the Second TOLIC Meeting held on 21st February, 2023 through virtual mode.
262. Dr. B. Sinha, Scientist-E attended the 6th meeting of the State level PBR quality evaluation monitoring committee in the Office of the Secretary, MBB on 22nd February, 2023.
263. Dr. Mrinal Kumar Das served as observer during the conduct of Trade Test for recruitment of mazdoors in Silviculture Division, Department of Environment and Forests on 22nd February, 2023.
264. Dr. C. Sivaperuman, Scientist-E attended the meeting with Chief Secretary, Andaman and Nicobar Islands and presented the book "Faunal Ecology and Conservation of Great Nicobar Biosphere Reserve on 23rd February, 2023.
265. Dr. Devanshu Gupta, Scientist- D attended the World Book Fair in Delhi from 24th February, 2023 to 06th March, 2023.
266. Dr. C. Raghunathan, Scientist-F attended the 9th Meeting on Development of TechDome under Nav Bharat Udyan chaired by Principal Scientific Advisor, Government of India held on 24th February, 2023 through VC mode.
267. Dr. Jayasree Thilak, Scientist-E attended the launching program of three projects of National importance, conducted at Head Quarters of ICAR- Central Institute of Brackish Water Aquaculture (CIBA), Chennai on 27th February, 2023.
268. Dr. Basudev Tripathy, Scientist-E along with Dr. S.S. Talmale, Scientist-C attended a meeting of IACM of WCCB, WR at Thane on 28th February, 2023.
269. Dr. Deepa Jaiswal, Scientist- E and Karuthapandi M., Scientist- D attended Andhra Pradesh State Biodiversity Board meeting on 28th February, 2023 at Vijayawada.
270. Dr. Gopal Sharma, Scientist- E attended the Gazetteer meeting in the DM Office Patna on 1st March, 2023.
271. Dr. Basudev Tripathy, Scientist-E, attended a National Marine Turtle Action Plan Meeting held at Ministry of Environment, Forest and Climate Change conducted on 1st March, 2023 (online) as deputed by DZSI.
272. All the members of organizing committee attended meeting with DZSI regarding discussions on 'Animal Taxonomy Summit 2023 (ATS 2023)' held on 1st March, 16th March, 2023 and 28th March, 2023 at Baini Prasad Hall, through hybrid mode.
273. Dr. C. Raghunathan, Scientist-F attended the GIZ project review meeting and revision of GIZ project ToR with their officials held at ZSI Headquarters on 3rd March, 2023.
274. Ms. Debashree Dam, Scientist-B attended a program on the occasion of International Women's day at Press Club, Kolkata on 6th March, 2023 in which Director, ZSI acted as a guest speaker.
275. All members of of Taxonomy committee attended the virtual meeting to evaluate taxonomy abstracts for 'Animal Taxonomy Summit 2023 (ATS 2023)' on 6th, 16th & 17th March, 2023.
276. Dr. C. Raghunathan, Scientist-F attended a meeting with GIZ Officials on 3rd March, 2023 at Baini Prasad Hall, ZSI-Headquarters, Kolkata.
277. Dr. C. Raghunathan, Scientist-F, Dr. K.G. Emiliyamma, Scientist-E, Dr. Anjum N. Rizvi, Scientist-E and Dr. Tamal Mandal, Scientist- D attended 'Progress Evaluation Meeting' of JRFs, SRFs and PDFs on 9th and 10th March, 2023.
278. Dr. Gaurav Sharma, Scientist-E attended virtual meeting on "GEF-8 Orientation Programme" organized by Ministry of Environment, Forest and Climate Change under the Chairpersonship of the Secretary, Ministry of Environment, Forest and Climate Change, New Delhi on 9th March, 2023.
279. Dr. P. Girish Kumar, Scientist-D attended one online meeting in connection with Ph.D. Admission Reservation Roster of University of Calicut conducted by the Directorate of Research, University of Calicut on 9th March, 2023.
280. Dr. C. Raghunathan, Scientist-F and Ms. Debashree Dam, Scientist-B along with Director, ZSI attended the meeting with CPWD officials regarding the newly constructed auditorium and museum at EBRC, Gopalpur-on-Sea held at on 14th March, 2023 at EBRC.
281. Dr. C. Sivaperuman, Scientist-E attended meeting with the Deputy Commissioner, South Andaman Mrs. Vedita Reddy, in connection with the NCRRI Land on 14th March, 2023.

282. Dr. C. Raghunathan, Scientist-F attended Biodiversity Sectional Committee, SSD 20 on 16th March, 2023 virtually.
283. All the members of Taxonomy committee attended a meeting regarding evaluation of abstracts submitted for Animal Taxonomy Summit 2023 on 16th March, 2023 at Baini Prasad Hall, ZSI, Kolkata.
284. Ms. Debashree Dam, Scientist-B, attended the 77th Foundation Day program of CIFRI at Barrakpore, West Bengal on 17th March, 2023 in which Director, ZSI graced the occasion as Guest of Honour.
285. Dr. C. Sivaperuman, Scientist-E organised and attended Doctoral Committee Meeting at ZSI, Port Blair on 17th March, 2023.
286. Dr. Anil Kumar Dubey, Scientist-E participated in the South-East Asia Regional meeting of wildlife forensic professionals on Beyond Species Identification Bangkok, Thailand. 20 – 24th March, 2023.
287. Dr. C. Raghunathan, Scientist-F attended a meeting related to GEF opportunities on 21st March, 2023 at Baini Prasad Hall.
288. Dr. C. Raghunathan, Scientist-F attended the 19th Meeting of Lakshadweep Coastal Zone Management Authority on 22nd March, 2023.
289. All the Scientists of Headquarters and the Regional Centers attended the meeting related to 'Man Ki Baat' with the administrative ministry in presence of DZSI on 27th March, 2023.
290. Dr. C. Raghunathan, Scientist-F attended the meeting with Chief Engineer, CCU, Ministry of Environment, Forest and Climate Change at New Delhi on 27th March, 2023 to discuss the issues related to capital works of ZSI Regional Centres.
291. Dr. Md. Jafer Palot, Scientist-B attended a Research Advisory committee meeting at the Conference Hall of Goa, Van Bhavan, Altinho, Panaji on 27th March, 2023 and presented the final report of Important Bird Areas of Goa and the Important Coastal Marine Biodiversity Areas of Goa.
292. All the member of organizing committee attended meeting organized by ZSI Headquarters, Kolkata on 28th March, 2023 for the preapartion of "Animal Taxonomy Summit 2023"
293. S.D. Gurumayum, Scientist-E attended on line on Vulnerability Assessment, Climate Change and Adaptation Methodology for Ramsar sites in India NERAQ Collaboration ZSI and IFB on 29th March, 2023.
294. S.D. Gurumayum and G. Srinivasan, Scientist-E attended State Research Advisory Committee meeting on 31st March, 2023 at PCCF Office, Itanagar.

Training & Workshops attended by Scientists

1. Dr. Rajmohana K., Scientist-E participated in National Workshop of EIACP scheme at Ministry of Environment, Forest and Climate Change, New Delhi on 30th January, 2022.
2. Dr. Jhikmik Dasgupta, Senior Zoological Assistant attended an online training programme entitled "Learning about Insects" by Suhaib Yattoo, organized by Compassionate Living Team on 16th April, 2022.
3. Dr. P. S. Bhatnagar, Scientist-E attended Life Global Call for Ideas and Papers launched by Honourable Prime Minister on 5th June, 2022 in virtual mode.
4. Dr. B. Sinha, Scientist-E attended the virtual Global launch of the Lifestyle for Environment (LiFE) movement by Honourable Prime Minister of India on 5th June, 2022 in virtual mode.
5. Dr. B. Sinha, Scientist-E participated in the State level consultation workshop on knowledge network in Meghalaya-identifying issues & priorities for bridging science, policy & practice organised by State Council of Science, Technology & Environment (SCSTE), Meghalaya & G. B. Pant National Institute of Himalayan Environment (NIHE), Sikkim Regional Centre, Sikkim on 9th June, 2022 at Shillong.
6. Dr. P. C. Pathania, Scientist-D participated in the panel discussion of One-Week Online Refresher Training Course for Indian Forests Services Officers organized by Himalayan Coniferous Forest Research Institute, Pathaghatti, Shimla on 10th June, 2022.
7. Dr. C. Raghunathan, Scientist-F attended the Workshop on National Institution for Research and Application of natural Resources

- to Transform, Adapt and build Resilience (NIRANTAR) at India International Centre, New Delhi organized by Ministry of Environment, Forest and Climate Change on 6th & 7th June, 2022.
8. All the scientists and staff of NERC, ZSI, Shillong attended a National Webinar of '*the sacred groves of Meghalaya: a bastion of biodiversity conservation*' organized by NERC, ZSI, Shillong and Sankardev College, Shillong on 23rd June, 2022.
 9. Dr. G Srinivasan, Scientist-E conducted a Short Summer Internship training (6-27th June, 2022) on "Field Surveys, Collection, Preservation and Basic Identification of Fauna" to the M. Sc students of Christ Deemed University, Bengaluru.
 10. Dr. Aparna S. Kalawate, Scientist-E has attended a workshop on Phylogenetics organised by Biologia Life Sciences from 27th June -01st July, 2022.
 11. Dr. C. Sivaperuman, Scientist-E attended the training Saltwater Crocodile census to the frontline staff of Department of Environment and Forests, North Andaman Forests Division on 17th July, 2022; South Andaman, Baratang and Little Andaman Forests Division on 16th July, 2022 (online).
 12. Dr. S. Balakrishnan, Scientist-D participated a High End workshop / Karyasaala on "Taxonomy, Ecology and genetic Analysis of Scyphozoans (Jellyfishes) from 18th - 23rd July, 2022 under the aegis of Accelerate Vigyan sponsored by DST-SERB.
 13. Dr. Indu Sharma, Scientist-E attended the online training programme organized by Zoological Survey of India, Kolkata "*Emergency preparedness and response*" delivered by Dr. Ranee Prakash, Senior Curator of Flowering Plants and a member of the Salvage Team at the Natural History Museum on 25th July, 2022 through Webex mode.
 14. Dr. B. Sinha, Scientist-E, Dr D. Khynriam, Scientist-D & Sh B. Saikia, SZA attended a *Workshop on Inventorisation work in NERAQ Pilot*", organized by GIZ at Guwahati on 26th August, 2022.
 15. Dr. D. Khynriam, Scientist-D attended the stakeholder workshop on Protection and sustainable management of aquatic resources in the northeastern Himalayan region of India on the 26th August, 2022 at Hotel Radisson Blue, Jalukbari, Guwahati organized by GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit, GmbH).
 16. Dr. Jasmine P., Scientist-E participated in the online training course on "Fundamentals of Remote Sensing and its Oceanographic Applications" conducted by INCOIS during 05th – 09th September, 2022.
 17. Dr. Manpreet Singh Pandher, Scientist-D attended 17th International Symposium of Trichoptera, Austria through Virtual mode from 5th-9th September, 2022.
 18. Mrs. Pallabi Priyadarsini, Assistant Zoologist attended a virtual workshop / webinar on 16th September, 2022, organized by ANRC, ZSI as a part of celebration of World Ozone day, 2022.
 19. Dr. C. Venkatraman, Scientist-E, attended one-day workshop on Ozone Day celebrations organised by ANRC/ZSI, Portblair on 16th September, 2022.
 20. Dr. Gaurav Sharma, Scientist-E attended "*Training Programme on Conservation and Management of Coastal Ecosystems*" organized by the Director, Forest Research Institute, Dehradun, FRI, Dehradun on 19th-23rd September, 2022.
 21. Dr. U. Saikia, Scientist-D attended a webinar "Insights in to the taxonomy and ecology of the bats of Western Ghats" organized by the Advanced Institute for Wildlife Conservation, Tamil Nadu Forest Department on the 22nd September, 2022.
 22. Mrs. Pallabi Priyadarsini, Assistant Zoologist attended a virtual webinar as a part of celebration of wildlife week, 2022 held on 06th October, 2022 on "Learning the lesser known Science of Asian Elephants" by the Environmental Information System Resource partner on Avian ecology at Bombay Natural History Society(BNHS-ENVIS).
 23. Dr. Anil Kumar Dubey, Scientist-E attended Entomological Society of India (ESI) Annual Workshop– 2022 held at IARI, New Delhi on 14th -15th October, 2022.
 24. Dr. Saipari Sailo, Scientist-D attended training on Community Resource Management for Women Scientists (online) from 17th - 21st October, 2022 organised by Indian Institute of Forest Management, Bhopal.
 25. Dr. K.K. Bineesh, Scientist-E attended the IUCN workshop on Global status of Shark, Rays and Chimaeras held at Valencia, Spain during 18th-19th October, 2022.
 26. Smt Ilona J. Kharkongor, Dr. S D Gurumayum & Dr. Temjenmongla, Scientist-E attended the

- online Training on GLIS hosted by Ministry of Environment, Forest and Climate Change under the Chairmanship of the Additional Secretary, Ministry of Environment, Forest and Climate Change, Shri Tanmoy Kumar, on the 21st October, 2022.
27. Dr. C. Sivaperuman, Scientist-E attended a workshop cum awareness programme, in the celebration of "World Fisheries Day "for "Marine fishery resources of Andaman and Nicobar Islands & sustainable development management and conservation on 21st November, 2022.
 28. Dr. Souvik Sen, Scientist-D attended DST sponsored training programme on "Science, Technology and Emerging Trends in Governance" organized by Indian Institute of Public Administration, New Delhi from 21st November, 2022 to 25th November, 2022.
 29. Dr. P.G.S. Sethy, Scientist-E and Mrs. Anindita Ghosh, Assistant Zoologist coordinated a training workshop on "Skill & Techniques of Taxidermy", from 15th-17th November, 2022. A total of 46 candidates were participated throughout the country in this training programme.
 30. Dr. B. Sinha, Scientist-E Dr D. Khyntiam, Scientist-D & Shri. B. Saikia, Senior Zoological Assistant attended the *Stakeholders Meeting organized by GIZ, Germany* under the NERAQ project at PCCF Office, Imphal, Manipur on 19th November, 2022.
 31. Dr. Chitra J., Scientist-D, Ms. Neha Rani Jr. Zoological Assistant, Mr. Gopal Chandra Dey, Mr. Santanu Dey of Soil Zoology section attended a training programme on Identification and management of mites on fruits and vegetable crops on 22nd November, 2022 by SERB –DST, Department of Entomology, Punjab Agricultural University, Ludhiana.
 32. Dr. P.C. Pathania, Scientist-E attended an online two-week Workshop on Bird Identification and Basic Ornithology (under the Accelerate Vigyan Scheme), sponsored by the Science and Engineering Research Board (SERB), Department of Science and Technology, organized by ANRC, Zoological Survey of India, Port Blair on dated 29th November, 2022.
 33. Dr. Souvik Sen, Scientist-D attended National Level online workshop on 'Ecological Paradigms an Applied Perspective (Phase I- Ecosystem)' organised by the Zoological Society, Kolkata from 1st -19th December 2022.
 34. Dr. Sandeep Kushwaha, Assistant Zoologist attended webinar on Challenges & Strategies for Conservation of Natural Recourses Organized by Department of applied Sciences, University of Tech & applied Sciences (Muscut) Oman on 6th December, 2022.
 35. Dr. P. S. Bhatnagar, Scientist-E & Officer-in-Charge attended online training for GeM for purchase of goods on 13th December, 2022 and received certificate.
 36. Dr. Indu Sharma, Scientist-E participated in the "International Conference on "Responsible Aquaculture and Sustainable Fisheries Interact (RASHI)" from 13th - 16th December, 2022 organized by College of Fisheries, CAU (I) Tripura, College of Fisheries Lembucherra Alumni Association, Tripura and North East Society for Fisheries and Aquaculture, India through virtual mode.
 37. Dr. U. Saikia, Scientist-D attended and chaired a session in the international conference on Biodiversity and Conservation organized by St. Anthony's College, Shillong on 14th-15th December, 2022.
 38. Mrs. Anindita Ghosh, Assistant Zoologist attended training programme on "Science and Technology for Rural Societies for Women Scientist & Technologist organised by Indian Institute of Public Administration, New Delhi 19th December to 23rd December, 2022.
 39. Dr. P.S. Bhatnagar, Scientist-E attended virtual workshop on CoMo (Covid Mathematical Modelling consortium at Oxford University, UK) and made an online e presentation on "Mathematical modelling with a more realistic approach for zoonotic diseases".
 40. All the Scientists of CZRC, ZSI participated in Shining India exhibition at Ujjain 18th - 21th January, 2023 under the leadership of Dr. P. S. Bhatnagar, Scientist-E & Officer-in-Charge.
 41. Dr. Narender Sharma, Scientist-E attended online one-day training programme on "*Identification and Management of mites on fruit and vegetable crops*" organised by Department of Entomology, Punjab Agricultural University, Ludhiana, Punjab on 22nd January, 2023.
 42. Smt. Rehanuma Sulthana attended a Regional Official Language Conference held at Thiruvananthapuram, Kerala on 27th January, 2023, organised by the Department of Official Languages under the Union Ministry of Home Affairs.
 43. Dr. S. Balakrishnan, Scientist- E participated and attended one-day workshop on "Role of Biodiversity in Sustainable Lifestyle" organized

- by EIACP Centre on Biodiversity (Fauna), Zoological Survey of India, Headquarters s, Kolkata in collaboration with Hemachandra Simanta Sanskrit Vidyalaya, Jaleswar, Odisha for the school students on 16th February, 2023.
44. Shri. Akhil Nair, Senior Zoological Assistant participated in the 18 days Senior Zoological Assistant's Career Progression Mandatory Training organized by ZSI, Headquarters, Kolkata from 24th January - 10th February, 2023 at Kolkata. Secured A+ grading in the training.
 45. Shri. L. Seitinmang Khongsai, Senior Zoological Assistant attended a 2 days Training of Trainers (ToT) Programme on Conservation Education: Himalayan Biodiversity, 27th-28th February, 2023 at GB Pant Institute of Himalayan Environment.
 46. Dr. U. Saikia, Scientist-D attended an international seminar on Climate change: Impact and Resilience organized by Assam Don Bosco University between 27th-28th February, 2023 and presented a paper "An extraordinary opulence: The bat fauna of Meghalaya and conservation challenges".
 47. Dr. Lalit Kumar Sharma, Scientist-D participated in workshop of GEF-GTF project on small cats at Dudhwa National Park from 10th-11th March, 2023.
 48. Dr. Gaurav Sharma, Scientist-E participated in the "Consultation Workshop on GEF-7 Project-Strengthening conservation and resilience of globally significant wild cat landscapes through a focus on small cat and leopard conservation" organized by Global Tiger Forum, New Delhi at Dudhwa Tiger Reserve, Uttar Pradesh from 10th -11th March, 2023.
 49. Dr. Indu Sharma, Scientist-E participated as *Guest of honour* in the one day "*Regional Workshop on National Aquifer Mapping and management (NAQUIM) Programme*" organized by the Centre Ground Water Board Western Region, Jaipur in association with Centre Ground Water Board Western Region, Ahmedabad on 10th March, 2023 at CAZRI, Jodhpur.
 50. Dr. Aparna S. Kalawate, Scientist-E has attended an online training programme on Environmental Leadership and Life Skills (Women Component) from 13th - 17th March, 2023 organised by IIFM, Bhopal.
 51. Dr. Swarnakala attended International workshop on Nanopore sequencing and data analysis organized by department of Zoology, Mizoram University from 16th -29th March, 2023.
 52. Dr. Gopal Sharma, Scientist E attended a workshop entitled Socio-Economic Perspective for India's Next Few Decades 16th-17th March, 2023, organized by Asian Development Research Institute, Patna.
 53. Shri. Manish Chanfra Patel, Assistant Zoologist attended one-day regional workshop on "National Aquifer Mapping and Management (NAQUIM) Programme" Organised by Central Ground Water Board (CGWB) Mid-Eastern Region, Patna on 17th March, 2023.
 54. Dr. Yogesh Kumar, Scientist-E participated in a three days' workshop and training entitled "SAAP BANCHAO MANUSH BANCHAO" on 17th - 19th March, 2023.
 55. Dr. Sandeep Kushwaha, Assistant Zoologist participated in 5th National Editor's Summit: 18th – 19th March, 2023, at NDMC Convention Centre, Jai Singh Road, Connaught Place, New Delhi organized by Innovative Education and Scientific Research Foundation (IESRF).
 56. Ms. Debashree Dam, Scientist-B participated in a one-day workshop "Role of faunal Diversity for Sustainable Environment" as a guest speaker at DRC, ZSI, Jodhpur on 20th March, 2023.
 57. Dr. K.K. Bineesh, Scientist-E participated in one online workshop on the Use of Fish Maws – Implications for Species, Fisheries, People and Sustainability during 21st-23rd March, 2023 conducted by SFACT, London, UK.
 58. Dr. Gaurav Sharma, Scientist-E participated in the "International Workshop on Enhancing Ecosystem Services and Carbon Sequestration by improving Forest Quality and Productivity, and SLEM Knowledge Dissemination" organized by Indian Council of Forestry Research and Education at Dehradun from 22nd -24th March, 2023.
 59. Dr. P. Padmanabhan, Assistant Zoologist attended Annual State Level Workshop for officers on the topic "Ghost Net Retrieval Vital for Marine Biodiversity Conservation" organized by Tree Foundation at NCSCM, Anna University, Chennai on 29th March, 2023.

Webinars, Conferences and Seminars attended by Scientists

1. Dr. Kamal Saini, Assistant Zoologist participated in European Congress on Orthoptera Conservation (ECOCIII) organized by the Naturalis Biodiversity Center (Darwinweg 2, Leiden, Netherlands) from 1st & 2nd April, 2022.
2. Dr. A. Anand Kumar, Scientist- B virtually participated in a National Webinar “Animals in Archeology and Temple Articture” a lecture delivered by Ashis Ranjan Sahoo, ASI, Bhubaneswar on 18th April, 2022 organised by RMNH, Bhubaneswar.
3. Dr. N. Marimuthu, Scientist-D attended an International webinar entitled, “Towards data-driven action for coral reef conservation and policy” by Dr. Emily Darling, Wildlife Conservation Society, Toronto, Canada on 21st April, 2022.
4. Dr. J. S. Yogesh Kumar, Scientist-E participated on webinar entitled of “Help the corals! Get trained in tracking coral bleaching” on 21st April, 2022.
5. Dr. C. Sivaperuman, Scientist-E attended the Heber International Conference on Climate Adaptation and Resilience on 22nd April, 2022 organised by Bishop Heber College (Autonomous), Thrichirapalli, Tamil Nadu.
6. Dr. P.C. Pathania, Scientist-D attended “Expanding Horizons in Lepidoptera Research” Webinar: Sean Ryan organized by McGuire Center of Florida, USA on 26th April, 2022.
7. Dr. C. Sivaperuman, Scientist-E attended the National Webinar as a part of celebration of World Earth Day on 29th April, 2022 organised by SSM Institute of Engineering and Technology, Dindigul, Tamil Nadu.
8. Dr. L. Kosygin Singh, Scientist-E participated in the training programme on Classical Freshwater Fish Taxonomy held at Imphal during 16th to 20th May, 2022 and delivered a talk on “Types in fish taxonomy & their importance”.
9. Dr. Navneet Singh, Scientist-E & Dr. Rahul Joshi, Scientist-D attended Arctiinae Research Meet organised by Global Arctiinae Research Community on 20th May, 2022.
10. Shri. R. Sakthivel, Assistant Zoologist, participated in the International Biodiversity Day conference held at Kalaivanar Arangam, Chennai on 22nd May, 2022.
11. All the Scientists & staff members of NERC, ZSI, Shillong attended the National Webinar on *The Sacred Grooves of Meghalaya: a bastion for faunal conservation* organised jointly by Zoological Survey of India, North Eastern Regional Centre, Shillong and Department of Zoology, Sankardev College, Shillong on the occasion of International day for Biological Diversity 2022, held on 23rd May, 2022.
12. All the Scientists ZSI, Headquarters and Regional Centers attended the International Webinar titled “International Day for Biological Diversity” organized by ENVIS Centre on Biodiversity (Fauna), Zoological Survey of India, Kolkata on 24th May, 2022.
13. All the Scientists ZSI, Headquarters and Regional Centers attended an IBD International Webinar 2022 on “Invasive Alien Species of India” organised by ENVIS Centre, ZSI, Kolkata on 24th May, 2022 to observe International Biodiversity Day- 2022.
14. Dr. Jhikmik Dasgupta attended the National webinar titled “Understanding Climate Change” on 5th June 2022, organized by the Department of Zoology and IQAC, Sarojini Naidu College for Women, Dum Dum, Kolkata.
15. Dr. C. Sivaperuman, Scientist-E attended the faculties and student's orientation programme at College of Nursing, Pondicherry Institute of Medical Sciences (PIMS), Pondicherry on 10th June 2022.
16. Dr. Anil Kumar Dubey, Scientist-E attended a webinar on ‘Gangetic Dolphin – Conservation of National Heritage of India by Central Zoo Authority, Patna on 20th June, 2022.
17. Dr. Gopal Sharma, Scientist-E attended a national seminar in T.M.U. Bhagalpur from 7-9th July, 2022 and presented a paper on Methodology of Rescue and Rehabilitation of Gangetic Dolphin.
18. Dr. Amit Mukhopadhyay, Dr. Abhijna Ghosh, Assistant Zoologist Participated in the “Southeast Asian Malacological Conference” organized as a virtual mode by the Center of Excellence on Biodiversity, Chulalongkorn University and co-hosted by the University Malaysia Sabah and the National University of Laos on 14 & 15th July, 2022.

19. Dr. T. Kubendran, Scientist-D, Dr. Jhikmik Dasgupta and Mr. R. K. Kushwaha participated a webinar on “Fireflies, Ecology and Environment” organized by Environmental Management and Policy Research Institute, Bengaluru on 22nd July, 2022.
20. All the scientists participated an online webinar on the topic “Emergency preparedness and response” on 25th July, 2022. Dr. Ranee Prakash, Senior Curator of Flowering Plants and a member of the Salvage Team at the Natural History Museum delivered the talk organised by the Director, ZSI, Kolkata.
21. Dr. T. Kubendran, Scientist-D participated the XVI International Conference on Ephemeroptera and XX International Symposium on Plecoptera-2022 organized by (A virtual conference) the University of Illinois Urbana/Champaign, USA from 26-29th July, 2022.
22. Dr. Anil Kumar Dubey, Scientist-E attended a Webinar on ‘State University Research Excellence (SERB SURE) launched by DST-SERB, New Delhi on 3 August 2022.
23. All the scientists attended one-day seminar on “Unlocking the Mystery of the DNA Molecule and the secrets of the GIS Technology” on 16th August 2022 at ZSI, Kolkata for the Standard of The Pentecostal Assembly School (PAS), Bokara Steel City, Jharkhand.
24. All the scientists attended online webinar organized by Ministry of Environment, Forest and Climate Change on PM’s award initiatives under the theme ‘Environment’ on 26th august, 2022.
25. Dr. G. Maheswaran, Scientist-F, on 10 -11th September, 2022 has attended the ‘National Conference for Zoo Directors’ at Bhubaneswar being organized by the Central Zoo Authority (CZA) and Ministry of Environment, Forest and Climate Change, New Delhi.
26. Smt. Ilona J Kharkongor & Dr. G. Srinivasan, Scientist-E attended the 9th Popular Lecture on ‘Shifting Cultivation: Transformational Approaches to Sustainable Development in North-East India’ at GB Pant National Institute of Himalayan Environment, North East Regional Centre, Itanagar, on the 10th September, 2022.
27. Dr. Anil Mohapatra, Scientist-E had participated in the “National Conference on Sustainable Coastal Management in India” organized by UNDP from 10th – 11th September, 2022 at Bhubaneswar, Odisha.
28. All the Scientists attended a national webinar on “World Ozone Day” on 16th September, 2022, organised by ENVIS centre, Zoological Survey of India.
29. Dr. G. Maheswaran, Scientist-F on 19th September, 2022 attended a meeting that was organized to bring State of India Birds (SoIB-II) report Part-II by Nature Conservation Foundation and BNHS wherein Dr. G. Maheswaran and ZSI are part of the SoIB’s second edition of the report.
30. Dr. G. Maheswaran, Scientist-F on 20th September, 2022 has participated (virtually) in a workshop on PM’s GatiShakti National Master Plan being organized by the Ministry of Environment, Forest and Climate Change, New Delhi. The National Master Plan provides for various tools and functionalities to make project planning and implementation faster and more accurate.
31. Dr. Narender Sharma, Scientist-E participated in “The 9th International Conference on “Recent Trends in Bio and Material Sciences” held at Sardar Patel University, Mandi, Himachal Pradesh organized by HIM Science Congress Association on 23-24th September, 2022.
32. Dr. P.C. Pathania, Scientist-E attended online presentation/lecture on Life Sciences in the National Conference on Role of Science & Technology in Environmental Conservation and Sustainable Development in Collaboration with NITI Aayog (GoI) organized by Department of BioSciences & HPU Biological Society, Shimla on 23-24th September, 2022.
33. All the Scientists of SRC, ZSI, Chennai attended National webinar on wildlife management in India: current perspective and challenges organised by the Department of wildlife Sciences Aligarh Muslim University from 4 - 6th October 2022.
34. Dr. Supriya Nandy, Scientist-D attended one-day webinar on 20th October, 2022 for the celebration of International Fossil day, organized by Deccan College Post Graduate & Research Institute, Pune, Maharashtra.
35. Dr. K.K. Bineesh, Scientist-E attended the Shark International Conference held at Valencia, Spain during 20-22th October, 2022.
36. Dr. Temjenmongla, Scientist-D attended a virtual event on ‘The Future of Climate Justice’ organized by The University of Edinburgh, Edinburgh, on 21st October, 2022.
37. Dr. M. E. Hassan, Scientist-E attended online webinar on “Diagnosis and management of economically important insect pests in agriculture: on 9th November, 2022.
38. Dr. Temjenmongla, Scientist-D attended a webinar on “Introduction to e-taxonomy &

- creation of identification keys using Xper3", organized by Savetcon on 8th November, 2022.
39. Dr. D.S. Chand, Scientist-E participated in the 18th AZRA International Conference on "Advances in Applied Zoological Researches towards Food, Feed & Nutritional Security and Safer Environment during 10th November, 2022 at Hotel Suryansh, Bhubaneswar, Odisha, India.
 40. Dr. Jasmine P, Scientist-E attended online conference of TMS-Cushman Forums seminar by Michael Kaminski on "*The Early Evolution of Multichambered Foraminifera - new results from Saudi Arabia*" on 22nd November, 2022 organised by the Cushman Foundation.
 41. Dr. M. E. Hassan, Scientist-E attended a webinar on "Management options for Helopeltis in Cashew, Tea and Eucalyptus" organized by ICAR-DCR, Puttur and attended Webinar on "Fall Armyworm Management in South Asia" organized by CIMMYT, Nepal.
 42. Dr. Anjum N. Rizvi, Scientist-E attended International Webinar "SOILS, WHERE FOOD BEGINS" on World Soil Day, 5th December, 2022, organized by Food & Agriculture Organization of the United Nations.
 43. All the scientists attended webinar on "Role of Biodiversity Conservation in Ecosystem Functioning" Jointly Organized by Department of Zoology Dr. Harisingh Gour Vishwavidyalaya, Sagar (Madhya Pradesh) (A Central University) and Zoological Survey of India, Kolkata on 14th December, 2022.
 44. Dr. Gaurav Sharma, Scientist-E participated in "Young Women Scientist Conclave 2022-23" organized by Uttarakhand Science Education and Research Centre, Dehradun in the IRDT Conference Hall Dehradun on 14th December, 2022.
 45. Dr. Gaurav Sharma, Scientist-E, Dr. Archana Bahuguna, Scientist-E participated in the "Seminar on Dr. Vijay Veer Foundation Lecture" held in the conference hall of ZSI, NRC, Dehradun on 5th January, 2023.
 46. All the deputed scientists attended a workshop on "Capacity building workshop on implementation of provisions of CITES" hosted by ZSI on 20th January, 2023 at Hyatt Regency, Kolkata.
 47. Dr. Gaurav Sharma, Scientist-E participated in the seminar 'Water, Wetlands and Life' and delivered invited a lecture entitled "Importance and role played by Wetlands in the Conservation of Fauna in India" to B.Sc. and M.Sc. students in the conference hall of Dolphin PG Institute of Bio-Medical and Natural Sciences, Dehradun on 2nd February, 2023.
 48. Dr. P.C. Pathania, Scientist-E attended webinar on the topic "Expanding Horizons in Lepidoptera Research-Making models and mining mimics" organized by McGuire Centre, Department of Ecology & Evolutionary Biology, Princeton University, Princeton, USA on dated 7th February, 2023.
 49. Dr. Mukesh, Scientist-D attended one-day webinar jointly organized with Amity University, Noida to celebrate World Pangolin Day & delivered a talk on "Safeguarding pangolins" 16th February, 2023.
 50. Dr. Jayasree Thilak, Scientist-E and Dr. K.K. Bineesh, Scientist-E attended in the Annual Research Conference, held on 16-17th February, 2023 at Advanced Institute for Wildlife Conservation, Vandalur, Chennai and he given presentation on "Threatened Species of Batoids in the Tamil Nadu".
 51. All the Scientists of SRC, ZSI, Chennai participated and presented a poster on the topic "DNA barcoding of snake from Chennai Snake Park using non-invasive sampling and non-toxic DNA isolation method" in the two-day Annual research conference on 16 & 17th February 2023, at the Advanced institute for wildlife conservation, Vandalur, Chennai.
 52. Dr. Suranjana Banerjee attended the International Conference on "Technological Innovations in Animal Science Research and Social Transformation" at Utkal University, Bhubaneswar from 24th to 26th February, 2023.
 53. All the Scientists & staff of ZSI-Headquarters and Regional centres attended a national webinar online on 3rd March 2023 to observe "World Wildlife Day" along with commemorating 50 years of CITES, Organized by EIACP Centre on Biodiversity (Fauna), Zoological Survey of India, Kolkata.
 54. Ms. Debashree Dam, Scientist-B participated in a one-day seminar at Tega Industries, Kolkata on 4th March, 2023 as part of celebration of International Women's Day.
 55. Dr. Temjenmongla, Scientist-D attended a webinar on "Myriapod Meet-up" organized by The Marek Lab at Virginia Tech, USA, on 7th March, 2023.
 56. Dr. P.C. Pathania, Scientist-E, participated and attended two days National Conference on "Sustainable Himalayas Environment: Challenges

and Opportunities” organized by Department of Environmental Sciences, Himachal Pradesh University, Shimla on 19-20th March, 2023.

57. Dr. SD. Gurumayum, Scientist-E attended two-days workshop on “Regional Assessment of the IUCN Red List status of freshwater fishes from selected Northeast states of India” organized under the Indo-German bilateral project “NERAQ” (Protection and Sustainable Management of Aquatic Resources in the North-eastern Himalayan Region of India), Manipur University from 21st & 22nd March, 2023.

58. Dr. Aditya Kapil Valiveti, Scientist- C participated in one-day webinar on “Powering through the complexity of elemental environmental analysis” organized by Thermo Scientific™ iCAP RQplus ICP-MS instruments on 28th March 2023.

59. Dr. Aditya Kapil Valiveti, Scientist- C participated in one-day webinar on “Unpacking freshwater role: Climate mitigation measures in land system” organized by Swedish Water House, SIWI on 30th March, 2023.

Lectures delivered by Scientists

1. Dr. Sathish Kumar. V.M, Scientist-B delivered an invited lecture entitled *“Integrated Taxonomy with special reference to the Biodiversity Research in India”* at the Dolphin (PG) Institute of Biomedical & Natural Sciences, Dehradun on 08th April, 2022.
2. Dr. S. Prabakaran, Scientist -E delivered a lecture ‘Insect Diversity in Tamil Nadu – A review’ at the international conference ‘Emerging Trends in Insect Science- 2022’ organized by Entomology Research Institute, Loyola College, Chennai, University of Madras on 8th April, 2022.
3. Ms. Debashree Dam, Scientist-B delivered a lecture as an invited speaker in an interactive programme on “Science and Environment” to the students of Standard XI-XII in Kishorenagar Sachindra Siksha Sadan Government School, Contai, Purba Medinipur District, West Bengal on 12th April, 2022.
4. Dr. Gopal Sharma, Scientist-E delivered a lecture before the students of JD Women’s College Patna in the office of Zoological Survey of India, Patna during their visit to GPRC ZSI museum on 19th April, 2022.
5. Dr. C. Sivaperuman, Scientist-E delivered a talk on Climate Change and Biodiversity: An Overview Indian Scientific Expedition to Antarctica in the Heber International Conference on Climate Adaptation and Resilience on 22nd April, 2022 organised by Bishop Heber College (Autonomous), Thirichirapalli, Tamil Nadu.
6. Dr K.P. Dinesh, Scientist-D presented an online talk “DNA Barcoding and its application: students’ approach” as a resource person at the Savitribai Phule Pune University sponsored two-day National level seminar on ‘Recent Trends in Science’ on 28th & 29th April, 2022 at Asian College of Science and Commerce, Pune.
7. Dr. P. Padmanban delivered a lecture on Coastal and Marine Biodiversity of India for the U.G zoology students, Stella Mary’s College on 28th April, 2022.
8. Dr. C. Sivaperuman, Scientist-E delivered a talk on an Overview of Biodiversity with special reference to Andaman and Nicobar Islands in the National Webinar as a part of celebration of World Earth Day on 29th April, 2022 organised by SSM Institute of Engineering and Technology, Dindigul, Tamil Nadu.
9. Mr. Imran Alam, Senior Zoological Assistant of Bird Section delivered a brief lecture on bird collection housed in Bird Section and attended the queries of the 36 visiting Range officers from Coimbatore, Tamil Nadu on 2nd May, 2022.
10. Dr. Gaurav Sharma, Scientist-E delivered a lecture on topic entitled *“Insect diversity in India”* to 3 Faculty and 36 M.Sc. Zoology students of Department of Zoology, S.S.V. (P.G.) College, Hapur, Uttar Pradesh at Conference Hall of ZSI, NRC, Dehradun on 6th May, 2022.
11. Dr. N. Marimuthu, Scientist-D delivered a lecture on “Coral Biodiversity and its Restoration prospects in the Indian Sub-continent” in Lieu of International Day for Biological Diversity on 17th May, 2022 at PSNA College of Engineering and Technology, Dindigul, Tamil Nadu.
12. Dr. Gaurav Sharma, Scientist-E delivered a lecture on topic entitled *“Faunal diversity and their conservation in India”* to 2 Faculties, 28 M.Sc. Zoology and 16 B.Sc. Wildlife Science students of Baba Farid Institute of Technology (BFIT), Dehradun at Conference Hall of ZSI, NRC, Dehradun on 17th May, 2022.
13. Dr. Gopal Sharma, Scientist-E, ZSI, GPRC, Patna delivered lecture on “Conservation of

- Endangered Species of Bihar on 17th May 2022 during the visit of students of Environmental Science and Management Students of Patna Science College, Patna University Patna.
14. Dr. Santosh Kumar, Scientist-E delivered an invited talk on the '*Diversity of soil fauna and its importance in Agriculture*' on 19th May 2022 under the Faculty development program on the theme 'Contemporary Pedagogical Advancement in Agriculture Education' organised by School of Agriculture, Uttaranchal University, Dehradun.
 15. Dr. Navneet Singh, Scientist-E delivered a lead talk on the topic 'Indian Arctiinae: taxonomic progress and road blocks for future headway' organised by Global Arctiinae Research Community on 20th May, 2022.
 16. Dr. Ch. Satyanarayana, Scientist D delivered a lecture on Coral Restoration to the Officers of Forest Department of Andaman Nicobar Islands on 21st May, 2022.
 17. Dr. B. Sinha, Scientist-E delivered a thematic lecture on Building a shared future for all life on the occasion of International day for Biological Diversity 2022 organised jointly by ZSI, NERC, Shillong with and at Sankardev College, Shillong on 23rd May 2022.
 18. Dr. Archana Bahuguna, Scientist-E delivered a lecture on topic entitled "*Introduction of ZSI and on Wildlife Forensic*" to 67 Foresters/ Deputy Rangers, Forest & Wildlife Department, Haryana Forest Department during their visit to ZSI, NRC, Dehradun on 24th May, 2022.
 19. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled "*Insect orders, Collection, Preservation and Identification*" to a batch of 67 Foresters & Deputy Rangers from Haryana Forest Department, Govt. of Haryana on 24th May, 2022.
 20. Ms. Debashree Dam, Scientist-B delivered a lecture on "The Importance of marine aquarium in Aquaculture" in Regional language (Bengali) to 50 students and 2 faculty members of B.Sc., 4th semester, Aquaculture management Honours, Ramnagar College, Purba Medinipur District on 25th May, 2022.
 21. Dr. P.C. Tudu, Scientist-C delivered lecture on hands on training on the molluscan identification delivered to the student of Aquaculture Management, Ramnagar College on 25th May, 2022.
 22. Dr. Aditya Kapil Valiveti, Scientist-B lecture delivered and hands on training on the DNA Molecular & Barcoding delivered to the student of Aquaculture Management, Ramnagar College on 25th May, 2022.
 23. Dr. Gopal Sharma, Scientist-E delivered an invited lecture on Conservation of Aquatic animals of River Ganga especially Ganges River Dolphin at KILKARI Bal Bhawan, Patna on 2nd June, 2022.
 24. Dr. Gopal Sharma, Scientist-E delivered an invited lecture on Rescue and Release of Ganges River Dolphin at KILKARI Bal Bhawan, Patna on 03rd June, 2022.
 25. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled "*Climate Change and Butterflies*" on World Environment Day, 5th June, 2022 to the School Children of different schools at ZSI, NRC, Dehradun.
 26. Shri. B. Saikia, Senior Zoological Assistant delivered an introductory speech on *ZSI and its objectives* at the school-level Elocution Competition organized on the occasion of World Environment Day at NERC, ZSI, Shillong on 6th June, 2022.
 27. Dr. Avtar Kaur Sidhu, Scientist-E acted as resource person and delivered invited lecture on the topic, "Insect Diversity of Trans Himalayan Region" on 10.06.2022 at Himalayan Forest Research Institute, Shimla in one-week refresher training course for IFS Officers from 6th-10th June, 2022.
 28. Dr. C. Sivaperuman, Scientist-E delivered a talk on the Biodiversity of Andaman and Nicobar Islands and an overview of Antarctica to the Faculties and students of College of Nursing, Pondicherry Institute of Medical Sciences (PIMS), Pondicherry on 10th June, 2022.
 29. Dr. Ranjana, Scientist-E delivered two lectures to the college student from New College came for internship 21st June to 12th July, 2022.
 30. Dr. Anil Mohapatra, Scientist-E delivered a lecture on "Marine Biodiversity and Conservation: Indian Prospective" in the Webinar organized by Department of Zoology, School of Applied Sciences, Centurion University of Technology and Management, Odisha on 21st June, 2022.
 31. Dr. JayasreeThilak, Scientist-E delivered two lectures on the Collection, Preservation and Identification of Zooplankton and Fishes to the M. Sc Zoology internship students from Gurunanak College and New Man College, Chennai on 23rd June, 2022.
 32. Dr. Gaurav Sharma, Scientist-E delivered a lecture on the topic entitled '*Faunal diversity of*

- Uttarakhand* to delegates/visitors during “Mega Exhibition- Rise in Uttarakhand” held at Hotel Pacific, Dehradun on 7th July, 2022.
33. Dr. R. Babu, Scientist-E delivered lectures on “Introduction to taxonomy”, “Diversity of insects” and “Collection and Preservation of Insects” to the participants of internship programme for M.Sc. Zoology students of Loyolla College and Queen Marys College, Chennai on 8, 11, & 13th July, 2022.
 34. Dr. Gopal Sharma Scientist-E delivered a lecture in NCC Headquarters Rajendra Nagar Patna on 10th July, 2022 conservation of wild animals.
 35. Dr. Anil Mohapatra, Scientist-E delivered a lecture on “Current trends in marine fish species discovery in India” lecture delivered on 11th July, 2022, in the distinguish lecture series organized by P.G. Department of Marine Science, Berhampur University, Berhampur.
 36. Dr. Indu Sharma, Scientist-E delivered an invited lecture through power point presentation on “*Animal Diversity of Desert Ecosystem and threats to biodiversity*” to the Research Scholars of JNV University, Jodhpur on 15th July, 2022.
 37. Dr. Indu Sharma, Scientist-E delivered an invited lecture on “*General Principles of Aquaculture*” at JNV University Jodhpur to the Research Scholars on 18th July, 2022.
 38. Dr. P.C. Pathania, Scientist-D acted as resource person and delivered a Lecture on Microlepidoptera diversity of India, provides Hands on Training and also participated in field trip in the Lepidoptera Karyashala: Capacity building for young Lepidopterisist from 18th-22nd July, 2022 at WRC, ZSI Pune.
 39. Dr. Varadaraju, Scientist-D delivered two lectures to internship students one on Taxonomy and classification of Reptilia on 14th July, 2022 and another on Taxonomy and classification of Amphibia on 19th July, 2022.
 40. Dr. N. Marimuthu, Scientist-D delivered a lecture on “Influence of an environmental indicators of Hydrozoan blue button jelly bloom in the Lakshadweep Archipelago- A case study” on 20th July, 2022 in DST-SERB funded Karyasahala Workshop on Taxonomy, Ecology and Genetic Analysis of Indian Scyphozoans (Jellyfishes) at ZSI, Headquarters, Kolkata.
 41. Dr. R. Venkitesan, Scientist-E delivered introductory lecture on role and objective of ZSI to the National Biodiversity Authority Interns -a team of 36 interns of various biodiversity boards from different states visited SRC/ZSI/Chennai on 20th July, 2022.
 42. Dr. Praveen K., Senior Zoological Assistant delivered a lecture on Taxonomy of leafhoppers to the internship programme of M.Sc. Zoology students of Bharathiar University, Coimbatore and Department of Zoology, New College, Chennai from 20th June to 5th July, 2022.
 43. Dr. K. Valarmathi, Scientist-E delivered a lecture regarding the crustaceans on 22nd July, 2022 as part of the Karyasala on “Jelly Fish” organised during 18th to 25th July, 2022.
 44. Dr. Devanshu Gupta, Scientist-D delivered a Lecture on “Beetle Diversity of India in a webinar on Fireflies, Ecology & Environment on 22nd July, 2022, organized by Environmental Management & Policy Research Institute, Bengaluru through video conferencing.
 45. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled ‘Insect orders and their identification’ to a batch of 74 State Forest Service officer trainees from 2022-24 SFS Course of CASFOS, Dehradun on 22nd July, 2022.
 46. Dr. Anil Kumar, Scientist-E delivered a lecture on topic entitled ‘*birds identification*’ to a batch of 74 State Forest Service officer trainees from 2022-24 SFS Course of CASFOS, Dehradun, on 22nd July, 2022.
 47. Dr. Indu Sharma, Scientist-E delivered an invited lecture on “*Construction of typical aquaculture farm and type of Culture System*” at JNV University Jodhpur to the Research Scholars and 23rd July, 2022, respectively.
 48. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled “*Collection, Preservation and Identification of Insect Order Lepidoptera*” for 30 M. Sc. Zoology (Final Year) students of Dolphin (PG) Institute of Biomedical and Natural Medical Sciences, Dehradun on 26th July, 2022.
 49. Dr. Gaurav Sharma, Scientist-E delivered a lecture on the topic entitled ‘*Faunal diversity of Haryana*’ to delegates/visitors during “Mega Exhibition- Arising Haryana” held at Hotel Royal Grand, Hissar, Haryana on 28th July, 2022.
 50. Dr. Kamalakannan M., Senior Zoological Assistant delivered two invited lectures on ‘Tricho-taxonomy of Indian mammals and Identifying Indian mammals using dentition patterns’ to the audience of one week ZSI-SERB KARYASHALA 2022 on "Demonstrating SoPs to combat illegal wildlife trade & strengthening wildlife forensic capabilities in India" on 28th July 2022 held at ZSI, Headquarters, Kolkata through virtual mode.

51. Dr. Mukesh Thakur, Scientist-D delivered a lecture in the Workshop on “Illegal Trade in Wildlife with special emphasis to Marine Species” for the Forest & Police Officials of Maharashtra in coordination with the APCCF, Mangrove Cell, Mumbai, and WCCB –WR on 05th August, 2022.
52. Dr. C. Sivaperuman, Scientist-E delivered a talk on Biodiversity of Andaman and Nicobar Islands to the 12th standard Science students of Naval Children School, Port Blair on 5th August, 2022;
53. Dr. Gopal Sharma, Scientist-E and Dr. M. E. Hassan, Scientist-E delivered lecture to the M.Sc. (Environmental Science) students of A.N. College, Patna University, Patna on 8th August, 2022, during their visit to GPRC, Patna.
54. Dr. Gaurav Sharma, Scientist-E delivered a lecture entitled “*Studies on Faunal Diversity of India*” to 35 M.Sc. Forestry students and Faculty of Forest Research Institute (Deemed University), Dehradun, Uttarakhand in the Conference Hall of ZSI, NRC, Dehradun on 03rd August, 2022 and M.Sc. Zoology students of Doon University, Dehradun Uttarakhand on 12th August, 2022.
55. Dr. T. Kubendran, Scientist-D delivered a guest lecture on the topic “Diversity of Aquatic Insects and conservation” to UG, PG Students & Scholars, organized by PG & Research Department of Zoology, Kohima Science College, Jotsoma, Phezzhu, Kohima, Nagaland on 18th August, 2022.
56. Dr. C. Sivaperuman, Scientist-E delivered a talk on faunal diversity of Andaman and Nicobar Islands to the trainees of Forest Training Institute on 22nd August, 2022.
57. Dr. R. H. Raina, Scientist-E delivered two lectures at Govt. Degree College Kargil and Govt HSS Leh Ladakh on “*Role of Indigenous bees in Pollination ecology*” at high Land ecosystem on 22 & 23rd August, 2022.
58. Dr B. Sinha, Scientist-E delivered a lecture entitled “Role of ZSI in Documentation and conservation of Faunal Biodiversity” at Abhayapuri College on 24th August, 2022 in the local community capacity building workshop organised by GIZ local partner.
59. Shri. B. Saikia, Senior Zoological Assistant delivered a lecture on *Amphibian diversity of Northeast India* at a workshop on Biological Research at Abhayapuri College, Bongaigaon, Assam on 24th August, 2022. The said lecture was an invitation extended by the local support network of GIZ-NERAQ Project at Abhayapuri, Bongaigaon.
60. Dr. U. Saikia, Scientist-D delivered a lecture “ZSI and biodiversity research in India” to the visiting students of Pragjyotish College, Guwahati on the 30th August, 2022.
61. Dr. C. Sivaperuman, Scientist-E delivered a talk on Avifauna of Andaman and Nicobar Islands on 1st September, 2022 in the National webinar series organised by Government Model Science College Rewa, Madhya Pradesh.
62. Dr. C. Sivaperuman, Scientist-E delivered a talk on Coastal and Marine Biodiversity and its importance on 6th September, 2022 in the one-day workshop organised by ANRC/ZSI as a part of celebration of Swachh Sagar, Surakshit Sagar organized by Vigyan Prasas, Department of Science and Technology, Government of India.
63. Dr. Gopal Sharma, Scientist-E delivered a lecture on Reshaping the City with special reference to Smart City on 14th September, 2022 at Dayanand Girls High School Patna.
64. Dr. Sreeraj C.R., Scientist-C delivered a lecture on the topic *Marine Biodiversity* during the programme of “International clean-coast, safe sea day” organized at the National Institute of Technology, Kozhikode organized by DST and Vigyan Prasas on 14th September, 2022.
65. Dr. Gopal Sharma, Scientist-E delivered a lecture on “e-Waste and Management” at Shri Arvind Mahila Mahavidhyalay, Patna on 15th September, 2022.
66. Dr. M.J. Palot, Scientist-B delivered an online lecture on “Butterfly diversity of Western Ghats” for the UGC Refresher Course for teachers in Life Sciences on 15th September, 2022 organised by the UGC- Human Resource Development Centre (HRDC), University of Kerala, Thiruvananthapuram.
67. Dr. C. Sivaperuman, Scientist-E delivered a talk on Antarctica: A fascinating journey through everlasting ice on 16th September, 2022 in the one-day workshop organised by ANRC/ZSI as a part of celebration of World Ozone Day 2022.
68. Dr. Archana Bahuguna, Scientist-E delivered invited lecture on topic entitled “*Tools and Techniques for Wildlife Forensic*” at Uttarakhand Science Education & Research Center, Dehradun on 16th September, 2022.
69. Dr. Saipari Sailo, Scientist-D delivered a Guest Lecture on “Modern trends in Animal Taxonomy” at St. Aloysius College, Jabalpur on 17th September, 2022 attended by 130 students.

70. Dr. Chitra J. delivered online lecture on UGC HRDC Refresher course on “Tiny organism’s entity and community restoration role in nature conservation” at Bharathiar University, Coimbatore, Tamil Nadu on 19th September, 2022.
71. Dr. R. Babu, Scientist-E delivered a lecture on “Insect Fauna of India with special reference to Odonata” in “Refresher Course in Zoology for the University and College Teachers” organized by UGC Human Resource Development Centre, Bharathiar University, Coimbatore, on 19th September, 2022 through online mode.
72. Dr. C. Sivaperuman, Scientist-E delivered a talk on an overview of Biodiversity of Andaman and Nicobar Islands to the 35 IFS in service officers have visited on 20th September, 2022 as a part of the training programme from Indira Gandhi National Forests Academy, Dehra Dun.
73. Dr. Gaurav Sharma, Scientist-E delivered a lecture on the topic entitled “*Studies on Faunal Diversity with special reference to Coastal region of India*” to trainees Coastal Guard Officers from different 08 States & Union Territories of India organized by the Director, Forest Research Institute, Dehradun, Uttarakhand in the Conference Hall of Scientist Guest House, FRI, Dehradun on 21st September, 2022.
74. Dr. B. Sinha, Scientist-E delivered a lecture on *Opportunities in Natural History Studies of Amphibians* at Debraj Roy College, Golaghat, Assam on 21st September, 2022.
75. Shri. B. Saikia, Senior Zoological Assistant delivered a lecture on *Opportunities in Natural History Studies of Amphibians* at Debraj Roy College, Golaghat, Assam on 21st September, 2022.
76. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled “*satyrids (lepidoptera: nymphalidae: satyrinae) of the indian himalaya with comments on dry and wet season forms*” in “*The 9th International Conference on Recent Trends in Bio and Material Sciences*” held at Sardar Patel University, Mandi, Himachal Pradesh organized by HIM Science Congress Association from 23-24th September, 2022.
77. Dr. Gopal Sharma, Scientist-E delivered lecture on “Key Stone Species of River Ganga” on 25th September, 2022 at the Ganga Research Centre on the Occasion of World River Day 2022.
78. Dr. Kamalakannan M., Senior Zoological Assistant delivered three invited lectures on ‘*Morphological identification of wildlife seizures*’, ‘*Tricho-taxonomy of Indian mammals*’ and ‘*Detention based identification of Indian mammals*’ to the Tamil Nadu Forest Range Officers at the Advanced Institute for Wildlife Conservation, Tamil Nadu Forest Department, Chennai on 26 & 27 September, 2022.
79. Dr. Gaurav Sharma, Scientist-E delivered invited lecture on the topic entitled “*Conservation of Wildlife in India*” to students/researchers/ common public on inaugural function of celebration of Indian Wildlife Week at Gandhi Park, Dehradun on 2nd October, 2022.
80. Dr. Gaurav Sharma, Scientist-E delivered a lecture on the topic entitled “*Status of Faunal Diversity and their Conservation in India*” to 100 school students/researchers on celebration of Indian Wildlife Week and World Habitat Day through virtual mode organized by Pushpa Gujral Science City, Punjab on 3rd October, 2022.
81. Dr. Vasanthakumar D., Senior Zoological Assistant delivered a lecture on the employment opportunities in the field of Zoology for the students of Zoology department, Raja Doraisingam Government Arts College, Sivagangai, Tamil Nadu on 3rd October, 2022.
82. Dr. P. Padmanapan invited talk on Marine Reptiles of India and their conservation in connection with Wildlife Week Celebrations with special reference Reptiles at Chennai Snake Park on 6th October, 2022.
83. Dr. Jasmine P., Scientist-E given an invited talk on Scope of life Science current scenario and future prospectus on 7th October, 2022 to St. Stephens College, Kerala.
84. Dr. T. Kubendran, Scientist-D delivered lecture on “Faunal Diversity of Trans-Himalaya with Special Reference to Aquatic Insects” on the occasion National Wildlife Week Celebration organized by PG and Research Department of Zoology, Parasakthi College for Women, Courtallam, Tamil Nadu on 08th October, 2022 through Google meet (online platform).
85. Dr. P.C. Pathania, Scientist-E delivered an invited talk on the topic entitled “Diversity of Microlepidoptera moth’s fauna from India and its economic importance” in the 9th International Conference “Recent trends in Bio and Material Sciences” at Sardar Patel University, Mandi, Himachal Pradesh on 10-11th October, 2022.
86. Dr. C. Sivaperuman, Scientist-E attended as Chief Guest and delivered a talk on Biodiversity

- Andaman and Nicobar Islands, vulnerability & adaptation to climate change on 11th & 17th October, 2022 in the seminar on Science & Technology communication of best practices and awareness raising on climate change & biodiversity conservation in Andaman & Nicobar Islands sponsored by the National Council for Science and Technology Communication, Department of Science and Technology, Government of India organized by CPREEC, Port Blair for the teacher trainees and college students.
87. Dr. Archana Bahuguna, Scientist-E delivered a lecture on topic entitled “*Herpetofauna*” to 48 students of Alpine Group of Institutes, Dehradun at Conference Hall of ZSI, NRC, Dehradun on 12th October, 2022.
 88. Dr. C. Sivaperuman, Scientist-E delivered a talk on the Biodiversity of Andaman and Nicobar Islands and its conservation to the Tagore Government College of Education, Port Blair on 19th October, 2022.
 89. Dr. D. S. Suman, Scientist -E delivered a lecture on “Mosquito vectors, transmitted diseases and the role of biotechnology and microbiology in their management” to the M. Sc. Students and research scholars of Microbiology, Biotechnology and Pharmacy departments of Kota University, Kota Rajasthan on 20th October, 2022.
 90. Dr Sachin R. Patil, Assistant Zoologist delivered a lecture on ‘Spider Taxonomy’ to M.Sc. students from Bharati Vidyapeeth (BVEER), Pune on 20th October, 2022.
 91. Smt. Ilona J Kharkongor, Scientist-E delivered a lecture on Taxonomy of Butterflies to the visiting BSc students of Dhakuakhana College, North Lakhimpur, Assam on 21st October, 2022.
 92. Dr. G Srinivasan, Scientist-E delivered a talk on Collection, Preservation and Identification of Orthoptera to the visiting BSc students of Dhakuakhana College, North Lakhimpur, Assam on 21st October, 2022.
 93. Dr. S.D. Gurumayum, Scientist-E delivered a lecture on Ornamental fishery potential of North east India to the visiting BSc students of Dhakuakhana College, North Lakhimpur, Assam in APRC office Auditorium on 21st October, 2022.
 94. Dr. N. Marimuthu delivered a lecture as a key note speaker on “Coral reef ecosystem: Important facts on their restoration process for the blue economy” given to PG & Research Department of Botany, Thiagarajar College (Madurai Kamaraj University), Madurai through offline mode on 27th October, 2022.
 95. Dr. C. K. Mandal, Scientist-B delivered lecture on Earthworm fauna to P.G Students (35 nos.) of Bodoland University at Assam on identification on 27th October, 2022.
 96. Dr. G. Maheswaran, Scientist-F delivered a lecture on Birds to the 35 M. Sc (Zoology) students from Bodoland University, Kokrajhar, Assam on 27th October, 2022.
 97. Dr. C. Sivaperuman, Scientist-E delivered a talk on the Migratory Birds of Andaman and Nicobar Islands for the officials of INS Utkrosh, Indian Navy on 28th October, 2022 organised by Station Flight Safety Officer, INS Utkrosh.
 98. Dr. S. Balakrishnan, Scientist-E & Dr. Aditya Kapil Valiveti, Scientist-B, delivered interactive lecture aquarium fauna and marine museum with B.Sc., Zoology, 26 students and 4 faculty members of Department of Zoology, Bajkul Milani Mahavidyalaya College, Bajkul, Purba Medinipur on 7th November, 2022.
 99. Dr. R. Venkitesan, Scientist-E delivered one lecture to the U. G students of Coimbatore College on 9th November, 2022.
 100. Dr. R. Babu, Scientist-E explained the collection and preservation of insects and their diversity in India to the Under Graduate students of Zoology (38 students of B.Sc. III Year), PSG College of Arts and Science, Coimbatore visited the Centre on 09th November, 2022 along with Dr. M. Senguttuvan, HOD and Dr. K.M. Priyadharshini.
 101. Dr. Anil Kumar, Scientist-E participated in the ‘*National Symposium on Avian Biology 2022*’ from 9-11 November, 2022 as invited speaker and delivered talk titled ‘*Variations in the spectro-temporal song characteristics in four sub-species of Indian Robin, Copsychus saularis*’ under the theme “Avian Acoustics” on 10th November, 2022.
 102. Dr. B. Sinha, Scientist-E delivered a lecture entitled “Knowhow for documentation of fauna in the People’s Biodiversity Register” in the training programme on documentation of fauna in the PBRs to 18 new field project associates of Meghalaya Biodiversity Board on 10th November 2022 at ZSI, NERX, Shillong.
 103. Dr. U. Saikia, Scientist-D delivered a lecture “ZSI and biodiversity research in India” to the visiting students of Barbhag College, Nalbari on the 10th November, 2022.
 104. Dr. U. Saikia, Scientist-D delivered a lecture “Importance of taxonomic research in Indian

- context” to the visiting students of Kokrajhar Science College, Kokrajhar on the 11th November, 2022.
105. Dr. C. Venkatraman, Scientist-E delivered a lecture on ‘Wetland Birds of India and its Importance’ in five-day training course on ‘*Bird Identification and Basic Ornithology*’ for the frontline staff of the department of Environment and Forests, Andaman and Nicobar Islands during 7th - 11th November 2022 organized by ANRC, ZSI, Portblair.
 106. Dr. N. Marimuthu, Scientist-D delivered a lecture as a key note speaker on “Coral reef habitat assessment based on benthic data and variables under Conserving the threatened” given to Natural Science Association, Department of Zoology, School of Life Sciences, St. Joseph’s University, Bengaluru through webinar mode on 12th November, 2022.
 107. Dr. K.P. Dinesh, Scientist-E delivered a short talk on ‘Need for biodiversity assessment’ to the Masters student of Indapur College, Pune Maharashtra at ZSI, WRC, Pune on 14th November, 2022.
 108. Dr. C. Sivaperuman, Scientist-E delivered a talk on Avifauna of Andaman and Nicobar Islands; Bird watching techniques and Ecosystem services to the trainees of the two-week workshop on Bird Identification and Basic Ornithology on 15th & 17th November, 2022.
 109. Dr. Anil Kumar, Scientist-E delivered invited lecture on topic entitled “*Avifauna of Himalayas with special reference to Song & Calls*” in the workshop on “*Bird Identification and Basic Ornithology*” under the Accelerate Vigyan (AV) sponsored by the Science & Engineering Research Board (SERB), Department of Science & Technology, Government of India, from 15th-28th November, 2022, organized by Zoological Survey of India, Andaman and Nicobar Regional Centre, Port Blair.
 110. Dr. C. Venkatraman, Scientist-E, delivered two lectures on ‘Taxonomic identification of Birds’ and ‘Wetland Birds of India and its Importance’ in two-week workshop on “*Bird Identification and Basic Ornithology during 15th - 28th November, 2022*” organized by ANRC, ZSI, Portblair, Andaman.
 111. Mr. Imran Alam, Senior Zoological Assistant of Bird Section delivered a brief lecture on bird collection housed in Bird Section and attended the queries of the 44 Range Forest Officer trainees from Gujarat Forest Range College, Narmada, Gujarat on 16th November, 2022.
 112. Smt. J. Lyngdoh, Scientist-E, Dr. U. Saikia, Scientist-D, Sh A. B. Meetei, Assistant Zoologist, Sh Amit Rana, Assistant Zoologist & Sh B. Saikia, Senior Zoological Assistant delivered a lecture on the collection, preservation and identification of respective group to the visiting students of Nagaland University on 16th November, 2022.
 113. Dr. Archana Bahuguna, Scientist-E delivered invited lecture entitled “*Science Communication and Methodology in Wildlife Forensic*” in workshop titled “*Science Communication and Methodology*” held at and organized by Gurukul Kangri Deemed to be University, Haridwar sponsored by DST on 17th November, 2022.
 114. Dr. C. Sivaperuman, Scientist-E delivered a talk on Marine Biodiversity of Andaman and Nicobar Islands to the trainees of the Forest Training Institute, Department of Environment and Forests on 18th November, 2022.
 115. Dr. S.K. Pati, Assistant Zoologist delivered a guest lecture on “Animal Taxonomy” for the graduate and postgraduate students of the New Arts, Commerce and Science College (Autonomous), Ahmednagar on 22nd November, 2022.
 116. Dr. M.J. Palot, Scientist-B delivered an online lecture on “Butterfly diversity of Western Ghats- An overview” in connection with the inauguration of the Zoology Association of Deva Matha College, Kuravilangad, Kottayam, Kerala on 24th November, 2022.
 117. Dr. Gopal Sharma, Scientist E delivered a lecture on River Ganga and the conservation of its fauna at RN College Hajipur, Bihar organised by the Vaishali District NYK Bihar on 25th November, 2022.
 118. Dr. A. Gokul, Scientist-B delivered a lecture on “Basic Science and its significance to social and communal welfare” to the students of De Paul school, Gopalpur on 26th November, 2022.
 119. Dr. C. Sivaperuman, Scientist-E delivered a talk on Biodiversity, Climate Change and Island ecosystem in the two-day capacity building workshop on Climate Change in sustainable development for school teachers organised by Jawaharlal Nehru Rajkeeya Mahavidyalaya on 1st December, 2022.
 120. Dr. Gopal Sharma, Scientist E, delivered an online invited lecture on Faunal Diversity of Bihar-Threats and Conservation on in the 4th Faculty Induction Programme on 1st December, 2022 organized by UGC-HRDC Patna University.

121. Dr. C. Sivaperuman, Scientist-E served as external member for selection of research personnel in various external funded projects at Central Island Agricultural Research Institute, Port Blair on 2nd, 5th & 6th December, 2022.
122. Dr. T. Kubendran, Scientist-E delivered a lecture titled “Integrative Taxonomy and importance of Mayflies” to Central Calcutta Science & Culture Organization for youth for Vigyan Sera Pratibha & Young Scientist Award 2022 at Kolkata on 4th December, 2022.
123. Dr. C. Sivaperuman, Scientist-E delivered a talk on Biodiversity conservation of Andaman and Nicobar Islands and its challenges to the IFS probationers on 4th & 5th December, 2022 organised by Indira Gandhi National Forests Academy, Dehradun (Two batches 35 + 35 trainees).
124. Dr. N. Marimuthu, Scientist-D delivered a talk on “Methodologies for study and analysis of Coral Reef Ecosystem” given to faculty members of UG & PG colleges and research scholars around India, organised by The Executive Council of the Zoological Society, Kolkata through online mode on 6th December, 2022.
125. Dr. K.A. Subramanian, Scientist-E delivered a lecture on Aghastyamalai Biosphere Reserve project preparation meeting with BSI, Kerala and Tamil Nadu Forest department on 6th December, 2022.
126. Dr. Kamalakannan M. Senior Zoological Assistant delivered lecture on ‘Mammal diversity’ to the B.Sc. and M.Sc., Zoology students from St. Joseph’s College (Autonomous), Irinjalakuda, Thrissur district, Kerala at WGRC, ZSI on 6th December, 2022.
127. Dr. C. Sivaperuman, Scientist-E delivered a talk on Faunal diversity with special reference to avifauna of Andaman & Nicobar archipelago in the three-day workshop on Coastal and marine biodiversity of island ecosystems under the “Training of Personnel of Other Stakeholders” sponsored by the Ministry of Environment, Forest and Climate Change, Government of India on 8th December, 2022.
128. Dr. K.A. Subramanian, Scientist -E delivered a lecture based on Climate Change Mission meeting, Chennai on 8th & 9th December, 2022.
129. Dr. J.S. Yogesh Kumar Scientist-E delivered guest lecture on the topic entitled “*Impact of Climate Change on reef fish diversity in India*”. The program organized by Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu on 8th December, 2022.
130. Dr. C. Venkatraman, Scientist-E delivered a talk on “An Overview of Coastal and marine Biodiversity of India” in three-day workshop on *Coastal and Marine Biodiversity of Island Ecosystems* held during 8th to 10th December, 2022 organised by ANRC, ZSI, Portblair,
131. Dr. Vasantha kumar D., Senior Zoological Assistant delivered a guest lecture on “Taxonomy and biology of Gall midges” and conducted practical session from 9th-12th December, 2022 for the participants of National workshop on “Capacity Building in Dipteran Biosystematics: Taxonomic and ecological diversity, conservation of Diptera” from University of Agricultural Sciences, Bangalore.
132. Dr. C. Sivaperuman, Scientist-E delivered a talk on Coastal and Marine Biodiversity of Andaman and Nicobar Islands in the three-day workshop on Coastal and marine biodiversity of island ecosystems under the “Training of Personnel of Other Stakeholders” sponsored by the Ministry of Environment, Forest and Climate Change, Government of India on 10th December, 2022.
133. Dr. Aditya Kapil Valiveti, Scientist- C, lecture aquarium fauna and marine museum with 84 college students (B.Sc. Zoology) along with faculty belongs to Sitananda College, Nandigram, Purba Mednipur visited on 12th December, 2022.
134. Dr. A. K. Sidhu, Scientist-E, Dr. Boni Amin Laskar, Scientist-E and Dr. Manpreet Singh Pandher, Scientist-D delivered lecture to 77 B. Sc. Final year students of Government degree college Solan on “Rare and Endemic fauna of Cold deserts of India and their conservation” on 12th December, 2022.
135. Dr. Tamal Mondal, Scientist-D delivered an invited talk on Methodologies for Marine Ecosystem for Zoological Society of Kolkata on 13th December, 2022.
136. Dr. C. Sivaperuman, Scientist-E delivered a talk on Terrestrial Faunal Diversity of Andaman and Nicobar Islands in the five-day training course on Para-taxonomy including preparation of people’s biodiversity registers (PBR) for the frontline staff of Department of Environment and Forests, on 13th December, 2022.
137. Dr. K.A. Subramanian, Scientist -E delivered a lecture at Biodiversity and Conservation of Aquatic Insects on 14th December, 2022 of the “Role of Biodiversity and Conservation in Ecosystem Functioning”. Department of Zoology, Dr. Harisingh Gour Vishwavidyalaya, Sagar, Madhya Pradesh.

138. Dr. Kamalakannan M. Senior Zoological Assistant delivered an invited lecture on '*Role of mammals in ecosystem functioning*' to the academicians and different college students from all over our country at the Dr. Harisingh Gour University (A Central University), Sagar, Madhya Pradesh on 14th December, 2022 through virtual mode.
139. Dr. Aditya Kapil Valiveti, Scientist- C, delivered interactive lecture aquarium fauna with young minds class VII, VIII & IX belongs to Sarkari Banga Vidyalaya (High.), Sonarpur, Kolkata during their visit on 15th December, 2022.
140. Dr. Anjum N. Rizvi delivered presentation on Activities and Achievements of ZSI to newly recruited Senior Zoological Assistant on 20th December, 2022.
141. Dr. K.A. Subramanian, Scientist-E delivered a lecture on 20th December, 2022 on Project Proposal Presentation on Biosphere Reserves, Ministry of Environment, Forest and Climate Change.
142. Dr. C.R. Sreeraj, Scientist-D delivered a lecture at Nehru Arts and Science College, Kanhangad, Kasaragod district, Kerala on 20th December 2022 as part of the program "Talk with a Scientist" organized by the Department of Zoology.
143. Dr. C. Sivaperuman, Scientist-E delivered a talk on an overview of Biodiversity of Andaman and Nicobar Islands at Jawahar Navodaya Vidyalaya, Panchavatti, Rangat, North & Middle Andaman on 21st December, 2022.
144. Dr. Anil Kumar, Scientist-E given presentation on ZSI research programme, on the fauna of Abohar WLS, Punjab, at PCCF Office, Forest Complex, Mohali on 21st December, 2022 to avail the permission of PCCF (WL), SAS Nagar, Punjab.
145. Dr. Anjum N. Rizvi delivered talk on "Nematodes" to newly recruited Senior Zoological Assistant on 22nd December, 2022.
146. Mr. Imran Alam, Senior Zoological Assistant of Bird Section delivered a brief lecture on bird collection housed in Bird Section and attended the queries of the 27 students of College of Fishery Science, Udgir, Maharashtra on 22nd December, 2022.
147. Dr. P.C. Tudu, Scientist-D, delivered lecture "Marine Biodiversity and Conservation" to B.Sc. students of J.K. College, Purulia, West Bengal on 23rd December, 2022.
148. Dr. Gopal Sharma, Scientist-E, delivered a lecture on the ecosystem of Ganga River and its significance on 27th December, 2022 organised by NYK at Magadha Mahila College, Patna University, Patna.
149. Dr. SD Gurumayum, Scientist-E delivered lectures on "International Mountain day" on 11th November 2022 at GB Pant Institute National Institute of Himalayan Environment on Women move Mountains and online lecture on "Benthos in Inland Fisheries" at ICAR -CIFRI Barrack pore" on 28th December, 2022.
150. Dr. Swetapadma Dash, Scientist-E delivered a lecture on "Classification of Hemiptera Fauna" for orientation Programme for Newly Joined Senior Zoological Assistant on 28th December, 2022.
151. Dr. Amit Mukhopadhyay, Assistant Zoologist delivered a lecture at CIFRI, Barrackpore on 28th December, 2022 on "Biodiversity, status, taxonomy of Freshwater Mollusca in India".
152. Dr. Tamal Mondal, Scientist-D delivered a talk on Marine Biodiversity, Protected and Schedule Animal, and CITES for newly appointed Senior Zoological Assistants, ZSI/Kolkata on 30th December, 2022 as part of their Orientation Course.
153. Dr. Swetapadma Dash, Scientist-E delivered a lecture on "Taxonomy of Aquatic Bugs" to a seven member team from Central Pollution Control Board, Kolkata on 1st January, 2023.
154. Dr. Gaurav Sharma, Scientist-E delivered a lecture on topic entitled "*Status and Conservation of Faunal Diversity in India*" to 102 Trainees of 54th RR IFS Probationers visited from Indira Gandhi National Forest Academy, Dehradun held in the conference hall of ZSI, NRC, Dehradun on 2nd January, 2023.
155. Dr. K.K. Bineesh, Scientist-E presented an invited talk in Indian Science Congress held at Nagpur during 3rd-7th January, 2023.
156. Dr. Gaurav Sharma, Scientist-E delivered a lecture on topic entitled "*Role of ZSI in Conservation of Fauna*" to 42 delegates in the "Seminar on Dr. Vijay Veer Foundation Lecture" held in the conference hall of ZSI, NRC, Dehradun on 5th January, 2023.
157. Dr. Anil Kumar, Scientist-E delivered invited lecture on topic entitled '*Importance of wetlands and contribution of ZSI for wetland faunal documentation and conservation*' in the meeting titled 'Stakeholder Meeting for Integrated Management Planning of Gobind Sagar, held

- on 05th January, 2023 at Hotel Sagar View, Bilaspur, Himachal Pradesh.
158. Dr. D. S. Suman, Scientist-E delivered a lecture on “Mosquito surveillance methods”. National Institute of Virology (NIV) Pune, MH on 6th January, 2023.
 159. Dr. V.D. Hegde, Scientist-E delivered a lecture to Zoology students of MES Mampad College, Malappuram on 6th January, 2023.
 160. Dr. N. Marimuthu, Scientist-D delivered lecture on “Introduction on General Non-Chordata fauna with reference to Corals and Echinodermata” to newly joined Senior Zoological Assistants, organized by Zoological Survey of India, Kolkata on 10th January, 2023.
 161. Dr. C.K. Mandal delivered a lecture on “Annelid fauna” to newly joined Senior Zoological Assistants, organized by Zoological Survey of India, Kolkata on 10th January, 2023.
 162. Dr. Ranjana, Scientist-E delivered a lecture on techniques on DNA isolation and barcoding of animal fauna to students from Ethiraj college for Women Chennai on 10th January, 2023.
 163. Dr. V.D. Hegde, Scientist-E delivered a lecture to M.Sc. Applied Zoology students of University of Calicut during Orientation course organized by ZSI-WGRC, Kozhikode on 11th January, 2023.
 164. Dr. Bindu L., Scientist-E delivered a talk on ‘Collection, preservation and identification of Protozoa’ to the M.Sc. Applied Zoology students of University of Calicut, on 11th January, 2023.
 165. Dr. Kamalakannan M. Senior Zoological Assistant delivered a lecture on ‘*Mammal diversity and their role in ecosystem functioning*’ to the M.Sc. Zoology students of University of Calicut, on 11th January, 2023.
 166. Dr. P. Girish Kumar, Scientist-D delivered a lecture on ‘*Hymenoptera*’ and imparted training on ‘*Insect collection and preservation techniques*’ to the 3rd semester M.Sc. students of the Department of Zoology, University of Calicut on 11th January, 2023.
 167. Dr. R. Aengals, Scientist-E delivered lecture on 12th January, 2023 Reptiles of India to the Internship training students from Department of Zoology Ethiraj College for Women Chennai.
 168. Shri. Amal S. Senior Zoological Assistant delivered lecture on “*Morphology of Insects*” to 3rd semester M.Sc. students of the Department of Zoology, University of Calicut on 12th January, 2023.
 169. Dr. R. Babu, Scientist-E delivered lectures on (i) Diversity of Insects and (ii) Collection and Preservation of Insects to the internship programme students (B.Sc. Zoology) from Ethiraj College for Women, Chennai on 13th January, 2023.
 170. Dr. Indu Sharma, Scientist-E delivered an invited lecture entitled “*High Altitude Cold Desert: Habitat, Fauna and Challenges*” in the International Conference at Sikar Rajasthan on “SCITECHCON-2023, *An International Conference on Emerging Challenges, their Solutions and Recent Advances in Science and Technology*” on 13th January, 2023 at Shobhasaria Group of Institute, Sikar.
 171. Dr. V.D. Hegde, Scientist-E delivered a lecture to B.Sc. and M.Sc. Zoology students of Kannur University during workshop organized in Kannapuram by ZSI-WGRC, Kozhikode on 14th January, 2023.
 172. Shri. Sreejith S. Kumar, Senior Zoological Assistant delivered a lecture on ‘*Animal Taxonomy*’ during *Hands on Training workshop on Animal Taxonomy* in collaboration with Youth Voice, Edakkeppuram on 14th January, 2023 for school and college students at Edakkeppuram UP School, Kannapuram.
 173. Dr. N. Marimuthu, Scientist-D delivered talk on “Corals and Gorgonids” in the Capacity Building workshop for frontline staff of West Bengal Forest Department on identification of scheduled animals, organized by Zoological Survey of India, Kolkata on 16th January, 2023.
 174. Dr. Navneet Singh, Scientist-E, Dr. Mukesh Thakur, Scientist-D, Dr. Tamal Mandal, Scientist-D delivered a talk during Capacity Building workshop for frontline staff of West Bengal Forest Department on 16th January, 2023.
 175. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled “*Collection, Preservation and Identification of Insects*” to the participants of the training Hands-on Training on Animal Taxonomy on 17th January, 2022 organised by Uttarakhand Science Education & Research Centre in collaboration with Zoological Survey of India, Dehradun.
 176. Dr. Anil Kumar, Scientist-E delivered illustrated talk on Avian Taxonomy and identification techniques on 17th January, 2023 in Hands-On-Training on Animal Taxonomy” held at ZSI, NRC, Dehradun from 16- 21st January, 2023, and trained over 70 participants. Identification of birds in field was undertaken on 20th January, 2023 during field tour to Asian Conservation Reserve.

177. Dr. Gaurav Sharma, Scientist-E delivered a lecture on topic entitled "*Mammalian Diversity and their conservation in India*" to 65 Trainees of "*Hands on Training on Animal Taxonomy*" organized jointly by Uttarakhand Science, Education and Research Centre, Government of Uttarakhand and Zoological Survey of India, Northern Regional Centre, Dehradun held in the conference hall of ZSI, NRC, Dehradun on 18th January, 2023.
178. Dr. Archana Bahuguna, Scientist-E delivered a lecture on topic entitled "*Herpeto fauna: Taxonomy and DNA barcode*" and also given hands on practical training to participants on DNA barcode during training programme "*Hands on Training on Animal Taxonomy*" organized by ZSI, NRC, Dehradun in collaboration with USERC on 18-19th January, 2023.
179. Dr. T. Kubendran, Scientist-D delivered a lecture on "Integrative Taxonomy, Biomonitoring Potential and Conservation Strategies of Aquatic Insects with special Reference to Mayflies (Insecta: Ephemeroptera)" to International Conference on "Integrated Sciences for Sustainable Future" organized by the Department of Microbiology & Zoology, Nadar Saraswathi College of Arts & Science, Theni, Tamil Nadu on 19th & 20th January, 2023.
180. All the Scientists of ZSI, Headquarters delivered lectures for the orientation programme for newly joined Senior Zoological Assistants held at ZSI, Headquarters from 20th December, 2022 to 17th January, 2023.
181. Dr. Atanu Naskar, Assistant Zoologist delivered a lecture on Taxonomy-Understanding the world around you! to all newly recruited Senior Zoological Assistants on 23rd January, 2023 at ZSI, Kolkata.
182. Dr. A. K. Dubey, Scientist-E delivered a lecture on "Biodiversity Faunal databases" for Career Progression Mandatory Training for Senior Zoological Assistant on 25th January, 2023.
183. Dr. C. Sivaperuman, Scientist-E delivered a talk on An Overview of Island Biodiversity, Conservation and Management in the 46th Indian Social Science Congress, held during 27th - 31st January, 2023 at Bharathidasan University, Tiruchirappalli, Tamil Nadu.
184. Dr. D. S. Suman, Scientist-E delivered a lecture on "Organisms/Insects of medical and agricultural importance" for "Career Progression Mandatory Training for Senior Zoological Assistant" at ZSI, Kolkata on 27th January, 2023.
185. Dr. C. Sivaperuman, Scientist-E delivered a talk on Status and Species Diversity of Avifauna in Important Bird Areas of Andaman and Nicobar Islands in the 46th Indian Social Science Congress, held during 27th - 31st January, 2023 at the Bharathidasan University, Tiruchirappalli, Tamil Nadu.
186. Dr. C. Sivaperuman, Scientist-E delivered a talk on an overview of Biodiversity of Andaman and Nicobar Islands at Department of Zoology, Government Arts and Science College, Kumbakonam on 1st February, 2023.
187. Dr. C. Sivaperuman, Scientist-E delivered a talk on an overview of Biodiversity of Andaman and Nicobar Islands (Tamil) & Motivational Speech at Department of Tamil, Government Women College, Kumbakonam on 2nd February, 2023.
188. Dr. Gaurav Sharma, Scientist-E delivered invited lecture on topic entitled "*Importance and role played by Wetlands in the Conservation of Fauna in India*" to B.Sc. and M.Sc. students in the conference hall of Dolphin PG Institute of Bio-Medical and Natural Sciences, Dehradun on 2nd February, 2023.
189. Dr. Gaurav Sharma, Scientist-E delivered a lecture entitled "*Faunal Diversity and their conservation in India*" to M.Sc. Zoology and Botany students of Hazarimal Somani College, Mumbai, Maharashtra in the conference hall of ZSI, NRC, Dehradun on 2nd February, 2023.
190. Dr. S. Balakrishnan, Scientist-E delivered an invited lecture on "Coastal Marine Biodiversity: Challenges, Threats and their Conservation" in DBT- FIST sponsored- International Conference on Contemporary Research for the Sustainable Development of Biological Sciences (ICCRSDBS - 2023), organized by the Vivekanadha College of Arts & Sciences for Women (Autonomous), Tiruchengode, Tamil Nadu on 2nd February, 2023.
191. Dr. C. Sivaperuman, Scientist-E delivered a talk on an Overview of Antarctica: Antarctica Research Expedition Experience at Centre for Advance Studies in Marine Biology, Annamalai University on 3rd February, 2023.
192. Dr. Rajmohana K., Scientist-E delivered a lecture on Beneficial and Harmful Insects at CPMT- 2023 on 7th February, 2023.
193. Dr. Gaurav Sharma, Scientist-E delivered an invited lecture on topic entitled "*Animal Taxonomy*" to M.Sc. students in the conference hall of Dolphin PG Institute of Bio-Medical and Natural Sciences, Dehradun on 7th February, 2023.
194. Dr. P. Girish Kumar, Scientist-D delivered a lecture on 'Insects' to the B.Sc. students of the Department of Zoology, Govt. Arts & Science College, Kozhikode on 7th February, 2023.
195. Dr. K.A. Subramanian, Scientist-E delivered a lecture on Biodiversity and Conservation of

- Freshwater Macroinvertebrates. MES, Mampad, Kerala on 8th February, 2023.
196. Shri. B. Saikia, Senior Zoological Assistant delivered a lecture on *Amphibian Diversity and Future scopes in NE India* at ZSI, Kolkata during the CPMT training on 6th February, 2023 delivered a group presentation on *Mission LiFE* at ZSI, Kolkata during the CPMT training on 8th February, 2023.
 197. Dr. V.D. Hegde, Scientist-E interacted with NAAC Peer committee on 9th and 10th February 2023 as an alumni and presented a PPT during the interaction between NAAC peer committee and alumni of SDM College, Honnavar on 9th February, 2023.
 198. Dr. P. C. Pathania, Scientist-E delivered keynote address in the seminar organized by the A.S. College, Samrala Road, Khanna, Punjab on 13th February, 2023.
 199. Dr. Manpreet Singh, Scientist-D delivered an invited talk in 'Regional Level Seminar on Present Status, Distribution and Ecology of Wildlife in Punjab' organized by A.S. College, Khanna on 13th February, 2023, sponsored by College Development Council Panjab University, Chandigarh.
 200. S.D. Gurumayum, Scientist-E and Ilona J. Kharkongor & Dr. Temjenmongla, Scientist-D delivered lectures on LiFE: Conservation of Water and Energy during the awareness campaign organized at Himalayan University, Jullong of Itanagar Capital-Complex on 15th February, 2023.
 201. Dr. K.A. Subramanian, Scientist-E delivered a lecture on Biodiversity and Conservation of Freshwater Macroinvertebrates, Nirmala College, Coimbatore on 17th February, 2023. S.D. Gurumayum, Scientist-E delivered a talk on Biodiversity of Chakpi River at One-day Workshop cum Brainstorming session on "Conservation action for Chakpi River, Manipur on 20th February 2023 organised by GIZ's -Protection and Sustainable Management of Aquatic Resources in the North-Eastern Himalayan Region of India.
 202. Dr. J.S. Yogesh Kumar Scientist -E delivered a lecture to the school students, Dwarkanath Balika School, Canning under the Mission LiFE programs on 21st February, 2023. A total of 90 students were participated under this program.
 203. All the Scientists of ZSI, Headquarters delivered lectures on "Career Progression Mandatory Training (CPMT)" Programme, held at ZSI, Headquarters, Kolkata from 24th January, 2023 to 10th February, 2023 at Kolkata.
 204. S.D. Gurumayum, Scientist-E delivered a lecture on Fish diversity of Arunachal Pradesh on 27th February, 2023 during 2 days Training of Trainers (ToT) Programme on Conservation Education: Himalayan Biodiversity at GB Pant Institute of Himalayan Environment.
 205. Dr. S. Balakrishnan, Scientist-E delivered an invited lecture on "Coastal Marine Biodiversity" in Tamil, organized by Government Higher Secondary School, Thenkodipakkam, Tamil Nadu on 27th February, 2023.
 206. Dr. S.D. Gurumayum, Scientist-E delivered a talk on Vertebrate Fauna of Arunachal Pradesh, and Dr. Temjenmongla delivered a talk on Millipede –The unsung Hero on National Science Day on 28th February, 2023 at the Himalayan University, Arunachal Pradesh.
 207. Dr. Gopal Sharma Scientist-E delivered a lecture on Macro fauna of Bihar in Bihar State Pollution Control Board Patna on 3rd March, 2023.
 208. Dr. D. S. Suman, Scientist-E delivered a lecture on "A technology transfer talk delivered on "Autodissemination technology for mosquito control at Rutgers University, NJ, USA" on 3rd March, 2023.
 209. Dr. Sreeraj C.R., Scientist-D inaugurated the butterfly garden at Government Vocational Higher Secondary School, Atholi, Kozhikode and delivered a lecture on "Importance of butterfly gardens" on 6th March, 2023.
 210. Dr. P.C. Pathania, Scientist-E delivered invited talk on the topic "Insect diversity and their economic importance" in the Refresher course on BioSciences organized by Human Resource Development Centre, Himachal Pradesh University, Shimla on 6-18th March, 2023.
 211. Dr. Avtar Kaur Sidhu, Scientist-E, acted as resource person in 2 weeks for refresher course on Bio Sciences conducted through online mode from 06-18th March, 2023 for enhancing the professional competence of College/University teachers organized by UGC – Human Resource Development Centre Himachal Pradesh University, Shimla. Gave lecture on "Faunal Diversity of Trans-Himalayan Region of India" on 07th March, 2023.
 212. Dr. M.J. Palot, Scientist-B delivered a lecture on the "Fauna of Kerala and its conservation" to the Bhoomimitra club students of NSS College, Manjeri on 8th March 2023 at Tholpettyorganised by Wayanad Wildlife Sanctuary.
 213. Dr. Mukesh Thakur, Scientist-D delivered a talk on the occasion of 23rd ADNAT International

- symposium held at the Banaras Hindu University, Varanasi, India. 10th-12th March, 2023.
214. Dr. Navneet Singh Scientist-E delivered a lecture for the Refresher course in BioScience conducted by Himachal Pradesh University, Shimla on 13th March, 2023.
215. Dr. M.J. Palot, Scientist-B delivered a lecture on the “Indian Wildlife (Protection) Act and Faunal wealth of Kerala” to the front-line staffs of Munnar Wildlife Division at Eravikulam National Park on 15th March, 2023.
216. Dr. Anil Mohapatra, Scientist-E delivered a lecture on “Marine Biodiversity and Conservation” for the Refresher course in BioScience conducted by Himachal Pradesh University, Shimla on 17th March, 2023 as a resource person.
217. Dr. C. Sivaperuman, Scientist-E delivered a lecture on Antarctica: A Journey through everlasting Ice, in the online platform of Mind your Mind (Attitude Development & Skill enrichment) on 18th March, 2023.
218. Dr. P.C. Pathania, Scientist-E delivered a invited talk on the topic “Insect diversity and recent climate change from North Western Himalaya” in the two days National Conference organized by Department of Environmental Sciences, Himachal Pradesh University, Shimla on 19th-20th March, 2023.
219. Dr. R. H. Raina, Scientist-E delivered a lecture on *Diversity of bees in India with special reference to Himalayan Bumblebees*” during the workshop entitled “*Role of Faunal Diversity for Sustainable Environment*” organized at ZSI, DRC, Jodhpur on 20th March, 2023.
220. Dr. Avtar Kaur Sidhu, Scientist-E, acted as resource person and guest of honour in workshop on, “Role of Faunal Diversity for sustainable environment” held at DRC, ZSI, Jodhpur from 20th March, 2023 and delivered invited lecture on “Conservation of rare and endemic fauna of Cold Deserts of India”.
221. Dr. Narender Sharma, Scientist-E delivered a lecture on topic entitled “*Taxonomy and its importance*” to graduate and post-graduate students of Shoolini University, Solan at ZSI, NRC, Dehradun on 22nd March, 2023.
222. Dr. Anil Kumar, Scientist-E delivered a lecture on topic entitled “*Identification of Birds*” to graduate and post-graduate students of Shoolini University, Solan at ZSI, NRC, Dehradun on 22nd March, 2023.
223. Dr. Gopal Sharma, Scientist-E delivered a lecture on Water Crisis and Conservation at Shri Krishna Science Center, Patna on water day 22nd March, 2023.
224. Dr. U. Saikia, Scientist-D delivered a lecture “The wonderful world of bats” at the state level National Science Day celebration organized by Meghalaya State Council for Science and Technology at Shillong on the 23rd March, 2023.
225. Dr. Gopal Sharma Scientist-E delivered a lecture on Gangetic Dolphin an Ecosystem Indicator at Education Department Pavilion in Bihar Diwas 2023 on 24th March, 2023.
226. Dr. A. Gokul, Scientist-B delivered a lecture on “Arthropods with special reference to Brachyuran crab” in training and capacity building programme on DNA barcoding of marine and estuarine isopods and their host fishes organized by Brahampur University, Odisha on 25th March, 2023.
227. Dr. D.S. Suman, Scientist-E delivered a lecture on “DNA barcoding and role in resolving of cryptic species” in training and capacity building programme on DNA barcoding of marine and estuarine isopods and their host fishes on 25th March, 2023 organized by Brahampur University, Odisha.
228. Mr. Imran Alam, Senior Zoological Assistant of Bird Section, ZSI, Headquarters delivered a brief lecture on bird collection housed in Bird Section and attended the queries of the 56 under graduates and post graduates students of RK Mission College, Kolkata on 28th March, 2023.
229. Dr. Devanshu Gupta, Scientist-D delivered a lecture on Coleoptera to 56 students and 3 faculty members from Ramkrishna Mission, Vivekananda Centenary College, Kolkata on 28th March, 2023 on Beetles Diversity of India during their section visit.
230. Dr. B. Sinha, Scientist-E delivered an invited lecture entitled “Faunal diversity of Meghalaya: Status, Gaps and Opportunities” in the National Youth Forum-Lecture series on biodiversity and mineral resources with relevance to the state of Meghalaya organised by the State Council of Science, Technology and Environment, Government of Meghalaya in association with Shillong College under the Himalaya Knowledge Network at Shillong College on 30th March, 2023.



Environmental Information, Awareness, Capacity Building and Livelihood Programme (EIACP)

EIACP (Environmental Information, Awareness, Capacity Building and Livelihood Programme) - the Centre is one of 85 network partners of the Environmental Information System (ENVIS), the focal point of which is located in the Environmental Information System (ENVIS) Government of India at New Delhi.

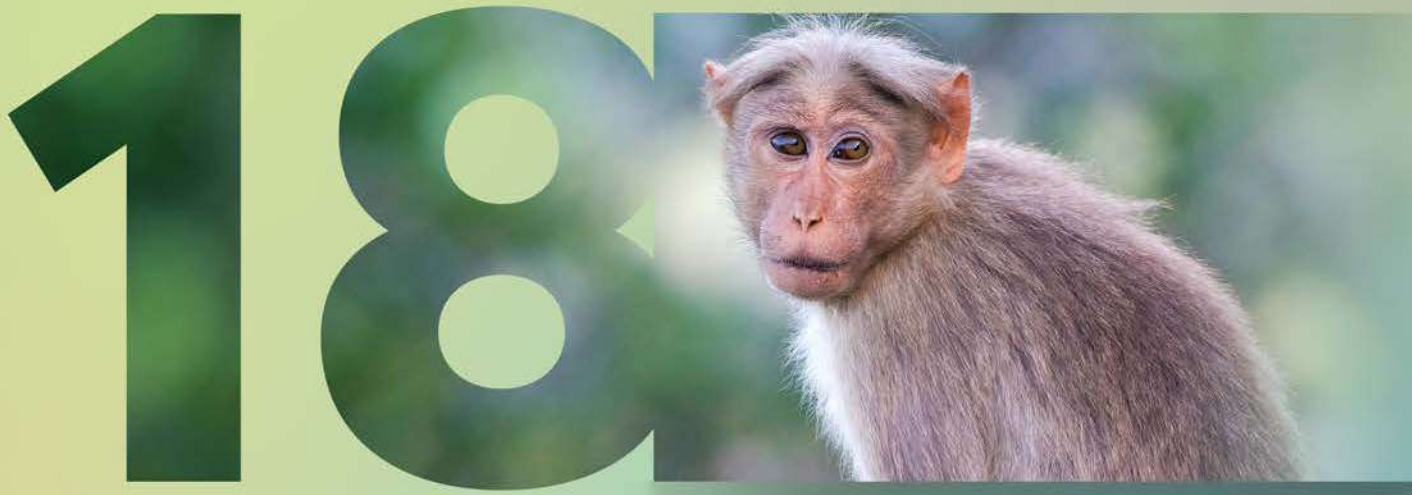
ZSI Headquarters is functioning as the host of the Environmental Information, Awareness, Capacity Building and Livelihood Programm (EIACP) on faunal diversity in India. The primary objectives of ENVIS are, to build up storage, retrieval and dissemination capabilities, with ultimate objective of dissemination of information speedily to the users in the field of animal diversity; to provide national environmental information system relating to the fauna of the country; to promote national and international co-operation and Liaison for exchange of information relating to the subject area; to promote exchange of information relating to the subject area amongst developing countries and to promote, support and assist education and personal training programmes designed to exchange animal biodiversity related information processing and utilizing capabilities.

During the year following targets were achieved by the EIACP Centre

Programme Conducted/ Publications	Details
EIACP Knowledge Products developed (Newsletters, Infographics, Database, Webpage, Video documentary, Thematic maps etc.)	ZSI EIACP NEWSLETTER: Vol 29 (2022-23), ready for publication Theme: Mission LiFE » Issue I: Aquaculture: Freshwater ornamental fishes and their management » Issue II: Aquaculture practices and its management with special reference to application of Indigenous Traditional Knowledge » Issue III: Vermicomposting: Way to sustainable future by production of natural fertilizer » Issue IV: Bee-keeping with <i>Apis cerana</i> in India INFOGRAPHICS / POSTERS developed: 7 1. Earth Day 2022 2. International Yoga Day 2022 3. World Environment Day 2022 4. World Bee Day 2022 5. International Primate Day 2022 6. International Day for the Preservation of the Ozone Layer: Biological effects of atmospheric UV radiation 7. Ramsar Sites in India-2023 WEB PAGE DEVELOPMENT AS KNOWLEDGE PRODUCT: Faunal Diversity of India (updated) (http://www.zsienviis.nic.in/UserMajorActivities.aspx?ID=21021) VIDEO PREPARATION: 7 (7) » Hariyali Saptah: Recognizing the importance of bee pollinators – 1 video » Say No to Single Use Plastic – 1 video » Role of Biodiversity in Sustainable Lifestyle awareness – 2 videos » Mission LiFE awareness activity campaign (ongoing) – 1 video » Nilpur Majhipara outreach activity – 2 videos DATABASE PREPARATION: » Biodiversity Profile of East Kolkata Wetlands: 175 species data » Amphibians and Reptiles: 39 » Aves: 123 » Mammalia: 13 NES GRIDSS-ISBEID: • Thematic Map of Purulia Dist., WB: 13 13 thematic block-wise distribution maps were prepared under different sectors viz. Area available for Pisciculture (Hect.); Area under effective Pisciculture (Hect.); Persons engaged in Pisciculture; Pisciculture annual production (qtl.); Live-stock: Buffaloes; Live-stock: Goats; Live-stock: Sheep; Poultry: Birds; Total Irrigated area (hect); Irrigated Tank Area (hect); Irrigated Canal Area (hect); River Lift Irrigation area (hect) and Open Dug Well area (hect).

Programme Conducted/ Publications	Details
SYMPOSIUM/ CONFERENCE & COMPETITION / CONTEST ORGANISED	Webinar organized: 2 Competition organized: 1 Outreach Sensitization Programme: 4 Webinar (summary): » An international webinar (online) was organized on the theme 'Building a Shared Future for All Life' to observe 'International Day for Biological Diversity' on 24th May, 2022 at ZSI-HQ. . A national webinar was organized online on 3rd March 2023 to observe World Wildlife Day along with commemorating 50 years of CITES. Competition Organized (summary): An online PPT competition was organized for postgraduate students and researchers on the theme 'Invasive Alien Species of India' to observe 'International Day for Biological Diversity' on 24th May, 2022. Outreach Programme (summary): » Introduction of Cheetah in India 4 local schools were visited as a part of sensitization programme related to 'Reintroduction of Cheetahs in India'. A total number of 504 students physically attended the program. Youtube/ webinar links as suggested by the MoEFCC were provided to the class teachers for further information on the topic. The name of the schools visited, number of students with respective class are as follows: 1. New Alipore Multipurpose School: 170 students from standards VI to X. 2. Sahapur Girls High School, New Alipore: 54 students of standards V& VI. 3. Holy Mission English Medium School, New Alipore: 180 students of standards VII & VIII. 4. St. Joseph & Mary's School, New Alipore: 100 students of standards VII & VIII. » 'Say No to Single Use Plastic' campaign: A street-play in Bengali language on the theme 'Say No to single Use Plastic' was organized on 14th January, 2023 as a part of Mission LiFE awareness campaign around the river bank of Ganges at Sukchar, Sodepur, West Bengal. 55 people took part in the campaign. » 'Say No to Single Use Plastic' campaign: A street-play in Bengali language on the theme 'Say No to single Use Plastic' was organized on 14th January, 2023 as a part of Mission LiFE awareness campaign around the river bank of Ganges at Sukchar, Sodepur, West Bengal. 55 people took part in the campaign. » Mission LiFE awareness campaign: A rally was organized by EIACP Centre in collaboration with local eco-club 'Saptarshi Sanskritik Sangha' on 28th January, 2023 at Sodepur, 24 PGS (N), West Bengal. » Mission LiFE Workshop for Rural School Students at Jaleswar, Odisha To promote Mission LiFE activities at grass-roots level, a one-day workshop on the Role of Biodiversity in Sustainable Lifestyle was organized by EIACP Centre, ZSI, Kolkata in collaboration with Hemachandra Simanta Sanskrit Vidyalyaya, Sahapur, Jaleswar, Balasore, Odisha for the rural school students.
EVENT JOINTLY ORGANISED WITH HOST INSTITUTION	Joined the host organisation in observing International Day for the Preservation of the Ozone Layer' on 16th September 2022- Dr. Jayanarayan Kuttippurath, Professor, Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL), Indian Institute of Technology, Kharagpur delivered keynote lecture on the theme 'Ozone and Climate'.
WOKPSHOP ATTENDED	EIACP National Workshop on LiFE: MoEFCC organized a one-day National Workshop on LiFE on 30th January, 2023 at Ministry of Environment, Forest and Climate Change (MoEF&CC), Indira Paryavaran Bhawan, Jorbagh Road, New Delhi. Shri Bhupender Yadav, Hon'ble Minister, MoEFCC inaugurated the programme with the introduction of the objectives of Mission LiFE and its recent alignment with EIACP activities.

Programme Conducted/ Publications	Details
OTHER IMPORTANT ACTIVITIES	Innovations: EIACP Centre at ZSI as a part of its initiative in promoting/supporting rural livelihood, designed the 2023 desk calender on Madurkathi mats. The dates and the messages were, through the traditional hand embroidery. The awareness mascot 'Prakriti' holds a message for adopting a sustainable lifestyle for a better environment: Mission LiFE. The Madur mat desk calendar was also displayed at the National Workshop, New Delhi. Designing work: » Typesetting and Designing of Checklist: A Checklist of Indian Amphibians with Common names for the country and their IUCN Conservation Status: 454 species (https://zsi.gov.in/WriteReadData/userfiles/file/Checklist/Amphibia_2023.pdf) » Designing works of various Posters, Flyers and Certificates for EIACP Centre as well as programme organized by ZSI-Hq.
EIACP Website & Social Media	EIACP website (www.zsienviis.nic.in) summary statistics: » Total Visitors: 5837 (467 Indian visitors + 5370 visitors from other countries) » Total Downloads: 1243 (1004 Indian visitors + 239 visitors from other countries) » Total Updating: 623 EIACP Social media (FB page): ZSI-ENVIS Activities uploaded regular interval. Total followers: +1.6k
ACHIEVEMENTS	» The EIACP Centre at ZSI successfully conducted sensitization programme on the reintroduction of cheetah in India. 504 students were physically attended. » 3 newspapers covered the outreach programme conducted by EIACP for rural tribal school students at Jaleswar, Odisha and received huge appreciations. » Promoted Madur mats as an important socio-economic livelihood and conservation of local fauna- the initiative was appreciated by important delegates of MoEFCC.



Infrastructure Developments

ZSI is continuously upgrading the laboratories sections and Centres, repositories for strengthening its functioning ability, during 2022-23, several such developments have been initiated and completed.

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Special Campaign 2.0 for disposal of pending matters from 2nd to 31st October 2022

- Scrap disposal: **31,306 Kgs of obsolete metallic and wooden material**
- E-waste: **1266 items**
- Weeding of files: **3300 physical files**
- Space restored: **17,309.5 sq. ft. area**
- Revenue generated: **Rs. 24,84,579/-**

Infrastructure Developments:

- Establishment of Molecular Systematics Laboratory at MARC, Digha.
- National Museum and State of Art Auditorium building work is almost completed at EBRC, besides 10 camera traps and one Stereozoom microscope was purchased Construction of compound wall for Eastern Ghats Regional Centre at Amravati, Andhra Pradesh (in progress).
- Construction of Visiting Scientist hostel at ANRC (in progress).
- Construction of compound wall of NCRI at ANRC (in progress).
- Construction of Additional Office Building for SRC, Chennai (in progress).
- DNA laboratory setup in Progress at APRC
- Three microscope procured at APRC
- Establishment of DNA lab is under process at CZRC
- A Stereozoom microscope and a UV-Visible Spectrophotometer were installed at FBRC

- The Molecular Systematic Laboratory has been established at ZSI, Solan
- Old ZSI, Chennai Building was demolished for constructing a new building for both MBRC and SRC.
- Museum work completed and ready to inauguration in ZSI-SbRC, Canning.
- Museum renovation, five Desktop computers and 5G-Wifi facility installed at WGRC
- Two Microscopes procured and 20 Collection Almirahs were added through new procurements.
- Six AC for office -cum-Laboratory, Five Water purification system and Minor museum renovation achieved at WRC.
- Restoration of conference hall at DRC.
- A multipurpose hall is ready for inauguration at GPRC.
- Procurement of five desktop computers, five split air conditioners and Repair and modernization of administrative office at SRC
- UPS Invertor 10 KV installed at NRC

Procurement:

GePNIC under CPPP has been implemented at Zoological Survey of India. ZSI has started its e-Procurement through NIC. The Central Public Procurement Portal of Government of India provides a single point access to the information on all procurement made across various central Government Organization across the country. It facilitates electronic tendering using Government eProcurement System of NIC (GePNIC) which aims at transparency and non discrimination amongst bidders, by allowing free access to tender documents, clarifications, secure on line bid submission and access to bid opening event. The system has been designed taking into account the tender rules followed in the country, the World Bank, ADB and CVC guidelines.

The details of procurement made during the financial year 2022-23

Types of Procurement in CPPP	No of Procurement through e-Procurement	Amount of Procurement through e-Procurement
e-Procurement	03	19,64,409

Govt e-Marketplace:

Zoological Survey of India has also been registered at Government e-Marketplace (GeM) and procurement is also made through GeM. Gem aims to enhance transparency, efficiency and speed in public procurement. It provides the tools of e-bidding, reverse e-auction and demand aggregation to facilitate the government users, achieve the best value for their money. Govt e-Marketplace (GeM) has been successful implemented at ZSI Kolkata and procurement has been made through GeM in the Financial Year 2022-23 as per following details:

No of Procurement in GeM	Amount of Procurement in GeM
121	1,35,82,905

Annual Maintenance Contract:

Annual Maintenance Contracts have been concluded for different Equipment held at ZSI after adopting tendering system. The details of AMC are as follows:

SI No	Details
(a)	AMC of Computer & Printers etc
(b)	AMC of Microscopes
(c)	AMC of SEM
(d)	AMC of VRF Air Conditioner
(e)	AMC of Split Air Conditioner
(f)	AMC of Photocopier Machine

Disposal of items:

Items which are not in use and obsolete has been declared condemned and disposed through e-Auction. During the past, following items has been disposed by adopting e-Auction:

SI No	Description	Amount
1	Obsolete & Unserviceable items	323692

Purchase of items:

During the past, items for stock purpose as well as stationery items have been purchased to cater the requirement of department.

List of some of the items purchased at HQ during the period:

SI No	Description
1	Printers
2	Refrigerator
3	Camera and Lenses
4	Photocopier Machine
5	Chairs
6	Entomological Pins
7	Stationery items
8	Cartridges
9	Chairs
10	Rectified Spirit
11	Stock Purpose items
12	UPS
13	Monitor
14	Air Conditioner
15	Sofa Set
16	Streozoom Microscope
17	Computers
18	Items for preservation of specimen
19	Insect Storage Cabinet
20	Optics Carrier for Microscope





Events & Activities

ZSI Headquarters and all its Regional Centres are actively organizing many events and activities for creating awareness for the Biodiversity and its Conservation.

ZSI Day celebrated on 1st July 2022



Press Conference regarding 107th ZSI Day



Lighting the lamp by the Union Hon'ble Ministers of MoEFCC



Release of the book 'Animal Discoveries 2021' by the Union Honorable Ministers of MoEFCC on 1st July 2022



Signing of the Book "Birds of India" by the Union Honorable Minister, Shri. Bhupender Yadav

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Capacity Building



‘Capacity Building Workshop on Implementation of Provisions of CITES’ hosted by ZSI-HQ



One day seminar on “Unlocking the mystery of the DNA molecule & secrets of the GIS Technology “organized at ZSI-HQ



Glimpses of the workshop organized at DRC, Jodhpur on 20th March 2023



Glimpses of workshop at DRC

Infrastructure Developments



Molecular Systematic Laboratory inaugurated by Director Zoological Survey of India at HARC



Honorable Governor of Himachal Pradesh, Shri. Rajendra Vishwanath Arlekar inaugurating Himalayan repository cum museum at HARC

Important Meetings



Meeting with IG, Forests, MoEFCC, Shri. Rohit Tiwari at ZSI-HQ



Half Yearly Progress monitoring meeting of Officers at ZSI-HQ



Annual Monitoring Meeting of Officers at ZSI-HQ

Important Events



Visit of Honorable Ministers at ZSI stall during International Day of Biological Diversity Exhibition in Chennai conducted by SRC



Release of book 'Fauna of Puducherry' by the Lieutenant Governor of Puducherry Dr. Tamilisai Soundararajan at Raj Niwas

Independence Day & Republic Day



Har Ghar Tiranga campaign organized at ZSI-HQ



Har Ghar Tiranga Campaign organized at NRC



Independence Day celebration at ZSI-HQ



Independence Day celebration at MARC



Independence Day celebration at EBRC



Republic Day Celebration at ZSI-HQ

World Environment Day



World Environment Day 2022 celebrated in collaboration with Indian Museum



World Environment Day 2022 celebrated in ANRC by conducting at one-day seminar



World Environment Day 2022 celebrated by FBRC



World Environment day 2022 celebrated by NERC

International Yoga Day



International
Yoga day
celebrated at
ZSI-HQ



International
day of yoga
celebrated at
CZRC



International day of
yoga celebrated by
SBRC



International day of
yoga celebrated
at MARC

Constitution Day



Constitution Day celebrated BY SBRC



Constitution Day celebrated at EBRC



Constitution Day celebrated at DRC

Vigilance Awareness, Rashtriya Ekta Diwas and Anti-Terrorism Pledge



Vigilance Awareness Week conducted by FBRC



Anti-terrorism Pledge at ZSI-HQ



Rastriya Ekta Divas, 31 October, 2022 by EBRC

Celebration of Rajbhasha



Prize distribution
to the winners of
Rajbhasha Pakhwada
at ZSI-HQ



Rajbhasha
Karyashala
celebrated at
HARC



Rajbhasha
Diwas
celebrated at
FBRC



Rajbhasha
Pakhwada
celebrated at
EBRC

Visits by Institutes, Colleges and Schools



Visit of Telangana
Range Officers at
ZSI -HQ



Museum
visit by
Navy School
students at
ANRC



Museum
visit at
CZRC by the
Government
College
Sihora,
Jabalpur



Internship - PAN
INDIA students at
MBRC

Swachhata Campaign



Swachhata Campaign 2.0 by MARC

Before



After



Special Cleanliness Activities at WGRC



Swacchata Campaign celebrations conducted by NRC

Mission LiFE Campaign



Launch of Mission Life at ZSI-HQ

Mission LiFE programme at CRPF DG Office, Itanagar by APRC



Mission life at Loyola College, Chennai conducted by MBRC

Mission LiFE program conducted by WGRC





Mission LiFE
programme by NERC



Coastal cleanup
day conducted
by EBRC



Coastal cleanup
day conducted
by SBRC



Coastal cleanup day
conducted by ANRC



Certificate of Registration

This is to certify that

ZOOLOGICAL SURVEY OF INDIA, FRESHWATER BIOLOGY REGIONAL CENTRE

PLOT NO.366/1, ATTAPUR, HYDERGUDA, HYDERABAD,
TELANGANA PINCODE: 500048, INDIA

has been independently assessed by QRO
and is compliant with the requirement of:

ISO 14001:2015

Environmental Management System

For the following scope of activities:

A PREMIER RESEARCH INSTITUTE IN TAXONOMY AND SYSTEMATICS OF FRESHWATER FAUNA. THIS CENTER IS WELL EQUIPPED WITH DNA BAR-CODING LABORATORY, AUTOMATED HIGH-END MICROSCOPES, LIMNOLOGY LAB AND FAUNAL MUSEUM. THIS INSTITUTE ALSO ORGANIZES TRAINING AND WORKSHOPS, SKILL DEVELOPMENT PROGRAMME FOR THE STUDENTS AND RESEARCH ENTHUSIASTS.

Date of Certification: 23rd November 2022

1st Surveillance Audit Due: 22nd November 2023

2nd Surveillance Audit Due: 22nd November 2024

Certificate Expiry: 22nd November 2025

Certificate Number: 305022112343E



Chunant...

Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit.
(In case surveillance audit is not allowed to be conducted; this certificate shall be suspended / withdrawn).

The Validity of this certificate can be verified at www.qrocert.org

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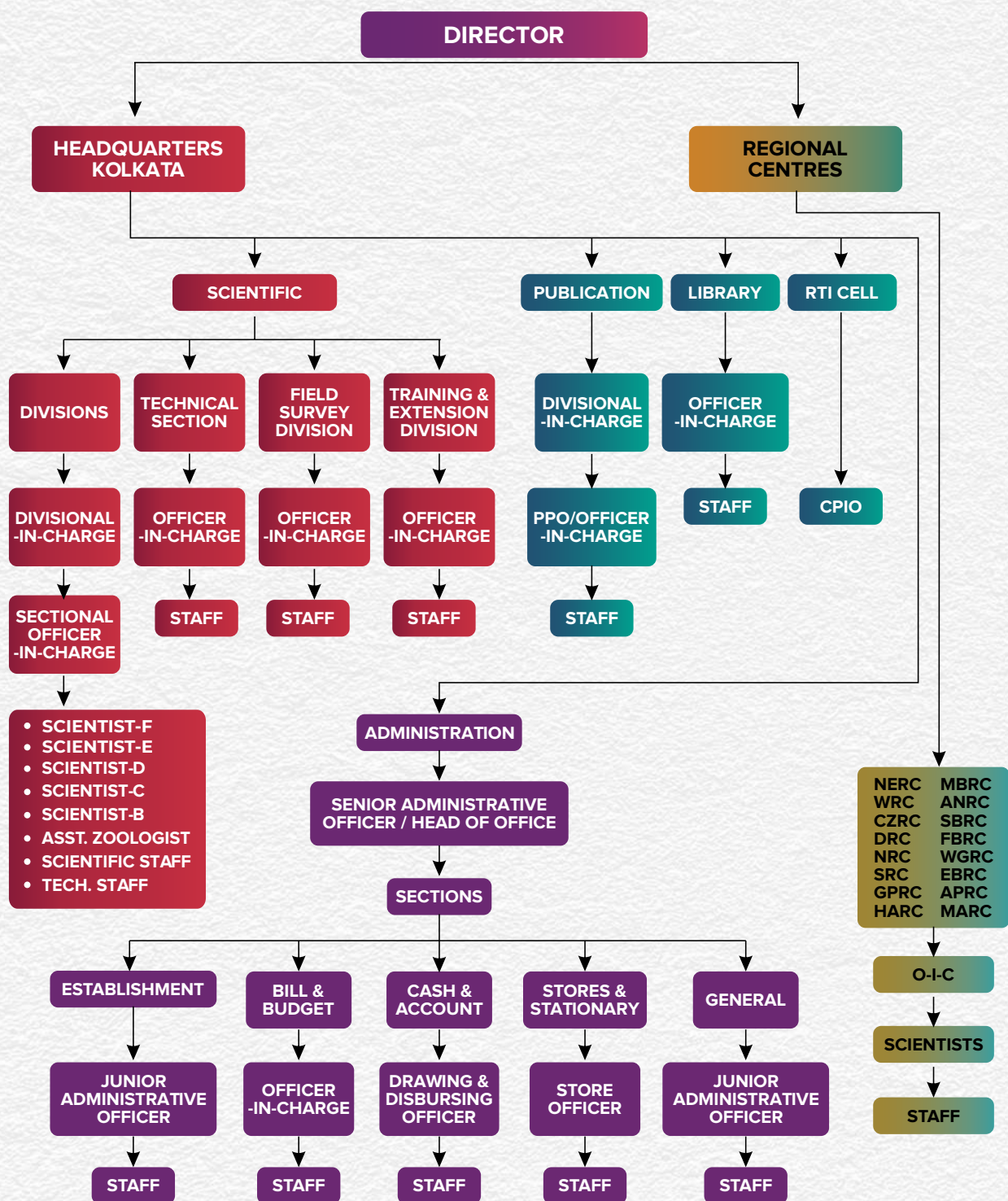
142, IInd Floor, Avtar Enclave, Near Paschim Vihar West Metro Station, Delhi-110063, (INDIA)

Website : www.qrocert.org, E-mail : info@qrocert.org



Organizational Structure

ORGANIZATIONAL STRUCTURE OF ZSI





Accounts

ACCOUNTS

Statement of Actual Expenditure up to 31.03.2023 (From 01.04.2022 to 31.03.2023)

Minor Heads as Demand for Grants	Sub-heads as Demand for Grants	RE 2022-23	Expdt. Upto the 31.03.23	Balance	%
1	2	3	4	5	6
3435.01.001					
04.02.01	Salary	550000000	549977994	22006	100.00
04.02.02	Wages	1060000	1041284	18716	98.23
04.02.03	O.T.A.	20000	20000	0	100.00
04.02.06	Medical	6500000	6499005	995	99.98
04.02.11	D.T.E.	25000000	24975191	24809	99.90
04.02.12	F.T.E.	1100000	982404	117596	89.31
04.02.13	O.E.	85000000	84801919	198081	99.77
04.02.14	RRT	2000000	1998636	1364	99.93
04.02.16	Publication	8000000	7998861	1139	99.99
04.02.21	S. & M.	35000000	34998820	1180	100.00
04.02.27	Min.Works	30000000	29998365	1635	99.99
04.02.30	OCS	66000000	65978617	21383	99.97
04.02.31	Grants-in-Aid	50000	50000	0	100.00
04.02.34	Sch. & Stp.	31500000	31496371	3629	99.99
04.02.50	Other charges	3770000	3764985	5015	99.87
	Total :	845000000	844582452	417548	99.95
Percentage :	99.95				



Acknowledgements

Zoological Survey of India acknowledges the encouragement and support provided by

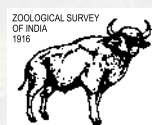
The Honourable Minister, Ministry of Environment, Forest & Climate Change

The Honourable Minister of State, Ministry of Environment, Forest & Climate Change

The Secretary, Ministry of Environment, Forest & Climate Change

The Additional Secretary, Ministry of Environment, Forest & Climate Change

The Joint Secretary, Ministry of Environment, Forest & Climate Change



ZOOLOGICAL SURVEY OF INDIA

Ministry of Environment, Forest and Climate Change

Government of India

Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata -700053