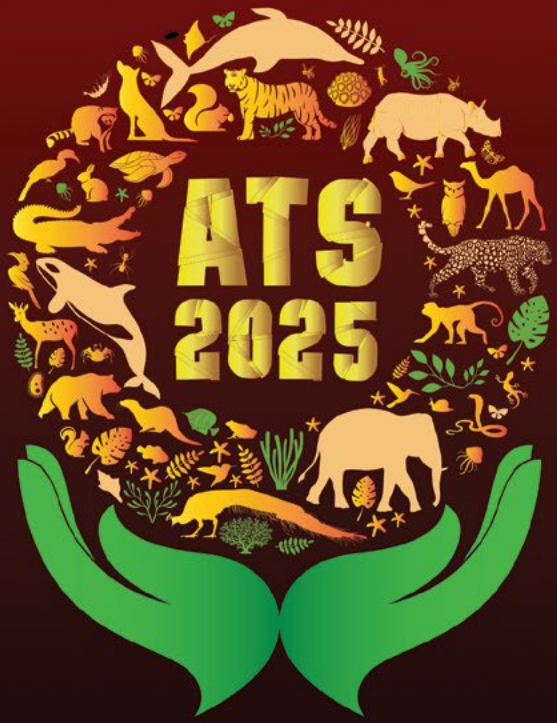
भारतीय प्राणि सर्वेक्षण
ZOOLOGICAL SURVEY OF INDIA

Book of Abstracts



Version 3.0

ZOOLOGICAL SURVEY OF INDIA
Ministry of Environment, Forest and Climate Change
Government of India

सत्यमेव जयते

Animal Taxonomy Summit 2025

1-3 July, 2025

Commemorating 110th Foundation Day of ZSI

Book of Abstracts

Zoological Survey of India

Citation:

Director (Ed.), 2025. Book of Abstracts, Animal Taxonomy Summit 2025, July 1-3, 2025, organized by Zoological Survey of India, Kolkata

Date of Publication: July, 2025

Editor: The Director, Zoological Survey of India, Kolkata

Co-Editors: Dr. G. Maheswaran
Dr. K.A. Subramanian
Dr. Navneet Singh
Dr. Tamal Mondal

ISBN: 978-81-986987-1-1

Published at the Publication Division by the Director, Zoological Survey of India, M-Block, New Alipore, Kolkata - 700 053

Designed & Printed at Cygnus Advertising (India) Pvt. Ltd., Kolkata - 700 091

Contents

Introduction

The Animal Taxonomy Summit 2025, organized by the Zoological Survey of India (ZSI) to commemorate the 110th Foundation Day of ZSI, represents a pivotal gathering in the fields of taxonomy, systematics, ecology, animal behavior, and biodiversity conservation. The summit emphasizes contemporary taxonomical practices, including molecular methods such as DNA barcoding and bioinformatics, which significantly improve the accuracy and efficiency of species identification and classification. These innovations are essential for addressing the gaps in documenting global biodiversity, given that only a small percentage of species have been described to date.. The event seeks to unite distinguished scientists, researchers, and academics from around the world to discuss recent advancements and challenges in taxonomy and related issues concerning animal communities. A primary goal of the summit is to address the existing challenges and advancements in taxonomy, which are crucial for biodiversity conservation and environmental management. Taxonomy provides a fundamental understanding of biodiversity elements, which is vital for making informed decisions regarding the conservation and sustainable use of biological resources. This expertise is critical for identifying and protecting endangered species, managing invasive species, and comprehending ecological interactions and evolutionary histories. The summit promotes interdisciplinary collaboration by merging disciplines such as ecology, genetics, and conservation biology. This comprehensive approach is essential for developing inclusive strategies to mitigate the effects of climate change, habitat degradation, and other human-induced pressures on biodiversity.

The abstract book is essential for enhancing the effectiveness and influence of an international workshop. It offers a detailed overview of research presentations, encompassing key findings, methodologies, and conclusions. This enables participants to swiftly understand the relevance and scope of the topics addressed, assisting them in planning their attendance and concentrating on sessions that align with their interests and professional work. Furthermore, the abstract book fosters networking and collaboration by highlighting researchers and their contributions, which aids in identifying potential collaborators and initiating significant discussions. This can result in the formation of new research partnerships and the sharing of innovative ideas and techniques, crucial for scientific progress. Additionally, the abstract book acts as a permanent record of the workshop, capturing the research landscape at the time of the event. This documentation is beneficial for future reference, allowing researchers to revisit the material, track the evolution of various research domains, and remain updated on advancements and trends within their field. It also guarantees that the knowledge disseminated during the workshop reaches a broader audience, amplifying the workshop's impact beyond its immediate participants. For early-career researchers and students, the abstract book serves as a significant educational resource. It provides examples of effective research communication, enhancing presentation and writing skills. The comprehensive abstracts also offer insights into contemporary trends, methodologies, and critical questions in the discipline, thereby contributing to their academic and professional development.

During the Animal Taxonomy Summit 2025, a total of 170 abstracts were accepted across three distinct themes. Specifically, there were 40 abstracts categorized under Thrust Area-1: Taxonomy, 64 abstracts under Thrust Area -2: Systematics, and 66 abstracts under Thrust Area -3: Faunal Diversity and Conservation. As per the decision of editorial board all these 170 abstracts have been accepted for the poster presentation during ATS 2025. The abstracts included in this volume cover a wide range of subjects from traditional taxonomy to molecular systematics, from the identification of cryptic species to integrative strategies in biodiversity documentation. These contributions showcase the richness and vitality of ongoing taxonomic efforts throughout India and beyond, reinforcing the Zoological Survey of India's lasting mission: to investigate, document, and preserve the nation's animal diversity.

Thrust Area 1:
Taxonomy

Poster Presentations

DNA Sequence Classifier: A Nucleotide Sequence Pipeline of Generating Usable Datasets for Machine Learning Classifiers

Ajey Kumar Pathak* and Rameshwar Pati

ICAR-National Bureau of Fish Genetic Resources, Lucknow

**Presenting Author: Ajey Kumar Pathak*
**Email Id of Presenting Author: ajey.pathak@icar.gov.in*

Abstract

DNA sequence repositories of the molecule markers are prominent resources for species identification. The computational approaches are being applied on these repositories to analyze the sequences. Among computational approaches, machine learning technique has gained momentum to identify the species because of their ability of learning from data and improving with experiences. As machine learning technique works on data, therefore preparation of usable datasets from the sequence repositories is essentially required, which is the corner stone of any machine learning classifier. The present study is focused on development of a nucleotide sequence pipeline for preparation of usable training and test datasets for any machine learning classifier from the raw DNA sequence datasets generated from the publicly available DNA sequence repositories. To construct the pipeline, three algorithms were designed and then coded and implemented under XAMPP (Linux, Apache, MySQL, PHP, Perl) environment. The logically integrated programs work in sequence and acts as an isolated processing unit accepting the input, then processing and generating the output as input for other. This pipeline is named as DNA classifier and works as a DE multiplexer whose purpose is to accept a single raw DNA sequence file in FASTA format as input and produce more than one training and test datasets as output through built-in customized folding mechanism. To provide understanding on the functioning of the pipeline, sequences of four genes Cytb, COI, 12S rRNA and 16S rRNA belonging to six fish taxa were downloaded from NCBI in FASTA file format and files of these genes were used as input in the pipeline for producing the usable training and test datasets. All the training and test datasets produced by the pipeline were tested for their usability by the different machine learning classifiers and it was found that the produced datasets were usable and increased efficacy.

Keywords: DNA sequence, DNA classifier, Nucleotide sequence pipeline, Machine learning, Fish species

Review of Indian Species of Genus *Gonopsis* Amyot & Serville, 1843 (Hemiptera: Pentatomidae) with a New Record to India

Amartya Pal* and Swetapadma Dash

Zoological Survey of India, New Alipore, Kolkata, West Bengal India -700053

**Presenting Author: Amartya Pal*
**Email Id of Presenting Author: amartyapal08@gmail.com*

Abstract

The genus *Gonopsis* Amyot & Serville, 1843 comprised 33 species worldwide with six species reported from India. This study adds *G. affinis* (Uhler, 1860) as a new record for the country, based on specimen collected in the Cooch Behar district of West Bengal. Detailed descriptions and illustrations of *G. affinis*, along with two other species of this genus, are provided in the paper, including a focus on external morphology and male genitalia. A taxonomic key to all known Indian species of *Gonopsis* is also included.

Keywords: Cooch Behar, Genitalia, India, New record, Taxonomic key

Phylogenetic and Taxonomic Investigation to Unfold the Morphological and Molecular Characteristics of the Polychaete Species (Polychaeta: Phyllodocida: Nereididae) from Southeast Coast of India

Anupama Vijay* and Madhavi Mookkan

Aquatic Sciences and Biotechnology Laboratory, PG and Research Department of Zoology, Ethiraj College for Women (Autonomous), Affiliated to University of Madras, Chennai - 600 008, Tamil Nadu, India

**Presenting Author: Anupama Vijay*
**Email Id of Presenting Author: vijayanupama592@gmail.com*

Abstract

Taxonomy plays a critical role in understanding the evolutionary relationship with the expansive diversity of life. Morphological identification provides fundamental comprehension based on physical observation, whereas molecular identification primarily relies on genetic materials for identification. The main aim of the present study is to brace the integrative taxonomy identification of polychaetes, which has been insufficiently established to date. The polychaetes samples were collected from Devanampattinam, Cuddalore District, Tamil Nadu, Southeast Coast of India. The samples were observed for distinctive morphological features of the order Phyllodocida through a microscope analysis. Further, molecular analysis targeting the COI (cytochrome c oxidase subunit I) gene, barcoding, and phylogenetics was done to enhance more accurate confirmation for organism identification. The *Namalycastis glasbyi* (Fernando & Rajasekaran, 2007) was characterized by short and smooth antennae, paired palp, which are anteriorly directed and biarticulate with a narrow longitudinal groove that extends from the tip to the mid-posterior prostomium. Notably, the species lacks notochaetae towards the posterior region. It also exhibits supra and sub-neuro acicular spinigers, falcigers, tripartite pygidium, and anus as observed morphological standpoint. Molecular analysis of the *N. glasbyi* (NCBI GenBank PQ865726) nucleotide sequence helps confirm species. DNA barcoding provides efficiency in ecological monitoring programs that aid in the effectiveness of species identification. This integrative taxonomy identification significantly sheds light on investigating new species and enhancing our knowledge of biodiversity.

Keywords: Taxonomy, Molecular Identification, Polychaetes, Phylogenetics, Biodiversity

An Illustrated Catalogue of Tiger Beetle (Coleoptera: Cicindelidae) Housed in the Collections of Zoological Survey of India, Western Regional Centre, Pune, India

Aparna Sureshchandra Kalawate, Thapasya K., Pooja Kumar Misal* and Uday K

Zoological Survey of India, Western Regional Centre, Pune

**Presenting Author: Pooja Kumar Misal*
**Email Id of Presenting Author: pkmspider@gmail.com*

Abstract

The Cicindelidae family, often referred as tiger beetles, represents one of the most well-studied and ecologically significant insects. They are recognized for their predatory behaviour and as bioindicators of environmental health. Worldwide, approximately 2,900 species have been described, exhibiting significant diversity across various habitats such as forests, grasslands, riverbanks, and coastal areas. There are total 241 species of tiger beetles reported from India. From the states of India, the highest diversity of these tiny creatures is found in Tamil Nadu with 40.66% followed by Karnataka with 31.95%, Kerala representing 28.63%, Maharashtra with 17.01%. The least diversity of tiger beetles is reported from Chhattisgarh with 0.41% of species. Extensive research has been conducted on Indian tiger beetles, resulting in close to 200 published articles and book chapters. The National Zoological Collections at the Western Regional Centre (WRC), Pune, which include 20 species of tiger beetles collected from three different states in India. From our collection, two species are endemic to southern India, one species is endemic to northeastern, central, and southern India, and four species have been newly recorded from Dadra and Nagar Haveli and Daman and Diu. Despite their ecological significance, many tiger beetle species face threats from habitat loss, climate change, and human activities, necessitating further taxonomic, ecological, and conservation-focused studies. This study contributes to the understanding of tiger beetle diversity and distribution, supporting future conservation strategies.

Keywords: Beetles, Tiger Beetle, Conservation, Taxonomy, Diversity

Morphology and Ultrastructure of Scales of Two Cyprinid Barbs from Northeast India

Arpita Sarkar* and Hrishikesh Choudhury

Department of Zoology, Cotton University, Guwahati 781001, Assam, India

**Presenting Author: Arpita Sarkar*
**Email Id of Presenting Author: arpitasarkar1202@gmail.com*

Abstract

Fish scales serve as vital diagnostic structures in ichthyology, offering key insights into species differentiation, taxonomy, and ecological adaptations. Advances in microscopy have enabled high-resolution assessments of scale ultrastructure, enhancing our ability to distinguish closely related taxa. In this study, we conducted a comparative microstructural analysis of the lateral-line and sub-dorsal scales of two freshwater Cyprinid barbs, *Pethia shalynius* and *Pethia ticto*, using Light Microscopy (LM) and Scanning Electron Microscopy (SEM). By examining key morphological features—including circuli structure, radii count, scale shape (length and width), inter-radial and inter-circuli distances, and lepidonts—we identified distinct interspecific variations that is suggestive of the value of scales as a morphological taxonomic tool for species delineation, providing a novel framework for Cyprinid species identification. Light microscopy revealed distinct morphological differences in the scales of *Pethia shalynius* and Pethia ticto. In *P. shalynius*, the entire anterior margin is scalloped as opposed to the presence of only three prominent scalloped regions in *P. ticto*. The sub-dorsal scale has a smooth anterior margin in *P. shalynius* but is wavy in *P. ticto*. The lateral field of the lateral-line scale is convex in *P. shalynius*, whereas in *P. ticto*, it is broadly convex on the dorsolateral side. Scanning Electron Microscopy (SEM) analysis revealed that *P. shalynius* possesses a higher number of total radii compared to *P. ticto*. Notably, *P. ticto* lacks secondary radii in both lateral-line and sub-dorsal scales, while *P. shalynius* exhibits secondary radii in both. Tertiary radii were absent in both species. As the first detailed documentation of scale ultrastructure in these species, this study contributes fresh perspectives to the field of fish systematics and morphological taxonomy.

Keywords: Lepidotaxonomy, Key scales, Microstructure, *Pethia shalynius*, *Pethia ticto*

Exostoma hajiensis, a New Sisorid Catfish, (Teleostei: Sisoridae) from Arunachal Pradesh, North-Eastern India

Diamond Rajakumar Tenali*, Aditya Kumar, Tarachand Kumawat, Rajeev Kumar Singh and Uttam Kumar Sarkar

ICAR-National Bureau of Fish Genetic Resources, Canal Ring Road, Telibagh, Lucknow, Uttar Pradesh- 226002

**Presenting Author: Diamond Rajakumar Tenali*
**Email Id of Presenting Author: diamondraj.t@gmail.com*

Abstract

North Eastern Himalayans region of India is one of the biodiversity hotspots among the 17 mega biodiversity hotspots of the world. Eastern Himalaya region of Arunachal Pradesh, geographically unique in nature with deep, steep valleys, plentiful streams and inaccessible river stretches. Favorable climatic conditions of this regions are breeding spots and nurturing grounds for numerous endemic species. Experimental explorations and conventional taxonomical studies revealed the existence of new fish species of Exostoma genus of Sisoridae family. A new sisorid catfish, *Exostoma hajiensis*, is described here from a small distributary of Subansiri River of Brahmaputra River basin in Arunachal Pradesh. It is distinguished from its congeners in having a combination of the following characters: posterior extremity of adipose fin base distinctly angular with sharply pointed dorsoposterior margin; tip of maxillary barbel extending beyond the origin of pectoral-fin base; nasal barbel not reaching anterior margin of orbit; presence of both parallel and rounded striae on the anterolateral surfaces of the lips; shorter pelvic fin length (15.9-16.7 % SL); shorter adipose fin base length (23.1-26.7% SL); shorter dorsal-adipose distance (10.2-17.1% SL) and shorter caudal peduncle (15.4-19.6 % SL).

Keywords: Taxonomy, New fish, Diversity, Sunbansiri, Brahmaputra River

Redescription of *Paradasynus rostratus* (Distant, 1908) (Heteroptera: Coreidae) and Report of a New Host

Digvijay Ramesh Jadhav[1*], Archana Sharbidre[1] and Hemant V. Ghate[2]

[1]Department of Zoology, Savitribai Phule Pune University, Pune
[2]Department of Zoology, Modern College, Shivajinagar- Pune 411 005

**Presenting Author: Digvijay Ramesh jadhav*
**Email Id of Presenting Author: digvijayjadhav777@gmail.com*

Abstract

Paradasynus rostratus, a known pest of several commercially important fruit trees, was discovered affecting *Amoora rohituka* (Roxb.) Wight & Arn., family Meliaceae, from Shirpur, Dhule (Maharashtra). Bugs were found feeding on young fruits and tender leaves during February 2025, but mating / egg laying were not observed. Bugs were hand-picked and preserved in 70% alcohol for further studies. Morphology and measurement were done under Leica Stereozoom. Pygophore was dissected and heated in 10% KOH solution and male genitalia were studied using standard methods. Photography was done using Canon Powershot S5 camera attached to stereozoom. Several images were photostacked. The bug is elongate, with almost parallel sided body posterior to thorax. Entire body is finely, blackly punctured. Colouration is mostly ochraceous dorsally with black punctures while ventrally pale-yellow brown with a series of segmental black spots laterally. Head is distinctly elongate in front of antennal tubercles and has fine black setigerous granules; eyes are large, globose and ocelli are closer to eyes than to each other. Antennae are long, slender, with black setigerous granules and magenta tinge on first four segments along with fuscus tips, with fourth segment distinctly longer than first, a character for tribe Dasynini to separate it from Homoeocerini. Very long and slender labium that passes much beyond metacoxae is another diagnostic feature of this species. Hemelytra are long and almost cover entire abdomen, except tip. Pygophore is with very convex ventral side and raised wall like posterior rim. We are giving substantially new information and a first detailed redescription of this species now placed under tribe Dasynini.

Keywords: Coreidae, Dasynini, Heteroptera

Taxonomic Study of Some Orthoclad fauna (Diptera: Chironomidae: Orthocladiinae) Based on Pupal Exuviae with New Records from Manas River of the Eastern Himalayas of India

Tuhar Mukherjee* and Dipak Kumar Som

Division of Entomology, Department of Zoology, Maulana Azad College Kolkata, India

**Presenting Author: Tuhar Mukherjee*
**Email Id of Presenting Author: dipaksom@gmail.com*

Abstract

The immature of Chironomidae, play a crucial role in freshwater ecosystems and serve as one of the water quality indicators of environmental health. The potential usefulness of pupal exuviae in describing chironomid fauna was first suggested by A. Thienemann and subsequently established as one of the important tools in Chironomid taxonomy. The advantage of such perspective is that minimum efforts are required to collect integrated samples representing midges of water bodies without damaging the ecosystem. The present study aims to assess the chironomid diversity in the Manas river of Eastern Himalayan region, an important biodiversity hotspot, using pupal exuviae as a key taxonomic tool. Sampling was conducted across the riverbed of Manas River. Specimens were identified based on morphological characteristics such as cephalothorax, respiratory organ structure, setal arrangements in tergites, and sternites along with shagreen patterns. Preliminary results reveal a high diversity of chironomid fauna, with notable occurrences of *Cardiocladius*, *Heleniella*, *Paralymnophyes*, *Psectrocladius*, *Cricotopus*, and *Eukiefferiella*. The first four genera were recorded from India. However, taxonomic descriptions were lacking in this field. The current work records, for the first time, the four taxonomic Orthoclad genera. This investigation highlights the need for further taxonomic studies. Furthermore, it emphasizes on the importance of pupal exuviae in chironomid taxonomy, particularly in remote and ecologically sensitive regions like the Eastern Himalayas. These findings help in understanding the biogeography of Chironomidae in high-altitude environments and provide a basis for future ecological studies.

Keywords: Chironomidae, Orthocladiinae, *Pupal exuviae*, Eastern Himalaya, Manas River

Otolith-Based Taxonomic Validation in Gangetic Fisheries: Addressing Management and Conservation Issues

Farah Bano*, Rajeev K. Singh and Uttam Kumar Sarkar

ICAR-National Bureau of Fish Genetic Resources, Canal Ring Road, P.O. Dilkusha, Lucknow-226002, UP, India

**Presenting Author: Farah Bano*
**Email Id of Presenting Author: farahbano2235@gmail.com*

Abstract

The Ganges, the largest river on the Indian subcontinent, is joined by river Gomti as a left bank tributary in district Lucknow, Uttar Pradesh. River Gomti is reported to harbor diverse ichthyofauna in the past, however anthropogenic pressures have resulted into the decline in abundance of many fish species. In order to have sustainability of fisheries resources, scientific management is the key. In this context, several phenotypic as well as genetic markers have been employed by various researchers for characterizing the species/stocks. Among the phenotypic markers, otoliths are considered to have good taxonomic values. Otoliths are the structures located in the inner ear cavity of all teleosts and are known to aid in hearing and balancing. There are three calcareous dense structures (sagitta, lapillus and asteriscus). The otolith does not get resorption, thus helps to establish the link between present and past fish assemblages, aid in taxonomy and phylogeny assessment for reconstructing their evolution and understand the origin of modern fish fauna. In the present study, we assessed whether otolith morphology can be utilized to discern between species, genus, order and family as well as to determine whether otoliths of the same species vary within a population. A total of 65 fish species from diverse orders were sampled from the Gomti River, and were analyzed by binoculars and Scanning Electron Microscopy. The results of otolith morphological features were able to identify and classify fishes into 9 order, 26 family and 40 genera. The study indicates the potential of otoliths as a marker in species identification. However, their possible systematic and phylogenetic attributes need to be further explored for proper management of fisheries resources.

Keywords: River Ganges, Management, Otolith, Taxonomy

Morphological Identification of *Anadenus altivagus* (Theobald, 1862) from Pir Panjal Range, Western Himalayas: A Rediscovery After Decades

Hilal Ahmed

Department of Zoology, University of Kashmir, 190006

Email Id of Presenting Author: hilalahmed1991@gmail.com

Abstract

Anadenus altivagus, a large Asiatic terrestrial slug of the family Anadenidae, was historically recorded from the Shimla and Kashmir valleys in the western Himalayas. However, its recent distribution and population status remain uncertain due to the absence of contemporary records. This study documents the first confirmed occurrence of *A. altivagus* in the Gulmarg region of Jammu and Kashmir in recent years, reaffirming its presence in the Pir Panjal range. Targeted early morning field surveys in the montane alpine forests facilitated its detection. High-resolution macro photography was employed to document key morphological features, aiding in species confirmation. Diagnostic traits include a finely granular mantle, a coarsely reticulated dorsum exhibiting greenish-brown, yellowish-tawny, or blackish hues, a lighter mantle, a black head, a paler underside, four black tentacles, and an anus positioned on the right mantle side near the margin. This record contributes to the malacofaunal diversity assessment of the western Himalayas and underscores the need for further investigations into the distribution and ecology of native slug species. Given the increasing anthropogenic modifications in this fragile ecosystem, the study highlights the importance of conservation efforts targeting lesser-documented molluscan taxa. Additionally, it emphasizes the role of photographic documentation as a non-invasive tool in biodiversity monitoring and calls for comprehensive surveys to reassess the status of *A. altivagus* and other terrestrial gastropods in the Himalayan landscape.

Keywords: *Anadenus altivagus*, Terrestrial slug, Pir Panjal range, Malacofaunal diversity, Himalayan gastropods

Surface Ultrastructure of the Oromandibular Region of three Stone Loaches (Teleostei: Nemacheilidae) from Northeast India

Hrishikesh Choudhury

Department of Zoology, Gauhati University, Guwahati 781014, Assam, India

Email Id of Presenting Author: choudhuryhr165@gauhati.ac.in

Abstract

The oromandibular region of fishes, which include the mouth and associated structures like barbels, papillae or similar modifications, shows features associated with sensory functions of gustation, chemoreception and mechanoreception on its epidermal surface. Stone loaches of the family Nemacheilidae, which are characterized in having a sub-terminal mouth surrounded by three pairs of short barbels, are bottom-dwelling inhabitants of freshwater fluvial habitats including shallow streams and rapids of hilly areas and fast-flowing stretches of large rivers. The mouth, specifically the upper and lower lips, and the barbels of stone loaches bear tiny horn-like projections (or bumps) that are visible to the naked eye. Epidermal modifications of the oromandibular region is a significant evolutionary adaptation of stone loaches to dwell and survive in the fluvial habitats. The present study was undertaken to study and understand the nature, types and pattern of distribution of these epidermal gustatory features, specifically taste buds and unculi, on the oromandibular region of three nemacheilid representatives from the Brahmaputra River basin, namely *Mustura dikrongensis*, 'Nemacheilus' corica and *Paracanthocobitis mackenziei*. Scanning electron micrographs revealed similarity and variability in the presence (or absence) of taste buds (TBs) on the lips, barbels and rostral cap of these three fishes, which can be put under three categories — Type I, Type II and Type III TBs. Type I TBs were observed only in '*N.' corica*, but absent in *M. dikrongensis* and *P. mackenziei*. Similarly, Type III TBs were observed in *M. dikrongensis* and *P. mackenziei*, whereas absent in '*N.' corica*. Additionally, unculi and keratinzed cells are present on the oromandibular epithelium including the breathing valve.

Keywords: Taste bud, Unculi, Ultrastructure, Loaches, Brahmaputra basin

Redescription of Two Nereidid Worms (Annelida: Nereididae) from the Bay of Bengal, India

Jyoshna Pradhan[1,3*], Tulio F. Villalobos-Guerrero[2] and S. Balakrishnan[3]

[1]P.G. Department of Zoology, Fakir Mohan University, Balasore, Odisha – 756 020, India
[2]Department of Marine Ecology, Centro de Investigación Científica y de Educación Superior de Ensenada, Ensenada, Baja California –22860, Mexico
[3]Marine Aquarium and Regional Centre, Zoological Survey of India, Digha, West Bengal –721 428, India

**Presenting Author: Jyoshna Pradhan*
**Email Id of Presenting Author: pjyoshna78@gmail.com*

Abstract

The nereidids inhabit marine and estuarine habitats, and a few dwell in semi-terrestrial environments. They comprise about 700 species worldwide, but 87 species have been recorded in Indian waters. The present study redescribes two nereidids species originally described from India: *Neanthes glandicincta* (Southern, 1921) and *Dendronereis dayi* Misra, 1999, based on specimens collected near their type locality. *Neanthes glandicincta*, recorded also from Myanmar, Thailand and Singapore, can be distinguished from its congeners by the presence of dorsal ligule, median ligule and prechaetal notopodial lobe throughout, neuropodia with postsetal, inferior and superior lobes (the latter absent in posterior parapodia, the number of pharyngeal paragnaths in areas II, III and IV, and the reproductive form (epitokes). On the other hand, *D. dayi* has been recorded only from India. It differs from the other *Dendronereis* species by the presence of pharyngeal papillae on both rings,branchiae starting from chaetigers 8-9, fully-developed branchiae with main stem carrying simple branches (pinnate), anterior parapodia with long dorsal cirrophore, dorsal cirrus and ventral cirrus. The specimens of both species were collected in the muddy habitat near the river mouth of Kirtania and Balramgadi (Odisha), eastern Bay of Bengal. Morphological characters, such as the type and presence of paragnaths in the maxillary ring of *N. glandicincta* and the presence of teeth in the jaw and branchial morphology of *D. dayi*, are also discussed.

Keywords: Nereidids, Neanthes, *Dendronereis*, Type locality, India

Comparative Morphological Study of Scorpion Stingers: a Powerful Tool in Unravelling Their Diversity and Evolution

Manisha Mategaonkar*[1], Shakera Inamdar[1], Ishrat Shaikh[2] and Deshbhushan Bastawade[2]

[1]Postgraduate Department and Research Centre in Zoology, Modern College of Arts, Science and Commerce, Ganeshkhind, Pune

[2]Department of Zoology, Abeda Inamdar Senior College of Arts, Science and Commerce, Pune

**Presenting Author: Manisha Mategaonkar*

**Email Id of Presenting Author: msmategaonkar@gmail.com*

Abstract

Scorpions are extremely venomous terrestrial Arachnids belonging to Order Scorpionida. They have metasoma with bulbous telson and pair of venom glands. Being predatory, notorious for poisonous sting, venom of few species are lethal to man. Venom glands have independent ducts ending in stinger, acting as venom store against larger powerful prey. Scorpion venoms are mixtures of neurotoxins, hyaluronidase, acetylcholinesterase, PLA2, proteases, histamine releasers. India is a vast nation with myriad natural habitats harboring diverse Scorpion fauna represented by 8 Genera under 6 Families viz. Buthidae, Chaerilidae, Euscorpiidae, Scorpionidae, Hormuridae and Vaejovidae. The present study was carried out to study morphological and morphometric variations in stingers as each species is known to exhibit unique characters, important for species taxonomy. The study was conducted from May 2023 to December 2024 with collection sites including hills, rocks, loams, stones. Different sites around Pune included Junnar (19.2032°N, 73.8743° E), Indapur (18.1187° N, 75.0234° E), Baramati (18.1792° N, 74.6078° E), Jejuri (18.1792° N, 74.6078° E), Purandar (18.2825° N, 73.9735° E), Saswad (18.3463° N, 74.0302°E). The target Scorpions selected for study included *Heterometrus xanthopus, Hottentota tamulus, Orthochirus bicolor, Scorpiops deccanensis, Lychas tricharinatus* belonging to families Buthidae, Scorpionidae and Scorpiopidae. Live specimens were collected, studied for taxonomic characters and authenticated. A comparative morphological, morphometric account was studied for telson color, size, structure of venom vesicle, setae, length of aculeus and subaculear tubercle supported with Scanning electron micrograph imaging. The study reveals prominent morphological variations in the stingers as this character is crucial in evolution, as all Buthids have slender telsons with long aculei and Non buthids have bulbous telsons with shorter aculei. The sub-aculear protruberance is known to have evolved independently in three familial lineages. This study helps to unravel comparative stinger morphology highlighting predatory and defensive evolutionary strategies, thereby assessing their diversity in Pune region.

Keywords: Scorpion stingers, Venomous, Morphology, Predatory, Evolution

Molecular Identification of Forensically and Medically Significant Coffin Flies (Diptera: Phoridae) from Eastern India Utilizing COI Barcodes

Oishik Kar, Moubanti Das*, Arka Mukherjee, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India, M-Block, New Alipore, Kolkata-700053, West Bengal, India

**Presenting Author: Moubanti Das*
**Email Id of Presenting Author: dasmoubanti89@gmail.com*

Abstract

Coffin flies (Diptera: Phoridae) are essential to forensic studies since they can inhabit concealed decomposing cadavers like in coffins or buried carcasses. Their contribution to forensic cases is widely reported, especially in postmortem interval (PMI) estimation and dead body relocation. In addition, some phorid species have been reported to cause myiasis and are potential vectors of pathogens, raising medical concerns. However, traditional taxonomic identification of phorid flies is difficult due to their small size, cryptic morphology, and lack of proper taxonomic expertise to quickly identify adult and larval forms. Hence, entomologists are increasingly concentrating on alternative strategies to expedite identification procedures to overcome the issue. A short mitochondrial cytochrome oxidase I (COI) gene fragment is a potent marker for accurate molecular identification and robust phylogenetic analysis. The present study assesses the COI gene in identifying three phorid fly species from the *Megaselia* and *Puliciphora* genera collected from different geo-climatic regions of West Bengal. Seven sequences of three species were generated and submitted to GenBank. COI barcodes successfully differentiated between species, with Kimura-2-Parameter (K2P) intraspecific genetic divergences ranging from 0%-1% and Kimura-2-Parameter (K2P) interspecific genetic divergences ranging from 14.5%-34.1%. The outcomes of the phylogenetic analyses implementing NJ (Neighbour-Joining), ML (Maximum-Likelihood), and BA (Bayesian Analysis) methods demonstrated strong reciprocal monophyly and accurate species differentiation. The three delimitation approaches, namely ASAP, PTP, and GMYC, were used to correctly identify species, which produced more or less similar results and helped distinguish the three species. Furthermore, this work comprises the first COI barcoding of *Megaselia rufipes*, and *Puliciphora borinquenensis* in India. The current research unveils the usefulness of COI barcoding as a dependable molecular approach for phorid species identification in forensic entomology. Adding regional COI sequences to reference libraries like GenBank and BOLD would boost forensic and medical usage of their entomological evidence.

Keywords: Scuttle flies, Forensic entomology, Cytochrome oxidase I gene, DNA barcoding, Phylogenetic analysis

Three New Records of Ensign Flies (Diptera: Sepsidae) from Andaman and Nicobar Islands with Taxonomic Key to the Species

Mousumi Chowdhury*, Debdeep Pramanik, Koustav Mukherjee, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India, M-Block, New Alipore, Kolkata-700053, West Bengal, India

**Presenting Author: Mousumi Chowdhury*
**Email Id of Presenting Author: mousumi_chowdhury@yahoo.in*

Abstract

Flies of family Sepsidae are known for their striking courtship rituals and mate guarding behaviours. Also called 'ensign flies' or 'black scavenger flies', this taxon is not at all explored from Andaman and Nicobar Islands. Three species of sepsid flies were recorded for the maiden time from Andaman and Nicobar Islands – *Sepsis* (*Sepsis*) *indica*, *Sepsis* (*Sepsis*) *nites* and *Sepsis* (*Allosepsis*) *testacea*. Currently, the bay islands are home to four species of Sepsidae belonging to two genera. The taxonomic key to the sepsis species of Andaman and Nicobar Islands along with diagnostic characters, local distribution and remarks are also presented here.

Keywords: *Sepsis*, Island ecosystem, Systematic list, New records, Taxonomic key

Taxonomy and Diversity of Psychodid Flies (Diptera: Psychodidae) from Dry Deciduous Landscape of West Bengal, India

Namrata Ray*, Bindarika Mukherjee, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India, M-Block, New Alipore, Kolkata-700053, West Bengal, India

**Presenting Author: Namrata Ray*
**Email Id of Presenting Author: namrataray97@gmail.com*

Abstract

Moth-flies and sand-flies (Diptera: Psychodidae) are of utmost importance due to their disease spreading capabilities as mechanical and biological vector respectively. The present study documents the existence of psychodid fauna within animal sheds located in the dry deciduous landscape of West Bengal, which provides a unique habitat for these flies. A total of 516 psychodid flies have been collected from six animal sheds and further species level identification led to the presence of four species, viz. *Phlebotomus argentipes* Annandale & Brunetti, 1908; *Sergentomyia punjabensis* (Sinton, 1933); *Psychoda alternata* Say, 1824 and *Psychoda makati* del Rosario, 1936 in varying number across all those collection sites. Based on the number of collected specimens of different species, diversity indices (Shannon diversity index, Simpson's index) have been calculated to quantify their diversity in different animal sheds. Results shows that Shannon diversity index (H') is 0.787, represents a moderate diversity within the studied group while on the other hand Simpson's index (1-D) is 0.489, which also suggests moderate species evenness of psychodid fauna. Both the indices imply some species dominancy to some extent in terms of other psychodid species but could not be concluded as dominating one. Based on this preliminary findings, further in-depth studies are crucial to enhance our understanding of the diversity of psychodid vector flies in domesticated animal habitats in this relatively underexplored region. Such investigations will offer valuable insights into the ecological roles of this significant faunal group, aiding in the broader comprehension of their potential impact on disease transmission and ecosystem functioning.

Keywords: Psychodidae, Vector, Dry deciduous landscape, Taxonomy, Diversity

A New Species of Sericine Chafer Beetle (Coleoptera: Scarabaeidae: Melolonthinae) from India

Aparna Sureshchandra Kalawate[1], Nancy Supriya[*2] and Pooja Kumar Misal[3]

[1]Zoological Survey of India, Western Regional Centre, Vidya Nagar, Sector-29, P.C.N.T (PO), Rawet Road, Akurdi, Pune, Maharashtra 411 044, India
[2]Department of Zoology, Fergusson College (Autonomous) Pune-411 004, Maharashtra, India
[3]Department of Zoology, Shivaji University, Vidyanagar, Kolhapur - 416 004. Maharashtra, India

**Presenting Author: Nancy Supriya*
**Email Id of Presenting Author: nancysupriya3@gmail.com*

Abstract

Neoserica Brenske, 1897 represents the most diverse groups within the sericini tribe. They are phytophagous scarab feasting on a diverse range of plants. Its small size and colour patterns make it challenging group to identify merely based on morphological characters. This paper describes a new species of Sercine chaffer, *Neoserica akurdi* sp. nov. from the Pune District of Maharashtra. The new species was described based on its morphological and genital characters. It is morphologically similar to its congener: *Neoserica gravida* Ahrens & Fabrizi, 2016 and *Neoserica putaoana* Ahrens, Liu, Fabrizi, Bai and Yang, 2014. However, it differs in elytral patterns and parameres of male genitalia. The illustrations of the adult along with male genitalia has been depicted in the current study. A map showing the collection locality has also been included. This paper includes a checklist of the tribe Sericine chaffer beetle, along with distribution records of the species found in India. Furthermore, we have provided details on the brief analysis of the research history of sericine chaffers from India. The research history of Indian sericine chaffers demonstrates the general patterns of when and by whom the Indian species were documented throughout the pre-Independence, post-Independence, and recent periods.

Keywords: Taxonomy, New species, Sericini, Beetles, Pune

Integrative Taxonomy of Invasive Whiteflies and its Natural Enemies in India – a Story of Decade

Selvaraj, K[1*], Kavya Yadav G.A.[1], Vasundhara, J.[1] and Rameshkumar, A[2]

[1]ICAR- National Bureau of Agricultural Insect Resources, Bengaluru-560 024, India
[2]Hymenoptera Section, Zoological Survey of India (HQ), Kolkata-700053, West Bengal, India

Presenting Author: Selvaraj, K
**Email Id of Presenting Author: selvaentomo@gmail.com*

Abstract

In India, invasive whiteflies (Hemiptera: Aleyrodidae) have become a major concern due to their rapid spread, high reproductive potential, and reduce crop yields both directly and indirectly. Integrative taxonomy has played a crucial role in identifying and managing whiteflies. In last decade (2015-2024), eight invasive whiteflies viz., solanum whitefly, *Aleurotrachelus trachoides* (Back) during 2015, rugose spiraling whitefly, *Aleurodicus rugioperculatus* Martin during 2016, legume feeding whitefly, Tetraleurodes acaciae (Quaintance), nesting whiteflies, *Paraleyrodes bondari* Peracchi and *Paraleyrodes minei* laccarino during 2018, palm infesting whitefly, *Aleurotrachelus atratus* Hempel, woolly whitefly, *Aleurothrixus floccosus* (Maskell) during 2019, respectively and annona whitefly, *Aleurotrachelus anonae* during 2024 invaded India. Species of exotic whiteflies are highly polyphagous and co-exist in more or less the same niche and have a similar pattern of growth and development. These invasive species are native to the Neotropical region, mostly from Central America and the Caribbean. Extensive surveys revealed that these species are spreading rapidly in the large geographical region of India mostly through transportation of infested seedlings. Several biological control agents have also been recorded to parasitize and predator on invasive whiteflies. Exotic parasitoids (Hymenoptera: Aphelinidae) viz., *Encarsia guadeloupae* Viggiani and *Encarsia dispersa* Polaszek on A. rugioperculatus, *Encarsia cubensis* Gahan on *A. atratus, A. trachoides* and *A. floccosus*, *Encarsia sophia* Girault and Dodd, *Encarsia* sp. and *Eretmocerus* sp. parasitize on *A. anonae*. Generalist predators viz., *Acletoxenus indicus* (Diptera), *Apterochrysa astur* (Neuroptera), *Cybocepalus indicus* and *Scymnus latemaculatus* from coleoptera were reported to predate on whiteflies. This decade-long research has significantly enhanced our understanding of invasive whiteflies in India, shedding light on their diversity, invasion pathways, and ecological interactions. Early detection of invasive species and its natural enemies methods could minimize the economic losses contributing to sustainable agriculture and pest control in the country.

Keywords: Whiteflies, Parasitoids, Integrative Taxonomy, Invasive, Predators

A New *Drawida* Michaelsen, 1900 (Clitellata, Moniligastridae) Species Earthworm from the Western Ghats of Northern Kerala, South-Western India

S. Prasanth Narayanan*[1], R. Paliwal[2], Sylas V.P.[3], A.P. Thomas[4] and J.M. Julka[5]

[1]Mahatma Gandhi University
ZSI
[3]Associate Professor, SES, Mahatma Gandhi University
[4]Mahatma Gandhi University
[5]Shoolini University

**Presenting Author: Prasanth Narayanan S.*
**Email Id of Presenting Author: narayanankc@gmail.com*

Abstract

A new moniligastrid earthworm species, *Drawida karatala* Narayanan, Paliwal & Julka, sp. nov., is described based on the specimens collected from a portion of the Western Ghats biodiversity hotspot of Kasaragod District, Kerala, India. It belongs to the robusta group characterized by the glandular prostates and bilobed spermathecal atria. Within this group, *D. karatala* sp. nov. belongs to the subgroup with distinctly bilobed atrium. Among the congeners of the subgroup, *D. karatala* sp. nov. shows affinity with *D. robusta robusta* (Bourne, 1886), *D. robusta ophidioides* (Bourne, 1894), *D. somavarpatana* Rao, 1921, *D. thomasi* Narayanan & Julka, 2017 and *D. paliwali* Narayanan, 2024. It can easily be differentiated from all the congeners of the group by the shape of the spermathecal atrium, which has superficial resemblance to closed human palm, and shape of the prostate, which is anvil-like. Detailed description of the external and internal characteristics of the new species, along with the illustrations of the key characters are provided in this work. Apart from this a key to the robusta group of *Drawida* species is provided. With this new finding, a total of 77 *Drawida* species are known from India and of these 53 are reported from the Western Ghats biodiversity hotspot.

Keywords: Annelida, Biodiversity Hotspot, Endemic, Kasaragod, Oligochaeta

Type Catalogue of Reptile Specimens in the National Zoological Collection of the Reptilia Section in the Zoological Survey of India, Kolkata, India

Pratyush P. Mohapatra*, Sumidh Ray, Soumya Bhattacharyya, Sudipta Debnath and Souradeepa Kundu

Zoological Survey of India, FPS Building, Indian Museum Cam

**Presenting Author: Pratyush P. Mohapatra*
**Email Id of Presenting Author: pratyush.m@zsi.gov.in*

Abstract

Article 72.10 of the International Code of Zoological Nomenclature (ICZN) emphasizes the significance of name-bearing types, stating that they must be carefully preserved and entrusted to responsible individuals for their safekeeping. Additionally, Recommendations 72D to 72F further outline the responsibilities of institutions that hold type specimens. In this paper, we present an updated catalog of the type specimens of reptiles housed in the Zoological Survey of India, Kolkata (ZSI). These specimens originate from present-day India, as well as regions in South and Southeast Asia and the Middle East, collected since the late 19th century. Currently, the Reptilia Section of the ZSI holds a total of 385 type specimens (holotypes, paratypes, neotypes, and lectotypes) representing 285 species, including 15 species of turtles, 161 species of lizards, and 109 species of snakes. We provide the status of these type specimens and highlight the importance of name-bearing types in taxonomic research. As per the museum records, prior to India's independence, some type specimens were loaned or donated to various museums, particularly the British Museum of Natural History (now the Natural History Museum, London) and other European institutions, which are yet to be returned to ZSI. Furthermore, some of the type specimens are also damaged due to unavoidable circumstances. Since the last published catalog of reptile type specimens at ZSI, over 30 type specimens have either been further damaged or are now considered lost. To enhance accessibility, ZSI has digitized 176 type specimens of species from India and other countries, capturing high-resolution photographs that are now available on the ZSI portal for public use. For taxonomic stability, there is an urgent need to restore the name-bearing types, designate lectotype from the syntypes, sequence the types, and perform Micro-CT scanning of the type specimens, for which historical collections play a crucial role.

Keywords: ICZN, Holotype, Syntype, Type specimen restoration, Taxonomy

Description of *Acanthurella himalayanus* sp. nov. (Collembola: Entomobryidae), a New Species from the Eastern Himalayas

Pritha Mandal* and Guru Pada Mandal

Zoological Survey of India

**Presenting Author: Pritha Mandal*
**Email Id of Presenting Author: prithamandal1995@gmail.com*

Abstract

Collembola, a non-insect hexapod class, plays a crucial role in soil ecosystem functioning, particularly in the degradation of organic matter and the enhancement of soil aeration. These minute (1-5 mm), wingless organisms, often overlooked due to their small size and habitat in leaf litter, under stones, or within soil layers, contribute significantly to the structural dynamics of topsoil. In this study, we describe a new species of the genus *Acanthurella* Börner, 1906, collected from the village of Mungpoo, Kalimpong district, West Bengal, India.The genus *Acanthurella* currently includes nine known species globally and belongs to the subfamily Lepidocyrtinae Wahlgren, 1906, which encompasses a total of 711 species worldwide. Species within the genus are characterized by the presence of finely striated, rounded scales on the body, a non-annulated fourth antenna segment, and a dens with a single row of ciliated spines. These key morphological traits serve to distinguish *Acanthurella* from its close relative *Acanthocyrtus* Handschin, 1925. The new species described herein, *Acanthurella himalayanus* sp. nov., is distinct in several morphological features, including its unique body color patch, chaetotaxy, and a humped mesothorax. Chaetotaxy and color patterns have been previously established as significant criteria for species delimitation within the genus *Acanthurella*. *Acanthurella himalayanus* sp. nov. and *Acanthurella betlaensis* Mandal, Suman & Bhattacharya, 2016 share a similar pigmentation pattern on Abdomen IV, however the new species differs in its antennal segment ratio and overall morphology. This is the first description of the chaetotaxy for the genus *Acanthurella*, contributing new insights into the taxonomic framework of the genus. All species of *Acanthurella* are restricted to tropical regions, with the discovery of *Acanthurella himalayanus* sp. nov. further highlighting the ecological and taxonomic significance of the Eastern Himalayan region as a hotspot for *Collembola* diversity.

Keywords: Soil invertebrate, Collembola, Chaetotaxy, Key, New species

Growth Dynamics of Selected Barb Species on the Basis of Morphometric Variability from Eastern Ghats of Southern Odisha, India

Priyanjoli Roy* and Sharat Kumar Palita

Central University of Odisha

**Presenting Author: Priyanjoli Roy*
**Email Id of Presenting Author: pianoroy9@gmail.com*

Abstract

Barbs, an ecologically and economically important group within the Cyprinidae family, exhibit high interspecific and intraspecific plasticity. This study examines growth variation in five species (*Puntius sophore*, *P. ticto*, *P. conchonius*, *P. amphibius*, and *P. dorsalis*) from different stretches of the Kolab River (Duruguda, Kanheiput, Ghatguda) in Koraput, Eastern Ghats of Southern Odisha. Thirty specimens per species, collected between August 2019 and May 2020, were analyzed for 21 morphometric parameters using Vernier calipers (0.1 mm precision). Total Length (TL) and Head Length (HL) were considered independent variables, while other morphometric traits were dependent. Most parameters varied significantly with TL, while some showed variation with HL. High coefficient of determination (R^2) values indicated a strong fit of the regression model, and the regression coefficient (b < 3) suggested negative allometric growth. Correlation analysis showed a significant positive relationship for most traits, with species-specific exceptions. In *P. sophore*, TL with Maximum Body Width (MBW) and Post Anal Length (PAL) was positive but insignificant. In *P. conchonius*, TL with Anal Fin Length (AFL) was negative and insignificant, whereas TL with Post Dorsal Length (PODL) was positive but insignificant. In *P. dorsalis*, TL with Caudal Peduncle Length (LCPD) was negative and significant, while HL with Eye Diameter (ED) was positive but insignificant. These findings emphasize the importance of morphometric analysis in species identification, biodiversity assessment, and ecological studies. As the first study of its kind from Koraput, it aids in distinguishing cryptic species and supports conservation and fisheries management. Given the ecological significance of barb and the threats they face, accurate classification is crucial for sustainable resource management. While molecular tools enhance species identification, morpho-taxonomy remains a fundamental reference for species delineation and evolutionary studies.

Keywords: *Puntius*, Barbs, Koraput, Morphometry, Biodiversity

Clarias batrachus and Its Cestode Tenants – A Hub for Many Species or Spectacles to Clear Illusion?

Roshmi Biswas* and Anirban Ash

Helminthology Laboratory, Department of Zoology, The University of Burdwan, Burdwan-713104, West Bengal

**Presenting Author: Roshmi Biswas*
**Email Id of Presenting Author: rayapdj@gmail.com*

Abstract

India, recognized as a megadiverse country by the IUCN, harbours 7-8% of all recorded species, including over 91,000 animal species. While this biodiversity is well-documented, the diversity of unsegmented freshwater cestodes (Order Caryophyllidea) remains less explored. Globally, 121 valid species across 42 genera are known, whereas India alone has reported over 84 species (excluding 78 synonymized previously). Many of these are endemic and new, such as Mystocestus anindoi from Mystus catfishes, and some hold significance in host biogeography and evolution (e.g., *Paracaryophyllaeus lepidocephali*, the only Indomalayan representative showing vicariance). However, a large proportion of Indian "new taxa" have been described from Clarias batrachus (Linnaeus, 1758), a widely available catfish species. Many of these taxa were later invalidated for being indistinguishable with existing species or non-compliance with the International Code of Zoological Nomenclature. This study investigates whether many cestodes reported from *C. batrachus* represent distinct species or merely exhibit fixative-induced morphological variations. Specimens from *C. batrachus* were freshly collected, fixed using different fixatives, and analysed with molecular data (hologenophores) to assess their taxonomic validity. Significant morphological variations were observed across different fixatives. However, molecular data confirmed their conspecificity. Helminth taxonomy remains in its early stages, with unresolved issues concerning species complexes, cryptic species, generic classification, biogeography, and life cycles. This study underscores the importance of selecting appropriate fixatives and fixation methods for accurate species identification.

Keywords: Cestodes, Caryophyllidea, Fixation, *Clarias*, Hologenophores

Studies on DNA Barcode and Phylogenetic Analysis of Three Land Snail Species of India

S R Magare[1], Sachin R. Patil[2*], A. Shabnam, K. P[2]. Dinesh and Basudev Tripathy[2]

[1]A.S.Mandal's, C.H.C.Arts, S.G.P.Comm.&.B.B.J.P.Sci. College, Taloda-425 413, India
[2]Zoological Survey of India, Western Regional Centre, Akurdi, Pune-411044, India

**Presenting Author: Sachin R. Patil*
**Email Id of Presenting Author: srpatil17@gmail.com*

Abstract

Studies carried out on DNA Sequences (Cytochrome/Mitochondrial Gene Co I/II) of three land snail species of gastropod molluscs of India i.e. *Glessula gemma* (Reeve, 1850) collected from Shahada Region, Dist. Nandurbar, North-Western Maharashtra, *Eurychlamys vilipensa* (Benson, 1853) and *Succinea tornadri* Rao, 1924 collected from Pune region of Western Ghat of India. We express here the morphology and phylogenetic analysis of *Glessula gemma* (Reeve, 1850), *Eurychlamys vilipensa* (Benson, 1853), and *Succinea tornadri* Rao, 1924. In present work, Phylogenetic Analysis of other species belonging to Genera *Glessula* Martens,1860; *Eurychlamys* Godwin-Austen, 1899 and *Succinea* Draparnaud, 1801 have been provided based on these DNA sequences which are uploaded in Gene Bank.

Keywords: Land Snail, *Glessula gemma*, *Eurychlamys vilipensa, Succinea tornadri*, DNA Barcode, Phylogenetic Analysis

Genetic and Morphological Insights into the Genus *Neoloboptera* Princis, 1953 (Blattodea: Blattellidae) from Peninsular India with a New Species Description

A. Shabnam[1*], M. Senraj[2], Sahil Shikalgar[1], Rashmi Morey[3] and K.P. Dinesh[1]

[1]Zoological Survey of India (ZSI), Western Regional Centre (WRC), Pune—411044, India
[2]Zoological Survey of India (ZSI), Southern Regional Centre (SRC), Chennai—600028, India
[3]Dept. of Zoology, Professor Ramkrishna More Arts, Commerce and Science, Pune-411035

**Presenting Author: Shabnam. A*
**Email Id of Presenting Author: a.shabnam1312@gmail.com*

Abstract

The genus *Neoloboptera* comprises six species globally and have documented to be distributed across India, Afghanistan, China, and Thailand. Of these, two species viz., *N. chakrabortyi* Roth, 1995 and *N. indica* (Brunner von Wattenwyl, 1865) are having type locality in India. Since their initial description, there have been no fresh specimen-based reports for both the species. Notably, none of the species within the genus have voucher-affiliated genetic data to date. Negligible DNA barcode data exist on the genus with most studies limited to species descriptions and checklists globally. To date, *Neoloboptera* lineages have not been included in any molecular or phylogenetic studies involving either single-gene or multi-gene analyses. This implies dearth of molecular data for the members of the genus on the global phylogeny for Blattodea. To address this gap, the present study provides the maiden voucher-based DNA barcode and multi-gene phylogeny for *Neoloboptera*, based on fresh collection from the Deccan Plateau zone of Maharashtra, within Peninsular India. Morphologically, our specimen does not match any of the previously documented species within the genus from India. At the molecular level, it represents an independent lineage in the mitochondrial COI gene tree and multi-gene phylogenetic analyses, incorporating two mitochondrial genes (mt COII, mt 16S rRNA) and one nuclear gene (nu 28S rRNA). Consequently, we report a new species, *Neoloboptera peninsularis* Shabnam & Senraj, sp. nov. utilizing an Integrative Taxonomic Approach (ITA) including Morphology, DNA barcoding, genetic distance, multi-gene phylogeny, and geographical distribution. Additionally, Linnaean, Wallacean, and Darwinian Shortfalls are discussed in context to the genus *Neoloboptera* from India.

Keywords: Deccan plateau, Blattodea, DNA barcode, Phylogeny, Systematics

Unveiling Cryptic Diversity in the Frogs of Genus *Nyctibatrachus* Boulenger 1882: An Integrative Taxonomic Study from the Western Ghats of Goa

Shubham Rane*, Sagar Naik and Nitin Sawant

Zoology-School of Biological Sciences and Biotechnology, Goa University, Taleigao Plateau, Panaji-403 206, Goa, India

**Presenting Author: Shubham Rane*
**Email Id of Presenting Author: shubhamrane7036@gmail.com*

Abstract

This study dives into the fascinating world of *Nyctibatrachus* (Wrinkled frogs), a frog genus endemic to the Western Ghats of India and is well-known for its unique adaptations to stream life. By using an integrative taxonomic approach, we confirm the existence of *Nyctibatrachus jog* alongside *Nyctibatrachus petraeus* in Goa and uncover a previously unrecognized lineage within this genus. Field surveys were carried out in the stream habitats throughout the Western Ghats region in Goa. We identified species based on key morphological traits, while also analysing acoustic traits and the phylogenetic analysis were performed using mitochondrial as well nuclear markers. The results not only confirmed the identity of *N. jog*, marking a notable northward expansion from Karnataka into Goa, but also revealed a distinct, undescribed lineage, hinting at hidden diversity within *Nyctibatrachus*. The acoustic data showcased variations between species, reinforcing the idea of reproductive isolation. Overall, these findings emphasize the power of combining morphology, acoustics, and genetics for precise species identification and shed light on the evolutionary richness of *Nyctibatrachus* in the Western Ghats. This research highlights the critical need for ongoing surveys and conservation efforts to safeguard amphibian diversity in this vital biodiversity hotspot.

Keywords: Morphology, Phylogeny, Acoustics, Molecular Markers, Stream Frogs

Morphological and Molecular Identification of the Genus *Diplonyhcus* Laporte, 1833 (Hemiptera: Belostomatidae) from Eastern Ghats, India

Somesh Banerjee[1*], Devadoss Kumar[2] and Deepa Jaiswal[1]

[1]Freshwater Biology Regional Centre, Zoological Survey of India, Hyderabad, Telangana
[2]Department of Zoology, Virudhunagar Hindu Nadars Senthikumara Nadar College, Virudunagar, Madurai Kamaraj University, Madurai

**Presenting Author: Somesh Banerjee*
**Email Id of Presenting Author: banerjeesomesh49@gmail.com*

Abstract

The present study is on the morphology and molecular data of the genus *Diplonyhcus* Laporte, collected from the Eastern Ghats of Odisha, Andhra Pradesh, and Telangana, India. Integrative approach on the genus *Diplonychus* identification through morphological and molecular systematics are discussed. The morphological identification was based on the structure of apex of head, posterior pronotal angle, paramere, and structure of the inner subapex of corium. Molecular characterization was based on the mitochondrial cytochrome oxidase subunit I (COI) gene. Species identified as being *D. annulatus, D. molestus* and *D. rusticus*. Phylogenetic trees were constructed for both genes, and the COI fragment shows raw genetic distance between 3.1-4.5% among the three species of *D. annulatus*, *D. molestus* and *D. rusticus*. The *D. molestus* and *D. rusticus* have a genetic distance of 0.310-0.445, according to the genetic distance heatmap, signifying that the two species are genetically comparable yet distinct. *Diplonychus annualtus* showed much genetical difference from the other two species. The present study contributes three novel mitochondrial COI for the first time from India.

Keywords: Aquatic bugs, Taxonomy, DNA barcodes, mtCOI gene

Glyptothorax dihangensis, a New Sisorid Catfish, (Teleostei: Sisoridae) from Arunachal Pradesh, North-Eastern India

Diamond Rajakumar Tenali[1*], Yilbong Yirang[2], Asha Kiran Tudu[3], Shubham Kashyap[4], Tage Tajo[5] and Sourabh Debbarma[6]

[1]Department of Zoology, Andhra University, Visakhapatnam, Andhra Pradesh
[2]Central Institute of Fisheries Education, Versova, Mumbai, India
[3]Freshwater Fish section, Zoological Survey of India, Kolkata, India
[4]College of Fisheries, Central Agricultural University(I), Lembucherra, Agartala, Tripura, India
[5]SAGE University, Bhopal, Madhya Pradesh, India.
[6]Fisheries College and Research Institute, Dr. J. Jayalalithaa Fisheries University, Thoothukudi, Tamil Nadu, India

**Presenting Author: Diamond Rajakumar Tenali*
**Email Id of Presenting Author: diamondraj.t@gmail.com*

Abstract

Ichthyological surveys in the stretches of Siang River resulted a new species of sisorid catfish of the genus *Glyptothorax*, which is here described from one of the North Eastern state Arunachal Pradesh of India. The new species, *Glyptothorax dihangensis*, can be distinguished from congeners having a combination of the following characters: a cone-shaped thoracic adhesive apparatus, with a shallow median depression that is widely opened posteriorly by skin ridges; unculiferous ridges of adhesive apparatus not extending anteriorly onto gular region; presence of plicae on ventral surfaces first pectoral and pelvic fins rays, maxillary barbel reaching half of the pectoral fin length; outer mandible barble reaching pectoral fin; presence of three pale cream longitudinal stripes on dorsal, lateral and ventral sides of the body; tuberculated body. Further, it is distinguished by the morphometric data for the body depth at the anus, maxillary barbel length, adipose fin base length and as well as clear evidence in meristic data.

Keywords: Fish and Fisheries, Taxonomy, Systematics, Siang River, Brahmaputra drainage

Historical Pitfalls in Systematics and Distribution of Silver Pomfrets (Scombriformes: Stromateidae): An Integrative Taxonomic Approach

Subal Kumar Roul[1*], Jeena N. S[1], Rajan Kumar[1], R Vinothkumar[1], Shikha Rahangdale[1], Summaya Rahuman[1] and Shubhadeep Ghosh[2]

[1]ICAR-Central Marine Fisheries Research Institute, Cochin - 682 018, Kerala, India
[2]Indian Council of Agricultural Research, Krishi Bhavan, Dr Rajendra Prasad Rd, New Delhi, Delhi -110 001, India

**Presenting Author: Subal Kumar Roul*
**Email Id of Presenting Author: subalroul@gmail.com*

Abstract

Silver pomfrets (*Pampus* spp.), a highly valuable commercial fishery resources distributed across the Indo-Western Pacific has a long legacy of complex taxonomic confusion due to their recent divergence and conserved morphology. In this study, the cryptic species *Pampus griseus* is resurrected from the synonymy of *P. argenteus* and re-described as a valid species based on an integrative taxonomic approach combining morphological and molecular data. Bayesian analysis of phylogenetic interrelationships was conducted using two data sets: concatenated mitochondrial gene sequences (1822 nucleotides) and curated COI barcodes (582 nucleotides) derived from three recorded species - *P. candidus, P. chinensis*, and *P. griseus* along with the sequences retrieved from GenBank. The accuracy of GenBank COI sequences was verified, and misidentifications were corrected. The resulting phylogenetic tree distinguished seven species into separate clades with no shared haplotypes, aligning with observed morphological divergence. Furthermore, the concatenated dataset strongly supported a polytomous clade for the *P. cinereus* species complex (*P. cinereus, P. griseus*, and *P. candidus*), which share synapomorphies that have led to frequent misidentifications in previous studies. The combined evidence from this study, along with previous morphological and molecular data, confirms that all seven species are both genetically and morphologically distinct. A revised key to Pampus species is provided, alongside corrected geographical distributions of all the silver pomfrets, which reveal the complete absence of *P. cinereus* and *P. argenteus* in the Indian Ocean. Additionally, new English names are proposed as 'Bengal Silver Pomfret' for *P. griseus*; 'Indian Silver Pomfret' for *P. candidus*; 'Japanese Silver Pomfret' for *P. punctatissimus*. This study enhances taxonomic clarity, addresses existing research gaps, and justifies each species description through robust and defensible taxonomic protocols. These findings will improve the management and conservation of Pampus species in the Indo-Western Pacific region.

Keywords: Integrative taxonomy, Silver pomfrets, COI, Phylogenetic, Resurrected

Fishes of the Genus *Badis* Bleeker, 1853 in India with a Note on the Validity of *Badis triocellus* Khynriam & Sen, 2013

Swamarpita Mukherjee[1*], Pratima Singh[1], Dimos Khynriam[2] and Laishram Kosygin[1]

[1]Zoological Survey of India, Freshwater Fish Section, 27 JL Nehru Road, Kolkata, India
[2]North Eastern Regional Centre, Zoological Survey of India, Shillong, Meghalaya, India

**Presenting Author: Swamarpita Mukherjee*
**Email Id of Presenting Author: swamarpitasjm20@gmail.com*

Abstract

A checklist of the fishes of the genus *Badis* distributed in India has been prepared based on the present study and available literature. It comprises a total of 18 species belonging to seven species groups. *Badis triocellus* was previously regarded as a junior synonym of *B. singenensis* by some workers. A comparative analysis has been conducted on the two species, reaffirming the current status of *B. triocellus* as a distinct species, and its species group has been identified. The species group of *B. rhabdotus* has also been discussed. A key to the species of the genus Badis reported in India has been provided.

Keywords: Badidae, *Badis*, Species group, Validity, India

First DNA Barcode for the Scolopendrid Centipede *Cormocephalus pilosus* Jangi, 1955 with an Additional Information on *Rhysida longipes* (Newport, 1845)

Thapasya, K[1*], Sahil Sikalghar[1], P.M. Sureshan[2], K. P. Dinesh[1] and Basudev Tripathy[1]

[1]Zoological Survey of India, Western Regional Centre, Vidya Nagar, Sector-29, P.C.N.T (PO), Rawet Road, Akurdi, Pune, Maharashtra 411044, India.

[2]Zoological Survey of India, Western Ghat Regional Centre, Kozhikode, Kerala, India

**Presenting Author: Thapasya K*

**Email Id of Presenting Author: thapasya1444@gmail.com*

Abstract

Centipedes, classified under the class Chilopoda, are crucial soil dwelling arthropods and a significant part of an integral ecosystem having a deeper evolutionary history. Globally, they exhibit a diversity of 3145 documented species categorized under 400 genera, 24 families, and five distinct orders. Among these, the order Scolopendromorpha includes giant centipedes inhabiting in the tropical and subtropical regions. Over 700 species within this order have been reported worldwide across 67 genera and five families. The family Scolopendridae, under this order, is the most extensively studied group and comprises 533 species within 45 genera globally. In India, this family exhibits a reported diversity of 69 species under seven genera. Despite ongoing research efforts on Indian Scolopendridae, DNA Barcode studies remain limited, primarily focusing on the Western Ghats, highlighting a gap in molecular data from other regions of India. The present study aims to document the first DNA barcode data for the species *Cormocephalus pilosus* and provide additional molecular data for *Rhysida longipes*, both classified under Scolopendridae. *C. pilosus* is an endemic species with its type locality in Maharashtra and confined to the Peninsular India, while *R. longipes* has a wide geographical distribution. Phylogenetic analyses were performed for both genera to assess the monophyly of *R. longipes* utilizing the existing sequences from the NCBI database, and to ascertain the phylogenetic position of *C. pilosus* lineage with other members of Cormocephalus. The study also discusses the current status of genetic data availability for these genera and its utility for future studies.

Keywords: Centipede, Chilopoda, Scolopendromorpha, Scolopendridae, DNA Barcode

DNA Barcoding for Two-Endemic Species of Land Snail *Ariophanta solata* (W. H. Benson, 1848) and *Ariophanta belangeri* (Deshayes, 1832) (Gastropoda: Ariophantidae) from Western Ghats, India

Uday Kumar*, Basudev Tripathy, Sahil Sikalghar and K. P. Dinesh

Zoological Survey of India (ZSI), Western Regional Centre (WRC), Pune- 411044, India

**Presenting Author: Uday Kumar*
**Email Id of Presenting Author: Udaysujal2008@gmail.com*

Abstract

The family Ariophantidae is represented by 53 genera all across the south and southeast Asia. The genus *Ariophanta* is known to have 20 species having their predominant distribution in India, wherein most of the species are reported to be endemic to the Western Ghats. Insights into the GenBank suggested limited DNA barcode availability for the members of the genus. Mitochondrial DNA barcodes (mt COI) were generated for the two endemic species viz. *Ariophanta solata* known to be (endemic to the Western Ghats) and *Ariophanta belangeri* (endemic to the Peninsular India). Being the first DNA barcodes for both of the species, preliminary single gene phylogeny suggested that the two distinct lineages justifying the morphological species identities. Most of the members of the *Ariophanta* are known by the original descriptions as discoveries were made during the colonial period and thereafter, there is no collections or locality data available. There is a need to revisit the type localities to establish the genetic identity of the species described earlier. Morphological descriptions are provided for both the species with shell morphology to corroborate with the generic information with related species occurring in Western Ghats of India.

Keywords: Molecular, Morphology, Diversity, Gastropoda, *Ariophanta*

Exploring the Genetic Landscape of *Argiope anasuja*: Phylogenetic Relationships and Species Differentiation Using DNA Barcoding

Chepe. V.*, Phirke. P. and Patil. S.

Fergusson College, Pune University

**Presenting Author: vaishnavi chepe*
**Email Id of Presenting Author: Vaishu3464@gmail.com*

Abstract

The Araneidae genus *Argiope* is one of the fascinating genera to study due to its web pattern decoration and signature way of presenting themselves on the web. DNA barcoding is the most emerging tool of this era. In this study, we use COI gene for DNA barcoding of the species Argiope anasuja, which belongs to the family Araneidae (spiders). The primary objective was to assess the phylogenetic relationships within the genus Argiope and identify genetic differentiation between *Argiope anasuja* and other species within the same genus. Mitochondrial gene cytochrome c oxidase subunit I (COI) was selected as the barcode marker. genetic variation and alignment. Phylogenetic trees were constructed using various methods, including maximum likelihood and Bayesian inference, to infer evolutionary relationships. The results revealed a distinct genetic signature for *Argiope anasuja*, with significant differentiation from closely related species within the genus Argiope. The analysis also identified well-supported clades that corresponded to species-level divergence. Our study highlights the utility of DNA barcoding in resolving taxonomic ambiguities and providing insights into the evolutionary patterns of the genus *Argiope*. The findings also contribute to the broader understanding of the biodiversity within the Araneidae family and emphasize the importance of molecular tools in studying arachnid systematics. Overall, the result sheds light on the evolutionary relationships within this diverse and ecologically significant genus and their species complex.

Keywords: *Argiope anasuja*, COI gene, Evolutionary relationship, Phylogenetics, DNA barcoding

Redescription of Two Species of Genus *Cistelomorpha* Redtenbacher, 1868 (Coleoptera: Tenebrionidae) from India

T.K. Viswanath[*1,2,3], V. D. Hegde[1] and K. M. Remia[2]

[1]Zoological Survey of India, Western Ghat Regional Centre, Kozhikode 673006, Kerala, India
[2]Department of Zoology, MES Mampad College, Malappuram 676542, Kerala, India
[3]University of Calicut, Thenhipalam, Malappuram 673635, Kerala, India

**Presenting Author: T K Viswanath*
**Email Id of Presenting Author: vivekvishvanath@gmail.com*

Abstract

Vaguely described comb-clawed beetles (Tenebrionidae: Alleculinae) of genus *Cistelomorpha* Redtenbacher, 1868 namely *Cistelomorpha trabeata* Fairmaire, 1894 and *Cistelomorpha nigrolineata* Allard, 1894 are redescribed from India based on the specimens collected from Tamil Nadu. In addition, the aedeagus of *C. nigrolineata* is documented for the first time and also this is the rediscovery of *C. trabeata* since its description. The specimens were collected using light trap, killed and stored in alcohol, later pinned, dried, labelled and identified. The identified specimens are deposited in Zoological Survey of India, Western Ghat Regional Centre, Kozhikode, Kerala. Illustrations are provided along with the redescription.

Keywords: Alleculinae, Darkling beetles, India, Redescription, Rediscovery

Review of the Indian Species of the Genus *Podontia* Dalman, 1824 (Coleoptera: Chrysomelidae: Galerucinae: Alticini)

Priyanka Ghosh[1, 2*] and Devanshu Gupta[1]

[1]Zoological Survey of India, Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata– 700053
[2]University of Calcutta, Ballygunge Science College, 35, Ballygunge Circular Road, Ballygunge, Kolkata– 700019

**Presenting Author: Priyanka Ghosh*
**Email Id of Presenting Author: priyankaghosh8559@gmail.com*

Abstract

The genus *Podontia* Dalman, 1824 (Coleoptera: Chrysomelidae: Galerucinae: Alticini), comprises 15 species globally and is characterized by a bifurcate prosternum, a saddle-shaped mesosternum, and strongly inwardly curved bifid tarsal claws. These beetles, primarily distributed across Southeast Asia, are recognized for their vivid coloration and phytophagous habits. As specialized herbivores, they significantly influence ecosystems by feeding on specific host plants, including agriculturally important crops. However, species identification within this genus using male genitalia remains underexplored, necessitating detailed morphological analysis. Studies on their diversity, distribution, and ecological impact in India are also limited. In this study, we examined specimens from the National Zoological Collection of the Coleoptera Section, Zoological Survey of India, Kolkata. A total of 34 specimens were examined, and five *Podontia* species were identified: *Podontia rufocastanea* Baly, 1865; *Podontia pitalohita* Maulik, 1926; *Podontia congregata* Baly, 1865; *Podontia quatuordecimpunctata* Linnaeus, 1767; *Podontia affinis* (Gröndal, 1808). We conducted a comparative analysis of adult morphology, including male genitalia, which refines species delimitation. The diagnostic characteristics and new distribution data are presented, and species distributions are illustrated on maps. In India, *Podontia* species are of ecological and economic importance, functioning as both pests and potential biological control agents. By synthesizing current knowledge and highlighting research gaps, this study enhances our understanding of *Podontia* in India, facilitating future taxonomic and ecological investigations of this important insect group.

Keywords: Taxonomy, Biogeography, Leaf beetles, Host plants, Male genitalia

Faunistic Records of the genus *Hydrovatus* (Coleoptera: Dytiscidae: Hydroporinae) from India

Shipra Sonali[1, 2*], Sujit Kumar Ghosh[1] and Devanshu Gupta[1]

[1]Zoological Survey of India, M–Block, New Alipore, Kolkata–700053, West Bengal, India
[2]University of Calcutta, Kolkata, 35, Ballygunge Circular Road, Ballygunge, Kolkata - 700019, West Bengal, India

**Presenting Author: Shipra Sonali*
**Email Id of Presenting Author: shipra.aquaticbeetles@gmail.com*

Abstract

Hydrovatus Motschulsky, 1853, is a genus of diving beetles within the family Dytiscidae, subfamily Hydroporinae, and tribe Hydrovatini. These beetles inhabit aquatic environments such as ponds, lakes, and slow-moving streams. They are characterized by streamlined, oval bodies and robust, well-developed hind legs adapted for swimming. Sexual dimorphism is present in some species, with males exhibiting modified antennae, while females typically have slender, unmodified ones. These beetles are ecologically significant, functioning as both predators and prey in freshwater food webs. This genus is among the most species-rich in Dytiscidae, with 210 recognized species globally, including 20 reported from India. The *Hydrovatus* collection housed at the Zoological Survey of India, Kolkata, was studied, and a total of eight species were identified: *Hydrovatus obtusus* Motschulsky, 1855; *H. acuminatus* Motschulsky, 1859; *H. bonvouloiri* Sharp, 1882; *H. cardoni* Severin, 1890; *H. castaneus* Motschulsky, 1855; *H. confertus* Sharp, 1882; *H. fractus* Sharp, 1882; and *H. pinguis* Régimbart, 1892. The faunistic records of these species are presented in this paper, which reports the first confirmed record of *Hydrovatus obtusus* Motschulsky, 1855, from India after over 125 years. This paper also includes habitus photographs and a distribution map of *Hydrovatus* species in India.

Keywords: Taxonomy, Diversity, Faunistic records, Freshwater ecosystems

Review of the Indian *Heteronychus* Species (Coleoptera: Scarabaeidae: Dynastinae: Pentodontini)

Irtiza Wani[1,2*] and Devanshu Gupta[1]

[1]Zoological Survey of India, M–Block, New Alipore, Kolkata–700053, West Bengal, India
[2]University of Calcutta, Kolkata, 35, Ballygunge Circular Road, Ballygunge, Kolkata - 700019, West Bengal, India

**Presenting Author: Irtiza Wani*
**Email Id of Presenting Author: irtiza.wani.9@gmail.com*

Abstract

The genus *Heteronychus* Dejean (Coleoptera: Scarabaeidae: Dynastinae) belongs to the tribe Pentodontini and comprises approximately 60 species globally. It is distinguished from other genera in this tribe by the following combination of characters: smooth pronotum; clypeus truncate with two upturned teeth; and frontoclypeal suture present on frons, which lacks tubercles or carinae. In the present study, we examined 71 *Heteronychus* specimens from India, housed at the Zoological Survey of India, Kolkata, resulting in the recognition of three species: *Heteronychus annulatus* Bates, *Heteronychus lioderes* Redtenbacher, and *Heteronychus sublaevis* (Fairmaire). Additionally, a co-type of *Heteronychus robustus* Arrow [currently a junior synonym of *Heteronychus sublaevis* (Fairmaire)] was also examined. We provide a revised identification key for Indian *Heteronychus*, a detailed distribution map, and high-resolution photographs of the habitus and aedeagus of the three *Heteronychus* species recorded from India. Notably, *H. lioderes* is a widely distributed and economically significant pest of rice. These findings enhance the taxonomic understanding of *Heteronychus* in India and provide valuable insights for pest management.

Keywords: Taxonomy, Biodiversity, New Record, Adeagus

Molecular Footprint of Newly Distributional *Dendrocerus istvani* Bijoy and Rajmohana (Hymenoptera: Megaspilidae: Megaspilinae) from West Bengal, India

Amit Kumar Ghosh[1,2], Sandip Mandal[1*], Vikas Kumar[1] and Kaomud Tyagi[1]

[1]Centre for DNA Taxonomy, Molecular Systematics Division, Zoological Survey of India, Kolkata, West Bengal, India

[2]Department of Zoology, University of Calcutta, Kolkata, West Bengal, India

**Presenting Author: Sandip Mandal*

**Email Id of Presenting Author: sandipmandal601@gmail.com*

Abstract

The superfamily *Ceraphronoidea*, comprising the families *Ceraphronidae* and *Megaspilidae*, includes 740 species, with the genus *Dendrocerus* Ratzeburg, 1852, being of significant agricultural importance. This study reports the first record of *Dendrocerus istvani* Bijoy & Rajmohana (2014) from West Bengal, India, extending its distribution beyond Uttarakhand. Specimens were collected using yellow pan traps in Kashinathpur village, North 24 Parganas district, during 2024-2025. Morphological analysis, along with a molecular signature (COI gene), was generated for the species, marking a significant contribution to the DNA barcode reference library for *Megaspilidae*. This record highlights the need for further taxonomic surveys and molecular studies to explore the distribution and ecological roles of *Ceraphronoidea* species in India.

Keywords: Megaspilidae, West Bengal, male genitalia, DNA Barcoding

Complete Mitochondrial Genomes of Four Species of Subfamily Thripinae (Thysanoptera: Thripidae): Comparative Analysis

Abhishek Ghosh[1, 2]

[1]*Centre for DNA Taxonomy, Molecular Systematics division, Zoological Survey of India*
[2]*Department of Zoology, University of Calcutta*

Email Id of Presenting Author: abhishekcivils2021@gmail.com

Abstract

Thrips (Thysanoptera) are slender bodied fringed wing insect with asymmetrical mouthparts. Globally, they are known by 6414 species within two suborders. Till now, 48 mitogenomes of 47 species are available including 22 belong to subfamily Thripinae. The mitogenomes of four species, *Arorathrips mexicanus*, *Bregmatothrips sinensis*, *Ctenothrips transeolinae*, and *Ernothrips longitudinalis* are annotated and characterized. These mitogenomes are AT biased ranging from 75% to 79 % with a positive AT skew (0.10 to 0.17) and a negative GC skew (-0.20 to -0.10). Most frequently used codons are ended with A/U. The synonymous and non- synonymous substitution analysis indicated that *cox1* is the most conserved gene and *nad6* is the most varible gene. Moreover, in ENC-GC3 plot and Neutrality plots *atp8*, *cox2*, *nad3*, *nad4L* etc. lied above the predicted curve and suggesting that these genes are subjected to strong mutational constraints rather than natural selection. PR2 bias plots indicated that *nad4*, *nad4L*, *nad5* exhibited bias of A over T and rest showing bias of T over A. Comparative analysis using the gene order of these species with ancestor identified five conserved gene blocks. The constructed ML phylogeny indicated that *A. mexicanus* and *B. sinensis* are in a sister relationship with the members of the *Craspedothrips* + *Megalurothrips* + *Mycterothrips* + *Odontothrips*, while *C. transeolinae* with *Taeniothrips tigris* and *Ernothrips longitudinalis* with *Thrips imaginis*. Further, to explore the selection pressure on vector and non-vector species, more data of non-vector species are necessitated.

Key words: Thrips, mitogenome, Thripinae, Selection pressure, vector

Description of a New Species of Losgna (Cameron 1903): Reviving a Forgotten Ichneumonid Genus in India

Karmannye Om Chaudhary*[1] and Sophia Reinisch[2]

[1]Queen Mary University of London, 405 Mile End Road London, UK
[2]Imperial College London, Exhibition Rd, South Kensington, London, UK. sophiareinisch@gmail.com

Presenting Author: Karmannye Om Chaudhary
**Email of the presenting Author: karmannyechaudhary@gmail.com*

Abstract

The Darwin wasp genus *Losgna* (Cameron, 1903) (subfamily Ichneumoninae), is poorly documented in India, with no new species described since Heinrich's work in 1965. Here we rediscover the genus in India and describe a new species collected from an urban dry scrub forest in Chandigarh. A taxonomic key for the identification of Indian *Losgna* is provided along with the illustrations of the new species and Generitype. The study significantly extends the known distribution of *Losgna* in the Oriental region and highlights the under-explored diversity of Ichneumoninae in India and the need for further taxonomic research.

Keywords: Ichneumonidae, Darwin wasps, parasitic wasps, Chandigarh

Thrust Area 2:
Systematics

Poster Presentations

Taxonomy, Altitudinal Distribution and Floral Associations of Syrphidae in the Kashmir Himalayas: A Comprehensive Analysis

Amir Maqbool[1*], Aijaz Ahmad Wachkoo[2] and A. Najitha Banu[1]

[1]Department of Zoology, School of Bioengineering & Biosciences, Lovely Professional University, Jalandhar, Punjab-144411 India

[2]Department of Zoology, Govt. Degree College, Kulgam, Jammu and Kashmir — 192231, India

**Presenting author: Amir Maqbool*

**Email Id of Presenting Author: aamir.freedom@gmail.com*

Abstract

This is the first comprehensive report on the hoverflies of Jammu and Kashmir, documenting and updating the taxonomy of Syrphid fauna of the union territory along with the bio-ecological perspectives. Sampling over different agro-climatic zones of Jammu and Kashmir from 2021-2024 and collecting over 2000 specimens revealed 70 hoverfly species across 38 genera, dominated by genus *Eristalinus*, *Eristalis* and *Sphegina*. The overall abundance showed, *Eristalisar bustorum* to be the most abundant species (12%), followed by *Episyrphus balteatus* (7%), *Eristalis tenax* (5.6%), and *Eristalis cerealis* (5.3%). In the present study, new to science species were discovered described (11 species), new genera (4 genera) and species records (5 species) were documented for the first time in India, while 15 species were incorporated into the fauna of Jammu and Kashmir. This is the first study from the Jammu and Kashmir UT taking into account the floral host interactions of hoverfly species whereby a total of 60 species of flowering were observed for syrphid fly species mostly within the Asteraceae and Apiaceae. *Mentha longifolia* was the most favoured flowering plant at higher altitudes with 39 species observed visiting and *Sisymbrium loeselii* was the most favoured flowering plant at lower altitudes with 24 syrphid species visiting the flowers. The present study revealed a unimodal distribution across an altitudinal gradient in the Kashmir Himalayas peaking at midlatitudes (2100-2400m asl). These findings offer significant insights into the ecological relationships of syrphid flies and how they respond to both natural and anthropogenic environmental gradients, contributing to our broader understanding of insect diversity patterns in mountainous regions. This taxonomic report will serve as a baseline to facilitate the work of taxonomists, and the obtained data will assist in future conservation plans.

Keywords: Syrphidae, Taxonomy, Biodiversity, Altitudinal gradient, Floral associations

Aquatic Beetle Diversity in an Urban Freshwater Ecosystem: Insights from Banabitan Biodiversity Park, Salt Lake, Kolkata, West Bengal, India

Abhik Rong [1*], Lina Chatterjee[2], Arjan Basu Roy[2], Sujit Kumar Ghosh[3], Bulganin Mitra[1] and Biplob Kumar Modak[4]

[1]Department of Zoology, Ramakrishna Mission Vivekananda Centenary College, Rahara, Khardaha, West Bengal – 700118, India
[2]Nature Mates – Nature Club, 6/7 Bijoygarh, Kolkata – 700032, West Bengal, India
[3]Zoological Survey of India, Kolkata, West Bengal, India
[4]Department of Zoology, Sidho Kanho Birsha University, Purulia – 723104, West Bengal, India

**Presenting author: Abhik Rong*
**Email Id of Presenting Author: amritorong@gmail.com*

Abstract

Aquatic beetles are a group of aquatic insects that serve as key bio-indicators of ecosystem health. This study was conducted from January 2024 to March 2025 at Banabitan Biodiversity Park, also known as Central Park, located at Salt Lake, Kolkata (22°35'04.56"N, 88°24'58.32" E) the city's third largest open space after Maidan and Ecopark. The study aimed to document the diversity and species richness within the park's extensive waterbody while concurrently assessing water quality parameters such as pH, Total Dissolved Solutes (TDS) and Electrical Conductivity (EC). Specimens were collected using D-shaped aquatic insect nets, enabling efficient sampling of the aquatic beetle community. 14 species across four families (Gyrinidae, Noteridae, Dytiscidae, and Hydrophilidae) were identified, with Hydrophilidae demonstrating the highest species richness (6 species), followed by Dytiscidae (5 species), Noteridae (2 species) and Gyrinidae (1 species). Moreover, these beetle species were associated with 12 species of aquatic vegetation belonging to 9 families under 8 orders, highlighting the intricate link between aquatic flora and beetle diversity. Concurrent water analyses revealed pH values ranging from 7 to 10, a TDS of 268 ± 10 ppm, and an EC of 441 ± 20 µs/cm, suggesting variable but generally favourable conditions for aquatic life. These results not only provide valuable baseline data on the biodiversity of urban freshwater ecosystems but also underscore the importance of preserving such green spaces amid urban development. The study advocates for on-going monitoring and conservation strategies to maintain the ecological integrity of Banabitan Biodiversity Park, ultimately contributing to a broader understanding of urban biodiversity and the sustainable management of natural resources in metropolitan areas.

Keywords: Coleoptera, Banabitan, Gyrinidae, Noteridae, Dytiscidae

Insights into Parasitic Infection: Preliminary Observations About Commensal Kleptoparasitic Nematodes in *Trigoniulus corallinus* Gervais, 1847 (Diplopoda: Spirobolida) from Bankura District, West Bengal, India

Anindita Sil[1*], Susobhan Mondal[2], Viswa Venkat Gantait[3] and Biplob Kr. Modak[1*]

[1]Department of Zoology, Sidho-Kanho-Birsha University, Purulia- 723104, West Bengal, India
[2]Department of Zoology, Sonamukhi College, Bankura- 722207, West Bengal, India
[3]Zoological Survey of India, M- Block, New Alipore, Kolkata-700053, West Bengal, India

**Presenting author: AninditaSil*
**Email Id of Presenting Author: ani.diya@gmail.com*

Abstract

Trigoniulus corallinus Gervais, 1847 (Diplopoda: Spirobolida), a rusty millipede, is commonly found in decaying plant materials all over southern West Bengal during the rainy season. While parasitic infections are prevalent among the species *T. corallinus*, there remains a notable dearth of comprehensive information regarding its parasitic fauna. The present study intends to provide initial insights into commensal kleptoparasitic nematodes within *T. corallinus* from the Bankura district. A survey for parasitic nematode infection in *T. corallinus* was conducted from June 2022 to September 2024 in the Bankura district (23°18'00.3"N 87°11'47.0"E) of West Bengal. Millipedes were handpicked from their natural habitat (forest areas, agricultural field and village areas) and brought alive into the laboratory for detailed investigation of nematode parasites. The nematodes were fixed using TAF (2% triethylamine, 7% formaldehyde). Among 82 millipedes examined, 26 (31.71%) were found to be infected, with all individuals co-infected by more than one species of gut-inhabiting nematodes. Altogether, three distinct nematode species were identified: *Rhigonema naylae* Morffe and Hasegawa, 2017; *Travassosinema bengalensis* Bhakat, 2020; and *Thelastoma krausi* Carreno, 2007, underscoring the diversity of parasitic fauna present within *T. corallinus*. Millipedes collected from rural village regions exhibited the highest incidence of nematode infection, indicating a statistically significant correlation between environmental factors and parasitic prevalence.

Keywords: *Trigoniulus corallines*, Nematode, *Rhigonema naylae*, *Travassosinema bengalensis*, *Thelastoma krausi*

Ethological Perception of Nilgai (*Boselaphus tragocamelus*) and the Local Ecosystem of Gopalganj District of Bihar

Anjali Srivastava[1*] and Rana Vikram Singh[2]

[1]Department of Zoology, Kamla Rai College, Gopalganj (Jai Prakash University, Chhapra)*
[2]Department of Zoology, Jai Prakash University, Chhapra Bihar

**Presenting author: Anjali Srivastava*
**Email Id of Presenting Author: anjali.sinha19515@gmail.com*

Abstract

Nilgai is a hoofed ungulate and the largest Asian antelope, also called as Blue Bull. It is endemic to peninsular India and also it is the single member of it's genus. A study was conducted on the various behaviours of Nilgai in the Gopalganj district of Bihar from march 2023- february2024 for analyzing the behavioural pattern of Nilgai and it's impact on the ecosystem of Gopalganj district of Bihar. Direct sighting and camera photography/recording along with questionnaire cum survey and personal conversation with the villagers was done The animal was found grazing along with other cattles in the field , mingling in harmony with Grass egret, Mynah bird and dogs of the region indicating towards it's docile behaviour. It's highly adaptive feeding behaviour led to destruction of crops of the area by feeding and trampling of the crops, while the dung piling habit helped in increased seed dispersal and soil enrichment of the area. Overall the impact was negative as well as positive on the local ecosystem.

Keywords: Adaptive, Dung piling, Ecosystem, Nilgai, Seed dispersal

Analyzing the Behaviour of Five- Striped Palm Squirrel (*Funambulus pennantii*) in Orchard Area and Agricultural Field

Anwesa Chatterjee*, Subhendu Mazumdar and Soumyajit Banerjee

Department of Zoology for UG and PG studies, Serampore College, Serampore, Hooghly

**Presenting author: Anjali Srivastava*
**Email Id of Presenting Author: anjali.sinha19515@gmail.com*

Abstract

Present study on analyzing the behaviour of five-striped palm squirrel, *Funambulus pennantii*, was conducted in orchard areas and agricultural fields. These rodents are members of the Sciuridae family. They have different activities during the day time. Various aspects of its behaviour, including foraging strategies, locomotion patterns, social interactions, territoriality, nesting, chirping, etc were systematically recorded. We observed the behaviour of five-striped palm squirrel for six hours a day on certain days of the month from August to February. During the study period, duration of each behaviour in individuals was recorded using focal sampling method and direct observation. We observed that squirrels gathered nesting materials like grasses, threads, wool, cotton, jute fibers, and other fibrous materials in the months of September. *Funambulus pennantii* is shown to have both solitary and opportunistic eating habits, mostly foraging on cultivated crops, falling fruits, and seeds. Squirrel's locomotion patterns consist of quick ground movements punctuated by arboreal activity, when they play games including pretend fighting, chasing, and jumping. The squirrels changed their day time activity with the season. The mid-day resting period was observed to avoid excessive heat in all the seasons except winters. In orchard areas, squirrel's strong preference for human-provided food over plants explains their willingness to take risks or interact with humans. In the agricultural field, they mostly fed on grains, seeds, and insects. Squirrels were found to interact with different species of birds. Mostly human presence had no effect on their activity. *Funambulus pennantii* is increasingly threatened by agricultural growth, tree cutting. Exposure to pesticides puts their life and wellbeing at much greater risk.

Keywords: Rodents, Foraging, Behaviour, Orchard, Agricultural field

An Invasion Concealed by Taxonomic Confusion? First record of the Afrotropical Trap-Jaw Ant *Odontomachus troglodytes* Santschi, 1914 from the Oriental Mainland

Aydan Peter Rangel* and Preeti Antonetta Pereira

Zoology Discipline, School of Biological Sciences and Biotechnology, Goa University

**Presenting author: Aydan Peter Rangel*
**Email Id of Presenting Author: aydanrangel68@gmail.com*

Abstract

While it may not be uncommon for researchers working on ant zoogeography to be hindered by misidentifications, few species have posed as much of a problem in this regard as *Odontomachus haematodus* (Linnaeus, 1758). With a reported range extending far eastward to Australia (through Africa and Asia) since description from its native South America, the species continues to be recorded outside the New World even though revisionary work on the genus—now nearly half a century old—established that the Afrotropical population deserves to be recognised as a species in its own right (*O. troglodytes* Santschi, 1914), while the populations discovered elsewhere in the Old World are likely misidentified *O. simillimus* Smith, 1858 or other more distantly-related species. In light of these findings, in India in particular, any recent records of *O. haematodus* lacking adequate justification have been dismissed as probable misidentifications of *O. simillimus*, which is relatively common and widespread in the region. While this may have seemed logical fora time given the seemingly low likelihood of a large, conspicuous New World species crossing continents unnoticed by experts, as well as the known frequency of misidentifications in Indian myrmecological publications, the recent discovery of a growing population of *O. troglodytes* in Taiwan calls into question the validity of this approach. The discovery of an apparently well-established population of *O. troglodytes* in Goa, India in the present study raises the possibility that some of the previous Indian (as well as other Oriental) reports of the extremely similar *O. haematodus* may actually refer to the former species, with which it was considered synonymous while much of the major work on Indian myrmecology was being undertaken. The prospect that this taxonomic ambiguity has obscured evidence of a growing population of a possibly invasive Afrotropical species in the Oriental region calls for further investigation.

Keywords: Exotic Species, Myrmecology, New Record, Ponerinae, Zoogeography

Prevalence of Gastrointestinal parasitic infections in Black Bengal Goats of Purulia District, West Bengal

Azmal Baidya* and Biplob Kumar Modak

Sidho-Kanho-Birsha University, P.O. & Dist.- Purulia, Pin-723104, West Bengal

**Presenting author: Azmal Baidya*
**Email Id of Presenting Author: azmalbaidya1234@gmail.com*

Abstract

Gastrointestinal parasitic diseases in ruminants are one of the greatest challenging issues in India causing severe economic losses due to emaciation, anaemia, decreased immunity, decreased nutrient absorption, diarrhoea, low productivity and quality of meat. The main goal of the current study was to elucidate the prevalence of gastrointestinal parasitic infections in Black Bengal goats of Purulia district, West Bengal. A total of 430 faecal samples of Black Bengal goat were collected randomly from various blocks of the Purulia district between March 2024 and February 2025 and examined under the microscope in the laboratory, initially by direct smear method, followed by sedimentation procedure and sugar floatation technique. Four different groups of parasites i.e., Protozoa (*Eimeriachris tenseni*), Trematode (*Fasciola hepatica, Paramphistomum cervi*), Cestode (*Moniezia expansa*), and Nematode (Strongyle type, *Strongyloides papillosus* and *Trichuris ovis*, *Toxocara vitulorum*) were found. Out of 430 faecal samples examined, 362 (84.18%) samples werefound to be infected with various gastrointestinal parasites. Prevalence of Strongyle type parasite (54.58%) was recorded highest and it was followed by *Eimeriachris tenseni* (23.99%), *Paramphistomum cervi* (10.19%), *Trichurisovis* (3.7%), *Strongyloides papillosus* (2.12%), *Moniezia expansa* (1.93%), *Fasciola hepatica* (1.67%) and *Toxocaravitulorum* (0.89%). In this study, co-infections (8.5%) were also found in the examined fecal samples. The incidence of infection was found highest in the monsoon compared to winter and summer. Baby goats (Kidling) were more vulnerable to infection than adult goats. Female Black Bengal goats were more susceptible compared to male Black Bengal goats. The findings of the present study might be helpful for the local veterinarian and stakeholders for the proper management and developing strategies to control gastrointestinal diseases in the Black Bengal goat of Purulia District.

Keywords: GI parasites, Nematode, Cestode, Trematode, Fecal samples

A Study on Behavioural Patterns of Breeding and Non-Breeding Season of Lesser Adjutant stork (*Leptoptilos javanicus*) in Nagaon, Assam

Baishali Das[1*], Jyotismita Das[1] and Jyotiprakash Boro[2]

[1]Nowgong College (Autonomous)*
[2]Fergusson College (Autonomous)

**Presenting author: Baishali Das*
**Email Id of Presenting Author: baishalidasla11@gmail.com*

Abstract

A study on behavioural activity patterns of the Lesser Adjutant stork (*Leptoptilos javanicus*) was conducted in the Nagaon district of Assam from August 2023 to July 2024 in two seasons: Breeding and non-breeding. A total of 190 hours were spent recording their activity budget and behaviour. Focal and Scan Sampling methods were applied for recording their behavioural activity pattern. Their behaviours showed significant differences in the two seasons. The results showed that in the breeding season, preening was highest followed by the head-bobbing. However, in the non-breeding season, pecking and probing were mostly observed followed by walking and feeding. It was observed that during the breeding season, preening helped the parents and chicks in avoiding parasitic infections. In the non-breeding season, the storks were mostly observed in foraging fields for feeding. Pecking and probing helped in the successful capturing of prey in feeding grounds. The study region comprises multiple nesting colonies close to human populations, agricultural areas, and roadways. As the study revealed that, the behaviour of Lesser Adjutant stork is affected by the season, the surrounding environment and the habitats, so proper conservation of the species as well as the habitat must be adopted for proper implementation of the conservation and management strategy.

Keywords: *Leptoptilos javanicus*, Behavioural pattern, Breeding season, Non-breeding season, Nagaon

Diversity of hidden Predator: A Solifugae survey from Madhya Pradesh, India

Bharat Pandram*

University of Allahabad, Prayagaraj

**Presenting author: Bharat Pandram*
**Email Id of Presenting Author: bpandram@allduniv.ac.in*

Abstract

Solifugae exhibit a wide global distribution, encompassing 12 families, 144 genera, and 1209 described species (World Solifugae Catalog, 2024). However, Indian Solifugae remain under documented. This study presents many new records from Madhya Pradesh, Central India, including findings from the arid region. The current understanding of Solifugae, particularly in India, is limited by significant knowledge gaps. This research endeavors to bridge these gaps by providing a comprehensive study of Indian Solifugae diversity and the intricate mechanisms behind their predatory behavior, thereby contributing valuable insights into the natural history of this fascinating arachnid order. Madhya Pradesh is anticipated to harbor a rich diversity of Solifugae (Pandram et al., 2024), an arachnid order characterized by a remarkable array of species-specific spines and setae. However, the ecology, diversity, and predatory behavior of Indian Solifugae, including those in Madhya Pradesh, remain largely unexplored. To address this, surveys were conducted and during the survey, we found a group of Solifugae instars which were hunting termites while they were living in their colony. The mother lays her eggs near a termite colony so that their instars do not have to work as hard to survive and find food in their early phase. Diverse regions of the state were selected, resulting in the collection and identification of Solifugae to the family and species levels. This study explores the efficacy of remote sensing techniques for mapping Solifugae habitats. By utilizing satellite imagery and derived spectral indices, we aimed to identify and delineate areas with suitable environmental characteristics for these Solifugae arachnids.

Keywords: Solifugae, Predatory behavior, remote sensing, taxonomy

Elements of Endemism in Amphibians of North East India

Bhaskar Saikia and Bikramjit Sinha*

Zoological Survey of India

**Presenting author: Bikramjit Sinha*
**Email Id of Presenting Author: sinhabj@gmail.com*

Abstract

Northeast India, situated at the confluence of two biodiversity hotspot, hosts a remarkable diversity of amphibians, with high levels of endemism driven by its unique biogeography and varied ecological conditions. Since the last comprehensive report in 2017, which documented 53 endemic amphibian species, new discoveries have increased the count to 72 endemic species as of 2025. The pattern of endemism among these species can be categorized into three distinct types: point endemics, known only from their type locality; restricted endemics, confined to a limited region around their type locality; and widespread endemics, occurring across multiple states within Northeast India. Notable examples include *Limnonectes ghoshi*, described in 1991 and *Nanorana mokokchungensis*, described in 2000—both still known solely from their type localities even decades after their discovery. Such cases of point endemism present significant conservation concerns. The conservation status of these endemic species, assessed using IUCN Red List criteria reveals that many face significant threats. Several newly described species remain Data Deficient or Not Evaluated, while some fall under threatened categories such as Endangered or Critically Endangered. The rapid rate of habitat modification/destruction, particularly in fragile montane and wetland ecosystems, poses a significant challenge to the survival of these species. This underscores the urgent need to assess the conservation status of species that remain Data Deficient (such a *L. ghoshi* and *N. mokokchungensis*) or Not Evaluated for considerable time. Understanding the spatial distribution of endemism provides crucial insights for conservation planning, emphasizing the need for habitat protection, ecological research and community-driven conservation initiatives. As amphibians are an important ecological indicator, the increasing number of endemism highlights the urgency of sustained taxonomic and ecological studies to document, monitor and protect the region's unique amphibian fauna and their habitats.

Keywords: Amphibia, Endemic, North East India, Biodiversityhotspot, Conservation

Analysing the Prey-Predator Interactions between Earthworms - *Bipalium* sp. (Stimpson, 1857), Respectively and Its Deleterious Effects on the Vermicomposting Efficacy of Said Prey

C. Jeffrey Aaron Mark* and Robert Selvam D

Department of Advanced Zoology and Biotechnology, Loyola College (Autonomous), Nungambakkam, Chennai – 600 034, Tamil Nadu, India

**Presenting author: C. Jeffrey Aaron Mark*
**Email Id of Presenting Author: jamtired07@gmail.com*

Abstract

This current study aims to unearth the interaction between the earthworms and its predatory flatworm *Bipalium* sp. within vermicomposting systems. Utilizing the Nicholson-Bailey equation, the current study quantitatively analyses the predator-prey interactions to understand the impact of *Bipalium* sp. on earthworm populations and vermicomposting efficiency. The present study aims to comprehend how varying population densities of *Bipalium* sp. influence earthworm behaviour, growth rates, and overall efficiency in converting kitchen waste into compost (a process called vermicomposting). Key findings of the study indicate a significant decline in earthworm numbers in the presence of *Bipalium* sp., highlighting its effectiveness as a predator, which in turn implicates a decline in the vermicomposting efficacy due to lesser number of specimens in the system to convert kitchen waste into organic soil. This study contributes to understanding interspecies interactions in soil ecosystems and underscores the necessity for managing *Bipalium* sp. populations to optimize vermicomposting practices and maintain soil health. The implications of these findings extend to ecological management strategies aimed at preserving beneficial earthworm species while controlling invasive predatory flatworms.

Keywords: Earthworm, *Bipalium* sp., Vermicomposting, Predator-prey interactions, Nicholson-Bailey equation

Insect Chronicles: Revealing the Hidden Narratives of Decay through Necrophagous Insects

Chetan Pratap Singh*, Devanshu Gupta and Ayesha Qamar

Department of Zoology, Aligarh Muslim University, Aligarh

**Presenting author: ChetanPratap Singh*
**Email Id of Presenting Author: chetanpratapsingh12@gmail.com*

Abstract

Necrophagous insects, particularly flies (Diptera) and beetles (Coleoptera), are essential contributors to the decay process of carcasses, exhibiting predictable colonization and succession patterns through various stages of decomposition. By examining the species composition and developmental stages of necrophagous insects present on remains, forensic entomologists can provide valuable information for estimating the time of death and aid in criminal investigations. The current study examines the diversity of necrophagous insects collected from animal carcasses over time. The collected insect taxa primarily included members of Diptera (Calliphoridae, Muscidae, Sarcophagidae) and Coleoptera (Histeridae, Cleridae, Staphylinidae, Dermestidae, Trogidae). Blowflies (Calliphoridae) were the dominant early colonizers, while *Dermestes maculatus* (Dermestidae) and *Necrobia rufipes* (Cleridae) were abundant in the later stages of decomposition. By documenting the diversity of forensically important insects, this study aims to contribute to the compilation of a comprehensive reference dataset for forensic entomology applications. Such baseline data will aid in improving species identification and enhancing the accuracy of PMI estimations in forensic investigations.

Keywords: Forensic entomology, Insect diversity, Necrophagous insects, Decomposition, Post-mortem interval

Occurrence of Soil-inhabiting Nematoda from Tropical Dry Deciduous Forest of West Bengal, India with Observation on Their Trophic Groups

Debabrata Sen* and Samprit Deb Roy

Zoological Survey of India

**Presenting author: Debabrata Sen*
**Email Id of Presenting Author: debabrata.zsi@gmail.com*

Abstract

Nematodes are the most abundant and diverse metazoans, with their diversity spanning not only across habitats but also in their feeding habits. Soil nematodes can impact plant health both directly and indirectly, either enhancing or limiting growth, while also playing a role in decomposition and nutrient cycling in soil ecosystem. An investigation was conducted to observe the occurrence of soil-inhabiting nematodes, focusing on their feeding habits across different districts in the forest ecosystem of the tropical dry deciduous region of West Bengal. Fifty-eight species of soil nematodes, belonging to 34 genera, 15 families and 3 orders, have been studied in relation to their trophic groups, particularly in terms of the feeding guild structure. Different feeding behaviors, including microbial, predatory, and parasitic, define the specific feeding apparatus of various nematodes, ranging from piercers to crushers, as explained by Hodda (2022). This classification was previously described as piercers and ingesters only by Yeates (1993. The community assemblage of nematodes and their associated feeding guilds in the tropical dry deciduous forest ecosystem provides a comprehensive understanding of their interactions with other microorganisms in the soil microhabitat.

Keywords: Occurrence of soil nematoda, Forest Ecosystem, Trophic Groups, Tropical Dry Deciduous Forest, West Bengal

Diversity, Seasonal Incidence & Diel Activity Pattern of Muscid Flies (Diptera: Muscidae) of Medico-Veterinary Significance from the Lower Gangetic Plains of West Bengal

Debjani Ghosh*, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India

**Presenting author: Debjani Ghosh*
**Email Id of Presenting Author: debjanighosh0009@gmail.com*

Abstract

Flies belonging to family Muscidae have gained global prominence due to their role in the dissemination of several life-threatening diseases to both humans and animals alike. While promising studies have been conducted to assess the ecology of other biting dipterans, like-Culicidae, Ceratopogonidae, and Tabanidae, in the study area, comprehensive knowledge regarding muscids remains insufficient. In this study, a total of 21 study sites were designated in the lower Gangetic plains of West Bengal, from which specimens were collected using both active and passive sampling methods from October 2022 to September 2023. A total of 27 species of muscids under 7 genera were procured, of which 11 were found to be obligate blood-feeders. *Stomoxys calcitrans* had the highest capture rate (44.78%), followed by *Stomoxys sitiens* (8.37%) and *Musca crassirostris* (8.06%). Among the non-biting flies, *Musca domestica* was the most frequently trapped species (8.84%), followed by *Musca ventrosa* (3.8%) and *Musca sorbens* (2.01%). Although the incidence of biting flies peaked during the monsoon, no such trend was observed for the non-biting flies. The incidence of the most abundant species, *S. calcitrans*, remained consistent across the sites throughout each season, while other biting flies demonstrated variability in capture rates across different sites and seasons. Additionally, the activity pattern of the most abundant species of biting flies were monitored on a 12-hour basis (6:00 am to 6:00 pm), where *S. calcitrans* exhibited peaks between 9:00 am and 11:00 am, while the other two species of biting flies displayed peaks between 10:00 am and 4:00 pm, on the days of collection. As the rural economy of the study area heavily relies on cattle-based farms, this study aims to establish a much-needed database on the diversity, seasonality and temporal dynamics of muscids, which will help policymakers in the development and implementation of better vector control strategies.

Keywords: Veterinary, Seasonality, Bovine, Hematophagous, Eastern India

Ecophenotypic Plasticity of Physid Gastropod Population from Nagpur Deccan Intertrappean Horizons- a Reappraisal

Debjani Nandi[1*], Dola Roy[2], Tapas Kumar Gangopadhyay[1], Anubarna Datta Chowdhury[1], Supriya Nandy[1], Debashree Dam[1] and Dhriti Banerjee[1]

[1]Zoological Survey of India, M-Block, New Alipore, Kolkata – 700 053, West Bengal, India
[2]IISER Berhampur

**Presenting author: Debjani Nandi*
**Email Id of Presenting Author: nandidebjani18@gmail.com*

Abstract

This study investigates morphological variations in the freshwater gastropod *Physa* sp. found in the intertrappean sedimentary beds of the Deccan Traps, India. The Deccan Traps represent one of Earth's largest volcanic provinces, covering approximately 500,000 km² with basalt flows exceeding 2,000 meters in thickness. Within these basalt layers lie sedimentary intertrappean horizons containing abundant fossil evidence, particularly pulmoniferous molluscs like *Physa* sp. These were first studied by Stephen. J. Hislop in 1860. He categorized them into several species. However, morphometric analysis of *Physa* specimens from Nagpur, Madhya Pradesh reveals significant intraspecific variation, displayed through bivariate scatter patterns indicating a complete gradation in shell morphology without discrete clustering. By applying ecological insights from studies of extant *Physa* species, whose morphological features correlate with environmental conditions, this research proposes that the observed phenotypic plasticity in fossil specimens likely resulted from environmental stress induced by volcanic activity, as well as avoidance of predation pressure from potent predators like sunfish and crayfishes. The sudden temperature increase associated with Deccan volcanism may have accelerated growth rates, leading to larger, more rotund shell morphologies before eventual mass mortality as conditions became uninhabitable. This research demonstrates the value of utilizing modern ecological data to interpret fossil evidence and understand paleoenvironmental conditions, particularly during periods of extreme environmental perturbation like the Deccan Trap eruptions.

Keywords: Deccan Traps, *Physa* sp, Ecophenotypic plasticity, Paleoecology, Morphomeric analysis

Molecular Phylogeny Revealed a New Clade of *Dugesia* (Planaria) from the Urban Lake in Pune, India

Deepika Eknath Walunj* and Ravindra Vasant Kshirsagar

Post-Graduate Department and Research Centre in Zoology, Modern College of Arts, Science and Commerce, Ganeshkhind, Pune-16

**Presenting author: Deepika Eknath Walunj*
**Email Id of Presenting Author: deepikawalunj2016@gmail.com*

Abstract

Planarians have remarkable ability of regeneration and are widely distributed in aquatic and terrestrial habitats. Until now, there are more than 1500 species of planarians described from freshwater habitats. Among those, *Dugesia* is one of the largest genera of freshwater planarians comprised of more than 110 species. Taxonomic and diversity studies of planarians have never been reported in the Indian literature. In the present study, we report a new clade of planaria *Dugesia* from the urban lake in Pune city, Maharashtra, India. We collected planarians and cultured them in the laboratory. Lab cultured individuals were used for morphological and histological analysis. DNA of these planarians was extracted using Qiagen DNA extraction kit, the mitochondrial COI gene and two nuclear genes (28SrRNA and ITS-1) were amplified using PCR and Sanger sequenced. The sequences were aligned with the sequences of other species of the genus using MEGA6. Maximum likelihood tree was constructed and visualized using Fig-Tree. Morphological and histological analysis revealed that the collected individuals belonged to the genus *Dugesia*. Phylogenetic analysis revealed that the individual collected from Pashan lake (Lat18.53639N, long 73.78337E) belonged to the Genus *Dugesia* and formed a distinct clade. Hence, the species collected in the present study can be treated as a new species. The present study is the first report describing molecular phylogeny of any planarians from India. These results also suggest that there is an urgent need of taxonomic studies focusing on the taxonomy and systematics of Indian planarians.

Keywords: Planaria, *Dugesia*, Molecular phylogeny, Maximum-likelihood tree, Systematics

Understanding Order Araneae and Web Architecture of Orb Weaver Spider (Family Uloboridae)

Divya Sanjay Falkar* and Nitin Sawant

School of Biological Sciences and Biotechnology Goa University Taleigao

**Presenting author: Deepika Eknath Walunj*
**Email Id of Presenting Author: deepikawalunj2016@gmail.com*

Abstract

Study area Piligao, Bicholim Goa Months-4 Based on my study on different types of webs of spiders, prey base in orb web and Web geometry of orb web (Uloboridae) the data that is found to be is identified 21 different webs of different families and Genus. From *Cyclosa* Genus, 7 different types of webs were observed such as 5 linear trashline web, 1 clustered trashline orb web. Circular web was observed from family *Tetragnathidae*, ladder web from Hersiliidae, Tangle web from theridiidae, sheet web of family linyphiidae, funnel web of family Lycosidae, signature orb web from Argiope genus, cribellate orb web from family Uloboridae, triangle web from family Uloboridae that are reduced orb webs, dome web of Genus *Crytophora*, funnel shaped web from family pholcodae and other webs that were observed are single thread web, irregular orb web, trapezoid orb web, cobweb. Different prey base of orb webs are identified till family level such as orthoptera, lepidoptera, hymenoptera, hemiptera, homoptera, coleoptera, diptera, araneae, nematocera, aphidoidea, pscoptera, brachycera. It is found in image j software calculation of Uloboridae orb web geometry that the where mesh and spiral size is big, there will be less prey capture where as if the spiral and mesh spacing is decreased there will be higher rate of prey captured in a orb web.

Keywords: Architecture, Orb web geometry, Spider webs, Prey capture, Family Uloboridae

Interrelation between Aquatic Insect Diversity and Physicochemical Parameters in Four Different Lakes on Kaas Plateau, World Natural Heritage Site, Western Ghats, MS

Gayatri Nitin Pawar* and Sandhya Mahesh Pawar

Lal Bahadur Shastri College of Arts, Science and Commerce, Satara, 415002, Maharashtra, India

**Presenting author: Gayatri Nitin Pawar*
**Email Id of Presenting Author: gayatripawar805@gmail.com*

Abstract

Aquatic biodiversity plays a major role in maintaining the health of the ecosystem. The present study investigated interrelation between aquatic insect diversity and physiochemical parameters in four different lakes namely Kas Lake, Gay Talav, Sarwar/KumudiniTalav, and BhadarTalav on the Kass Plateau. Total 24 species belonging to two order Coleoptera being most dominant order with 19 species and Hemiptera accounting for 5 species. Additionally, physiochemical parameters of water such as temperature, pH, salinity, electrical conductivity, dissolved oxygen, hardness, turbidity, total dissolved solids (TDS) and alkalinity were recorded. The result concluded that, unpolluted water bodies significantly contributed to richness of aquatic insects.

Keywords: Aquatic insects, Physiochemical parameters, Kass Plateau, Ecological Indicators

Scorpions of Indapur Tehsil, Pune District, Maharashtra, India

Govind Giri[1*], Sharad Giramkar[2] and Sachin Patil[3]

[1]PDEA's Prof.Ramkrishna More Arts, Commerce & Science College, Akurdi, Pune-44
[2]PDEA's Annasaheb Magar MahavidyalayaHadapsar, Pune-25
[3]Zoological Survey of India, Western Regional Centre, Vidya Nagar, Sector-29, P.C.N.T. (PO), Ravet Road, Akurdi, Pune, Maharashtra 411044, India

**Presenting author: Gayatri Nitin Pawar*
**Email Id of Presenting Author: gayatripawar805@gmail.com*

Abstract

A comprehensive survey of scorpions in Indapur Tehsil, Pune District, Maharashtra, India, was conducted to document species diversity, habitat preferences, and distribution patterns. Fieldwork was carried out between July 2023 and June 2024 using a randomized quadrat method across five distinct microhabitats. The study recorded seven scorpion species belonging to two families, Buthidae and Scorpionidae, and three genera. The identified species include *Hottentotta tamulus*, *Hottentotta rugiscutis*, *Hottentotta pachyurus*, *Orthochirus bicolor*, *Orthochirus bastawadei*, *Deccanometrus xanthopus*, and *Deccanometrus phipsoni*. Observations revealed that species distribution varied across different microhabitats, with *Hottentotta tamulus* being the most prevalent, often found near human settlements, while *Deccanometrus phipsoni* was the rarest, restricted to dense forested patches. *Orthochirus bicolor* and *Hottentotta pachyurus* preferred loose soil habitats and exhibited burrowing tendencies. The study highlights the critical role of specific habitats such as rocky terrains, scrublands, and burrows in supporting scorpion populations. Nocturnal surveys using ultraviolet (UV) light proved effective in detecting scorpions, contributing to enhanced species documentation. The findings underscore the importance of conservation measures to protect scorpion habitats from anthropogenic threats, including habitat destruction, urbanization, and agricultural expansion. Preservation of scrublands with stones, vegetated areas, and old trees with exfoliating bark is vital for sustaining scorpion biodiversity. Further research on scorpion ecology, population dynamics, and the impact of environmental changes is necessary to develop targeted conservation strategies.

Keywords: Scorpion diversity, Microhabitats, Conservation, Indapur Tehsil, Pune District

Updated Checklist of Birds, in and around Udanti –Sitanadi Tiger Reserve, Chhattisgarh, India

H. N. Tandan*

Sant Guru Ghasidas Govt. P. G. College Kurud, Chhattisgrh, India.

**Email Id of Presenting Author: tandanhn79@gmail.com*

Abstract

Animals in any habitat are markers of its environment. Avifaunal diversity serves as an important bio-indicator for a specific environment. A taxonomic survey of avifaunal diversity was conducted in and around the Udanti-Sitanadi Tiger Reserve, which covers the Gariaband and Dhamtari districts of Chhattisgarh, India, from July 2023 to 2024. During the survey, we recorded 144 bird species from 18 orders and created a checklist. The earlier study on avifaunal diversity in Udanti- Sitnadi Tiger Reserve found 210 bird species in this study region, to which the current survey added 24 new records, bringing the total number of bird species in UdantiSitanadi Tiger Reserve to 234. The updated checklist of 234 species was placed systematically under 19 orders, with the order Passeriformes dominating with 111 species, followed by Charadriiformes - 17, Ciconiiformes - 15, Accipitriformes - 15, Piciformes - 09, Anseriformes - 09, Columbiformes - 09, Cuculiformes - 8, Coraciiformes - 08, Galliformes - 07, Strigiformes - 06, Gruiformes -04, Suliformes -04, Ps The birds are classified as IUCN conservation status and fall under the Wildlife Protection Act (WPA) of 1972.

Keywords: Udanti, Sitanadi, Wildlife Sanctuary, Gariaband, Dhamtari

Behavioural Studies on the Fishing Cat Cub *Prionailurus viverrinus* Scientific name italics in Captivity

Ishita Chongder*[1], Chinnadurai Venkatraman[2] and Indrani Das[3]

[1]West Bengal Zoo Authority, Kolkata
[2]Zoological Survey of India, 130, Santhome high road, Chennai-28
[3]Department of Botany, Seth Anandram Jaipuria College, Kolkata

**Presenting Author: Ishita Chongder*
**Email Id of Presenting Author: ishita.titir@gmail.com*

Abstract

The fishing cat (*Prionailurus viverrinus* Bennett, 1833) is a charismatic species having a diverse array of interesting and unique behavioural pattern. Most of the studies have focused on territorial behaviour and hunting strategies of these animals. Though, parental care behaviour is an important part of their reproductive ecology, little is known about this intriguing behaviour. A proper scientific understanding of the concerned species can help in determining specific measures required for their successful breeding and the captive management in an effective way. The study was conducted at Garchumuk Zoological Park, Howrah, West Bengal (22.34560 N Latitude and 88.08580 E), which also acts as the Ex-situ Conservation Breeding Centre for the State Animal of West Bengal Fishing Cat. For monitoring the array of behaviours ad-libitum sampling method was done, followed by Focal sampling method considering all occurrences. The present study which was conducted over a period of two years, emphasises on the role of both male and female parents on the cubs through active parental care and learning behaviour of the cubs from parents. The mother fishing cats are committed carers who give their kittens essential nutrition, protection, and socialisation till a particular age, which gradually reduces with the time. Though male parents have a lesser contribution in active parental care, but their involvement is still distinguished as it is noticed in some instances that, the cubs learn from them. The study in captive environment has provided an inimitable prospect to observe and collect data on the specific animal behavior adaptations including learning strategies, free from the constraints and dangers of wild environments. The findings can have significant implications for designing the conservation and management strategy of fishing cat populations, highlighting the need to protect family unit along with their habitats with linkages to the reintroduction programs.

Keywords: Fishing Cat, Parental care, Learning, Conflict, Conservation

Diversity and Microhabitat of Spiders (Arachnida: (Arachnida: Araneae) in Banana Agroecosystems of Kamrup (Rural) District, Assam

Jyotiprakash Boro*[1], Samir Terdalkar[1], Kartik Adake[2] and Baishali Das[3]

[1]Department of Zoology Fergusson College (autonomous), Pune
[2]Department of Zoology St. Xavier's College (autonomous), Mumbai
[3]Department of Zoology Nowgong College (autonomous), Nagaon, Assam

**Presenting Author: Jyotiprakash Boro*
**Email Id of Presenting Author: jyotiprakashboro1@gmail.com*

Abstract

Spiders are a diverse group of Arachnids with generalist predatory characteristics. Most of the spider diversity in agro-ecosystem is studied by several researchers in rice fields from different states of India. Banana agroecosystem are unique and are major agroecosystem in Lepgaon and Kothalguri of Kamrup (rural) district. A study was undertaken to determine the diversity of spider fauna in banana agroecosystem of Kamrup (Rural) district of Assam. A study was undertaken to estimate spider diversity and their habitat in banana plantations of two above mentioned areas. The results showed presence of a total of 51 species of spiders, representing 8 genera and 12 families. Out of these, family Araneidae (39%) dominated the list followed by Lycosidae (15%), Salticidae (15%), Oxyopidae (8%), Tetragnathidae (5%), Theriidae (5%), Thomisidae (3%), Clubionidae (1%), Nephilidae (1%), Pholcidae (1%), Sparrasidae (1%), Uloboridae (1%). The present paper provides an insight on diversity and habitats of spiders in banana agroecosystem.

Keywords: Spider, Diversity, Microhabitat, Banana, Agroecosystem

Biogeography and Phylogenetic Relationships of *Caridina fernandoi* in India and Sri Lanka, with the Discovery of Novel Western Ghats Endemics

K. Kunjulakshmi*, Antony Santos and S. Prakash

Centre for Climate Change Studies, Sathyabama Institute of Science and Technology, Tamil Nadu, Rajiv Gandhi Salai, Chennai 600119, Tamil Nadu, India

**Presenting Author: K. Kunjulakshmi*
**Email Id of Presenting Author: kunjulakshmi.cccs@sathyabama.ac.in*

Abstract

The Western Ghats harbours exceptional freshwater biodiversity. Caridean shrimps of the family Atyidae play crucial ecological roles in ecosystem functioning. Despite their significance, only 28% of freshwater shrimps globally have been assessed for extinction risk, with many species being data deficient, particularly in India. These shrimps face increasing threats from habitat degradation and ornamental trade, highlighting the urgent need for comprehensive taxonomic and conservation research. This study investigates the phylogenetic relationships of freshwater shrimps between India and Sri Lanka, using *Caridina fernandoi* as a model organism. While previously considered endemic to Sri Lanka, this species now shows widespread distribution across India. This makes freshwater shrimps an ideal representative for gaining insights into the evolutionary relationships of other aquatic invertebrates in the Western Ghats. Specimens were collected through day and night sampling from various freshwater habitats across the central Western Ghats (Mangalore) and southern Western Ghats (Calicut and Thrissur), specifically targeting locations across the Palghat gap biogeographic barrier. Morphological examination and molecular analysis using two mitochondrial markers (16S rRNA and COI) were conducted on ethanol-preserved samples. India's *C. fernandoi* populations likely descended from diverse Sri Lankan mainland stock. Despite historical land bridges during periods of low sea levels, faunal exchange between southern India and Sri Lanka has been limited, with genetic exchange predating 500,000 years ago. This restricted exchange has resulted in high endemism, with species evolving into new taxa at higher altitudes of Western Ghats in particular from Chikkamangaluru and Malaya marutha falls. These findings enhance our understanding of Caridina systematics and biogeography while emphasizing the need for updated IUCN Red List assessments for both newly described and existing species, crucial for developing effective species-specific conservation strategies.

Keywords: Phylogeography, *Caridina*, New species, Western Ghats, Conservation

The Cladocerans as an Ideal Live-food for Fish Larviculture: The Protocols and Prospects of Their Collection, Identification and Mass Culture towards Aquaculture Sustainability

Karuppaiah Nanthini Devi*, Perumal Santhanam, Ayyanar Shenbaga Devi, Narasimman Manickam, Piliyan Raju, Rex Peter Francis Sagaya Princy, Karuppanan Rajagopal and Pachiappan Perumal

Marine Planktonology & Aquaculture Laboratory, Department of Marine Science, School of Marine Sciences, Bharathidasan University, Tiruchirappalli-24, Tamil Nadu, India

**Presenting Author: Karuppaiah Nanthini Devi*
**Email Id of Presenting Author: nanthinidevi74@gmail.com*

Abstract

Aquaculture remains one of the fastest-growing food-producing sectors, challenges for the development of a sustainable and species diverse aquaculture industry is lack of suitable live feeds at the larviculture phase. At present, some live feeds are being harvested from the wild and fed to the larvae and brooders. However, unfortunately, the wild collected live feeds are forming a way to entry of pathogenic organisms, which can cause diseases to the cultivable organisms. In this context, the present review was focussed on the cladocerans, their morphology, collection, identification features and culture methods. The culture of live feeds primarily the cladocerans culture in captive condition is highly essential for country like India. However, viable technologies for the intensive production of marine cladocerans are lacking in aquaculture industry especially in India coupled with the issue of lack of brood stock facility. A comprehensive brood stock facility for marine cladocerans to take up on as commercial scale seems to be the need of hour. Therefore, the culture technology has to be developed for all the possible species of marine cladocerans and pure culture of such species could be maintained and supplied to farmers and researchers of the country for sustainable aquaculture practices.

Keywords: Cladocerans, Taxonomy, Feeding types, Culture methods, Nutritional content

Discrete Generation Cycles in the Sugarcane White Grub, *Holotrichia serrata* (F.) (Coleoptera: Scarabaeidae: Melolonthinae)

K. V. Prakash[*1], Y. B. Srinivasa[2] and D. Rajanna[1]

[1]ICAR-All India Network Project on Soil Arthropod Pests, Department of Entomology, University of Agricultural Sciences, G.K.V.K., Bengaluru-560 065, Karnataka, India
[2]Tene Agricultural Solutions Private Limited, Bengaluru, Karnataka, India

**Presenting Author: K. V. Prakash*
**Email Id of Presenting Author: kvpento@gmail.com*

Abstract

Discrete generation cycles (DGCs) have been documented in the sugarcane white grub, *Holotrichia serrata* (F.), prevalent in the rain-fed regions of the Indian peninsula. Time series analysis of two spatially distinct populations sampled over two years revealed DGC with annual periodicity. The species exhibits synchronous adult emergence, polyandrous females, a near-equal sex ratio, mating aggregations, and the absence of female searching behaviour in males. Grubs show rapid growth and consumption, contributing to broader population distribution. These findings highlight the significance of DGCs in managing H. serrata and underscore its role as a model for studying DGC mechanisms in univoltine, polyphagous, long-duration tropical insects.

Keywords: Discrete generation cycles, *Holotrichia serrata*, Polyphagous, Synchronous, Aggregations

An Inventory to the Ant Fauna (Hymenoptera: Formicidae) of Chhattisgarh with 20 New Records

Maneesha T M*, Sheela S, Arnab M and Paromita M

Zoological Survey of India, Prani Vigyan Bhawan, New Alipore, Kolkata West Bengal – 700 053, India.

**Presenting Author: Maneesha T M*
**Email Id of Presenting Author: maneeshadeepa96@gmail.com*

Abstract

Chhattisgarh is one of the least explored areas for ant diversity with a mere four species represented in the checklist of India by Bharti et al. (2016). Here the study is done based on a collection of Formicidae made from Chhattisgarh during the late winter season. The habitat was extremely dry, the soil was cracked to the depth of about 0.5 to 1 metre. Vegetation included drought deciduous trees only, that too found in only a few of the sites surveyed. Some of the very common plants observed at almost all the sites were Arabic gum tree and Pink morning glory. This study shows the existence of 31 species of Formicidae from 35 different sites of 7 districts of Chhattisgarh in the Chhota Nagpur Plateau region. Previously some useful study on the faunal composition of Chhattisgarh has been done by Chandra et.al. (2018) and Chandra et. al. (2019) that reported 23 species of ants from Surguja, Korba districts, Barnawapara Wildlife Sanctuary and Udanti Sitanadi Tiger Reserve, Chhattisgarh. This is the first detailed faunal exploration of Formicidae of Chhattisgarh representing a total of 31 species including 20 species as first report from Chhattisgarh. Therefore, the species from Chhattisgarh currently stands at 45 combining result from present study and previous studies done so far.

Keywords: Chhattisgarh, Chhota Nagpur Plateau, Formicidae, Arabic Gum Tree, Pink morning glory

Urban Spider Diversity in Kollam, Kerala: Implications for Conservation and Ecological Monitoring

Midhun P*, Pathissery John Sarlin, Abel Sam Daniel, Noel C Thomas, Adithya Unni S, Surya A S, Jereena J David, Krishna K and Ann Mary

PG and Research Department of Zoology, Fatima Mata National College (Autonomous), Kollam, University of Kerala, India

**Presenting Author: Midhun P*

**Email Id of Presenting Author: sanciamorris@yahoo.com*

Abstract

By controlling insect populations, spiders (Araneae) contribute significantly to the stability of ecosystems; yet urbanization and habitat fragmentation are posing a growing danger to their variety and ecological roles. This study contributes to baseline data for biodiversity conservation and long-term ecological monitoring by offering a thorough evaluation of spider diversity, morphological adaptations, and ecological roles in Kollam, Kerala's urban settings. Documenting species richness and family composition, dividing spiders into functional guilds according to their foraging tactics, examining morphological adaptations that impact ecological functions, and improving taxonomic clarity for conservation planning were the main goals. Standardized field methods, including active searching, beat-sheeting, and sweep-netting, were used to gather specimens from a variety of urban locations during the seven-month survey period (July 2024–March 2025). Morphological keys and taxonomic references were used to identify the species, and Uetz et al. (1999) recommended functional classification based on web design and foraging behavior. Morphological adaptations were examined using biomechanical research and traditional anatomical descriptions. There were 47 spider species found in 13 families, with the most prevalent families being Salticidae (17 species) and Araneidae (11 species). Six different groupings were identified via functional guild analysis, with orb-web builders (31.91%) and stalkers (42.55%) being the most common. Ecological specialization was associated with notable morphological adaptations, including as differences in eye arrangement, silk gland anatomy, and predation tactics. The study offers vital information about the richness of urban arachnids, laying the groundwork for ecological evaluations and conservation plans. To preserve biodiversity in quickly changing landscapes, it is essential to comprehend how urban expansion affects spider communities. This highlights the necessity of sustainable urban planning that incorporates biodiversity conservation strategies.

Keywords: Araneae diversity, Functional guilds, Morphological adaptations, Foraging behavior, Urban ecosystems

Seasonal Species Diversity and Abundance of Butterflies around Mukutmanipur Dam and Its Surrounding Areas of Bankura District, Bankura, West Bengal, India

Mizanur Rahman*, Motinur Rahman and Biplob Kumar Modak

Department of Zoology, Sidho Kanho Birsha University, Purulia, West Bengal, India

**Presenting Author: Mizanur Rahman*
**Email Id of Presenting Author: tufan.newsinfo@gmail.com*

Abstract

Butterflies are beautiful as well as important part of nature. Butterflies are good indicators of a healthy ecosystem and act as good pollinator agents, increasing the productivity of plants by promoting fertilization. The objectives of the present survey are focused on the assessment of the diversity and seasonal variation of butterflies and their host plants found at Mukutmanipur. Mukutmanipur is known for its green lush forest, dam, birding hotspot, and habitat of chital deer. This survey was carried out from February 2024 to January 2025 and divided into four seasons - pre-monsoon, monsoon, post-monsoon and winter. The species diversity of butterflies was measured by using relative density, relative abundance, relative frequency, Shannon index, Simpson's diversity index, Margalef Index etc. A single-factor ANOVA was performed to analyze the season-wise distribution of species. Individual rarefaction analysis was done to analyze seasonal variation. Hierarchical classical clustering was performed among seasons based on the Jaccard similarity index using UPGMA. A total of 42 species of butterflies were recorded belonging to five families. The present study shows a high abundance of butterflies that belongs to Nymphalidae family comprising 18 species. The Highest number of butterflies were recorded in the monsoon season, which is reflected in individual rarefaction analysis. Season-based hierarchical cluster analysis shows higher similarity of butterflies in between monsoon and post-monsoon seasons. A checklist of the butterflies found in this region is also prepared. Lantana, Imperata and Calotropis were found to be the most favoured host plants of the butterflies of the study area.

Keywords: Single factor ANOVA, Individual rarefaction, Hierarchical cluster analysis, Nymphalidae, Ecological indices

Diversity and Abundance of Odonate Fauna in Surrounding Areas of Mukutmanipur Dam, Bankura, West Bengal, India

Motinur Rahman[*1], Mizanur Rahman[1], Arijit Ganguly[2] and Biplob Kumar Modak[1]

[1]Sidho Kanho Birsha University, Purulia, Department of Zoology
[2]Achhruram Memorial College, Jhalda, Department of Zoology

**Presenting Author: Motinur Rahman*
**Email Id of Presenting Author: parichayrahman@gmail.com*

Abstract

The present research assessed the diversity and abundance of Odonates at twelve sites surrounding Mukutmanipur Dam on the Kangashabati River in West Bengal, India, across various seasons. Documentation was conducted from March 2024 to February 2025, and data was collected according to four major seasons: pre-monsoon (February to April), monsoon (May to July), post-monsoon (August to October), and winter (November to January). The dominance of odonate species was quantitatively assessed through various metrics, including density, relative density, abundance, relative abundance, and relative frequency. A single-factor ANOVA was used to examine the results across the four distinct seasons. Seasonal variation was examined using individual rarefaction analysis. The hierarchical classical clustering was performed using the Jaccard similarity index. The result reveals that there were a total of thirty-nine odonate species, distributed across 26 genera and 6 families, in the study area during the research period. Among these, 27 species of dragonflies were identified within the families Aeshnidae, Gomphidae, Libellulidae, and Macromiidae, and 12 species of damselflies were categorised under the families Coenagrionidae and Platycnemididae. Various ecological indices (Shannon-Wiener index, Simpson's Index of Diversity, etc.) were also calculated from the observed diversity of odonata species. The individual rarefaction analysis indicated that the probability of finding the highest number of odonata species occurred during the post-monsoon season. Among the thirty-nine species, Ictinogomphus rapax is very common, while Gynacantha dravida is rarely found in this location.

Keywords: Odonata, Dragonflies, Damselflies, Kangashabati River, Mukutmanipur Dam

Exploring the Diversity and Seasonal dynamics of Aseptate Gregarines in Earthworm: A Preliminary Study in Purulia, West Bengal, India

Moumita Sinha[1,2*] and Biplob Kumar Modak[2]

[1]Department of Zoology, Bankura Christian College, Bankura- 722101, West Bengal
[2]Department of Zoology, Sidho- Kanho-Birsha University, Purulia - 723104, West Bengal

**Presenting Author: Moumita Sinha*
**Email Id of Presenting Author: sinhamoumita11@gmail.com*

Abstract

Aseptate gregarines are frequently observed in annelids, particularly in seminal vesicles of earthworms. This study focuses on investigating the diversity and distribution of gregarines infecting earthworms, along with their seasonal variations, across different regions of the Purulia District in West Bengal. To achieve this, extensive field surveys were conducted to collect host specimens from various habitats, including forests, agricultural fields, and garden soil, while ensuring they remain alive. The study spanned nearly two years, from March 2023 to January 2025. For smear preparation, a small amount of seminal fluid was applied to a glass slide and then semi-dried. The samples were then fixed in Schaudinn's fixative, stained with Heidenhain's hematoxylin, and examined under a light microscope. The findings revealed a rich diversity of aseptate gregarines across different species of host earthworms. Under three different genera viz. *Monocystis* Stein, 1848; *Nematocystis* Hesse, 1909 and *Stomatophora* Drzhevetskii, 1907, six different species of these parasites were recorded. They are *M. bengalensis*, *M. beddardi*, *N. kailasi*, *S. diadema*, *S. majumdari*, *S pradhanis* respectively. Their different reproductive stages were also observed, and their intensity was noted. A total of 517 host specimens, representing different species, were examined. Morphometric analysis was employed for parasite identification, and the study of prevalence was calculated using standard formula. ANOVA test was also carried out. The highest rate of gregarine infection was recorded during the monsoon season i.e., June-September (96.51%) followed by post-monsoon i.e., October-November (83.49%), with Monocystis Stein, 1848 being significantly more prevalent than the others.

Keywords: Aseptate gregarines, Diversity, Seasonal, Earthworm, Purulia

Diversity of Chalcididae from Agro-ecosystem of North Bengal with New Records to West Bengal

Nabasri Basak* and Sheela Saroj

Zoological Survey of India, Prani Vigyan Bhawan, M- Block, New Alipore, Kolkata-700053, West Bengal

**Presenting Author: Nabasri Basak*
**Email Id of Presenting Author: nabashri.basak@gmail.com*

Abstract

The diversity of Chalcididae species was studied from some selected parts of two agro climatic zones of West Bengal viz. Northern Hill Zone and Terai-Teesta Alluvial Zone. Chalcididae specimens were collected from Darjeeling, Jalpaiguri and Alipurduar districts of West Bengal. The Darjeeling district comes under the Northern Hill agro-climatic zone which is world famous for producing high quality tea. The Terai- Teesta alluvial region which include entire Jalpaiguri and Alipurduar districts also produces significantly large amount of tea. The fertile soil of Terai region is highly suitable for cultivating different types of important crops like Paddy, Jute and vegetables. Chalcididae specimens were primarily collected from 18 tea gardens of North Bengal including both organic and inorganic gardens and some specimens were also collected from natural vegetation. Sweep net and yellow pan traps methods were followed to collect the Chalcididae specimens. An initial attempt is made to showcase the diversity of Chalcididae species from agro-ecosystem North Bengal which depict the presence of total 18 species belonging to 8 genera with 7 new distributional addition to the existing Chalcididae species diversity of West Bengal. The genus *Brachymeria* has the highest number of species diversity with 6 species followed by the genus *Antrocephalus* with 4 species and the genus *Kriechbaumerella* with 3 species. The genus *Haltichella* and *Hayatiella* are first time reported from West Bengal.

Keywords: Chalcididae, North Bengal, Agro-climatic Zone, New distributional Records, Species diversity

Opportunistic Foraging by Cattle Egrets (*Bubulcus ibis*) in Response to Highway Expansion: A Case of Behavioral Adaptation

Pathissery John Sarlin*, Sandie Morris, Polycarp Joseph, Sancia Morrisa and Savio Morris

PG and Research Department of Zoology, Fatima Mata National College (Autonomous), Kollam, University of Kerala, India
Institute of Chemical Technology Mumbai, IOC Bhuvneshwar Odisha, India
Kollam Birding Battalion, Kerala, India

**Presenting Author: Pathissery John Sarlin*
**Email Id of Presenting Author: sarlinpoly@yahoo.com*

Abstract

Wildlife behavior is greatly influenced by anthropogenic activities, especially in urban and semi-urban settings where biological dynamics are altered by habitat alterations brought about by humans. The opportunistic foraging behavior of cattle egrets (Bubulcus ibis) in reaction to highway development activities is one such instance. These birds, which are well-known for their strong bonds with large grazing mammals, have shown incredible behavioral adaptability by changing their foraging tactics in response to environmental changes brought about by humans. Cattle egrets were seen closely trailing excavators (JCBs) during highway extension activities as they dug up the ground and vigorously searched the recently disturbed dirt for prey. By exposing insects, worms, amphibians, and other vertebrates that would otherwise go undetected, the excavation process gives the egrets a plentiful and convenient food source. Their custom of foraging close to grazing livestock, where they take advantage of food flushed out by the animals' movements, is reflected in this behavior. The birds have, however, changed their ecological relationship from living animals to mechanical disruptions in this instance, indicating their capacity to take advantage of new foraging opportunities brought about by human activity. These behavioral changes demonstrate how birds' reactions to human disruptions are dynamic. The long-term ecological effects of this flexibility are still unknown, despite the possibility that it will have short-term advantages like improved foraging efficiency. Prey populations and predator-prey relationships may be impacted by infrastructure development's effects on habitat fragmentation, soil erosion, and changed food availability. To fully comprehend how ongoing exposure to human-modified habitats influences bird foraging tactics and the wider ecological effects of these interactions, more research is required. This case study emphasizes the significance of evaluating how infrastructure projects affect animals and the necessity of sustainable development strategies that lessen adverse effects on biodiversity.

Keywords: Cattle Egret, Urban Ecology, Opportunistic Foraging, Behavioral Plasticity, Anthropogenic Interference

Two New Records of Mangrove Slugs (Gastropoda: Euthyneura: Onchidiidae) from Goa, India

Pankaj Premanand Nagvekar* and Preeti Antonetta Pereira

Goa University

**Presenting Author: Pankaj Premanand Nagvekar*
**Email Id of Presenting Author: nagvekarp60@gmail.com*

Abstract

Despite being one of the most abundant slugs in the Indo-West Pacific mangrove forests, the diversity and distribution of Onchidiidae Rafinesque, 1815 (Gastropoda: Euthyneura) is not well studied. The present study reports the occurrence of two onchidiid slugs belonging to the genus *Platevindex* H. B. Baker, 1938 viz., *P. tigrinus* (Stoliczka, 1869) and *P. martensi* (Plate, 1893) for the first time from the mangrove habitats of Goa, India. Individuals of both species were observed from mangrove trunks, on mud, and on rocks. This study delineates these two species through scanning electron microscopy, morphological analysis and comparative anatomy (reproductive organs and radulae). Members of the genus *Platevindex* (*P. aptei*, *P. martensi*, and *P. tigrinus*) are poorly represented in India, with sporadic distributions from Kerala, West Bengal, and the Andaman Islands so far. The present study extends the distribution of these shell-less slugs from Kerala to Goa along the west coast of India. Further surveys in mangrove and saltmarsh estuary habitats are recommended to authenticate the distribution of mangrove slugs in India.

Keywords: Mollusca, *Platevindex*, West coast, Distribution, Onchidiid slugs

Study of Fresh Water Zooplanktons in Sina River Around the Madha from Solapur District (M.S) India

Pankaj V. Pawar* and S. G. Banasode

P.A.H..Solapur University Solapur Maharashtra India

**Presenting Author: Pankaj V.Pawar*
**Email Id of Presenting Author: pawar2925@gmail.com*

Abstract

Present investigation has been conducted on Sina river around the Madha region (popularly knows as Sina river) of Maharashtra with special reference to its zooplankton diversity in relation physico-chemical characteristics. 105 (One hundred and five) zooplankton species were identified from Nira river around the akluj which consisted of Rotifera 43 species (41%), Cladocera 25 species (24%), Protozoa 20 species (19%), Copepoda 12 species (11%) and Ostracoda 5 species (51%). The investigation on physico-chemical characteristics at different sites revealed its alkaline nature, suitable for aquaculture practices. Significant site variations have been recorded dar to the interference of sewage and agricultural wastes. Among all the zooplankton groups, Rotifera recorded dominance. Maximum diversity of zooplankton population was recorded at macrophytic sites during summer season.

Keywords: Sina River, Zooplanktons, Fresh water, Bacteria, Metals

Thermoregulatory and Ectoparasite Control Functions of Sunning Behavior in *Milvus migrans*: A Field Observation from Kollam Beach, Southwest Coast of India

Polycarp Joseph[1*], Pathissery John Sarlin[2], Sandie Morris[1], Aparna Mohan[2], Sancia Morris[3], Savio Morris[1]

[1]Kollam Birding Battalion, Kerala, India
[2]PG and Research Department of Zoology, Fatima Mata National College (Autonomous), Kollam, University of Kerala, India
[3]Institute of Chemical Technology Mumbai, IOC Bhuvneshwar Odisha, India

**Presenting Author: Polycarp Joseph*
**Email Id of Presenting Author: candletrees4sp@gmail.com*

Abstract

Sunning is a common bird habit that has important physiological and ecological ramifications, including as ectoparasite management, feather upkeep, and thermoregulation. Sunning in Black Kites (*Milvus migrans*) entails assuming a characteristic stance to optimize exposure to sunlight. The functional importance of this behavior is still not fully known, though. Through field observations, this study seeks to characterize sunbathing behavior in *Milvus migrans* and examine its physiological and ecological implications. The study's primary goals are to record Black Kites' sunbathing behavior in their natural habitat, examine the possible thermoregulatory and ectoparasite management advantages of sunning, and evaluate the environmental factors linked to sunning behavior. We observed *Milvus migrans* sunning during a Raptor Monitoring Program at Kollam Beach, Kerala. It was noted that a Black Kite was sunbathing at 11:30 AM on November 17, 2024. With its head slightly up and its wings and tail spread wide, the bird positioned itself horizontally on the beach sand, facing the sun. Using a mercury thermometer, the ambient air temperature was found to be 33°C, whereas the soil surface temperature was 51°C. A Nikon D500 camera with a Sigma 150-600mm telephoto lens was used to take pictures of the evidence. Post-observational evaluations of the site were carried out, and the length of the sunbathing activity was recorded. The kite flew to a nearby tree following the brief tanning session, which lasted less than three minutes. The bird may have been better able to control ectoparasites and maintain body temperature since it was exposed to both direct sunlight and the heat that the hot beach soil generated. This habit may help manage ectoparasites because feather lice are exposed to deadly temperatures when tanning. The observed position supports the ecological significance of sunbathing in raptors by being consistent with earlier research on the subject (Simmons, 1986). Our research advances our knowledge of the adaptive advantages of bird sunbathing behavior. To measure its contribution to thermoregulation and ectoparasite control in diverse environmental settings, more investigation is required. This study emphasizes how important field observations are for understanding the behavioral ecology of birds.

Keywords: Sunning Behavior, Thermoregulation, Ectoparasite Control, Sunning Behavior, Thermoregulation, E Black Kite (*Milvus migrans*), Avian Ecology.

Unraveling the Cryptic Species Complex in Coral Reef Dwelling 'Peacock Tail' Shrimp *Ancylocaris brevicarpalis* (Schenkel, 1902) (Palaemonidae) in the Indo-Pacific

Prakash Sanjeevi[1*], Kunjulakshmi Kozhikkaparambil[1] and T. T. Ajith Kumar[2]

[1]Integrative Taxonomy Lab, Centre for Climate Change Studies, Sathyabama Institute of Science and Technology, Rajiv Gandhi Salai, Chennai 600117, Tamil Nadu. India
[2]ICAR-National Bureau of Fish Genetic Resources, Dilkusha Marg, Lucknow, Uttar Pradesh 226002

**Presenting Author: Prakash Sanjeevi*
**Email Id of Presenting Author: prakash.cccs@sathyabama.ac.in*

Abstract

The study on the peacock-tail shrimp, *Ancylocaris brevicarpalis* (Schenkel, 1902), uncovers a complex of cryptic species within this obligate symbiont of sea anemones found in the Indo-Pacific region. Despite its striking coloration, demand in aquarium trade and ecological significance, the factual diversity of this species has been obscured by morphological similarities, that complicate accurate identification. This research employs various molecular techniques such as phylogenetic analysis (using multiple markers such as 16S, H3 and 18S), species delimitation approaches and haplotype network analysis to unravel the cryptic species complex associated with *A. brevicarpalis*. By sampling individuals (N=29) across various geographic locations such as Gulf of Mannar, Lakshadweep, Gulf of Kutch and Vietnam, we aim to delineate distinct genetic lineages and assess their ecological roles within their respective habitats. Preliminary findings indicate significant genetic divergence among populations, suggesting that, what was once considered a single species may comprise multiple, morphologically similar yet genetically distinct entities. Understanding this cryptic diversity is crucial for conservation efforts and the management of marine ecosystems, as these shrimps play vital roles in symbiotic relationships with sea anemones. This study not only enhances the knowledge of *A. brevicarpalis*, but also contributes to broader discussions on biodiversity and species delimitation in marine environments.

Keywords: Cryptic species, Biogeography, Molecular phylogeny, Species delimitation, Coral reef shrimps

Diversity, Abundance and Diel Activity Patterns of Sympatric Ungulates in the High Altitude Landscape of Western Arunachal Pradesh

Pujan Kumar Pradhan[1, 2*], Chinnadurai Venkatraman[3] and Govindan Veeraswami Gopi[1]

[1]Department of Endangered Species Management, Wildlife Institute of India, Dehradun, Uttarakhand, India
[2]Department of Zoology, University of Calcutta, Kolkata, West Bengal, India
[3]Marine Biological Research Centre (MBRC), Zoological Survey of India, Chennai

**Presenting Author: Pujan Kumar Pradhan*
**Email Id of Presenting Author: pradhanpoozan@gmail.com*

Abstract

Ungulates play a crucial role in high-altitude ecosystems as primary prey for carnivores. Their sympatric distribution often results in intraguild competition, which becomes more pronounced in resource-scarce high-altitude environments. By partitioning aspects of available ecological resources, such as temporal, spatial, and nutritional niches, they facilitate coexistence. This study assessed species diversity, abundance, and temporal activity patterns among the ungulate guild in the high-altitude regions of Tawang and West Kameng districts, Arunachal Pradesh, using camera trapping. From September 2023 to February 2025, 174 camera traps were deployed, accumulating 14,081 trap nights and yielding 13,393 usable captures. Eight ungulate species were recorded, with Barking Deer being the most abundant, while Bhutan Takin was captured only once. Temporal activity patterns were analysed for the six most frequently recorded species: Himalayan Goral, Blue Sheep, Barking Deer, Wild Boar, Musk Deer, and Mainland Serow. Himalayan Goral, Barking Deer, and Mainland Serow were active throughout the day, peaking during crepuscular hours. Wild Boar exhibited primarily diurnal activity, with peak movement at noon. Blue Sheep were exclusively diurnal, with peak activity at 9:00 hours. Activity overlap analysis revealed that Himalayan Goral and Mainland Serow had the highest overlap (Dhat I = 0.83973), followed by Barking Deer and Himalayan Goral (Dhat I = 0.83962). The lowest overlap was observed between Musk Deer and Blue Sheep. This study establishes a foundational understanding of ungulate community dynamics in resource-constrained environments, providing insights into the temporal interactions and activity profiles of ungulate species in the Western Arunachal Pradesh.

Keywords: Ungulates, Eastern Himalaya, Diel activity, High altitude, Camera trapping

Checklist of Bivalves of India - A Diversity Comparison among Indian States along Various Coastline

Rupavath Rajendar Kumar*, Vanishree Jagadeesan, G. Sivaleela and Florence Suganya

Marine Biology Regional Centre, Zoological Survey of India, Chennai 600028

**Presenting Author: Rupavath Rajendar Kuma*
**Email Id of Presenting Author: rrajendarkumarzsi@gmail.com*

Abstract

India is a country with a long coastline and a mainland coast that stretches roughly over 11,098 km. This coastline is largely peninsular and runs through varied ecoregions such as sandy beaches, rocky shores, estuaries, mud banks etc. The coastline is politically divided into 9 states with 4 on the east coast towards the Bay of Bengal and 5 on the west coast adjacent to the Arabian Sea. The west coast consists of the Kachchh and Kathiawar coasts, the Konkan coast, the Kannada coast and the Malabar coast. The east coast is mostly deltaic from rivers such as Godavari, Krishna and the Ganges and consists of the Utkal, Andhra and Coromandel coasts. Upon comparison the east coast and the west coast show stark variations in width, topography, soil fertility, coastal features and climatic influences. These factor into the contrast in biodiversity of the coasts. The current paper presents a checklist of bivalves present along the coastline in each of these states and attempts to understand the diversity, and distribution of bivalves in the states and a contrast is drawn between the bivalve diversity of the east and west coast. Bivalve biodiversity is compared across the coastal states of India and plausible reasons for the variations are discussed. A special reference is made to the Tamil Nadu coastline as is it very dynamic having two shallow large bays, the Palk Bay and Gulf of Mannar, which are unique in having coral reefs and mangroves and seagrasses in the same area.

Keywords: Arabian Sea, Bay of Bengal, Bio diversity, Gulf of Mannar, Mangrove

Rocking Female Chooses Clingy Male: Observational Notes on the Reproductive Behaviour of *Myllocerus subfasciatus* Guerin, 1843

Rahul Kumar*[1] and Birendra Kumar Singh[2]

[1]*Department of Zoology, Sheodeni Sao College (Magadh University), Kaler-824127, India*
[2]*Postgraduate Department of Zoology, Magadh University, Bodh Gaya-824234, India*

**Presenting Author: Rahul Kumar*
**Email Id of Presenting Author: rahuldayanand33@gmail.com*

Abstract

Myllocerus subfasciatus Guerin, 1843, commonly known as the ash weevil, is a polyphagous pest species of weevil (Coleoptera: Curculionidae) found in the Indian subcontinent. In present study, courtship behaviour of *M. subfasciatus* was studied ex situ. Adult female weevils are mostly larger in size than males. Adult male and female weevils were collected from a tree of Indian bay leaf and reared in pairs inside transparent glass containers. Various unique behavioural patterns were recorded. Whenever a male weevil approaches and tries to mount on a female weevil, the female starts swinging its abdomen to-and-fro vigorously and this swinging continues for about half an hour which is part of its mate-selection strategy. This prolonged vigorous shaking dislodges a "weak" male whereas a "strong" male stays firm. Intra-sexual male-male conflicts were also observed where a non-mounting male tries to dislodge a mounting male to take its position over a rocking female. A "strong" male doesn't loosen its grip and successfully mates with the female. Mating takes place only after the female stops shaking its abdomen and continues for hours. Prolonged genital contacts or copulatory guarding reduces the chances of sperm competition. Deliberate separation of the mating pair leads to injury and subsequent death of the male. Prolonged abdominal swinging in female and copulatory guarding in male are energy consuming behaviours and have associated trade-offs. Present study provides useful insights regarding reproductive behaviour of *M. subfasciatus* and its evolutionary significance.

Keywords: Ash weevil, Copulatory guarding, Courtship, Sexual conflict, Sperm competition

Freshwater Ostracods of Jalgaon District, India: Diversity and a Notable New Record

Renuka R. Khairnar* and Yugandhar S. Shinde

Department of Zoology, Progressive Education Society's Modern College of Arts, Science and Commerce, Shivajinagar, Pune, 411005

**Presenting Author: Renuka R. Khairnar*
**Email Id of Presenting Author: khairnarrenu1998@gmail.com*

Abstract

This study explores the diversity of ostracods in Jalgaon District, Maharashtra, India, based on 85 samples collected qualitatively and randomly from different aquatic habitats. 41 species belonging to 23 genera were identified, accounting for approximately 27% of India's known ostracod diversity. The diversity of species identified in the Jalgaon district reflects varying degrees of geographical distribution, ranging from cosmopolitan species with broad global ranges to those with more localized, regional occurrences. Heterocypris incongruens, *Cypris granulata*, and *Cypridopsis vidua* exhibit cosmopolitan distribution patterns. In contrast, species like *Hemicypris dissona*, *Hemicypris bairdi*, *Pseudocypretta maculata*, *Pseudostrandesia ovata*, and *Dentocypria mesquitai* are only known from the Oriental region. This study also records *Tanycypris alfonsi* in India for the first time. Originally described by Nagler *et al.* (2014) in Germany, this species was previously recorded from South Korea, Eastern China, and the Nansei Islands of Japan. Its presence in India marks a significant southward expansion of its geographic range within Asia and makes it only the second member of its genus documented in the country.

This study highlights the diversity and distribution of ostracods in Jalgaon district. The study emphasizes the need for continuous research and documentation of freshwater species in India, a country with immense, largely unexplored ecological potential.

Keywords: Freshwater, Crustacea, Microcrustaceans, Distribution, *Tanycypris*

Spider Communities in Two Habitats: A Study on Distribution and Ecological Interactions

Warlikar RC, Phirke Pramod and Patil SR

Department of Zoology, Fergusson College (Autonomous), Pune, Maharashtra, India

**Presenting Author: Ruchita Warlikar*
**Email Id of Presenting Author: ruchitawarlikar@gmail.com*

Abstract

The survey of spider diversity is essential for assessing their population prevalence in two different habitats from Pune district for building a comprehensive biodiversity database of spider fauna. At site 1 (Maval) a total no. of 27 spiders were collected during the monsoon period from 15th June to 15th November while site 2 (Mulshi) showed a collection of total 32 spiders. Equitability indices are important because they provide a more complete picture of biodiversity than just species richness alone. H max was high at site 1 indicating stable population while site 2 indicates unstable population was H max was low. The given study on the distribution and diversity of spiders was conducted and revealed that environmental parameters, habitat type, vegetation structure, and human activities influenced their distribution. The habitat heterogeneity hypothesis suggests that as habitat complexity increases, more niches become available, leading to greater species richness.

Keywords: Spider, Araneae, Diversity, Ecology, Habitat

Relative Influence of Environmental Factors on Feeding Habits of Deep-Sea Dragon Fish, *Astronesthes lucifer* (Gilbert, 1905) along the South-Eastern Arabian Sea

S. N. Kamalini[1,2*], Bincy M. Raj[1], Nitin Suyani Kanji[1], A. Kathirvelpandian[1], G. Kantharajan[1], T. T. Ajith Kumar[1]

[1]ICAR – National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh - 226 002, India
[2]Kerala University of Fisheries and Ocean Studies, Panangad, Kochi, Kerala - 682506, India

**Presenting Author: S. N. Kamalini*
**Email Id of Presenting Author: kamalinisekar24@gmail.com*

Abstract

Understanding spatial variation in fish trophic structures along deep-sea ecosystems remains challenging, and the influence of fish food selectivity and diet shifts on these structures remains unknown. The present study attempts to study the temporal changes in the food and feeding behavior of *Astronesthes lucifer* and their association with various environmental parameters. Specimens were collected fortnightly from a deep-sea trawler based at Sakthikulangara fishing harbour from September 2024 to February 2025, and biological parameters were recorded. The size of the specimens examined ranged from 88 to 133 mm in total length. Monthly environmental data of the fishing locations were extracted for ten variables viz., dissolved iron, nitrate, phosphate, silicate, chlorophyll a, molecular oxygen, zooplankton, inorganic carbon, sea surface temperature (SST) and upward water velocity from the datasets downloaded from the Copernicus Marine Service (CMEMS) for the respective sampling months using Geographical Information System. This study revealed that deep sea shrimps and fishes are the major diet components based on the Index of Relative Importance (IRI). A shift in prey with environmental variables was also observed. This preliminary study gives insights on the feeding ecology of the lesser-known deep-sea dragonfish *A. lucifer*, concerning environmental conditions that may furnish robust scientific foundations to sustainably utilize this deep-sea fishery resource.

Keywords: Deep-sea, Dragonfish, Feeding ecology, Mesopelagic, Stomiidae

Study of Loaches in The Collection of Western Regional Centre, Zoological Survey of India, Pune

Sandeep Kumar*

Zoological Survey of India, Western Regional Centre, Pune

**Email Id of Presenting Author: sandeep.kumar707@zsi.gov.in*

Abstract

Loaches form a vital component of India's freshwater biodiversity. Loaches, belonging to the suborder Cobitoidei, are ray-finned, freshwater fish that inhabit the aquatic ecosystem. This study presents a comprehensive analysis of loach species documented in the National Zoological collections of the Zoological Survey of India, Western Regional Centre, Pune (ZSI-WRC), encompassing species diversity, distribution patterns, population abundance and IUCN status. In this study, a total of four species from Cobitidae, five from Balitoridae, and 26 from Nemacheilidae were examined, with *Lepidocephalichthys thermalis* and *Schistura denisoni* representing the most abundant taxa. The results highlight the presence of both widespread and rare species, including newly described taxa, IUCN status with their common names and emphasizing the need for targeted conservation efforts. Habitat degradation and anthropogenic pressures pose significant threats to several loach species, warranting urgent ecological assessments. This study provides critical insights into loach diversity in India and supports future taxonomic and conservation initiatives. Additionally, the study identifies potential new records and underscores the need for conservation measures due to habitat degradation and anthropogenic threats. The research contributes to the growing knowledge of India's ichthyofaunal diversity and supports future taxonomic and ecological assessments of loaches.

Keywords: Fish Biodiversity, Loaches, Conservation Status, ZSI-WRC

Nocturnal Foraging by Little Egrets (*Egretta garzetta*) Under Artificial Lighting in an Urban Coastal Fish landing centre: Adaptive Response to Anthropogenic Influences

Sandie Morris*[1], Pathissery John Sarlin[2], Polycarp Joseph[1] and Sancia Morris[3] and Savio Morris[1]

[1]*Kollam Birding Battalion, Kerala, India*
[2]*PG and Research Department of Zoology, Fatima Mata National College (Autonomous), Kollam, University of Kerala, India*
[3]*Institute of Chemical Technology Mumbai, IOC Bhuvneshwar Odisha, India*

**Presenting Author: Sandie Morris*
**Email Id of Presenting Author: sandiemorris101@gmail.com*

Abstract

The availability of resources and the surrounding environment have a big impact on how birds forage. We report an uncommon case of nocturnal foraging at Vaddy Harbour, Kollam, Kerala, where birds were seen actively foraging under artificial light sources, despite the fact that Little Egrets (*Egretta garzetta*) are typically diurnal feeders. Because prey are more visible and there is less competition at night, this behavior seems to be an opportunistic adaptation. By illuminating fish and invertebrates close to the water's surface, the artificial illumination in the harbor may improve foraging efficiency and enable egrets to take use of an ecological niche that would otherwise go unused. Bird behavior can be significantly impacted by anthropogenic changes, especially those related to urban illumination, which can change natural activity patterns and impact feeding tactics. Little Egrets' observed nightly activity points to behavioral flexibility in response to environmental changes brought on by humans. Artificial illumination raises questions about possible disruptions to natural circadian rhythms, dependence on food sources connected with humans, and changes in predator-prey dynamics, even though it may offer temporary foraging benefits. This work emphasizes the need for more research into the long-term ecological effects of artificial illumination on marsh birds and adds to the expanding body of knowledge on avian adaptation to urban settings. Developing conservation methods that strike a balance between human activities and the preservation of natural foraging patterns and ecosystem integrity requires an understanding of how species, such as *Egretta garzetta*, alter their behaviors in response to anthropogenic impacts.

Keywords: Little Egret, Nocturnal Foraging, Artificial Light, Behavioral Adaptation, Avian Ecology

Change in Ant Diversity in Response to Environmental Variations in Two Selected Localities of Manipur

Sangeeta Dhar* and Sheela S.

Central Entomology Laboratory, Zoological Survey of India, Kolkata

**Presenting Author: Sangeeta Dhar*
**Email Id of Presenting Author: dhar.sangeeta11235@gmail.com*

Abstract

Northeast India is renowned for its rich biodiversity, with Manipur forming part of the "Seven Sisters" states. It is connected to the Indo-Myanmar biodiversity hotspot This study focuses on two villages—Tengnoupal and Pallel—located in the Tengnoupal and Kakching districts, respectively, at different elevations. Tengnoupal village is situated at an altitude of 1,450 meters, whereas Pallel lies at around 830 meters. Other than elevation both the locations are differ from each other in terms of rainfall, temperature and soil constitution. The aerial distance between two areas is around 31 km. Pallel serves as the gateway to the Trans-Asian Super Highway and is located along NH-39, about 46 km southeast of Imphal. Tengnoupal, a hill town, stands at the highest point on NH-2 between Imphal and Moreh, near northwestern Myanmar. The ASEAN Highway also passes through this village. Both locations have experienced rapid ecological changes due to highway construction and increased human activity. In the coming decade, these areas are expected to gain more significance. However, the absence of a dedicated database for this region limits our ability to understand changes in ant diversity, which serves as an indicator of various ecological factors. The primary objective of this study is to document the ant diversity in these regions. Ants were collected using handpicking, pitfall traps, baited traps, and baited pitfall methods. All samples were identified at the Zoological Survey of India's Central Entomology Laboratory facility using standard taxonomic keys. Preliminary findings suggest that Pallel has diversity of 44 species of ants, while Tengnoupal represented only 25 species.

Keywords: Ant diversity, Pallel, Tengnoupal, elevation, environmental effect

Compositional and Pharmacological characterisation of honeybee venom

Satish Kumar Ramteke*

Pandit Ravi Shankar Shukla University Raipur

**Email Id of Presenting Author: satishkumarramteke72@gmail.com*

Abstract

Honey bee venom is a defensive toxin with multiple pharmacologically active compounds which are useful for human therapeutics. Two major forms of honeybee venom are used in such applications manually extracted from the gland or extracted through electrical stimulation. Venom thus collected has been studied for their proteome composition using gel based other non-gel based analytical approaches. Pharmacological applications are most important and there by promoting bee farming as a lucrative business model and increasing bee population and diversity as well as providing eco-friendly livelihoods to the farmers of one of the most under developed states of India. Bee venom from different geographical regions through manual glandular extraction and through electrical stimulation and analysing these bee venom collected through Gel based two dimensional electrophoresis, shotgun analysis and non-gel based approaches. Majority of the work done till date has identified various proteins in bee venom and their effectiveness in various pharmacological uses. The protein composition and the aforementioned effectiveness has a direct relationship. The bee venom extracted manually was found to be less effective than the one extracted through electrical stimulation. Melittin, Apamin and Phospholipase A2 are considered important quality indicators for suitable therapeutic and cosmetic purposes (Kekecoglu et al., 2021). 44 different proteins were identified in both manually and electrically extracted venoms and toxins proteins were higher in abundance in electrically extracted venom suggesting electrical stimulation, thus affecting their pharmacological use (Rongli Li *et al*., 2013). Protein content in the bee venom is affected by different geographical locations. Thus a specific study of Bee venom extracted from different regions of Chhattisgarh will not only provide the protein content but presence of effective toxins will also boost bee farming and there by the income of the farmers.

Keywords: Honeybee, Bee venom, Proteomics

Species Composition of Benthic Nematodes of Gahirmatha Coastal Zone: An Ecological Sensitive Province along the East Coast of India

Satyabrata Das Sharma[1*], Sangeeta Mishra[1], Debasish Mahapatro[1], S.S. Pati[1], R.R. Behera[1], S. Patnaik[1], S. Nayak[1], S.K. Mohanty[1], N. Mallick[1] and K. Murugesan[2]

[1]Coastal Management Cell, ICZMP, 4th Floor, Central Laboratory, State Pollution Control Board, Plot No. B-59/2 & 3, Patia, Bhubaneswar, Odisha-751024, India

[2]State Pollution Control Board, A-118, Paribesh Bhawan, Unit-VIII, Nilakantha Nagar, Bhubaneswar, Odisha-751012, India

**Presenting Author: Satyabrata Das Sharma*

**Email Id of Presenting Author: satyaospcb@gmail.com*

Abstract

The minor phyla are of great ecological importance as they act as biological indicators of the environmental change, helps to evaluate the coastal health, serves a prime role for pollution assessment of any coastal ecosystem; hence this has been taken for biological monitoring studies. The study area Gahirmatha is an ecologically sensitive zone and declared as the largest Olive ridley mass nesting habitat located along north east coast of India. However less research attention was made on meiobenthic composition study in general and nematodes in particular. Therefore present study was undertaken to monitor the nematode community of Gahirmatha coastal stretch. Sediment samples were collected from 24 GPS fixed location of Gahirmatha by using coastal monitoring vessel "Sagar Utkal" of Odisha State Pollution Control Board. Out of several meiofaunal groups, nematodes were found to be dominant. All total, 16 nematodes species were encountered belonging to 12 families under the class Adenophorea. Remarkably 10 out of 12 families have single species representation whereas two species recorded from the family Desmoscolecidae. Indeed family Xyalidae exhibited maximum of 4 species representation. Predominant nematode species are those of *Tricoma* sp. of family Desmoscolecidae, *Daptonema* sp. and *Rhynchonema chiloense* of Xyalidae, *Polygastrophora* sp. from Enchelidiidae, *Desmodora* sp. from Desmodoridae and *Astomonema* sp. from the family Siphonolaimidae. Nematodes include *Diodontolaimus* sp., *Pselionema* sp., *Viscosia* sp exhibits meager occurrence. Certain species were recorded those can thrive in high organic loads, namely *Daptonema*, *Polygastrophora* and *Rhynchonema chiloense*. Though information obtained during this study is preliminary, it reflects some important traits of nematode community structure that could able to indicate ecosystem condition of Gahirmatha. Therefore, long term monitoring, investigation, and data acquisition of benthic nematodes both in temporal and spatial scale is of great importance for planning, conservation and management actions, especially in certain ecologically sensitive areas.

Keywords: Meiofauna, marine nematodes, organic pollution, Gahirmatha coastal zone, ecological sensitive zone

First Country Record of Female Spider *Poltys illepidus* (C. L. Koch, 1843) (Araneae: Araneidae) from India

Sharada D. Rajgurav[1*], Sachin R. Patil[2] and Rajesh J. Sharma[3]

[1]Vidya Pratishthan Art's, Commerce and Science college, department of Biotechnology, Baramati
[2]Zoological Survey of India, Western Regional Centre, Pune
[3]Vidya Pratishthan department of Biotechnology, Baramati

**Presenting Author: Sharada D. Rajgurav*
**Email Id of Presenting Author: sharadarajgurav3959@gmail.com*

Abstract

The present study documents the first county record of female *Poltys illepidus* (C. L. Koch, 1843) (Araneae: Araneidae) from India. The genus Poltys is known for its cryptic morphology, which enables excellent camouflage in the natural environment. This species was previously reported from Southeast Asia, but its presence in India remained undocumented until now. Specimens were collected from Kadus, Kathapur khurd ,Vadgaon Mahadaji Shinde udyan from Pune district (Maharashtra, India) and their morphological characteristics were examined using stereomicroscope and compound microscopy. The diagnostic features were compared with existing descriptions from previous records. This paper provides a detailed description of the firstly recorded specimens, along with ecological observations and habitat details. The findings contribute to the expanding knowledge of Indian arachno fauna and underline the need for further studies on the distribution and diversity of the Poltys genus in the region. Ecological Significance as an arboreal nocturnal predator, *Poltys illepidus* (C. L. Koch, 1843) plays an important role in controlling insect populations. Its preference for undisturbed forest patches highlights the need for conservation measures in dry deciduous habitats.

Keywords: *Poltys illepidus*, First country record, India, Araneidae, Tree stump spider

Spider Diversity of Family Thosimidae (Sundevall, 1833) with Species Distribution Mapping Present in National Repository at Zoological Survey of India, WRC, Pune, India

Sachin R. Pati[1*] and Shraddha R. Londhe[2]

[1]Zoological Survey of India, Western Regional Centre, Pune-4110044, India.
[2]Department of Zoology, Savitribai Phule Pune University, Pune-411007, India

**Presenting Author: Shraddha Rajendra Londhe*
**Email Id of Presenting Author: londheshraddha.a19@gmail.com*

Abstract

The family Thomisidae (Sundevall, 1833), commonly known as crab spiders, is a diverse group of ambush predators characterized by their laterigrade legs and remarkable camouflage abilities. This study provides a comprehensive analysis of the species diversity of Thomisidae present in the National Repository of the Zoological Survey of India (ZSI), Western Regional Centre (WRC), Pune. The specimens were examined for taxonomic identification, and their distribution was mapped using GIS tools. The present study focuses on the diversity of Thomisidae Spiders in Maharashtra with species distribution mapping using GIS. A total of XX species belonging to XX genera were identified, with significant records from the Western Ghats, Central India, and semi-arid regions of Maharashtra. All the species reported here are collected from Maharashtra state.The study highlights the importance of curated collections in understanding spider diversity and provides a baseline for future ecological and conservation studies on Thomisidae in India.

Keywords: Thomisidae, Crab Spiders, Distribution Mapping, National Zoological Collection

Non-Volant Small Mammals of Maharashtra: Zoogeography, Diversity, Distribution and Their Conservation Status

Shyamkant S. Talmale[1*] and Sanket Donglikar[2]

[1]Zoological Survey of India, Western Regional Centre, Ravet road, Akurdi, Pune- 411044
[2]Department of Zoology, Deccan Education Society's Fergusson College (Autonomous), Pune- 411004

**Presenting Author: Shyamkant S. Talmale*
**Email Id of Presenting Author: s_talmale@yahoo.co.in*

Abstract

Non-volant small mammals play very important role in ecosystem services and matters of human interest in particular economic aspects. Altogether 37 non-volant small mammals belonging to the orders Scandentia (Tree Shrew), Rodentia (Rat, Mice, Gerbil and Squirrels) and Eulipotyphla (Hedgehogs and Shrews) are reported from the state Maharashtra. Order-wise species diversity in the state Maharashtra shows that Rodentia dominates the lot (31; 84%) followed by Eulipotyphla (5; 13%) and Scandentia (1; 3%) respectively. In this study, distribution pattern of non-volant small mammals in Maharashtra have been studied in four main biogeographic zones and provinces excluding west coast. Among the four biogeographic regions of Maharashtra studied, Western Ghats is rich in diversity reporting 30 species / subspecies (81%), Konkan coastal plains and Central Highlands with 26 species each (70%) and Deccan plateau reports 18 species / subspecies (49%) of small mammals. In the Zoogeographic distribution studies of the state Maharashtra, it suggests that 30 species / subspecies (81%) are predominantly Oriental, followed by 5 (14%) Oriental and Palearctic and 2 (5%) are Oriental, Palearctic and Ethiopian in distribution. The present study suggests that among the total 37 species, 17 (46%) of the Indian endemic non-volant small mammal species are reported from the state Maharashtra. Attempts are made to provide the species distribution maps using QGIS mapping utilizing the collection localities of vouchers specimens from Maharashtra available at different museums and the past and recent published literature. Species wise distribution maps shows the gap areas of surveys and reports of non-volant small mammals in Maharashtra state. Scope of further work on gap areas showing in the distribution maps of small non-volant mammals is discussed in the paper. Conservation implications of small mammals reported from the state are also presented in the paper.

Keywords: Non-volant small mammals, Diversity, Distribution, Zoogeography, Maharashtra

An Inventory with Density and Seasonal Dynamics of Mosquitoes (Insecta: Diptera) in the Eastern Part of Chota Nagpur Plateau: A Study of Vector and Non-vector Perspective from Purulia District, West Bengal

Somashree Roy[1*], Sankarsan Roy[2] and Biplob Kumar Modak[1]

[1]Department of Zoology, Sidho-Kanho-Birsha University, Purulia – 723104, West Bengal, India
[2]District Entomological Laboratory, O/o CMOH, Dept. of Health & Family Welfare, Govt. of West Bengal, Purulia – 723101

**Presenting Author: Somashree Roy*
**Email Id of Presenting Author: somashree.zoology@gmail.com*

Abstract

The Chota Nagpur Plateau, a geologically and ecologically unique region of India, hosts diverse mosquito fauna that play critical roles in both disease transmission and ecosystem functioning. This study provides a comprehensive inventory of mosquito species from Purulia District, with a focus on diversity, species composition, and seasonal variation, including both vector and non-vector species. The samplings were conducted across different habitat types (forest, foothills, rural, peri-urban and urban setup) among different blocks and municipalities of the district, from March-2023 to February-2025, once in a month. The adult and larval samples were collected using a mouth aspirator and ladle respectively and were morphologically identified using the available literature. Altogether, 27 species of 06 genera belonging to two sub-families under the family Culicidae were recorded, of which 12 species were newly recorded from this zone. Among them, the genus *Anopheles* was found predominant with 10 species, followed by *Culex* (08), *Aedes* (04), *Mansonia* (03), *Armigeres* (01), and *Toxorhynchitis* (01). The overall density of *Culex quinquefasciatus* Say, 1823, was recorded maximum (12.1%), followed by *Anopheles (Cellia) pulcherrimus* Theobald, 1902 (7.37%), *Aedes (Stegomyia) albopictus* (Skuse, 1894) (7.19%), *Anopheles (Cellia) vagus* Döntiz, 1902 (6.67%) and so on. However, 10 species from this inventory are reported as vectors for different deadly diseases like Malaria, Lymphatic Filariasis, Dengue, Japanese Encephalitis etc., which accounts for 51.25% of the total sample. Significant differences were observed in the seasonal trend of mosquito species, with peak abundance during the monsoon and post-monsoon season, with a decline in winter months, aligning with climatic factors. With limited studies on vector mosquito fauna from this plateau, this research provides essential data for future entomological studies and vector management. Understanding mosquito diversity and seasonal trends is vital for effective vector control and public health strategies in the Chota Nagpur plateau.

Keywords: Diversity, Ecology, Mosquitoes, Purulia, Vector Borne Diseases

Spider (Arachnida: Araneae) Diversity of Maval in Pune, Maharashtra, India

Sonali G. Chavan[1*], Sachin R. Patil[2] and Sharad V. Giramkar[3]

[1]PDEA's Prof. Ramkrishna More Arts, Commerce & Science College, Akurdi, Pune-411044
[2]Zoological Survey of India, Western Regional Centre, Pune-411044
[3]PDEA's Annasaheb Magar Mahavidyalaya Hadapsar, Pune-25

**Presenting Author: Sonali G. Chavan*
**Email Id of Presenting Author: sonalichavan2994@gmail.com*

Abstract

Spiders (Arachnida: Araneae) are among the most abundant predatory taxa within the phylum Arthropoda, playing a crucial role as bioindicators of environmental conditions and as natural pest controllers in agroecosystems. The present study aims to assess and document the diversity of spiders in Maval Tehsil of Pune District in the state of Maharashtra, India. The study area holds historical significance from the pre-independence time and it is also a part of the Northern Western Ghats, a recognized biodiversity hotspot. Systematic faunistic surveys were conducted during 2023-2024 which resulted in the identification of 46 species distributed across 19 genera and 9 families. This preliminary research provides a baseline for understanding the Arachnid fauna of the region. These findings provide a foundational understanding of the Arachnid diversity in the region and underscore the critical ecological role spiders play in promoting agroecosystem stability. Furthermore, the research emphasizes the urgent need for conservation measures aimed at preserving spider habitats to ensure sustainable ecosystem management as the study area is prone to aftermath of ongoing Industrial development in the region.

Keywords: Araneae Diversity, Maval, Northern Western Ghats, Maharashtra

Effect of Soil Edaphic Factors on Collembola Diversity: A Case Study

Souvik Mazumdar* and Guru Pada Mandal

Zoological Survey of India, New Alipore, Kolkata – 700053, India

**Presenting Author: Souvik Mazumdar*
**Email Id of Presenting Author: souvikmazumdar353@gmail.com*

Abstract

Edaphic factors—integral components of soil ecosystems—govern the diversity, distribution, and ecological functions of soil biota, including Collembola (springtails), vital yet understudied bioindicators of soil health. This study examines the seasonal dynamics of Collembola communities and their response to edaphic variables in flower fields of East Medinipur, West Bengal, India, a region characterized by intensive floriculture. Over 12 months, soil samples were collected from fields cultivating marigold (*Tagetes* spp.), chrysanthemum (*Chrysanthemum* spp.), and tuberose (*Polianthes tuberosa*), representing both organic and conventional management practices. Soil physicochemical parameters (pH, electrical conductivity, organic carbon, nitrogen, phosphorus, potassium) and microclimatic variables (temperature) were analyzed using standardized protocols. Collembola were extracted via aspirators and modified Tullgren funnels, identified taxonomically, and assessed using biodiversity indices (Shannon-Weiner, Simpson). Statistical analyses (Pearson correlations, redundancy analysis) revealed significant seasonal and management-driven variations in Collembola abundance and diversity. Results demonstrated peak Collembola abundance during the pre-monsoon season, correlating with optimal soil pH (6.5 – 7.5) and organic carbon (0.50 – 0.75%), while monsoon reduced populations by 40%. Soil Electrical Conductivity and nitrogen (285 – 450 Kg/ha) were key predictors of community composition, favoring Isotomidae and Entomobryidae families. Electrical conductivity (>1.2 dS/m) negatively impacted diversity, highlighting sensitivity to salinity. Organically managed fields exhibited 30% higher Collembola richness than conventional systems, underscoring the detrimental effects of synthetic agrochemicals. This study establishes edaphic factors as critical drivers of Collembola dynamics in agroecosystems, emphasizing their role in sustaining soil fertility and ecosystem services. Findings advocate for organic farming and soil health-centric practices to enhance Collembola-mediated processes like nutrient cycling and fungal regulation. By integrating soil mesofauna conservation into agricultural strategies, this work contributes to sustainable floriculture in tropical regions vulnerable to soil degradation.

Keywords: Collembola, Diversity, Edaphic factors, Seasonal abundance, Bioindicator

Plasticity of Foraging Behaviour in the Firefly Species *Abscondita terminalis* (Coleoptera: Lampyridae: Luciolinae) Inhabiting Two Contrasting Habitats in West Bengal, India

Srinjana Ghosh[1*], Debabrata Bera[2] and Susanta Kumar Chakraborty[3]

[1]Department of Zoology, Bethune College, Kolkata - 700 006, West Bengal, India
[2]Department of Food Technology and Biochemical Engineering, Jadavpur University, Kolkata - 700 032, West Bengal, India
[3]Department of Zoology, Vidyasagar University, Midnapore - 721 102, West Bengal, India

**Presenting Author: Srinjana Ghosh*
**Email Id of Presenting Author: srinjanaluciolinae@gmail.com*

Abstract

Foraging plasticity involves modifications in the choice, portion, timing, strategies, and energy assimilation efficiencies of food intake by organisms. The plasticity is designed by genetic set up, triggered by environmental cues, manifested through morphological, behavioural, and physiological attributes, and assures their adaptability against nutritional stresses originated either by natural or anthropogenic factors. In Luciolinae (Coleoptera: Lampyridae) species, the voraciously carnivorous larvae undergo pupal maturation, when the alteration of morphoanatomy of mouthparts, gut, and activity digestive enzymes complement the shifting of dietary spectrum in adults to either non-feeding or nectarivore or plant sap consuming natures. From the males of Abscondita terminalis, the study species, the gut amylase was quantified characterize the distinctive patterns of utilization of nectar, consumed from flowers, as observed in two contrasting habitats, southern Gangetic Plains (site 1), and Rarh plains (site 2) in West Bengal, India. Amylase contents were found to vary significantly during their pre, and post breeding stages at site 1 ($H=7.46$, $p=0.006$), and site 2 ($H= 11.29$, $p=0.0007$). Although no significant variation in amylase ($H= 1.335$, $p= 0.24$) was prominent between the post breeding populations collected from sites 1, and 2, however, interestingly, the prebreeding amylase levels expressed significant difference ($H= 9.28$, $p=0.002$) in fireflies collected from those two sites. Such findings indicated that the efficiency of metabolizing floral nectar gets influenced by two factors, first, availability of nutrients at different sites, and secondly, the differential enzyme activity during different stages of life cycle. Thus, the present research demonstrates the plasticity of foraging behaviour of fireflies, which remains helpful for understanding their adaptability in different landscapes, as well as identifying the specific functional roles played by them to secure the ecological resilience of the ecosystems they inhabit.

Keywords: Adaptation, Fireflies, Foraging, Nutrition, Plasticity

Diversity of Lateritic Plateau Crabs at Chalkewadi (MS), their Endemism and Distribution in Western Ghats, India

Sunil H. Bhoite[1], Gayatri N. Pawar[1*] and Sameer Kumar Pati[2]

[1]Mahadare Ecological Research (Interdisciplinary) Organization
[2]Zoological Survey of India, Western Regional Centre, Pune

**Presenting Author: Gayatri N. Pawar*
**Email Id of Presenting Author: gayatripawar805@gmail.com*

Abstract

The Chalkewadi is a high-elevation lateritic plateau, situated in the Satara district, Western Ghats of Maharashtra. It is one the important plateau showcasing largest wind power plant in Asia. It is a biodiversity hotspot with an ideal grassland ecosystem featuring seasonally blooming flora, seasonal streams, small basins, and it also serves as the origin of the Tarali River. Over a three-years, the plateau was investigated to study behavioural study of plateau crabs supported by WWF India's Conservation Catalyst Programme for least concerned species. Despite the relatively small geographical area of the Chalkewadi Plateau, the study documented five freshwater crab species. *Inglethelphusa fronto* (Alcock, 1909), *Sahyadriana alcocki* (Pati in Pati, Thackeray & Khaire, 2016), *Barytelphusa cunicularis* (westwood in Sykes, 1836), *Ghatiana pulchra* Pati & Thackeray, 2018, and *Barusa gracillima* (Pati & Yeo, 2022a). Among these, one was point endemic, three were endemic to the Western Ghats, and one was widespread across India. However, significant gaps remain in understanding of these crustacean species. Such as lack of knowledge about the habitat preferences, ecological roles, and population dynamics. This study presents a comprehensive account of the diversity, distribution, and endemism of freshwater crabs found on the lateritic plateau of Chalkewadi. Emphasizing the importance of this ecosystems and the need for further research on their conservation.

Keywords: Lateritic plateau, Least concern, Crustaceans, Grassland, Endemis

Diversity of Plant-Parasitic Nematodes Associated with Banana Crops in West Bengal, and First Record of *Sclerolabia camerunensia* (Dorylaimida: Thornenematidae) from India

Subhankar Dey*[1], Viswa Venkat Gantait[2] and Biplob Kumar Modak[1]

[1]Sidho-Kanho-Birsha University
[2]Zoological Survey of India, Kolkata

**Presenting Author: Subhankar Dey*
**Email Id of Presenting Author: subhankar048@gmail.com*

Abstract

Banana (*Musa paradisiaca* L.) is a highly nutritious and economically significant fruit crop, predominantly cultivated in tropical and subtropical regions. India is the world's largest producer of bananas, contributing approximately 20% to global production, with West Bengal being one of the leading banana-producing states. In West Bengal, banana cultivation spans 49.30 thousand hectares, yielding around 1200 thousand tons annually. However, the production of bananas is significantly impacted by plant-parasitic nematodes (PPNs), leading to substantial yield losses and economic damage. This paper aims to compile a comprehensive checklist of PPN species associated with banana in West Bengal, India. Globally, over 154 species of nematodes from 51 genera have been recorded in association with banana crops, with India reporting more than 100 species. Despite this, updated and detailed data on PPNs in banana cultivation in West Bengal remain scarce. This paper presents a thorough compilation of 89 PPN species from 48 genera that have been described or reported in association with banana crops in West Bengal. Additionally, during a faunistic survey, the plant parasitic nematode *Sclerolabia camerunensia* was observed in the rhizospheric soil of banana roots. This marks the first report of this species in India, and it is described and compared with the original population in this paper. The original description of this nematode was provided by Carbonell and Coomans (1985), who collected specimens from Cameroon. The findings of this study are intended to provide valuable insights for the improved management and control of nematode infestations, aiding in the sustainable production of bananas in West Bengal.

Keywords: Banana, Diversity, Palant-parasitic nematode, *Sclerolabia camerunensia*, West Bengal

Diversity of moths (Lepidoptera: Heterocera) in the premises of Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, India

Vijay Kumar, Swarup Jena* and Vadamalai Elangovan

Department of Zoology, School of Life Sciences, Babasaheb Bhimrao Ambedkar University, Lucknow-226025, India

**Presenting Author: Swarup Jena*
**Email Id of Presenting Author: swarupjena22@gmail.com*

Abstract

Moths are ectothermic invertebrates belong to the order Lepidoptera. Also, they are phytophagous, cosmopolitan, pollinators, and potential bioindicators in the ecosystem. This study aims to document the diversity of moths in the premises of Babasaheb Bhimrao Ambedkar University (BBAU), Lucknow, Uttar Pradesh, India, an area that remains largely unexplored in this context. The field survey on the diversity of moths was conducted twice a week from September 2024 to February 2025, across the habitats within the campus and the collection of dead moths below the lamppost and light trap were carried out between 18:00 h and 23:00 h. A total of 27 specimens, representing 25 genera across seven families, were identified and recorded. The family Erebidae was the most species-rich with 12 genera and 11 species, followed by Crambidae (4 genera, 3 species), Geometridae (4 genera, 2 species), Noctuidae (2 genera, 2 species), Saturniidae (1 genus, 1 species), Sphingidae (1 genus, 1 species), and Notodontidae represented by a single genus. A preliminary checklist was compiled, which illustrates the first report on moth diversity from Lucknow, Uttar Pradesh. The findings of this study may enhance the understanding of the diversity of moths and provide a foundation for future assessment and conservation strategies of moths.

Keywords: Bio-indicators, Erebidae, Lepidoptera, Moth diversity and conservation, Pollinators

Aquatic Beetle (Coleoptera) Assemblages and Water Quality Variations across the Freshwater Habitats of Bankura District, West Bengal, India

Tarun Das[1*], Abhik Rong[2], Sujit Kumar Ghosh[3], Bulganin Mitra[2] and Biplob Kumar Modak[1]

[1]Department of Zoology; Sidho-Kanho-Birsha University, Purulia -723104, West Bengal, India
[2]Department of Zoology, Ramakrishna Mission Vivekananda Centenary College, Rahara, Khardaha, West Bengal-700118, India
[3]Zoological Survey of India, Kolkata, West Bengal, India

**Presenting Author: Tarun Das*
**Email Id of Presenting Author: tarundasprl569@gmail.com*

Abstract

Aquatic beetles (Coleoptera) are ecologically significant insects that play crucial roles in freshwater ecosystems by contributing to food webs and nutrient cycling. This study, conducted across 26 sites in Bankura district, West Bengal—a region that forms a transitional zone between the plains of Bengal and the Chota Nagpur plateau—aimed to document the diversity, distribution, and richness of aquatic beetle species, as well as to assess key water quality parameters. Sampling was carried out using a D-shaped aquatic insect collecting net between February 2024 and March 2025, and water quality was evaluated by measuring pH, Total Dissolved Solutes (TDS), and Electrical Conductivity (EC). A total of 36 species belonging to five families were recorded, with the family Dytiscidae showing the highest species richness, followed by Hydrophilidae, Noteridae, Gyrinidae, and Haliplidae. Notably, Canthydrus laetabilis emerged as the most abundant species, whereas Dineutus indicus was the least abundant. Results indicated that sites with moderate pH (pH 6) and lower TDS (22 ppm) levels supported higher species richness,while higher pH (pH 11) and TDS (249 ppm) were associated with a marked decline in species diversity. These findings underscore the sensitivity of aquatic beetle communities to changes in water quality and highlight the importance of environmental parameters in shaping species distribution. The study contributes valuable insights into the biodiversity of aquatic beetles in the Bankura district and emphasizes the need for ongoing monitoring to better understand and conserve these ecologically important organisms.

Keywords: Coleoptera, Aquatic Beetle, Bankura District, Dytiscidae, Hydrophilida

Host-Specific Morphological Variations of *Pallisentis* [Van Cleave, 1928] (Helminth: Acanthocephala) in *Channa* spp.

Upasana Sarkar* and Anirban Ash

Helminthology laboratory, Department of Zoology, The University of Burdwan, Golapbag, Burdwan-713104, India

**Presenting Author: Upasana Sarkar*
**Email Id of Presenting Author: upasanasarkar303@gmail.com*

Abstract

Among helminths, acanthocephalans are obligatory endoparasitic organisms with complex life cycles and host specificity. This study investigated parasitic infections in two Channidae species, *Channa punctata* and *Channa striata*. Methodology: Over six months, fifty *C. punctata* and fifty *C. striata* were collected from Bardhhaman district, West Bengal. The fish were dissected, and helminths were extracted from their guts. Acanthocephalan parasites were preserved in water until their proboscis fully extended, then fixed in 80% ethanol and stained with Mayer's acid carmine. Morphological features such as proboscis form, hook arrangement, trunk size, and reproductive organs were examined for species identification using taxonomic keys. Objectives:(1) Investigate acanthocephalan infections in Channidae species. (2) Identify the acanthocephalan parasites. (3) Understand the host specificity. Observations: Two acanthocephalan morphotypes of the genus Pallisentis were found, with *Channa striata* having longer bodies and trunks than *C. punctata*. Differences in trunk spines, collar spines, and reproductive organs suggest potential host-specific adaptations or species variations. Further molecular studies are needed to confirm species identity and evolutionary relationships. This research highlights the importance of morphological analysis in parasite taxonomy and provides new insights into Pallisentis diversity and host-parasite interactions in aquatic environments.

Keywords: *Channa punctata*, *Channa striata*, Pallisentis, acanthocephala, host specificity

Boring Pattern of Isopods in Hard Mudflat Habitat along the Gulf of Khambhat, Gujarat

Vaishali Prajapat* and Kauresh D Vachhrajani

Marine Biodiversity and Ecology Lab, Department of Zoology, Faculty of Science, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India

**Presenting Author: Vaishali Prajapat*
**Email Id of Presenting Author: vaishali.p-zoophd@msubaroda.ac.in*

Abstract

Study of the burrowing and boring pattern is an important bioturbatory behavioral display which provide information about interactions of animals with their surrounding factors and habitat selection preferences. Studies have been carried out on the boring activity of sphaeromatid isopods in wood, polystyrene, and rock substrates worldwide. However, no previous reports have been documented on the boring pattern of isopods in hard mud substratum. Present studies were carried out on the silty clayey, calcrete rich hard substratum of coastal mudflats at Kamboi, the northern innermost region of Gulf of Khambhat, Gujarat. This habitat is selectively preferred by the isopods which is indicated by its abundance. To decipher the boring patterns, we examined the sediments blocks during low tides, took multidirectional sections of the exposed regions and photographed the boring patterns. It showed that there were incidences of the bores of different sizes crossing each other. We primarily interpreted it as the borings of younger and older isopods. However, to further confirm, resin casting was done which gave us complex network of interconnected borings. But we were not sure whether these interconnected borings are continuous and whether the entire subsurface structure is a network of through and through tunnels like we find in the case of termites. To visualize this, we undertook CT Scanning of the sediment block and studied the findings through the bronchoscopic software. The software reveals the patterns of tunneling and their connections, multiple branching, bore size variations etc. It clearly exposed, for the first time, the continuous interconnected borings of different sizes of individuals (0.56 to 4.75 mm) of *Sphaeroma annandalei* Stebbing, 1911 in Hard mud flat habitat along The Gulf of Khambhat, Gujarat.

Keywords: Boring pattern, Calcrete mudflat, *Sphaeroma annandalei*, Kamboi, Interconnected burrows

Influence of Artificial Light Illumination on the Foraging Behaviour of Frugivorous and Insectivorous Bat Species in the Foraging Habitats

Vijay Kumar*, Nivedita Harsh and Vadamalai Elangovan

Department of Zoology, School of Life Sciences, Babasaheb Bhimrao Ambedkar University, Lucknow-226025, India

**Presenting Author: Vijay Kumar*
**Email Id of Presenting Author: vijaybbau2023@gmail.com*

Abstract

Artificial light at night (ALAN) is increasingly altering natural ecosystems, affecting behaviour of obligatorily nocturnal creatures, like bats, especially at risk from night illumination. Bats are ecologically significant mammals, feed on plants and insects as a food source, based on their foraging nature, and play a significant role in ecosystem dynamics by pollination, seed dispersal and insect control. This study was aimed to investigate the impact of artificial illumination on the feeding behaviour of two distinct bat species that show divergent foraging behaviours. The field observations were performed on foraging behaviour with the help of acoustic monitoring, visual observation, and temporal patterns of foraging activity, and resource utilisation of the bat's foraging areas. The species composition involves nine different bats species out of these, two fruit-eating bat species belonging to the suborder Megachiroptera, namely *Pteropus giganteus* and *Cynopterus sphinx*, remaining seven insect-eating bat species namely *Scotophilus kuhlii, S. heathii, Taphozous nudiventris, T. melanopogon, Megaderma lyra, Rhinopoma microphyllum*, and *R. hardwickii* belong to suborder Microchiroptera. The foraging bouts of bats were recorded highest in the evening hours, moderate in the midnight hours, and low in the early mornings, as per availability of rich food resources. Instead of this pattern, fruit-eating bats actively engage in feeding on ripe fruits overnight in naturally dark habitats and avoid light illuminated habitats. While some fast-flying insectivorous species benefit from light illumination and overexploit on increased insect concentration around lights, others, slow flyer bats avoid illuminated areas due to predation risks and sensory disruptions, and prefer to feed in naturally dark habitats. Thus, a mixed response on foraging efficiency was experienced as artificial lighting alters natural habitats, may provide insight into the ecological consequences of their foraging strategies. The current findings will enhance ecological understanding and emphasize the need to mitigate light pollution's impact on bats.

Keywords: ALAN, Chiropteran, Biodiversity and Conservation, Nocturnal Creatures, Urban Ecology

Review on Planktons Diversity and Water Quality Assessment of Ponds in Chhattisgarh

Vishnu Prasadin Sahoo* and Kavita Das

Government Nagarjuna Post Graduate Autonomous Science College

**Presenting Author: Vishnu Prasadin Sahoo*
**Email Id of Presenting Author: vishnusahoo65@gmail.com*

Abstract

Plankton diversity serves as a vital indicator of water quality, reflecting the overall health of the aquatic ecosystem and its resilience to various stressors. Raipur, a district in the state of Chhattisgarh, is home to approximately 58,514 ponds, covering an area of about 0.744 lakh hectares, known for their rich plankton diversity, which acts as a bioindicator of water quality. The abundance and composition of plankton in these ponds offer valuable insights into the overall health of the aquatic ecosystem. A comprehensive review delves into the interplay between plankton diversity, water quality, and seasonal distribution in water bodies, involving the assessment of trophic level and pollution status using the Shannon diversity index (H'), species richness index (S), and various physicochemical parameters. The size of the plankton population was found to correlate with both biotic and abiotic factors, including pH, alkalinity, temperature, dissolved oxygen, transparency, phosphate, chloride, and nitrate. The review unveiled that phytoplankton species such as Chlorophyceae, Bacillariophyceae, Cyanophyceae, Chrysophyceae, Euglenophyceae, Dinophyceae, Myxophyceae, Volvox, and Chlorella exhibit high abundance, while zooplanktons encompass Protozoa, Rotifers, Cladocera, Copepod, and Ostracoda, showcasing maximum diversity. Furthermore, the review identified a total of 79 species from five different groups of zooplankton in the lakes, with seasonal variation indicating higher diversity of phytoplankton and zooplankton in summer compared to winter and rainy seasons, with lower diversity in the rainy season due to turbidity. The results of the review depict a remarkable diversity of both phytoplankton and zooplankton in the rural and urban ponds of Raipur, Chhattisgarh, indicative of a healthy ecosystem. However, the review also highlights that increased anthropogenic activities have resulted in decreased phytoplankton productivity, posing a potential threat to fish and other health issues if not regulated. Given the dependence of these areas on the fishing monitoring and mitigation measures are crucial.

Keywords: Plankton diversity, Bioindicators, Physiochemical parameters, Seasonal abundance, Aquatic ecosystem

Exit Holes as Ecological Clues: Understanding the Guild Structure of Heteropteran Egg Parasitoids in India

Rupam Debnath[1,2*], J. Abitha[1,2], K. Rajmohana[1†] and Sherin Chacko[3]

[1]Zoological Survey of India, Prani Vigyan Bhawan, New Alipore, Kolkata, West Bengal- 700053, India
[2]Department of Zoology, University of Calcutta, Kolkata, West Bengal- 700019, India
[3]Department of Zoology, Mary Matha Arts and Science College, Wayanad, Kerala- 670645, India

**Presenting Author: Rupam Debnath*
**Email Id of Presenting Author: upam.zoology@gmail.com*

Abstract

The present study is the first from India to demonstrate the diagnostic potential of emergence hole morphology in bug (Heteroptera) eggs for inferring parasitoid guild composition. Heteropterans constitute a major insect group of agricultural importance, comprising both economically significant pests and beneficial species. Egg parasitoids, especially hymenopteran endoparasitoids such as *Gryon* Haliday (3 spp.), *Hadronotus* Förster (27 spp.), *Paratelenomus* Dodd (4 spp.), *Telenomus* Haliday (34 spp.), *Trissolcus* Ashmead (26 spp.) (Scelionidae), *Anastatus* Motschulsky (27 spp.) (Eupelmidae), *Ooencyrtus* Ashmead (69 spp.) (Encyrtidae), and *Acroclisoides* Girault & Dodd (3 spp.) (Pteromalidae) play a vital role in regulating populations of agriculturally important heteropterans belonging to the families Coreidae, Alydidae, Pentatomidae, and Plataspidae. By examining 72 egg masses collected from Kerala and West Bengal between 2011 and 2025, distinct emergence patterns were observed that helped determine the type of emergence (host or parasitoid), minimum parasitism rate, and taxonomic identity up to the generic level. The presence, shape, and location of exit holes served as key indicators. For example, host nymphs emerged by lifting an operculum, whereas parasitoid emergence left chewed or round holes. *Ooencyrtus* always exited from the side of Kudzu bug eggs, while *Paratelenomus* species emerged from the top. *Acroclisoides* exit holes had irregular margins, contrasting with the more regular holes of *Anastatus* and also emerged from the sides. *Hadronotus*, *Trissolcus*, and *Telenomus* species emerged from the top with more regular margins. Such taxaspecific emergence signatures of egg parasitoids along with field observations offer a non-invasive tool to assess parasitoid assemblage and impact. These insights contribute to devising sustainable, pesticide-free pest control strategies and to understanding ecological interactions among parasitoids.

Keywords: Heteroptera, Parasitoid, Parasitism

Macroinvertebrates Composition and Diversity from Upstream Stretches of River Godavari, India

Michael Antony Packiam. T.[1]*, Prakasam T.[1], Rehanuma Sulthana Sk[2] and Deepa Jaiswal[2]

[1]Department of Zoology, S.T. Hindu College, Nagercoil, Tamil Nadu- 629002
[2]Freshwater Biology Regional Center, Zoological Survey of India, Hyderabad- 500048

Presenting Author: Michael Antony Packiam. T.
**Email of the presenting Author: michaelantoney45925@gmail.com*

Abstract

The current study assessed macroinvertebrates taxa composition, diversity, EPT index, and BMWI from upstream stretches of River Godavari. A total of 92 taxa were recorded belonging to 49 families across the ten different sampling stations. The greater number of macroinvertebrates taxa were observed in Insecta has 75 taxa, Mollusca 10 taxa, Annelida 5 taxa and Crustacea 2 taxa. *Chironomini sp*. and *Macrobrachium sp*. were frequently observed across all studied sampling stations. The Diversity Index (H') ranges from 1.7 to 2.7 the highest diversity observed in Gangapur Dam and Karaajgon stations. EPT index was more in Nathsagar stations, and it indicates a moderate to good water quality status. The BMWI score suggests that maximum stations maintain good water quality status and expect Kapila it reflects variable ecological condition influenced by anthropogenic pressures. This finding provides an important baseline data for assessing the ecological status of the River Godavari.

Keywords: Macroinvertebrate diversity, Composition, BMWI score, EPT index, River Godavari.

Thrust Area 3:
Faunal Diversity and Conservation

Poster Presentations

Preliminary Observation of Terrestrial Hemiptera in Mount Abu Wildlife Sanctuary, Sirohi, Rajasthan, India

Aakriti* and I. Sharma

Desert Regional Centre, Zoological Survey of India

**Presenting Author: Aakriti*
**Email Id of Presenting Author: aakriti61997@gmail.com*

Abstract

Mount Abu, a hill station located in Aravalli Mountain range, in southern region of Rajasthan. The sanctuary is characterized by uneven and rough terrain with rocky hills, valleys and steep mountain slopes. The forest area ranging from xeromorphic subtropical thorn forest, subtropical semi evergreen, is thick and dense and a good habitat for various rare, endangered, threatened and endemic flora and fauna. Along with small and large animals, diversity of small insects is also distinct in the sanctuary. Hemiptera, the true bugs, are present in different habitats like open fields, agricultural fields and forest area. Some species of Hemiptera are phytophagous in nature causing damage to crop production and forest while some predatory species act as the biocontrol agents. In this study paper, 15 species of Hemiptera belonging to 15 genera under 07 families, present in the sanctuary is provided based on the fauna collected from the sanctuary during various faunal surveys conducted from March 2022 to September 2024.

Keywords: Hemiptera, Heteroptera, True bugs, Mount Abu, Terrestrial

Diversity of the Order Ophidiiformes Along the South Indian Coast

Ahamed Rasheeq. A[1,2*], Bincy M Raj[1], A. Kathirvelpandian[1] and T. T Ajith Kumar[1]

[1]ICAR - National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh - 226 002, India
[2]Kerala University of Fisheries and Ocean Studies, Panangad, Kerala- 682506, India

**Presenting Author: Ahamed Rasheeq*
**Email Id of Presenting Author: rasheeq876@gmail.com*

Abstract

The Order Ophidiiformes are among the most dominant groups of deep sea fishes in Indian waters despite having a considerable share in the deep sea trawl bycatch landings. The order Ophidiiformes are less studied in the Indian waters. Hence this study is done based on the traditional morphometric and modern molecular techniques. Sampling has been done from various fish landing centres across the south west and south east coast of India. The collected specimens were identified based on the standard literature available to distinguish a total of 12 species comprising 3 families and 9 genera. *Brotula multibarbata, Carapus* sp., *Neobythites fasciatus, Neobythites multistriatus, Hypopleuron caninum, Grammonus robustus, Pyramodon* sp., *Glyptophidium oceanum, Glyptophidium argentum, Ophidion smithi, Ophidion* sp. and *Sirembo jerdoni*. The Molecular sequences generated in the study were aligned using CLUSTAL W and the phylogenetic tree was constructed using the best-fit model with ultrafast bootstrap (1000 bootstrap replicates) aiding IQ-TREE software and the tree was visualized using Interactive Tree of Life. The molecular information generated will be helpful in species identification of this group. Further analysis on phylogeny and evolutionary relationships would help in resolving the ambiguities within the order Ophidiiformes. Studies on the reproductive biology, developmental stages, and life history strategies of these deep-sea species are essential for understanding their ecological roles and adaptations to extreme environments. Such research would provide valuable insights that can aid in fisheries management, conservation initiatives, and the sustainability of deep-sea ecosystems.

Keywords: Ophidiiformes, Phylogeny, Indian waters, Fisheries Management, Deep sea

Exploring Moths (Lepidoptera - Heterocera) Diversity in Agroforestry Habitats of Dhamtari district, Chhattisgarh

Akanksha Chandrakar[1*], Shashi Gupta[1] and H.N. Tandan[2]

[1]Govt. Nagarjuna Pg College of Science Raipur, Chhattisgarh
[2]Sant Guru Ghasidas government pg college Kurud, District - Dhamtari, Chhattisgarh

**Presenting Author: Akanksha Chandrakar*
**Email Id of Presenting Author: akankshachandrakar63@gmail.com*

Abstract

Agroforestry habitats, which integrate trees, crops and other vegetation, support diverse insects' population, including moths, which play crucial roles as pollinators, bioindicators, and agricultural pests. This study explores moth diversity in agroforestry landscapes of Dhamtari district, Chhattisgarh, where farming is a primary livelihood and agricultural fields are surrounded by variety of forest trees. A survey conducted from January 2024 to December 2024 recorded 128 moth species using light traps and opportunistic searches. The findings emphasize the significance of agroforestry habitats in sustaining moth populations and highlights the need for growing forest trees near agricultural fields to enhance biodiversity, improve ecosystem stability and promote various sustainable farming practices in agricultural fields.

Keywords: Biodiversity, Lepidoptera, Moths, Checklist, Agroforestry habitats

Estimation of Avifaunal Diversity in Boshipota: A Case Study from Hooghly, West Bengal

Ananya Sengupta[1*], Rudra Prasad Das[2] and Soumyajit Banerjee[1]

[1]Department of Zoology for UG and PG studies, Serampore College, Serampore, Hooghly, West Bengal-712201, India
[2]Department of Zoology, Kishore Bharati Bhagini Nivedita College (Co-Ed.), Behala, Kolkata, West Bengal-700060, India

**Presenting Author: Ananya Sengupta*
**Email Id of Presenting Author: ananyasengupta2002@gmail.com*

Abstract

Birds are vital bio-indicators of ecosystem health, offering insights into environmental stability and potential shifts in ecological functions. This study, initiated in October 2024, focuses on documenting avian diversity, seasonal variations, and feeding behaviours in Boshipota (Lat. 22.686717N, Long. 88.321288S) in Hooghly district, West Bengal. Using a combination of line and point transects, call counts, and opportunistic encounters, bird species were recorded to assess the diversity, and continuous monitoring was conducted to assess their feeding behaviour. So far, 114 species have been identified belonging to 41 families and 20 orders which was further categorized as residents, summer visitors, and winter visitors. Passeriformes being the most abundant order. Species richness was maximum in December. Common resident species include the Common Myna (*Acridotheres tristis*), Red-vented Bulbul (*Pycnonotus cafer*), Spotted Dove (*Spilopelia chinensis*), Asian Koel (*Eudynamys scolopaceus*), Indian Pied Starling (*Gracupica contra*), Rufous Treepie (*Dendrocitta vagabunda*), Black Drongo (*Dicrurus macrocercus*), Blackhooded Oriole (*Oriolus xanthornus*), and Plain Prinia (*Prinia inornata*). Among the migratory species recorded were the Bluethroat (*Luscinia svecica*), Siberian Rubythroat (*Calliope calliope*), Verditer Flycatcher (*Eumyias thalassinus*), Indo-Chinese Roller (*Coracias affinis*), and Graybacked Shrike (*Lanius tephronotus*). Additionally, the near-threatened Alexandrine Parakeet (*Psittacula eupatria*) and Oriental Darter (*Anhinga melanogaster*) was observed in the study area. While this research represents an initial effort in documenting the avifauna of Boshipota, longterm studies are necessary to monitor changes in bird communities and their ecological roles. Further research and conservation measures are essential to preserving the region's avian diversity

Keywords: Avifauna, Diversity, Migration, Resident birds

Incredible Disguise of Praying Mantis (Insecta: Mantodea) Recorded from Forested & Urban Landscapes of West Bengal, India

Sumana Saha[1], Anish Mondal[1*] and Dinendra Raychaudhuri[2]

[1]Post Graduate Department of Zoology, Barasat Government College, 10, K.N.C. Road, Barasat, Kolkata – 7000124, West Bengal, India
[2]Department of Zoology, Ramakrishna Mission Vidyamandira, Belur Math, Howrah - 711202, West Bengal, India

**Presenting Author: Anish Mondal*
**Email Id of Presenting Author: anishmonal907@gmail.com*

Abstract

Praying mantises exhibit remarkable skills in camouflage and mimicry, enabling them to seamlessly integrate into their environments and evade potential threats. When faced with danger, these insects may display warning colours or engage in various threat behaviours. This communication highlights the astonishing diversity of the disguises employed by praying mantises found in both the forested and urban areas of West Bengal, alongside their expanding distribution. The research identified eight mantid species across eight genera, classified into three families and five subfamilies. The family Mantidae was the most represented, accounting for 36% of the findings, with three species across three genera: *Statilia maculata* (Thunberg) (Asian Jumping Mantis), *Hierodula patellifer*a (Audinet-Serville), and *Mantis religiosa inornata* Werner (European Mantis). Among these, *Statilia maculata* emerged as the most prevalent and dominant species in the study area, with peak sightings recorded during the post-monsoon season. Notably, *Amantis reticulata* (Haan) was documented for the first time in the state, and all eight species were newly recorded in the protected forests of Alipurduar district and the urban landscapes of North 24 Parganas district in West Bengal. *Odontomantis planiceps* Haan, known as the Asian Ant Mantis, was discovered exclusively in North 24 Parganas, residing within ant colonies. This small mantis exhibits Batesian mimicry during its juvenile stages, resembling a black ant. Additionally, *Ambivia undata* (Fabricius) (Asian Twig Mimicking Mantis) possesses a cryptic appearance that imitates the texture and colour of tree bark, allowing it to ambush prey while remaining undetected by both predators and prey. Furthermore, *Euclimacia nodosa* (Westwood), a rare and poorly understood species of mantidfly (Mantispidae: Neuroptera), was collected and is noted for its mimicry of social wasps in body shape and coloration, featuring raptorial forelegs akin to those of mantises. This survey expands the current understanding of the diversity of mantis camouflage in the area

Keywords: Camouflage, mimicry, diversity, distribution, expansion

Parasitic Infestation and Restoration of Ornamental *Trichogaster fasciata* (Bloch and Schneider,1801) due to Aquatic Pollution in Tamluk, Purba Medinipur, West Bengal, India

Antara Mahapatra

PG Department of Zoology, Tamralipta Mahavidyalaya, Tamluk, Purba Medinipur, West Bengal, India

Email Id of Presenting Author: antaramahapatra94@gmail.com

Abstract

In the ornamental fish market, there is a high demand of the *Trichogaster fasciata* (Bloch and Schneider,1801) for the aquarium due to its attractive colour combination. But at present, banded gourami fishes are abolishing day by day and placed under the least concern in IUCN red list of threatened species. Diseases are one of the chief cause for the extinction of this fish from the universe. Helminth parasites are the main reasons behind the scenario. It is found that two infectious helminth parasites are identified from the fish body. The trematode helminth parasite, *Clinostomum complanatum* is more (78.33%) infectious than the Acanthocephala, *Pallisentis* sp. (25%). They attack mostly in their favourable specific sites which are peritoneal wall of body cavity and the intestine respectively. The female striped gourami are more (82.50%) susceptible against the infection of the helminth pathogen than the male fishes (40%). The large group (7.1-10.0 cm) of the Kholshe fishes are the highest (73.33%) susceptible followed by the medium (4.1-7.0) and small (<4.0 cm.) group that are 50% and 26.66% respectively. The abundance of pathogens is the highest in the summer season (76.66%) followed by rainy (53.33%) and winter (36.66%) due to aquatic pollution. This type of hazardous helminth invasions in Kholshe fishes are one of the leading factors behind the extinction of Kholshe fishes. The remedy is to initiate immediate action plan to restore this ornamental fish as before which is very essential to maintain ecological sustainability and for the welfare of the animal society.

Keywords: Parasitic invasion, Fish disease, Aquatic pollution, Ecological sustainability, Restoration

Crab Chronicles: Unraveling the Ecological Diversity and Distribution of Brachyuran Crabs in the Mangroves of Kalibhanjadia, Bhitarkanika National Park, Odisha

Anusaya Behera[1*], Dipti Raut[2] and Sharat Kumar Palita[3]

[1]Department of Zoology, Sri Sri Jagannath Mahavidyalaya, Rajnagar-754225, Kendrapara, Odisha
[2]Centre of Excellence in Environment and Public Health, Environmental Science Laboratory, Department of Zoology, Ravenshaw University, Cuttack-753003, Odisha, India
[3]Department of Biodiversity and Conservation of Natural Resources, Central University of Odisha, Koraput-763004, Odisha

**Presenting Author: Anusaya Behera*
**Email Id of Presenting Author: anusayabehera31@gmail.com*

Abstract

Brachyuran crabs play a vital role in the benthic macrofauna of mangrove ecosystems, significantly enhancing species diversity and biomass. This study aims to investigate the diversity and distribution of brachyuran crabs living in the mangrove swamps of Kalibhanjadia Island, located within the Bhitarkanika National Park in Odisha, India. The research spanned two years, from January 2018 to December 2019. Kalibhanjadia Island (20°4746N; 86°5417E) is the largest mangrove island in the national park, positioned at the confluence of the Brahmani and Baitarani Rivers. Its dense mangrove forests offer an ideal habitat for numerous crab species, which have adapted to specific sediment conditions, tidal variations, and salinity levels ranging from 0.5 to 40 psu. Field surveys were conducted to collect the crabs using quadrate sampling techniques in intertidal zones, mangrove swamps, and mud flats. Identification of crab species was done based on their morphological characteristics and literature. A total of twelve crab species from six distinct families were recorded. The families represented include Sesarmidae (*Episesarma versicolor*, *Episesarma mederi*, and *Parasesarma plicatum*), Varunidae (*Metaplax dentipes, M. distincta*, and *Varuna litterata*), Grapsidae (*Metapograpsus latifrons*, also known as *M. maculatus*, and *M. messor*), Ocypodidae (*Uca annulipes* and *U. rosea*), along with one species each from Gecarcinidae (*Cardisoma carnifex*) and Portunidae (*Scylla serrata*). The results reveal a clear distribution pattern of brachyuran crabs across varying salinity gradients, underscoring their ecological adaptability. Specifically, grapsid, sesarmid, and ocypodid crabs mostly inhabit riverbank regions with low to moderate salinity, while varunid crabs, with the exception of *Varuna litterata*, are predominantly found in areas characterized by medium to high salinity within the upper tidal zones. These findings provide valuable insights into the ecological dynamics and conservation implications for crustacean fauna associated with the Kalibhanjadia, Bhitarkanika mangrove habitats.

Keywords: Brachyuran Crab diversity, Salinity tolerance, Mangrove ecosystem, Kalibhanjadia, Bhitarkanika

Spectral Hues of Spiders in the Riceland Ecosystem of North 24 Parganas of West Bengal

Sumana Saha[1], Supriyo Mondal[1], Anushka Ghosh[1*] and Dinendra Raychaudhuri[2]

[1]Post Graduate Department of Zoology, Barasat Government College, 10, K.N.C. Road, Barasat, Kolkata – 7000124, West Bengal, India
[2]Department of Zoology, Ramakrishna Mission Vidyamandira, Belur Math, Howrah - 711202, West Bengal, India

**Presenting Author: Anushka Ghosh*
**Email Id of Presenting Author: ghoshanushka708@gmail.com*

Abstract

A field survey was carried out on a weekly basis during the kharif season from August 2024 to December 2024 in the agricultural fields of Kharibari, North 24 Parganas, West Bengal, to investigate the seasonal prevalence of pests impacting paddy crops. Throughout the observation period, the Rice stem borer [*Scirpophaga* (=*Tryporyza*) *incertulus* (Walker)] emerged as the most significant threat. The survey identified a total of 28 spider species across 20 genera within 8 families as part of the biotic factors examined. The results indicated that the abundance of spiders increased in relation to the age of the crops and the incidence of rice stem borers. Among the eight spider families identified, the Tetragnathidae family was the most prevalent, with *Tetragnatha ceylonica* O.P.Cambridge being the dominant species. Four foraging guilds were documented, revealing that the composition of ambushers surpassed that of web weavers, despite the latter being numerically dominant. Spiders, as versatile generalists, serve as effective predators, and their natural capacity to regulate pest populations is of considerable significance. This underscores the vital role these carnivorous arthropods play in pest management within rice cultivation.

Keywords: Spider diversity, richness, paddy crop, North 24 Parganas, West Bengal

Baseline Biodiversity Assessment of Macrobenthic Communities in the Subarnarekha and Budhabalanga Estuaries: Insights into Ecological Dynamics and Anthropogenic Impacts in Northern Odisha, East Coast of India

Aparna Mishra[1*], Sanjaya Dalai[1], Dusmanta Kumar Das[1], N. V. Subba Rao[2] and Dipti Raut[1]

[1]Centre of Excellence in Environment and Public Health, Environmental Science Laboratory, Department of Zoology, Ravenshaw University, Cuttack-753003, Odisha, India
[2]Zoological Survey of India (Retd.), New Alipore, Kolkata-700053, India

**Presenting Author: Aparna Mishra*
**Email Id of Presenting Author: aparnamishra839@gmail.com*

Abstract

This study investigates macrobenthic communities in the Subarnarekha and Budhabalanga estuaries, aiming to establish baseline data critical for future biodiversity assessments in the largely uncharted northern Odisha region. Given the rising economic activities, including port development and prawn aquaculture, an urgent need is to evaluate their potential impacts on marine benthic organisms, which serve as key indicators of environmental change within soft sediment ecosystems. A one-time sampling event was conducted during the premonsoon season 2024 using a GPS-fixed grid method across predetermined locations in both estuaries. The research identified six phyla, 31 families, and 56 macrobenthic species, categorized into 35 genera, with mollusca being the dominant class. The Subarnarekha estuary featured significant bivalve populations, including the venerid *Meretrix meretrix* (Linnawus, 1758) and arcid *Brachidontes undulatus* (Dunker, 1857). In contrast, the Budhabalanga estuary was predominantly characterized by the venerid *Timoclea imbricata* (G.B.Sowerby II, 1853) and the echinoderm holothurian *Acaudina molpadioides* (Semper, 1867). Evaluating biodiversity through comprehensive indices indicated that Budhabalanga exhibited higher species richness (Margalef index = 2.42), despite a lower Shannon-Wiener index (H' = 1.63) compared to Subarnarekha (H' = 1.70). Notably, the discovery of the arcid bivalve *Trisidos tortuosa* (Linnaeus, 1758) in the Subarnarekha estuary represents a first record for the Odisha coast. This baseline data is a vital contribution to future environmental monitoring, research, and conservation initiatives in the area, fostering an understanding of the ecological dynamics and potential impacts of anthropogenic activities.

Keywords: Macrobenthic communities, Biodiversity, Estuaries, Anthropogenic Impacts, Odisha

The Rising Trade of *Ailia coila* Fish from Manjhi Block of Saran

Arpita Singh* and Rana Vikram Singh

Jai Prakash University Saran Bihar

**Presenting Author: Arpita Singh*
**Email Id of Presenting Author: arpitasinghrajput001@gmail.com*

Abstract

Ailia coila, also referred to as Kajoli in Bengal and Sutari in Bihar, is a much sought-after freshwater fish. Manjhi block of Saran district has emerged as a key center for its trade, supplying different areas such as Darjeeling, Assam, and other Indian eastern states. *Ailia coila* belongs to the family Ailiidae and is a small to medium-sized fish that is prized for its high nutritional value, soft texture, and economic importance in the fisheries market. In the present paper we tried to examines the economic potential of *Ailia coila* and its contribution to the livelihoods of fishermen, traders, and transporters. With its high demand, the fisheries industry in Manjhi has been growing steadily, generating employment and additional revenue for local fish farmers. Every day, 1.5 to 2 tons of this fish are transported, sold at rupees 700 to 800 per kg. The trade is however challenged by factors like poor cold storage and delay in transport. Lack of refrigerated transport units impacts the quality and access of the fish to the market. The government has established subsidy schemes aimed at improving fishery management as well as encouraging sustainable practices. With appropriate investment in infrastructure, storage, and logistics, Manjhi can further consolidate its position as one of the largest suppliers of *Ailia coila*. Improving the fisheries industry of Bihar by organized methods will not only maintain local livelihoods but also increase the state's share in India's fisheries industry. The result indicates that better policies and fisheries technology can provide sustainable growth and economic stability to this industry in the long run.

Keywords: *Ailia coila*, Fish transport, Fisheries market, Economic contribution of fisheries, Sustainable fisheries

Ant Diversity of Ganjam District, Odisha, India

Ashutosh Biswal[1*], Madhusmita Das[1] and Rajesh Lenka[2,3]

[1]P.G. Department of Zoology, Binayak Acharya College, Berhampur, Ganjam-760001, Odisha, India
[2]Zoological Survey of India, New Alipore, Kolkata- 700053, India
[3]Department of Zoology, Ballygunge Science College, 35 Ballygunge Circular Road, Kolkata– 700019, West Bengal, India

**Presenting Author: Ashutosh Biswal*
**Email Id of Presenting Author: ashutoshbiswal12345@gmail.com*

Abstract

Ants are recognized for their taxonomic diversity and vast population across diversified habitats and landscapes of the world. They play a fundamental role in shaping terrestrial ecosystem structure and function. Information regarding the ant diversity is limited in Ganjam district. For the first time, the present study investigated overall ant diversity of Ganjam district, Odisha, from July 2024 to December 2024 in eight sampling points across three different habitat types i.e. (1) Edge forest, (2) crop fields and (3) residential area. Ants were sampled using standardized sampling methods which included pitfall traps, bait traps and intensive all-out search (collection by hands) techniques. Collected specimens were sorted and then preserved using alcohol. Later they were identified through comparing various morphological traits with taxonomic keys, available literatures and online websites (www.antweb.org). A total of 29 ant species were identified, representing 20 genera which belongs to 4 subfamilies (Formicinae, Myrmicinae, Ponerinae, Dolichoderinae). The subfamily Formicinae was the most dominant group, with 14 species, followed by Myrmicinae with 10 species, Ponerinae with 3 species, and Dolichoderinae with 2 species. Camponotus genus was found to be most species rich i.e. eight species were documented under this genus. Among three habitat types, edge forest found to be most species rich (16 species) followed by crop fields and residential area (11 species each). The results of this research will enhance the understanding of ant diversity in Ganjam district, offering valuable baseline information for future conservation and management initiatives. This study will also emphasize the significance of preserving ant populations for sustaining healthy ecosystems and promoting biodiversity within the region.

Keywords: Camponotus, Formicinae, Heterogenous habitat types, Myrmicinae, Species diversity

A New Record and Range Extension of *Garra jaldhakaensis* in Jharkhand with a Taxonomic Note on Fishes of the Genus *Garra*

Basudhara Roy Chowdhury*, Asha Kiran Tudu, Shibananda Rath and Laishram Kosygin Singh

Zoological Survey of India, FPS Building, Kolkata-700 016, West Bengal, India

**Presenting Author: Basudhara Roy Chowdhury*
**Email Id of Presenting Author: basudhararoychowdhury@gmail.com*

Abstract

The genus *Garra* (Cyprinidae: Labeoninae) is widely distributed across India, primarily inhabiting fast-flowing rivers and hill streams. These fish adhere to rocky substrates using a specialized suctorial disc. Fishes of the genus *Garra* exhibit considerable morphological diversity, particularly in the structure of the disc and snout. *Garra jaldhakaensis*, originally described from the Jaldhaka River in West Bengal, is characterized by a prominent, thick, unilobed proboscis that protrudes downward above the transverse groove, 10–11 predorsal scales, 33 lateral line scales, and 16 circumpeduncular scales. This species belongs to the proboscis-bearing group and features a proboscis with a transverse lobe. This study reports the first occurrence of *G. jaldhakaensis* in Jharkhand, India, expanding its known distribution range. The present also provides systematic accounts of previously recorded species from the state, namely *Garra annandalei*, *G. lamta*, and *G. mullya*. It confirms the presence of *G. jaldhakaensis* as the fourth species in Jharkhand. These findings contribute to the understanding of the biogeography and diversity of Garra in eastern India and emphasize the need for further ichthyofaunal surveys in the region. A key to the fishes of the genus *Garra* of Jharkhand state is provided.

Keywords: Cyprinidae, *Garra jaldhakaensis*, Jharkhand, Diversity

Conservation Need of Horseshoe Crabs: A Special Reference to Odisha, East Coast of Peninsular India

Bhabani Sankar Mohapatra[1*], Sudeep Kumar Behera[1], Hemanta Kumar Sahu[2], Basudev Tripathy[3] and Satyaranjan Behera[1]

[1]Odisha Biodiversity Board, RPRC Campus, Nayapalli, Bhubaneswar-751015, Forest, Environment and Climate Change Department, Government of Odisha, India

[2]Department of Zoology, Maharaja Sriram Chandra Bhanja Deo University, Takatpur, Baripada-757003, Odisha, India

[3]Western Regional Centre, Zoological Survey of India, Akurdi, Pune – 411044, Maharashtra, India

**Presenting Author: Bhabani Sankar Mohapatra*

**Email Id of Presenting Author: bsmohapatra7@gmail.com*

Abstract

Indian coastal waters are home to two species of horseshoe crabs, *Tachypleus gigas* (Müller, 1785) and *Carcinoscorpius rotundicauda* (Latreille, 1802). Both species have been found mainly in the northern east coast of India. However, the recent study confirms the drastic decline of horseshoe crab population in these coasts. In this present study, a total of 108 live and dead individuals of horseshoe crabs were documented. Population decline is due to the degradation of their breeding habitat, rampant fishing, predation, coastal tourism, construction, and changes in beach morphology. To address this issue, government should take appropriate steps for mass awareness to fisher community, school, and college student about the rules and laws of Indian Wildlife Protection Act for the protection of this ancient marine creature. Novel conservation management plans of horseshoe crabs have proposed in this current study and their viable population sites may be declared as "Conservation Reserve or Biodiversity Heritage Site".

Keywords: *Carcinoscorpius rotundicauda*, Coastline, Population, Relative density, *Tachypleus gigas*

Herpetofaunal Diversity in Papikonda National Park, Eastern Ghats, Andhra Pradesh, India

Bharath Bhupathi[1,2*], M. Karuthapandi[1], Deepa Jaiswal[1], B. Laxmi Narayana[3] and Pratyush P. Mohapatra[4]

[1]Freshwater Biology Regional Centre, Zoological Survey of India, Hyderabad, Telangana
[2]P. G. Department of Zoology, Fakir Mohan University Vyasa Vihar, Nuapadhi, Balasore-756089, Odisha
[3]Nehru Zoological Park, Hyderabad, Telangana 500064, India
[4]Zoological Survey of India, FPS Building, Indian Museum campus, Kolkata- 700016, West Bengal, India

**Presenting Author: Bharath Bhupathi*
**Email Id of Presenting Author: bhupathibharath23@gmail.com*

Abstract

The present study was conducted at Papikonda National Park, located in the northern part of the Eastern Ghats, Andhra Pradesh. A total of 51 herpetofaunal species were recorded, including 18 amphibians, 12 lizards, 10 snakes, and 2 chelonian species. Among these, three species *Minervarya kalinga*, *Sphaerotheca maskeyi*, and *Hemidactylus kangerensis* were recorded for the first time from Andhra Pradesh. According to the IUCN Red List (2024), 45 species are listed as Least Concern, three species have not been accessed yet, while other species such as *Raorchestes sanctisilvaticus* (Critically Endangered), *Hemidactylus kangerensis* (Endangered), and *Lissemys punctata* (Vulnerable) are listed as rare. This study provides a comprehensive inventory of the herpetofauna in Papikonda National Park, an ecologically unique and previously unexplored region of Andhra Pradesh. By documenting these species, the research fills a critical knowledge gap and establishes baseline data essential for the conservation of herpetofauna, particularly threatened species and their habitats.

Keywords: Herpetofauna, Diversity, Papikonda National Park, Eastern Ghats, Status and Conservation

Strategic Application of Integrated Crop Pollination (ICP) methods for Sustainable Agriculture

Bibhudendu Behera*, Rohit Kumar and Anjali Dhar

Department of Zoology, Central University of Jammu, Samba, Jammu and Kashmir, India

**Presenting Author: Bibhudendu Behera*
**Email Id of Presenting Author: bi22izoo04@cujammu.ac.in*

Abstract

Integrated Crop Pollination (ICP) method is a sophisticated solution to the maximize the pollination-based crop production in midst of mounting food production pressures and environmental stress. The blending of honey bee management with the alternative pollinators, habitat management, and strategic attractants, ICP could deliver effective and resilient pollination procedures for future world. The most viable solution is perhaps the employment of pheromones from honeybees and VOCs emitted by the flowers to control the foraging activity. The Nasonov pheromone which is a mixture of compounds like geraniol, citral, nerolic acid, and farnesol proves to be a strong attractant and stimulates the potential foragers to crops. Volatile Organic Compounds (VOC's) like linalool, methyl salicylate, benzaldehyde, and eugenol are responsible for increased visitation of pollinators. Artificial blends of Nasonov pheromones and floral volatiles, applied in slow-release dispensers, induce strong stimulation of pollination levels, promoting yield and quality. ICP utilizes site specific, adaptive methods with the application of habitat management, agronomically enhanced approaches, and stewardship of pesticide management. ICP framework delivers maximum crop yield while enhancing economic returns through return-on-investment practices. ICP like Integrated Pest Management (IPM) that assumes decision-supporting systems applied as part of biological, agronomic, and economic studies in aiding growers with appropriate means of pollination strategies. Furthermore, the combination of managed and free pollinators acts as an environmental variability buffer and hence maintains stable pollination services. ICP promises to promotes conservation of biodiversity by limiting the dependence on a single method of pollinators and increasing the provisions of a polymorphic set of pollinators within a specific bio diversity zones. With the integration of scientific acumen and practical agro-solutions, ICP provides a scalable solution and maintains secured food production in the face of ecosystem vibrancy that makes it an anchor for the future agriculture ecosystem.

Keywords: Pollinator, Pheromones, Pesticides, Volatile, Agriculture

Study of Anurans in an Agro-ecosystem using Functional Trait Diversity and Bioacoustics

Blusha Fernandes*, Shubham Rane, Sagar Naik and Nitin Sawant

Zoology -School of Biological Sciences and Biotechnology, Goa University, Taleigao Plateau, Panaji-403206, Goa, India.

**Presenting Author: Blusha Fernandes*
**Email Id of Presenting Author: fernandesblusha19@gmail.com*

Abstract

Anurans are of great ecological and economic value, acting as excellent environmental indicators. Their persistence is dependent upon their capacity to efficiently exploit existing ecological niches. The present study examines ecological and acoustic dynamics of anurans in agroecosystems, with a focus on functional trait diversity, bioacoustics features and microhabitat selection in an agricultural landscape of selected sites in Goa. The methods employed in this study includes Visual Encounter Surveys (VES) and Acoustic Encounter Surveys (AES). Visual encounter survey was done to systematically observe and record anurans in their natural microhabitat, focusing on their spatial distribution and habitat preferences. Findings reveal distinct pattern of functional trait divergence. Acoustic encounter survey was carried out to analyse the vocalisation of co-existing anurans. Acoustic analysis proves spectral partitioning and temporal niche differentiation among species with overlap in call frequencies and reducing competition. This research offers significant understanding of anuran species survival and co-occurrence within human altered environment. It reveals remarkable adaptability of amphibians in challenging environment and highlights it's crucial role in maintaining ecological balance.

Keywords: Anurans, Agro –ecosystem, Functional trait diversity, Bioacoustics, Ecological balance

Unveiling the Ghost Fishing Net Impacts on *Lauridromia dehaani* at Gopalpur Coast, Bay of Bengal

Debasish Mahapatro[1*], S.D. Sharma[1], Sangeeta Mishra[1], S.S. Pati[1], R.R. Behera[1], S.K. Mohanty[1], S. Nayak[1], N. Mallick[1], K. Murugesan[2] and Shibananda Rath[3]

[1]Coastal Management Cell, ICZMP, 4th Floor, Central Laboratory, State Pollution Control Board, Plot No.B-59/2 & 3, Patia, Bhubaneswar, Odisha 751024, India

[2]State Pollution Control Board, A-118, Paribesh Bhawan, Unit-VIII, Nilakantha Nagar, Bhubaneswar, Odisha 751012, India

[3]Zoological Survey of India, Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata-700053

**Presenting Author: Debasish Mahapatro*

**Email Id of Presenting Author: debasish.ocean@gmail.com*

Abstract

Abstract Ghost nylon fishing nets, also known as Abandoned, Lost, or Discarded Fishing Gear (ALDFG), are a major source of marine plastic pollution, significantly harming marine life through accidental entanglement. In this context present study, conducted at Gopalpur Coast, South Odisha (2023-2024), examines the impact of ghost nets on the mortality of *Lauridromia dehaani* commonly known as Japanese sponge crab or De Haan's sponge crab belonging to the family Dromiidae and infraorder Brachyura. Random sampling along the Gopalpur coastline has been made for the collection of eight ghost nets, five of which contained entangled *L. dehaani* in both adult and sub-adult stages, having damaged body and missing legs. Frequent entanglement of *L. dehaani* is especially vulnerable to ghost nets due to its slow movement, distinct body structure, delayed threat response, and tendency to hide in crevices where ghost nylon fishing nets accumulate. Known for its ability to camouflage using sponges, algae, and shells, this species plays numerous crucial ecological roles. As a scavenger, it is aiding in organic matter breakdown and energy transfer. Additionally, *L. dehaani* serves as an indicator species, detecting environmental changes such as pollution, bio-indicator of ghost fishing nets and habitat degradation. By burrowing and creeping, it helps to reshape the seabed, supporting nutrient cycling and benthic biodiversity. Indeed *L. dehaani* also significantly contributing to symbiotic relationships thereby supporting other marine life to thrive. Currently, this species has not been assessed by the International Union for Conservation of Nature (IUCN) Red List, highlighting a research gap in conservation studies. However, the growing presence of ghost nets in coastal waters underscores the urgent need to reassess the conservation status of various marine species for better ecosystem management.

Keywords: Ghost nylon nets, *Lauridromia dehaani*, Mortality, Gopalpur Coast, Conservation and Management

Taxonomy, Diversity and Distribution of Soldier Flies from Andaman and Nicobar Islands (Diptera: Stratiomyidae) with Three New Records from the Islands, including one Country Record

Debdeep Pramanik*, Koustav Mukherjee, Moubanti Das, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India, Prani Vigyan Bhawan, 535, M – Block, New Alipore, Kolkata – 700053

**Presenting Author: Debdeep Pramanik*
**Email Id of Presenting Author: mailtodebdeep.005@gmail.com*

Abstract

An updated scenario of soldier flies from Andaman and Nicobar Islands has been presented here with three species (*Hermetia illucens*, *Ptilocera quadridentata* and *Sargus mactans*) observed for the first time in these islands. Among these, *Ptilocera quadridentata* is also the maiden report from India. The current diversity of soldier flies from the bay islands stands at 16 species belonging to 10 genera. During our surveys in 2022-2024, we found 12 species of soldier flies from the bay islands. The spatial distribution and temporal variation of 12 soldier fly species have also been represented here through a heat map. Among the 12 species recorded in our survey, 8 species were observed both in Andaman and Nicobar while 4 were found only in Andaman. Two species - *Ptecticus australis* and *Sargus metallinus*, showed consistency in occurrence along all the study sites in different time periods. The systematic list and distributional accounts of the soldier flies from Andaman and Nicobar Islands have also been amended with new locality records. A taxonomic key for the identification of soldier fly species from the bay islands has been given.

Keywords: Stratiomyidae, island ecosystem, new record, heat map, *Ptilocera*

Effect of urbanization on the avifaunal diversity of Berhampur city, Ganjam, Odisha, India

Swarup Patnaik[1*], Madhusmita Das[1] and Rajesh Lenka[2,3]

[1]Department of Zoology, Binayak Acharya College, Berhampur, Ganjam-760001, Odisha, India
[2]Zoological Survey of India, New Alipore, Kolkata- 700053, West Bengal, India
[3]Department of Zoology, Ballygunge Science College, 35 Ballygunge Circular Road, Kolkata– 700019, West Bengal, India

**Presenting Author: Swarup Patnaik*
**Email Id of Presenting Author: swaruppatnaik333@gmail.com*

Abstract

Due to habitat loss and fragmentation brought on by urbanization, biodiversity is greatly impacted. This maiden study examines the effect of urbanization on avifaunal diversity in Berhampur city of southern Odisha, hypothesizing that increasing house density leads to a decline in bird diversity and abundance. Bird diversity was recorded using the point count method at 16 sampling points across four habitat types i.e. (1) wetlands, (2) green areas, (3) urban areas, and (4) agricultural fields. The total number of houses and other man-made infrastructures per predetermined 0.09 sq. km. quadrats (also known as house density) located on each type of habitat inside the city of Berhampur was counted. A total of 78 bird species were identified in 15 orders, 29 families and 57 genera. Agricultural fields had the highest avian diversity having species richness (S) = 52 species and species abundance (N) = 835 individuals, followed by wetlands (S = 46 species, N = 871 individuals) and green areas (S = 42 species, N = 862 individuals) and the lowest in urban areas (S = 18 species, N = 470 individuals). Calculation of several species diversity indices also reflected this trend, with the highest Simpson's index in agricultural fields (0.9525) and the lowest in urban areas (0.8036). A strong negative correlation was found between the house density and bird diversity (r = 0.9479) and abundance (r = 0.9978), indicating that higher house density reduces bird diversity. These findings confirm that urbanization negatively affects avifaunal diversity in Berhampur city. Sustainable urban planning by incorporating biodiversity-friendly strategies is essential for maintaining ecological balance in urbanizing landscapes.

Keywords: Bird diversity, House density, Silk city, Species richness, Urban ecology

Identifying Key Wetlands of the Western Ghats for Conserving Threatened Freshwater fauna

Gija Anna Abraham[1,2*] and Subramanian, K. A.[1]

[1]Southern Regional Centre, Zoological Survey of India, Chennai
[2]University of Madras, Chepauck, Chennai

**Presenting Author: Gija Anna Abraham*
**Email Id of Presenting Author: gijaabraham95@gmail.com*

Abstract

Freshwater ecosystems are recognized as the most productive yet threatened ecosystems, experiencing biodiversity loss that exceeds that of terrestrial and marine ecosystems. The Western Ghats, a global biodiversity hotspot in India, is also home to several freshwater species characterized by high endemism and species diversity. Although freshwater habitats support high species diversity, studies on freshwater fauna and flora in the Western Ghats have not been thoroughly carried out. Geospatial techniques help us to address these challenges and can effectively map species distribution using GIS tools to identify important wetlands. In the present study, we compiled a data set on freshwater-threatened fauna of the Western Ghats from published sources. A GIS database was created for 131 freshwater-threatened species comprising 28 species of amphibians, 29 species of birds, 61 species of fishes, 5 species of odonates, 2 species of mammals, and 6 species of reptiles. The species distribution was mapped to river and lake sub-basins as delineated by HydroBASINS (Level 12) using QGIS software. The study identifies important wetlands for the conservation of threatened freshwater fauna, and the variations in their distribution. The study shows that nearly 50% of freshwater-threatened fauna were found outside the protected areas and the highest distribution of species was found in protected areas such as Periyar Tiger Reserve in Kerala and Indira Gandhi National Park in Tamil Nadu. The study maps the species-rich areas of freshwater-threatened fauna in the Western Ghats and emphasizes the need to prioritize areas for conservation actions.

Keywords: GIS, Wetlands, Freshwater threatened fauna, Western Ghats

Foraging Ecology of Wild Bees (Hymenoptera: Apoidea) on *Cirsium* spp. in High Land Ecosystem of Gulmarg Kashmir India

Rifat Hussain Raina, Ishfaq Majeed Shah*, Preeti Choudhary and Indu Sharma

Zoological Survey of India (ZSI), Desert Regional Centre, Jodhpur-342 006 Rajasthan, India

**Presenting Author: Ishfaq Majeed Shah*
**Email Id of Presenting Author: ishfaqskuast@gmail.com*

Abstract

Wild bees play a vital role in enhancing the productivity of both wild and cultivated plants through pollination. The study investigates the foraging behavior and activity period of nine wild bee species including *Bombus tunicatus, B. longiceps, B. eurythorax, B. simillimus, B. rufofasciatus, Xylocopa valga, Lasioglossum himalayense, L. polyctor* and *Ceratina hieroglyphica* on *Cirsium* spp. at high land ecosystem of Kongdoori, Gulmarg Kashmir. Field observations were conducted during the year 2024 to measure the foraging speed (time spent on flower) over multiple days of a week and foraging rate (flowers visited/min). Among the observed bees, *Bombus tunicatus* exhibited the highest foraging rate (8.95±0.35 flowers/min), whereas *L. polyctor* recorded the lowest (3.90±0.25 flowers/min). Foraging initiation and cessation times varied across species, with *Bombus tunicatus* displaying the earliest initiation (0745 ± 0012 hours) while late initation was recorded in *L. polyctor* (1110 ± 0010 hours). Additionally, the highest foraging period (h) was observed in *Bombus tunicatus* (11.00±0.03) with peak foraging activity occurring between 10.30am-12.50 pm and lowest in *L. polyctor* (04.05±0.06) with peak activity between 11.00am-11:30pm, respectively. The results underscore the significance of these wild bees in pollination ecology and the need to conserve these valuable creatures for conservation of floral and faunal biodiversity in high-land ecosystem.

Keywords: Wild bees, Foraging ecology, *Cirsium* spp., Plant-pollinator interaction, Kashmir, India

Fish Diversity and Habitat Status Assessment of Subarnarekha River for Conservation and Management of Fisheries Resources

Ajey Kumar Pathak, Jaspreet Singh*, Mahender Singh, Raghavendra Singh, Tarachand Kumawat, Rajeev Kumar Singh, Shubham Kanujia, Ravi Kumar and Vikas Kumar

ICAR-National Bureau of Fish Genetic Resources, Lucknow-226002, Uttar Pradesh, India

**Presenting Author: Jaspreet Singh*
**Email Id of Presenting Author: jaspreet.108icar@gmail.com*

Abstract

The Subarnarekha River, with a length of around 460 km, is one of the longest east-flowing interstate rivers flowing through Jharkhand, West Bengal, and Odisha. The river originates from Chotanagpur plateau near Ranchi and discharges into the Bay of Bengal at Chaumukha in Odisha. The catchment area of Subarnarekha River basin accounts to 0.6% of India's geographical area. The deterioration in the aquatic ecosystem due to climate change, overfishing, waste discharge, pollution, and endangered status of several commercially fish species has posed threats to river ecology. To take concrete steps for sustainability of the aquatic resources, it is necessary to investigate fish diversity and habitat status on spatiotemporal scale. The present study is an account of fish diversity and habitat status of Subarnarekha River. The data was collected through an exploratory survey in the year 2024 from 10 locations along the river. The findings revealed 75 fish species belonging to 16 orders, 35 families, and 58 genera. Out of 75 species, 53.33% were from the estuary and 46.67% from freshwater. Perciformes (34.67%) was the most dominant order, followed by Cypriniformes (21.33%). The species richness was highest in the Cyprinidae family. The feeding habit of the recorded fish species revealed carnivorous (44%), omnivorous (22.22%), herbivorous (12.5%), planktivorous (12.5%), detritivorous (6.9%), and larvivorous (1.38%). The conservation status of the fish species as per IUCN Red List Criteria 2024 presented 6.9% as Near Threatened, 2.7% as Vulnerable, 1.38% as Endangered, 8.33% as Data Deficient, 2.7% as Not Evaluated, and 77.77% as Least Concern. The water pollution showed the high levels of ammonia and chlorine in Ranchi city, and the concentration of the dissolved oxygen was below the normal level. Based on the baseline information, this work suggests adopting ecosystem-based conservation and management strategies for the sustainability of fisheries in the river by mitigating threats.

Keywords: River ecology, Fish biodiversity, Fish habitat, Subarnarekha river, Jharkhand

First record of *Acronicta denticulata* Moore, 1888 (Lepidoptera: Noctuidae) from the Western Ghats, India with a note on its morphology and distribution

Joslin Treesa Jacob* and Abhilash Peter

Christ College (Autonomous), Irinjalakuda, Thrissur, Kerala

**Presenting Author: Joslin Treesa Jacob*
Email Id of Presenting Author: joslintreesa98@gmail.com

Abstract

The genus *Acronicta*, erected by Ochsenheimer, has over 150 species in nine subgenera. It has trifine venation, small forewings, uniform grey, pale grey, or grey-brown colouration, and a black cryptic pattern (Kononenko & Han 2008). It is found mainly in the temperate regions. This study records the first record of *Acronicta denticulata* Moore from the Western Ghats of India, one of the 12 species listed from India (Singh *et al*., 2024). The species was previously recorded from North West Himalayas and Himachal Pradesh. The specimen was collected from Palakkad district of Kerala. The collection site falls within the range of Western Ghats, one of the biodiversity hotspots in India. A light trap method using mercury vapour lamp was used for specimen collection. The collected specimen was then killed, pinned, dried, and stored in an insect box. Even though the genus includes morphologically similar species, *A. denticulata* can be clearly distinguished from its congeners based on the shape and structure of the male genitalia. From the Himalayas to the Western Ghats of India, species range expanded significantly. This indicates the presence of *A. denticulata* in two important biodiversity hotspots in India and the necessity to continue exploring the Western Ghats' fauna.

Keywords: New report, Biodiversity hotspot, Range expansion, Western Ghats, Noctuidae

Managing the Menace - Understanding Threshold Levels of *Pomacea canaliculata* (Lamarck, 1822) to Environmental Stressors under Controlled Conditions

Kamaleshwaran. E[1*], K. Thresia Mathews[1] and Ranjana Bhaskar[2]

[1]Department of Advanced Zoology and Biotechnology, Loyola College (Autonomous), Nungambakkam, Chennai – 600 034, Tamil Nadu, India
[2]Southern Biology Regional Centre, Zoological Survey of India, Chennai – 600 028, Tamil Nadu, India

Presenting Author: Kamaleshwaran. E
Email Id of Presenting Author: kamaleshwaran215@gmail.com

Abstract

Pomacea canaliculata (Lamarck, 1822), commonly known as the golden apple snail, is considered as a highly invasive freshwater species due to its adaptability, high reproductive rate, and tolerance to a wide range of environmental conditions. Introduced originally for aquaculture and ornamental purposes, the species has spread to various aquatic habitats. The rapid expansion of *Pomacea canaliculata* poses a biodiversity conservation issue, particularly in wetland and agricultural ecosystems, where it harms native species by outcompeting them and damaging crops, especially rice, by feeding on young seedlings. The present study investigates the behavioural responses of *Pomacea canaliculata* under controlled experimental conditions, with a focus on the species tolerance to salinity and pH variations. Over a period of two months, the behavioural activity of the specimen was observed, namely feeding, locomotion, and reproduction under changing salinity and pH levels. The study setup included three terrariums: a control sample with two species, a salinity setup with four species, and a pH setup with four species. Salinity and pH were increased at levels which act as environmental stressors, by adding salt and baking soda, respectively. Behavioural changes of the specimen were noted in an ethogram. The findings of the current study indicate that *Pomacea canaliculata* exhibits a certain level of adaptability but also has defined tolerance thresholds to environmental stressors. Genome sequencing of the experimental animal aided in this analysis and helps further our understanding on how to mitigate invasive alien species. The results of this study provide insight into the management strategies needed to control the spread of this invasive species in vulnerable aquatic ecosystems.

Keywords: *Pomacea canaliculata*, Behavioural adaptation, Salinity tolerance, pH stress, Environmental management

The Habitat & Niche Ecology of the Water Monitor Lizard

Krishna Golui[1*], Tapajit Bhattacharya[2] and Soumyajit Banerjee[2]

Serampore College, Hooghly

**Presenting Author: Krishna Golui*
**Email Id of Presenting Author: krishnagolui36973@gmail.com*

Abstract

Varanus salvator, the second largest monitor lizard in the world, even they easily adapted with the anthropogenic changes. Being a reptile, this species prefers semi-aquatic habitations where they can easily exploit the water bodies & also can explore the nearby plant vegetation. Though the degradation & fragmentation of habitat is a vast issue of conservational aspect but the occurrence of this species is notably seen under the tropical & sub-tropical climate from decades after decades. The present work is based on the understandings of the habitat & niche ecology study in two selected districts of West Bengal. The study comprises two study sites from the Howrah district that includes Wadipur (22.64280N, 88.21930E), Amta(22.57780N, 88.01670E) and as well as one study area from the South 24 Pargana district which is Sonarpur Adi Ganga Canal side (22.42440N, 88.40480E) to a stretch through the canal side. The measurement of external environmental parameters such as pH, salinity, and alkalinity, TDS, dissolve Oxygen etc. are considered to be the fundamental foundation of the methodology used to comprehend the habitat ecology of water monitor lizard. The vegetation study, the number of surrounding waterbodies and their distances, the distance from the dumping grounds, and other parameters are examples of other techniques of the methodology. The current study is predicated on the idea that there is a close relationship between those environmental and anthropogenic factors and the habitat and niche selection site of *V. salvator*.

Keywords: Water monitor lizard, West Bengal, Conservation, Habitat and niche, Environmental factors

Studies on the Lynx Spiders (Aranae: Oxyopidae) Across the Different Agro-climatic Regions of West Bengal

Mrinmoy Kumar Kayal, Upasana Bhattacharya*, Rahul Kumar, Chandan Bera and Souvik Sen

Zoological Survey of India, Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata – 700053, West Bengal, India

**Presenting author: Upasana Bhattacharya*
**Email Id of Presenting Author: upasanabh26993@gmail.com*

Abstract

The members of family Oxyopidae, also known as 'lynx spiders' play dual roles in the environment, both as insect pest controlling agents and intermediate components of food chains in various ecosystems. These medium-sized spiders are known to inhabit almost all terrestrial habitats, with a preference for low vegetation. West Bengal has different types of agro-climatic zones and there is great altitudinal variation across different parts of the state. Currently, 90 species of Lynx Spiders are reported from India, belonging to 4 genera, namely, *Hamadruas* Deeleman-Reinhold, 2009, *Hamataliwa* Keyserling, 1887, *Oxyopes* Latreille, 1804, and *Peucetia* Thorell, 1869. So far, members of all the 4 genera have been reported from West Bengal, of which Oxyopes emerged as the most speciose genus. A total of 33 species of lynx spiders have been recorded from the state, of which 19 species are endemic to India. This study aims to prepare a comprehensive checklist of the lynx spiders of West Bengal to facilitate the understanding of their taxonomy. Moreover, mapping of their distribution across different agro-climatic zones of West Bengal reveals that lynx spiders are very well adapted in almost all the agro-climatic zones and their preferable habitat falls within the altitudinal ranges of 15 to 540 meters.

Keywords: Spider, Oxyopidae, Checklist, Taxonomy, Endemism, Agro-climatic Zones, West Bengal, India

Investigating the Enigmatic and Invasive Entomofaunal Diversity of Temperate Viticulture: First Record of the *Planthopper cedusa vulgaris* (Fitch, 1851) and a Previously Undocumented *Altica* Species (*Altica aenescens*) (Weise, 1888) from India

Madhanram G*, Shaheen Gul, Suriya S, Vengateshkumar M and Maheswari S

Division of Entomology, Sher-e-Kashmir University of Agricultural Sciences and Technology of Kashmir, Srinagar -190025, India

**Presenting author: Madhanram.G*
**Email Id of Presenting Author: madhanramvgp@gmail.com*

Abstract

The increasing spread of invasive phytophagous pests in temperate fruit-growing regions of the Indian subcontinent poses a significant threat to agricultural sustainability, driven by globalization, climate change, and expanding international trade. To investigate this emerging challenge, a study was conducted from May 2024 to identify previously undocumented insect pests affecting grapevines cultivated under temperate climatic conditions in India. Weekly entomological surveys were carried out in the Srinagar and Ganderbal districts of Jammu and Kashmir, focusing on three grape cultivars: Sahebi and Hussaini (native to Kashmir) and Thompson Seedless (a widely grown commercial variety). Insect specimens were collected using traps and vials, followed by detailed morphological identification using a stereo zoom microscope (Olympus SZX16) equipped with a high-resolution video camera for both insects and molecular analysis giving cytochrome c oxidase subunit I (COX1) gene, partial cds isolate for the flea beetle. This research led to the discovery of two previously unreported pests in Indian viticulture. The first, *Cedusa vulgaris*, belonging to the subfamily Breddiniolinae and tribe Cedusini, marks the first ever recorded occurrence of this blue derbid hopper infesting *Vitis* spp., establishing a new host association with this economically important crop. Previously this genus is reported in US and Canada alone. Additionally, an unreported flea beetle species, *Altica aenescens*, from the genus *Altica*, was identified, further expands knowledge of grapevine pests in the region. This species was reported in Western Europe, Middle east and Russia alone in Asia previously. These findings emphasize the urgent need for continuous entomological monitoring and pest documentation, as changing climatic conditions and global trade continue to influence the geographic distribution and adaptability of insect species. Early detection and proactive management of such pests are crucial for developing effective control strategies, minimizing economic losses, and ensuring the long-term sustainability of temperate grape cultivation in India.

Keywords: Novel distributional record, Derbidae, Chrysomelidae, Agricultural pests, Kashmir

Study on Comparison Odonates Diversity Between a Rural and Urban Sites in Selected Areas on Purba Bardhaman, West Bengal

Madhushree Ghosh*, Asif Hossain and Soumyajit Banerjee

Department of Zoology for UG and PG studies, Seramopore College

**Presenting Author: Madhushree Ghosh*
**Email Id of Presenting Author: ghoshmadhushree48@gmail.com*

Abstract

Odonata (Dragonflies and Damselflies) constitute a small, widely recognized order of insects which are broadly allotted all around the globe. The adults are commonly predacious insects and act as a crucial bio-control agent of many dangerous bugs and gambling a vital position in controlling pest populations of agro as well as inside the wooded area ecosystems. Their aquatic larvae represent a herbal organic control over mosquito larvae and hence help to govern several epidemic disorder. Due to habitat fragmentation, urbanization, climate change and excessive pesticide uses, much of our native odonates are fast disappearing and at present, their survival is under threat. The objective of the present study is focused on the assessment of the odonates diversity in two study areas (agriculture areas and University of Burdwan Golapbag Campus) of Purba Bardhaman District. Two different sites of the district were surveyed by line transect, direct search and opportunistic sighting methods. Some of the odonates observed were *Pantala flavescens, Orthetrum sabina, Potamarcha congener, Ceriagrion coromandelianum, Pseudagrion rubriceps*. Libellulidae were found to be the largest family represented in the odonates species, while the ground skimmer *Diplacodes trivialis* was the most dominant species. Preliminary consequences suggest that rural areas support better species richness and abundance because of the presence of much less polluted water bodies and greater vegetation cover, at the same time as city areas display decreased variety, likely due to habitat fragmentation, pollutants, and loss of herbal wetlands. The study emphasizes the need for conservation efforts in urban landscapes to sustain odonate populations and maintain ecological balance.

Keywords: Odonata, Agriculture land, Damselfly, Dragonfly, Diversity

Diversity and Distribution of Meiofauna along Chennai Coast and Their Role as Pollution Indicators (using N/C ratio)

Nivedhitha. K. S[1*], M.C. John Milton[1], Sivaleela G[2] and Florence Suganya R[2]

[1]Department of Advanced Zoology and Biotechnology, Loyola College (Autonomous), Nungambakkam, Chennai – 600 034, Tamil Nadu, India

[2]Marine Biology Regional Centre, Zoological Survey of India, Chennai – 600 028, Tamil Nadu, India

**Presenting Author: Nivedhitha K S*

**Email Id of Presenting Author: nive16professional@gmail.com*

Abstract

Meiofaunal assemblages play a crucial role in maintaining sediment ecosystem and environmental health. Therefore, their diversity and distribution serve as valuable indicators of ecological wellbeing of their niche. Current study aims to investigate meiofaunal diversity along the Chennai coast and evaluate the efficiency of the Nematode/Copepod (N/C) ratio as a pollution indicator. Sediment samples were collected from 8 sites across four stations along the Chennai coast: Marina Beach, Edward Elliot's Beach, Foreshore Estate Beach and Kasimedu Beach. Meiofaunal diversity (up to the taxa level) was assessed, and diversity indices—including Simpson's index (D), Shannon–Wiener index (H'), and Evenness index (E')—were calculated along with the N/C ratio. Analysis of a total of 160ml Sediment sample revealed the presence of 14 major taxa from 3,267 specimens. Nematodes dominated the meiofaunal community (62%), followed by harpacticoid copepods (20%). Other identified taxa included isopods (4%), polychaetes (2%), foraminifera (2%), acari (2%), ostracods (2%), oligochaetes (2%), and cyclopoids (1%). A small fraction (3%) comprised miscellaneous taxa such as amphipods, archiannelids, pycnogonids, rotifers, and sipunculans. A notable trend of higher meiofaunal count in the upper sediment strata (0–5 cm) compared to deeper sediment strata (5-10 cm) was observed. This indicates the importance of surface microhabitats. The findings of the study suggest a clear relationship between pollution levels, meiofaunal assemblage, and ecosystem health, with the most polluted sites having lower taxonomic evenness and greater dominance of pollution-resistant taxa. To further corroborate the data and strengthen the scope of the study heavy metal contamination of water samples from the collection site was also analysed.

Keywords: Meiofauna, Nematode/Copepod Ratio, Pollution Indicator, Chennai Coast, Marine Biodiversity

Ecological Significance and Habitat Assessment of Golden Jackals (*Canis aureus*) in Selected Districts of West Bengal

Oindrila Manna[1*], Tapajit Bhattacharya[2] and Soumyajit Banerjee[1]

Department of Zoology for UG and PG studies, Serampore College, Serampore, Hooghly, West Bengal-712201, India
Department of Conservation Biology, Durgapur Government College, Jawahar Lal Nehru Road, Amarabati Colony, Durgapur, West Bengal-713214, India

**Presenting Author: Oindrila Manna*
**Email Id of Presenting Author: oindrilamanna07@gmail.com*

Abstract

Mammalian carnivores are recognized as keystone species due to their profound impact on biodiversity, trophic interactions, and ecosystem stability. Among these, the golden jackal (*Canis aureus*), a mesocarnivore, has garnered attention for its ecological versatility and behavioural adaptability. The species demonstrates remarkable resilience in anthropogenically altered landscapes by utilizing man-made food resources. This study explores the ecological roles and denning ecology of golden jackals across three districts in West Bengal—Howrah, Hooghly, and Purba Bardhhaman—with an emphasis on their habitat preferences and population distribution patterns. Golden jackals perform crucial ecosystem functions such as scavenging, seed dispersal, and rodent population control. Their scavenging behavior facilitates nutrient recycling and limits the spread of pathogens from animal carcasses. Additionally, they contribute to the stabilization of agricultural landscapes by regulating pest populations and altering vegetation dynamics through seed dispersal. These ecological roles highlight the significance of conserving this adaptable species in human-dominated ecosystems. This study employed a combination of direct and indirect observational techniques to investigate jackal distribution, habitat preferences, and environmental factors influencing population dynamics. Opportunistic sightings served as the primary mode of data collection. The integration of spatial analysis and ecological variables aimed to elucidate habitat use patterns and identify potential conflict zones between jackals and human communities. Understanding the ecological factors shaping golden jackal populations is essential for designing effective conservation strategies. By fostering awareness of the ecological services provided by jackals, this research aims to mitigate human-wildlife conflicts and promote sustainable coexistence between wildlife and human societies. Conservation initiatives must focus on habitat protection, conflict resolution, and the dissemination of ecological knowledge to ensure the long-term viability of golden jackal populations.

Keywords: *Canis aureus*, Mesocarnivore, Habitat preferences, Human-wildlife interactions, Conservation planning

A Preliminary Study on the Orb-Weaving Spiders (Araneae) of the Khasi Hills of Meghalaya

Arup Chanda[1], Supradipta Dutta[1*], Rajib Goswami[2], Shouvik Mali[1], Souvik Sen[1] and Dhriti Banerjee[1]

[1]Zoological Survey of India, Prani Vigyan Bhawan, M-Block, New Alipore, Kolkata – 700053, West Bengal, India.

[2]Zoological Survey of India, North Eastern Regional Centre, Shillong 793 003, Meghalaya, India

**Presenting Author: Arup Chanda*

**Email Id of Presenting Author: duttasupra49@gmail.com*

Abstract

Orb-weaving spiders are among the most widespread and ecologically significant spider groups. They are known for their spiral webs commonly found in gardens, fields, and forests. They exhibit a cosmopolitan distribution, including some large, brightly coloured species that are well-known. They help to control pest populations by capturing insects in their intricate webs. Brightly coloured orb-weavers also attract their prey, which enhances their hunting efficiency. Recently, the northeastern states of India have gained a significant focus for spider research. Meghalaya, one of the seven northeastern states of India, is renowned for its rich biodiversity and high levels of endemism. The three major hills, the Garo, Khasi, and Jaintia, contribute significantly to this biodiversity richness. While some previous studies have explored orb-weaving spiders in the Jaintia Hills and parts of the Garo Hills, detailed taxonomic research on orb-weaving spiders of the Khasi Hills is lacking. To bridge that gap, a comprehensive taxonomic study on orb-weavers was recently carried out. Systematic field surveys were undertaken across the Khasi Hills for one year. Findings revealed a total 28 species of orb-weaver belonging to 16 genera and 2 families. Among these, *Argiope pulchella* Thorell, 1881 and *Lecauge celebesiana* (Wackenaer, 1842) were the most encountered species. This study highlights the presence of known as well as potential for discovering new ones, as many areas are yet to be explored. This study on orb-weaving spiders not only expands scientific knowledge but also validates the need for conservation efforts to protect these vital ecosystems from threats such as deforestation and habitat loss.

Keywords: Orb-weavers, Diversity, Endemism, Khasi hills, Meghalaya

Studies on the Effects of Climate Change Adaptation on *Anabas testudineous* (Bloch,1792) and Control Measures of Its Deadly Diseases by the Medicinal Plant Extracts

Paritosh Biswas[1*] and Antara Mahapatra[2]

[1]Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, West Bengal, India
[2]Tamralipta Mahavidyalaya, Tamluk, Purba Medinipur, West Bengal, India

**Presenting Author: Paritosh Biswas*
**Email Id of Presenting Author: amahapatra9800@gmail.com*

Abstract

The effects of climate change on *Anabas testudineous* (Bloch,1792) where fish diseases are appeared to be in severe infectious condition. The seasonal influences on the intensity of infection of the parasites to this fish were assessed in three successive seasons and the results revealed that the pathogens are the highest infectious in the summer, prevalence (80%) and intensity (4.03) followed by the rainy, prevalence (57.50%) and intensity (2.95). But in winter, the pathogenicity where prevalence (27.50%) and intensity (1.90) is lowest. To control the dangerous pathogens of fin rot disease, 25 tropical medicinal plant part extracts were tried in-vivo condition in 5 litre bucket container each for 7 days' observation. On the daily basis of the performances of the inhibitory quality against the disease, 10 plant extracts were finally selected out of 25. Results of the second experiment were recorded at an interval of 5 days only. At the 55th day, all the treated koi fishes of 7 plant extracts: Casuarina, Aloevera, Tulsi, Money plant, Muchkunda flower, Marigold, Gulancha and control, all are died. But the treated Koi fishes of remaining 3 buckets died partially. Their inhibitory capacity against the fin rot disease is better than the others. It is also observed that one koi fish out of 5 is dead in case of eucalyptus followed by 2 is dead out of 5 in Arjun and in Muchkunda leaf extract, 3 fishes are dead out of 5. Among these three plant extracts, Eucalyptus is the best inhibitor followed by Arjun and Muchkunda leaf. Susceptibility of the fin rot pathogen in Muchkunda leaf extract is 60% followed by Arjun (40%) and Eucalyptus (20%). On the other hand, resistance power against this disease is the highest (80%) in Eucalyptus followed by Arjun (60%) and Muchkunda leaf extract is only 40%.

Keywords: *Anabas testudineous*, Climate change, Fin rot, Medicinal plant extracts, Disease control

First Record of a Shendurney Hunter Hawkmoth (Lepidoptera: Sphingidae) from Tamil Nadu, India

Aparna Sureshchandra Kalawate[1], Thapasya K.[1], Pooja Kumar Misal[2], Mitra Shukla[3*], Anukriti Nigam[3] and R. Babu[4]

[1]Zoological Survey of India, Western Regional Centre, Vidya Nagar, Sector-29, P.C.N.T (PO), Rawet Road, Akurdi, Pune, Maharashtra 411044, India
[2]Department of Zoology, Shivaji University, Vidyanagar, Kolhapur - 416 004. Maharashtra, India
[3]Department of Zoology, Fergusson College (Autonomous) Pune-411004, Maharashtra, India.
[4]Zoological Survey of India, Southern Regional Centre, Santhome High Road, Chennai - 600 028, Tamil Nadu India

**Presenting Author: Mitra Shukla*
**Email Id of Presenting Author: reticentmitrashukla@gmail.com*

Abstract

Lepidoptera, an order of insects comprising moths and butterflies, is one of the largest and most diverse groups, with approximately 1,66,320 described species worldwide and in India about 13,124 species. Moths, which account for about 11,745 species in India. Among the diverse families of moths, Sphingidae, commonly known as hawk moths or sphinx moths, stands out due to its ecological significance. The Sphingidae family includes approximately 1,602 species worldwide, with about 241 species reported from India. Within this family, the genus *Theretra* Hübner [1819], encompasses 71 recognized species worldwide, 16 of which are found in India.This study reports, for the first time, the occurrence of *Theretra shendurneensis* Sondhi, Kitching, Basu & Kunte, 2017 from Tamil Nadu, from outside of its type locality. These moths are not only essential pollinators but also serve as important environmental indicators, reflecting the health of ecosystems and changes in climate. The decline in their populations could lead to negative impacts on plant biodiversity and ecosystem stability. Despite their ecological importance, the Sphingidae family, including the *Theretra* genus, remains underexplored, highlighting the need for further research and conservation efforts to protect these valuable species.

Keywords: *Theretra*, pollinators, bio indicators, macroglossinae, heterocera

Conservation Status of Reptiles of India and the Need for an IUCN National Red List Assessment

Pratyush P. Mohapatra

Zoological Survey of India, FPS Building, Kolkata-700 016, West Bengal, India

Email Id of Presenting Author: pratyushm.zsi@gmail.com

Abstract

The IUCN Red List serves as a comprehensive global database that evaluates species based on their risk of extinction, using standardized criteria established by the International Union for Conservation of Nature (IUCN). In India, out of the 778 reported reptile species, 629 have been assessed by the IUCN Red List Assessment and as per the Wild Life (Protection) Amendment Act, 2022, 62 species are listed in Schedule I and Schedule II. Among the Red List assessed reptiles, 26 species are classified as Critically Endangered (CR), 48 as Endangered (EN), 34 as Vulnerable (VU), 37 as Near Threatened (NT), 370 as Least Concern (LC), and 125 species fall under the Data Deficient (DD) category. The assessment also indicates that the population of 74 species is decreasing, while for 379 species, the trend remains unknown and 167 species have a stable population, while in case of six species there is population growth. The IUCN Red List is a vital tool for conservation planning and funding but lacks detailed species distribution data within state boundaries. Despite its global importance, it assesses only a small, biased subset of biodiversity. Expanding the Red List would improve conservation efforts by identifying priority species more effectively. While progress has been made in assessing more number of taxa, the current pace falls short of the Barometer of Life's goals. To accelerate growth, strategies like collaboration with various countries for National and Regional Red List Assessments, investing in training and capacity building, and expanding the scope for a wider coverage are recommended. In India, a National Red List Assessment is urgently required to have a baseline of the conservation status of the country's fauna, based on which the conservation planning can be relied on to achieve the goals and targets set by SDGs and NBSAP.

Keywords: Endemic species, Policy, SDGs, Species distribution, Threats

First record of *Bombus rainai* (Hymenoptera: Apidae) from Gurez Valley in Union Territory of Jammu and Kashmir- India

Rifat Hussain Raina, Preeti Choudhary*, Ishfaq Majeed Shah and Indu Sharma

Zoological Survey of India, Desert Regional Centre, Jodhpur

**Presenting Author: Preeti Choudhary*
**Email Id of Presenting Author: alliswell.0356@gmail.com*

Abstract

The present study documents a new distributional record of *Bombus rainai* Williams, 2022 (Hymenoptera: Apidae), a member of the subgenus *Alpigenobombus* from the Gurez valley in Union Territory of Jammu and Kashmir, India. Extensive field surveys were conducted across the diverse habitats at an altitudinal variation ranging from 2100-3500 m AMSL during the year 2024. The study revealed *B. rainai* as a key pollinator in maintaining plant diversity, ecosystem stability and genetic resilience particularly in the high altitude environments where pollination resources are very limited. Their foraging behaviour and floral preferences significantly influence population dynamics, ensuring reproductive success and genetic diversity of various plant species. This finding not only expands the known geographical range of *B. rainai* but also emphasizes the importance of conserving these vital pollinators and provides valuable insights in to its distribution, behaviour and ecological dynamics. The study provides diagnostic morphological characteristics, geo-referenced data, food plants and relevant illustrations to aid in species identification.

Keywords: *Bombus rainai*, *Alpigenobombus*, Pollination ecology, Biodiversity, Gurez valley, Jammu and Kashmir

Distribution and Conservation of Giant Water Bugs (Hemiptera: Belostomatidae) in Pune, Maharashtra

Purnima Kumari

Zoological Survey of India

Email Id of Presenting Author: purnimadtg@gmail.com

Abstract

The giant water bug *Lethocerus indicus* (Lepeletiler & Serville, 1825) is a large aquatic predator of freshwater ecosystems belonging to the family Belostomatidae in the order Hemiptera. In nature, they are considered bioindicators of water pollution and ecosystem health and contribute to an important link in the aquatic food web. This research explores the ecological role, distribution and environmental parameters affecting the distribution of this species in Pune. However, owing to rapid industrialization and urbanization, the aquatic environment in and around Pune city is changing at a rapid pace. Consequently, their habitats are gradually degrading, and their population is shrinking. This paper incorporates the collection data of past surveys of Pune district, emphasizing population trends, the environmental challenges that giant water bugs face and the need for conservation against anthropogenic threats such as urbanization, habitat destruction and pollution.

Keywords: Distribution, Pune, Giant water bug, *Lethocerus indicus*, Population

Species Diversity and Updated Checklist of Family Drosophilidae in the Indian Subcontinent

Rajendra Singh Fartyal[1*], Pradeep Chandra Sati[2], Manisha Sarswat[1], Asha[1], Mohd. Zahier Khan[1], Sonali Khali[1], Pragya Topal[3], Durga Rawat[1], Kanita[1], Shipra Khanduri[1], Sanjay Singh[1], Mahato Shakti Pada[4], Gupta Kishore Kumar[4], Kishor Kumar[5] and Sushmika Pradhan[6]

[1]Fly Laboratory, Department of Zoology, HNB Garhwa lUniversity, Srinagar-Garhwal, 246174, Uttarakhand, India
[2]Drsophila laboratory, University of Allahabad, Department of Zoology, Allahabad, UP, India
[3]Deaprtment of BioSciences, Mody Uuniversity of Science and Technology, Lakshmangarh, Sikar, Rajasthan, India
[4]Cytogenetic laboratory, Vinoba bhaveUniversity Department of Zoology, Hazaribag, Jharkhand, India
[5]GB Pant National Institute of Himalayan Environment, Himachal Regional Center, Mohal-Kullu, Himachal Pradesh, India
[6]Department of Zoology, Ananda Chandra College, Jalpaiguri - 735101, West Bengal

**Presenting Author: Rajendra Singh Fartyal*
**Email Id of Presenting Author: fartyalrs@gmail.com*

Abstract

The family Drosophilidae has rich species diversity in India and abroad where the greater levels of diversities in ecological conditions might have provided impetus to the evolution of different types of genus and species. A large number of species of these genera is endemic to these subcontinents. Thus, this genus is quite diverse and well distributed in India too. About 4,718 species within 77 genera and 2 subfamilies of drosophilids have been described so far from the world, currently included in the online TaxoDros database (http://www.taxodros.uzh.ch/, accessed January 2025), but with respect to India compiling all the previous (Gupta, 2005; Sati *et al.* 2013) and new records and an updated and revised checklist of Indian Drosophilids is provided with 336 species belongs to 27 genera of the family Drosophilidae. In this revised checklist with some new species have been considered as proposed conserved name (nom. cons. prop.) which will be described very soon.

Keywords: Diversity, Checklist, Drosophilidae, New Species, Indian subcontinent

Record of Coral-Associated Benthic Fauna Recruitment on the Biorock Reef Structures at the Reef Restoration Sites in the Gulf of Kachchh

K Ramkumaran[1*], R Chandran[2], M Selva Bharath[1], R Senthilkumaran[3], Ch Satyanarayana[1] and Rajkumar Rajan[1]

[1]Marine Biology Regional Centre, Zoological Survey of India, Chennai-600028
[2]General Non-Chordata Section, Zoological Survey of India, Fireproof Spirit Building, Indian Museum Complex, JN Road, Kolkata 700 019. India
[3]Marine National Park & Sanctuary, Forest Colony, Jamangar, Gujarat 361001, India

**Presenting Author: K Ramkumaran*
**Email Id of Presenting Author: ramkumarantpg@gmail.com*

Abstract

Biorock technology is one of the coral reef restoration methods worldwide. This method induces the growth of calcareous marine organisms on a metal frame substratum supplemented by a small voltage of electric power. In addition, mineral accretion also occurs on the frame. The mineral-accreted structure acts as a calcified reef and attracts the coral reef-associated benthic fauna to thrive on the structure, thereby creating an ideal coral reef ecosystem. In the present study, to understand how bio-rock structures rapidly establish as functional reefs, the recruitment of coral reef sessile benthos and coral-associated organisms was assessed on the two bio-rock structures deployed in Mithapur and Arambhada reefs in the Gulf of Kachchh. The assessment involved identifying the organisms in situ (confirming the identity with the support of macro photographs) and enumerating their abundance. The results showed that among the non-motile organisms, the highest recruitment was observed in ascidians, with 22.7% at Mithapur and 21.5% at Arambhada. Sponges, bryozoans, and hydrozoans showed the lowest percentages. Among the motile associates, molluscs exhibited high abundance, with 97.9% at Mithapur and 95.7% at Arambhada. Other groups recorded include arthropods, annelids, and Platyhelminthes. Among other life forms, crustose coralline algae (CCA) exhibited overall high recruitment, with 23.7% at Mithapur and 24.3% at Arambhada structures, enabling favourable conditions for coral settlement. The seasonal trend showed the winter months favouring the highest recruitment, with reduced numbers in the post-monsoon and summer. During the monsoon season, increased water currents, bringing highly turbulent waters restricted the establishment of these associates. Mitigating steps such as removing turf and fleshy algal overgrowth and cleaning sediment deposition to favour the recruitment of associates during the monsoon season were proven successful. Continuous monitoring is required to assess the long-term effects of these interventions and to optimize strategies for reef restoration and resilience.

Keywords: Biorock, coral-associated benthic fauna, Gulf of Kachchh, Coral restoration

Free-living Marine Nematodes from Andhra Pradesh Coast, India: One New Record from India and Three New State Records

Ritika Datta[1,2*], Pavel Dutta[1] and Anjum N. Rizvi[1]

[1]University of Calcutta, 87/1, College Street, Kolkata-700 073, India
[2]Zoological Survey of India, New Alipore, Kolkata-700053, West Bengal, India

**Presenting Author: Ritika Datta*
**Email Id of Presenting Author: dattaritika1@gmail.com*

Abstract

The most prevalent meiofaunal group in marine ecosystems are free-living marine nematodes, but they are very less studied from coastal India. The present study is an attempt to explore the diversity of free-living marine nematodes along the Andhra Pradesh coast, India. Sediment samples were collected from various locations following standard nematode sampling protocols, and species identification was based on general morphological characteristics. Herein, four species are reported namely, *Gammanema fennicum* Gerlach 1953, *Chromaspirina parapontica* Luc & De Coninck, 1959, *Corononema parvum* Nicholas & Stewart, 1995 and *Rhynchonema hirsutum* Hopper, 1961. *Gammanema fennicum* Gerlach, 1953 is being recorded for the first time from India, originally described from the East Baltic Sea. The genus *Gammanema* Cobb, 1920 comprises 15 valid species, four of which, *G. cancellatum* Gerlach, 1955, *G. conicauda* Gerlach, 1953, *G. polydonta* Murphy, 1965, and *G. rapax* (Ssaweljev, 1912) Ditlevsen, 1918 were previously reported from India. The other three species reported are new state records for Andhra Pradesh: *Chromaspirina parapontica* Luc & De Coninck, 1959, *Corononema parvum* Nicholas & Stewart, 1995, and *Rhynchonema hirsutum* Hopper, 1961. These species were originally recorded in southwest England, Australia, and the Atlantic coast of the USA (Gulf of Mexico), respectively. Currently, 21 species under *Chromaspirina* Filipjev, 1918, three under *Corononema* Nicholas & Stewart, 1995, and 36 under *Rhynchonema* Cobb, 1920 are considered valid. In India, *C. parapontica* was previously reported from Tamil Nadu and West Bengal, while *C. parvum* and *R. hirsutum* were earlier recorded only from Puducherry. The study provides detailed morphological descriptions and photomicrographs of all identified species. The findings highlight the importance of continued biodiversity assessments in Indian coastal ecosystems, addressing existing gaps in taxonomic knowledge and emphasizing the need for further research on marine nematode diversity across different geographic regions.

Keywords: *Gammanema fennicum, Chromaspirina parapontica, Corononema parvum, Rhynchonema hirsutum*, coast

Impact of Seasonal Variations in Physiochemical Parameters and Zooplankton Diversity in Guntur Lake, Tiruchirappalli, Tamil Nadu, India

Sagaya Sowmya A.[1]*, Sathyamoorthy S.[1], and Gokula V.[2]

[1]PG and Research Department of Zoology, National College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli – 620001, Tamil Nadu, India.
[2]Cell Biology and Neuroscience Laboratory, Department of Zoology, School of Life Sciences, Guru Ghasidas Vishwavidyalaya, Bilaspur – 495009, Chhattisgarh, India

**Presenting Author: Sagaya Sowmya A*
**Email Id of Presenting Author: sowmiantho93@gmail.com*

Abstract

Anthropogenic activities play a major role in shaping the biological resources and water quality of freshwater lakes, with significant effects on the zooplankton populations. To evaluate the hydrobiological conditions and zooplankton diversity of Guntur Lake (Lat. 10.78º N and Long. 78.66 °E) in the Tiruchirappalli district of Tamil Nadu, India, a study was conducted over two years, from March 2022 to February 2024. Monthly sampling was performed to examine seasonal fluctuations in physicochemical parameters, species composition, and zooplankton biodiversity, accounting for eight distinct seasons: summer, pre-monsoon, monsoon, and post-monsoon. A total of 31 zooplankton species belonging to the Rotifera, Cladocera, Copepoda, and Ostracoda groups were identified. The analysis revealed a positive relationship between zooplankton populations and various water quality parameters such as temperature, pH, salinity, dissolved oxygen, total dissolved solids, and electrical conductivity. Rotifera was found to be the most prevalent group, while Ostracoda showed the lowest distribution and diversity. The highest zooplankton population was observed during the summer months, with the lowest numbers recorded during the monsoon season. Variations in refractive index values were noted across zooplankton groups in different seasons, likely due to changes in species abundance. The present study highlights the rich zooplankton biodiversity present in Guntur Lake, suggesting that, with proper management, the lake holds the potential to support inland aquaculture of fish and prawns.

Keywords: Biodiversity, Physiochemical, Guntur Lake, Tiruchirappalli, Zooplankton

Two New Records of Soil Nematoda (Dorylaimida) from India

Samprit Deb Roy* and Debabrata Sen

Zoological Survey of India, M-Block, New Alipore, Kolkata-700 053, West Bengal, India

**Presenting Author: Samprit Deb Roy*
**Email Id of Presenting Author: samprit.zsi@gmail.com*

Abstract

A species from the genus *Promumtazium* Siddiqi, 1982 and another species from the genus *Nygolaimus* Cobb, 1913, belonging to the families Tylencholaimidae Filipjev, 1934 and Nygolaimidae Thorne, 1935 respectively, have been recorded for the first time in India. *Promumtazium pyxidorum* Siddiqi, 1982, has been found in the soil of the forest ecosystem in Bharatipura Hills, Keonjhar district, Odisha, while *Nygolaimus brachyuris* (De Man, 1880) Thorne, 1930, has been observed in the soil of the island ecosystem at Hope Island, Coringa Wildlife Sanctuary, East Godavari district, Andhra Pradesh. Soil samples were processed using the standard methods of Cobb's Sieving and Decantation technique and modified Baermann funnel technique, to extract the nematode specimens. *Promumtazium pyxidorum* was first described by Siddiqi in 1982 from the Colombian rainforests, and its distribution was later observed in Japan and South Korea. On the other hand, *Nygolaimus brachyuris* was first described as *Dorylaimus brachyuris* by De Man in 1880 from the Netherlands and Norway. It was later transferred to the genus *Nygolaimus* by Thorne in 1930, with reports from Salem, Utah in USA and many other places in the world. Important characteristics of *Promumtazium pyxidorum* include the presence of a didelphic female genital system, a short, rounded tail, a fusiform odontostyle, and a distinctly sclerotized tip of the lip region. *Nygolaimus brachyuris* is characterized by comparatively feeble spear as long as width of lip region with rectum and prerectum somewhat longer than anal body diameter and pharynx occupying 35-40 percent of body length in immature specimens.

Keywords: Soil Nematoda, Dorylaimida, New records, India

Unveiling Hidden Biodiversity: A Comprehensive Study of Molluscs in the Devi Estuary, Odisha, on the East Coast of India

Sanjaya Dalai[1*], Aparna Mishra[1], Bhagyashree Dash[2], Sonali Sanghamitra Rout[1], Biswaprajna Mohanty[3], Aswini Nayak[1], Payasini Panda[1], Gyana Ranjan Sahoo[1], N. V. Subba Rao[4] and Dipti Raut[1]

[1]Centre of Excellence in Environment and Public Health, Environmental Science Laboratory, Department of Zoology, Ravenshaw University, Cuttack-753003, Odisha, India.
[2]Indian National Centre for Ocean Information Services, Ministry of Earth Sciences, Govt. of India, Hyderabad, 500090, India
[3]Department of Zoology, Model Degree College, Sonepur -767017, Odisha, India
[4]Zoological Survey of India, New Alipore, Kolkata-700053, India

**Presenting Author: Sanjaya Dalai*
**Email Id of Presenting Author: s.dalai1996@gmail.com*

Abstract

In tropical and subtropical regions, mangroves, prominent at the intersections of terrestrial, estuarine, and near-shore marine environments, are repertoires of biodiversity. While few mangrove-associated estuaries in Odisha, on the eastern coast of India, have been investigated, the Devi estuary at Astaranga, near the Olive Ridley nesting grounds, remains hitherto insufficiently explored, particularly for molluscs. The limited research on molluscan biodiversity in this estuary raises significant concerns due to the crucial roles such species play in marine, estuarine, and mangrove food webs and impacts on ecosystems. Furthermore, given the dependence of coastal communities on shellfish for sustenance and economic livelihoods, the necessity of cataloging molluscan species in the region is necessary. Therefore, the study's primary objectives were to address the existing knowledge gaps and enhance understanding of the taxonomy, community structure, and environmental variables affecting mollusc distributions. A macrobenthic investigation conducted (2014 - 2017) at GPS fixed sampling stations in the estuary revealed 77 mollusc species belonging to 30 families. The dominant group, gastropods, included 50 species across 32 genera and 20 families, whereas bivalves comprised 27 species from 21 genera and 10 families. Notably, species such as the venerids *Dosinia cretacea* (Reeve, 1850) and *D. prostrata* (Linnaeus, 1758) were documented for the first time from the north east coast of India. Moreover, the cardiid species *Vepricardium asiaticum* (Bruguière, 1789), has been documented from Odisha coast for the first time. The tellinid *Tellinella travancorica* (E. A. Smith, 1899) from the estuary, was the first record from east coast of India. This study presents a comprehensive checklist of molluscs collected from the Devi estuary, with taxonomic, morphometric, and ecological data for newly documented species. The findings could serve as a foundational reference for future ecological monitoring and assessments, thereby contributing to the formulation of informed conservation policies for the region.

Keywords: Mollusc, Biodiversity, Mangroves, Estuary, Odisha

Assessment of Temporal Variations of Zooplankton Populations and Their Role in Coral Recruitment in Narara Reef, Gulf of Kachchh

Sarah Tamilkani Peter*, K. Ramkumaran, M. Selva Bharath, Ch. Satyanarayana and Rajkumar Rajan

Marine Biology Regional Centre, Zoological Survey of India, Chennai, India

**Presenting Author: Sarah Tamilkani Peter*
**Email Id of Presenting Author: sarahtamilkanipeter@gmail.com*

Abstract

Coral reef zooplankton represents a key community in coral ecosystems, as they are involved in trophic dynamics and coral wellbeing. In the present study, we examined the seasonal flux in the abundance and species composition of zooplankton populations at three stations on the Narara intertidal reef in the Gulf of Kachchh to learn how these might influence coral feeding in the run-up to recruitment. The zooplankton population was assessed monthly for a year (January 2024 to December 2024) along with the assessment of coral recruits. A total of 28 zooplankton taxa were identified during the study period, with specimens classified to the species level. Zooplankton abundance ranged from 1131 to 7528 individuals/m3 and exhibited seasonal fluctuation. Copepods dominated the samples, comprising 42.85% of the total, followed by crustacean larvae at 16.18%. The maximum abundance of zooplankton occurred during the summer months (April to June), whereas the abundance of coral recruits peaked between April and September. ANOVA and Canonical Correspondence Analysis (CCA) employed indicated the relationship between zooplankton abundance and coral recruits and associated environmental parameters. The findings suggest that the abundance of zooplankton for ingestion by coral colonies before or during spawning could be a factor favouring enhanced coral recruitment.

Keywords: Coral Reefs, Zooplankton diversity and abundance, Gulf of Kachchh, Coral recruitment

Species Composition and Distribution of Flatfishes in Winter Season along the Northeast Coast of India

Sayani Dutta* and Honey U.K. Pillai

Zoological Survey of India

**Presenting Author: Sayani Dutta*
**Email Id of Presenting Author: duttasayani20@gmail.com*

Abstract

This study analyzes the species composition and distribution of flatfish along the northeast coast of India during the winter season. Flatfish, which belong to the Order Pleuronectiformes, are benthic and cosmopolitan. Adult flatfish have asymmetrical bodies with their eyes located on one side of their heads, either the left or the right. They include keystone species in benthic ecosystems and play a significant role in global fisheries, including those in India. India is home to a total of 108 species of flatfish, out of a global total of 815 species. For this study, intensive sampling was conducted during the winter seasons of two consecutive years (2023-2024 and 2024-2025) at eight major landing centers and harbours along the coasts of West Bengal and Odisha. Immediately after collection, the specimens were photographed and preserved in formalin solution for taxonomic studies. Later in the laboratory, they were identified following standard keys and references. A total of 20 species of flatfish, belonging to eight genera and four families, were documented. The dominant species, such as *Cynoglossus arel* and *Cynoglossus lingua*, were widely distributed across both West Bengal and Orissa along the northeast coast of India. In contrast, some species, like *Aesopia cornuta* and *Pseudorhombus triocellatus*, exhibited more restricted distributions. This study highlights the need for further research on flatfish diversity in India, given their economic and ecological importance and the threats endured by this group of fish.

Keywords: Flatfish, species composition, distribution, winter season, northeast coast of India

Increased Prevalence and Escalation of Coral Health Issues in Narara Reef, Gulf of Kachchh

M Selva Bharath[1*], R Chandran[2], K Ramkumaran[1], Ch Satyanarayana[1] and Rajkumar Rajan[1]

Marine Biology Regional Centre, Zoological Survey of India, Chennai- 600028, India
General Non-Chordata Section, Zoological Survey of India, Fireproof Spirit Building, Indian Museum Complex, JN Road, Kolkata 700019. India

**Presenting Author: M Selva Bharath*
**Email Id of Presenting Author: selva0424@gmail.com*

Abstract

Coral health issues have increased significantly in recent decades due to climate change, rising sea temperatures, ocean acidification, and anthropogenic stressors, posing a major threat to reef ecosystems. The Gulf of Kachchh (GoK), known for its high turbidity caused by tidal currents, sediment influx, and coastal development, harbours marginal reefs that are increasingly vulnerable to thermal stress, disease outbreaks, and habitat degradation. To understand the stress levels on corals in these reefs, we recorded coral health issues over four years (2021 to 2024) by quantifying the prevalence of disease and health issues. Five sites in Narara Reef in the Gulf of Kachchh MNP were sampled periodically during the study duration. Four coral diseases namely yellow band disease, white syndrome, focal bleaching, and trematodiasis, and seven non-disease conditions, including fish predation, algal overgrowth, sponge overgrowth, CCA overgrowth, ascidian overgrowth, zooanthids overgrowth and worm infestation were identified. Of the 15 coral genera recorded, *Porites* was the most affected by health issues, which was also the second dominant genus next to *Goniastrea*. The prevalence of disease and coral health issues increased significantly, from 2.1% in 2021 to 5.6% in 2024 in the case of the former and from 7% to 23.1% in the latter, with non-disease health issues more widespread. Focal bleaching was the most common disease and was observed to be non-fatal to coral colonies, whereas sponge invasion was the most severe non-disease condition, with infected colonies experiencing complete mortality. These findings highlight the urgent need for targeted conservation efforts to keep disease and coral health issues in check.

Keywords: Gulf of Kachchh, Sponge overgrowth, Coral diseases, Environmental stressors

A Study of Family Drosophilidae in the Forest of Canary Hill of Hazaribag, Jharkhand, India

Shakti Pada Mahato* and Kishore Kumar Gupta

Cytogenetic laboratory, University Department of Zoology, VBU, Hazaribag, Jharkhand

**Presenting Author: Shakti Pada Mahato*
**Email Id of Presenting Author: shakti.eco@gmail.com*

Abstract

Hazaribag is a district of Jharkhand has rich ecological heritage with a variety of natural resources covered by approximately 35% of forests which provides shelter to many wildlife flora and fauna including species of Drosophila. Our comprehensive field surveys using three traditional methods (Tap-bait, Net- sweeping and Direct collection with the help of aspirator) in the forest of Canary hill of the Hazaribag revealed the only 1 species is belonging to subfamily Steganinae and rest 19 species are belonging to subfamily Drosophilinae with percentage value 5% and 95% respectively indicates the dominancy of subfamily Drosophilinae. The identification of species of family Drosophilidae was based on taxonomical parameters of identified species, phallic and periphallic organs, body indices of various parts, respective morphometric measurement, and taxonomic keys of identified species. However, the results were pointed that genus *Drosophila* is the most important genus of the subfamily Drosophilinae which shows rich species diversity at global level which is perhaps due to great adaption in the ecosystem, while other genera were endemic, may be due to specific niche preferences.

Keywords: Drosophilidae, Steganinae, Drosophilinae, *Drosophila*, Canary hill

Ichthyofaunal Diversity and Conservation Challenges in the Valvanti River, Goa

Sharan S

Zoology Discipline, School of Biological Sciences and Biotechnology, Goa University, 403206, Goa, India

Email Id of Presenting Author: sharanssawal2@gmail.com

Abstract

The Valvanti River, also known as the Haltar River in Karnataka and Thorli Nhai in Maharashtra, is a key tributary of the Mandovi Estuary. Originating in the Western Ghats of Karnataka, it flows through Maharashtra and enters Goa at Siroli village in Sattari Taluka, covering 12.6 kilometres before merging with the Mandovi Estuary. Despite its ecological significance, research on the river's ichthyofaunal diversity remains limited. This study aims to document the composition of fish species, assess their conservation status, and evaluate the impact of human activities on aquatic biodiversity. The river was divided into three depth zones, each with four sampling stations, and field surveys were conducted from November 2024 to February 2025 using cast nets, umbrella traps, and hook-and-line methods, in 15 day and night sampling events. The study recorded 238 individuals across 24 species, with 20 species in the freshwater region and four in the buffer zone. *Carinotetraodon travancoricus* was the smallest species, while *Anguilla bengalensis* was the largest. Conservation assessments identified one species as Endangered (EN), two as Vulnerable (VU), and two as Near Threatened (NT). The first river segment exhibited the highest diversity, likely due to minimal human disturbance. However, anthropogenic activities such as check dam construction, retaining walls, and river dredging alter the flow, sediment deposition, and depth, leading to habitat degradation and biodiversity loss. This study underscores the ecological significance of the Valvanti River, revealing a rich ichthyofaunal diversity despite the challenges posed by anthropogenic activities, stressing the need for continued monitoring and proactive conservation efforts to safeguard the river's ecological integrity.

Keywords: Anthropogenic activities, Conservation status, Ecological integrity, Ichthyofaunal diversity

From Lake to The Sea: Meiofaunal Biodiversity along the Adayar Wetland Complex With Its Marine Continuum and Their Implications on Their Environ

G Sharmila[1]*, Mary Dorothy Anitha Sebastin[1], Sivaleela. G[2] and Florence Suganya R[2]

[1]Loyola college, Nungambakkam, Chennai - 600034, Tamil Nadu, India
[2]Marine Biology Regional Centre, Zoological Survey of India, Chennai - 600 028, Tamil Nadu, India

**Presenting Author: G Sharmila*
**Email Id of Presenting Author: 20mails24@gmail.com*

Abstract

Meiofauna are minute benthic invertebrates inhabiting the aquatic sediments. The study area includes the Adyar Wetland Complex which consists of the Chembarambakkam lake-Aadyar River-Adayar Estuary and it's marine continuum-the Edward's Elliots beach. The current study investigates the variation in density, distribution, and diversity of meiofaunal groups across the distinct ecological niches of the study area: freshwater (lake and riverine), estuarine, and marine zones using the Simpson's diversity index, Shannon wiener index and Species evenness index. Sediment samples were collected from these four sampling stations and were decanted, sieved and sorted for meiofauna. The sorted meiofauna were identified (upto the phylum level) using taxonomic keys and pictorial guides. A total of 950 meiofauna across the continuum were counted out of which, 551 exs were nematodes, 80 exs harpacticoid copepods, 56 exs foraminiferans, 45 exs ostracods and 218 exs were of other taxa (which includes acari, amphipoda, polychaeta, archiannelida etc). In all the four sample stations nematodes and harpacticoid copepods were the dominant taxa. Upon comparing the diversity patterns it was found that the Chembarambakkam lake had the most diverse groups of meiofaunal communities followed by the Adyar estuary due to high species dominance in the estuarine region. When the population density among the taxa were compared it was evident that the estuarine region had more population density followed by marine. In both of the above criteria, the Adayar river zone was found to be trailing far behind. This variation could be influenced by factors like salinity, sediment texture, nutrient availability and anthropogenic interference. The findings of this study can be resourceful in postulating conservation strategies, by identifying sensitive zones across the Adayar wetland complex, which is indicated by a sudden plunge in diversity and density of certain meiofaunal taxa. Since meiofauna are pollution indicators their diversity provides valuable insights into the extent of damage done to their ecological niche. Results from the present study can be used in fields such as environmental management, aquatic ecology, and climate change studies, particularly in understanding how meiofauna respond to environmental gradients and reverse inferences.

Keywords: Meiofauna, Adyar wetland complex, Biodiversity, Population density, Simpson's Diversity index

First Record of *Lepidocephalichthys alkaia* (Havird and Page, 2010) from Khiuro Stream, Nagaland, India

Shekhumcha Y* and Limatemjen

Department of Zoology, Kohima Science College, Jotsoma, Nagaland, 797002, India

**Presenting Author: Shekhumcha Y*
**Email Id of Presenting Author: shekhumchay@gmail.com*

Abstract

Abstract *Lepidocephalichthys alkaia* is reported for the first time from Nagaland. *L. alkaia* is distinguished from all other *Lepidocephalichthys* by a mid-lateral dark stripe on caudal fin, extending from base to terminus of fin. It is further distinguished from all other *Lepidocephalichthys* by the combination of a truncated or rounded caudal fin; scales absent on top of head; usually dark stripe, sometimes dark spots on lateral side; dorsal-fin originates just posterior to pelvic-fin origin; dark bars on dorsum. During a recent field survey conducted in Khiuro stream, tributary of Zungki river, specimens of *L. alkaia* were identified, marking the first documented occurrence of this species in Nagaland. The specimens were collected using cast net and by hand-picking method. Photographs were captured in the field and preserved in 10% formalin. The specimens were further examined using meristic and morphometric counts under a stereozoom microscope and were identified referring relevant literature. This report is noteworthy as it expands the known range of *L. alkaia* within Chindwin drainage system, as it is only known from Manipur, India till date. The purpose of this paper is to document the first record of *L. alkaia* in Nagaland, describing the specimen and its habitat.

Keywords: Cobitidae, Chindwin drainage, First report, Freshwater, Zungki river

Assessment of Fish Diversity and Hydrological Characteristics of Sarayu River for Fisheries Management and Conservation

Shikha*, Tarachand Kumawat, Jaspreet Singh, Ajey Kumar Pathak, Mahender Singh, G. Kantharajan, A. Kathirvelpandian, Rejani Chandran, Vikas Sahu and Uttam Kumar Sarkar

ICAR-National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh

**Presenting Author: Shikha*
**Email Id of Presenting Author: shikhasharmasis786@gmail.com*

Abstract

The Ghaghara River is a major left-bank tributary of the Ganges River that originates from the Himalayas and enters the plains near the Indo-Nepal border. As this river flows through Uttar Pradesh, its stretch near Ayodhya is called the Sarayu River, which continues its course eastward and eventually joins the Ganga River. The Sarayu Riverfront is a central landmark in Ayodhya. Sampling was conducted at five selected sites in the Sarayu River from May 2024 to February 2025 to investigate the fish diversity and the influence of the environment in the Sarayu River. The analysis revealed that Sarayu River provides home to 55 finfish species belonging to 10 orders and 22 families. Cyprinidae emerged as the most dominant family group (13 species), followed by Danionidae (7 species), Bagridae (4 species), and the rest others. According to the IUCN Red List Status, 50 species are classified as Least Concern (LC), one as Vulnerable (VU), three as Near Threatened (NE), and one as Data Deficient (DD). The water temperature ranged between 16.8-28.7°C; water depth was shallow (19-131 cm); water flow varied between 0.1-0.6 m/sec; pH (>8.4) and dissolved oxygen (4.3-10.3 mg/l). The outcome of this study generates baseline information for the conservation and management of the fisheries resources of the Sarayu River.

Keywords: Fish diversity, Hydrological parameters, Sarayu River, Conservation, Ayodhya

Study of Copepod Diversity from Gahirmatha Coastal Stretch: An Ecological Sensitive Area, North East Coast of India

Shilpa Patnaik[1,3], Sangeeta Mishra[1], Debasish Mahapatro[1], Rajaram Behera[1], Sharada Shrinivas Pati[1], Dipti Raut[2], Niranjan Mallick[1] and K. Murugesan[2]**

[1]Coastal Management cell, ICZMP, State Pollution Control Board
[2]Centre of Excellence in Environment & Public health, Environmental Science Laboratory,
[3]Dept. of Zoology, Ravenshaw University

Presenting Author: Shilpa Patnaik
Email Id of Presenting Author: shilpa.patnaik0@gmail.com

Abstract

A three-year study (February 2020 — April 2023) on copepod community structure at 14 GPS fixed locations of an ecological sensitive stretch of 42 km (Lat. 20°29'59.537" N; Long. 86°46' 41.96" E to Lat. 20°26'42.21" N; Long- 86°48'36.685"E) in south to (Lat 20°42'22.955" N; Long- 87°5'3.32" E to Lat 20°40' 28.23" N; Long 87°7' 34.757" towards north) on the northeast coast Of India revealed altogether 73 species represented by 50 calanoid followed by 16 cyclopoid and 7 harpacticoid copepods- Numerically 12 number of species *Paracalanus parvus* (16.43%), *Euterpina acutifrons* (11.28%), *Oithona rigida* (10.40%), *Coryceaus danae* (9.6%), *Acrocalanus gibber* (7.24%), *Coryceaus catus* (6.26%), *Temora turbinate* (5.82%), *Corycella gibbula* (4.64%), *Canthocalanus pauper* (2.94%), *Oithona brevicornis* (2.41%), *Oithona* sp (1.4%), *Labidocera acuta* (2.92%) constitute more than 80% of the population. Station-wise, all measures of alpha diversity were high at offshore stations relative to the near shore stations. On the basis of multivariate analysis (hierarchical clustering implemented in PRIMER) using abundance data it was possible to distinguish the 14 locations into 2 clusters representing (estuarine coastal of 2.5 km away from coast) and (offshore of 5.0 km away from coast). There were 12 influential species identified through BVSTEP (similarity analysis implemented in PRIMER) and Bio-Env revealed 5 variables (i.e. salinity, Turbidity, orthophosphate, chlo-a and phytoplankton abundance had a significant effect on copepod distribution.

Keywords: Copepod, Species, Off shore, Estuary Diversity

A Study on The Fish Catch Along the River Ganges Flowing Through the Three Districts in West Bengal: A Way Towards Conservation

Shraboni Kundu* and Soumyajit Banerjee

Department of Zoology, Serampore College

**Presenting Author: Shraboni Kundu*
**Email Id of Presenting Author: shrabonikundumail@gmail.com*

Abstract

The riverine ecosystem has always been through anthropogenic stresses like industrial pressure, pollution, overexploitation or misuse of resources and nowadays the rapid increasing of civilization is only adding fuel to it, resulting in massive biodiversity loss and habitat degradation of many fish species and the Gangetic ecosystem is no exception. But among all the states in India, recently West Bengal has been stealing the spotlight from researchers, Government as this is the state gifted with 7.5% of the water resource of the country, in the form of rivers, ponds or tanks, reservoir, beel and boar, brackish water and several wetlands which indicates to the diverse fish species richness of this state. Under this backdrop the present study is carried out. The present study is based on A study on the Fish catch along the River Ganges flowing through the Three districts in West Bengal: A way towards conservation. The survey on the recent fish catch is done from seven various ghats of Bagbazar and Babughat (Kolkata), Tribeni, Konnagar and Uttarpara (Hooghly), Barrackpore and Ariadaha (North 24 Parganas). The seven survey sites are visited and data of the fish catch is collected from the local fishermen. But many common fish species such as *Clarias magur, Wallago attu, Tenualosa Ilisha* are in grave danger, also many catfish species like, *Ompok bimaculatus, Pangasius pangasius* are critically endangered by IUCN. Needless to say, the Gangetic fishes are also the centre of many peoples' livelihood. Unfortunately, except some scarce documentation, there is no comprehensive information available addressing the diversity along the entire lower stretch of the Ganges. The present study depicts the horrified scenario of the recent fish diversity of the Ganga and the tremendous scarcity of the fishes especially *Bagarius bagarius, Rita rita, Labeo boga, Anguilliformes* sp., *Glossogobius giuris*.

Keywords: Pollution, West Bengal, IUCN, Fish Diversity, Ganga

Tracing Claws: Exploring the Diversity of Terrestrial Carnivorous Mammals (Suborder Fissipeda) in Selected Areas of Purulia, West Bengal

Sohan Kundu[1*], Tapajit Bhattacharya[2] and Soumyajit Banerjee[1]

[1]Department of Zoology for UG and PG studies, Serampore College, Serampore, Hooghly, West Bengal 712201, India
[2]Department of Conservation Biology, Durgapur Government College, Jawahar Lal Nehru Road, Amarabati Colony, Durgapur, West Bengal 713214, India

**Presenting Author: Sohan Kundu*
**Email Id of Presenting Author: kundusohan.28@gmail.com*

Abstract

From playful otters and stealthy wildcats to powerful bears and hyenas, the Carnivora order of placental mammals is home to a fascinating array of species. These carnivores are found across the globe, adapting to diverse habitats influenced by evolutionary history, environmental conditions, and human activities. Against this backdrop of declining biodiversity, my study focuses on the diversity of terrestrial carnivorous mammals belonging to the suborder Fissipeda in selected regions of Purulia, West Bengal. The research is conducted across three key study sites: Sugnibasa (23.031405° N, 86.372732° E), Jharnakocha (23.038978° N, 86.443229° E), and Kalapati (22.870722° N, 86.674486° E). To identify these mammals, the pugmark study is being used as the primary methodology, complemented by other approaches such as questionnaire surveys, roadkill analysis, and direct sightings. While camera trapping is yet to be conducted, the observations have already confirmed the presence of Bengal fox, Asiatic jackal, wolf, hyena, and jungle cat in these areas. One alarming trend noted during the research is the migration and habitat shifts among several carnivore species. Increased human encroachment, illegal deforestation, and habitat fragmentation may be forcing these animals to move to new areas, often leading to conflicts and further endangerment. These findings emphasize the urgent need for conservation strategies that balance human development with ecological preservation. This study aims to provide insights into the current status of carnivorous mammals in Purulia, contributing valuable data for future conservation efforts.

Keywords: Carnivore, purulia, pugmark, diversity conservation

Preliminary Observation of Terrestrial Coleoptera in Mount Abu WLS, Sirohi Rajasthan

Sonal Yadav* and Indu Sharma

Desert Regional Centre, Zoological Survey of India

**Presenting Author: Sonal Yadav*
**Email Id of Presenting Author: yaduvanshisonal8@gmail.com*

Abstract

The Mount Abu Wildlife Sanctuary, located in the Aravalli Range of Rajasthan, India, is a significant biodiversity rich area, covering approximately 290 square kilometers. The sanctuary is known for its lakes, various valleys and hills, waterfalls, including sub-tropical forests and a diverse range of wildlife. Despite its ecological importance, limited research has been undertaken of insect fauna in this region. Coleopterans are important for human beings as well as some of them are good pollinators. During the present study terrestrial Coleoptera fauna of this sanctuary has been worked out. This study documents fourteen species of terrestrial Coleoptera, representing eleven genera and four families recorded from Mount Abu Wildlife Sanctuary, Sirohi, Rajasthan. Identification was carried out using morphological characteristics and standard taxonomic keys. These findings contribute to the understanding of beetle diversity in the region and emphasize the need for further entomological studies.

Keywords: Terrestrial, Coleoptera, Survey, Diversity, Rajasthan

Comparison of the Diversity and Abundance of Moth Fauna (Order Lepidoptera: Heterocera) in Urban and Rural area of Hooghly district, West Bengal

Sonmitra Nandy*, Rudra Prasad Das and Soumyajit Banerjee

Department of Zoology for UG & PG Studies, Serampore College

**Presenting Author: Sonmitra Nandy*
**Email Id of Presenting Author: sonmitranandy@gmail.com*

Abstract

Lepidoptera or lepidopterans is an order of winged insects which includes butterflies and moths. It is the second largest insect order with 126 families. Moths form majority of the Lepidopteran diversity and contribute about 88% of to the group. They are considered to be very sensitive to vegetation alterations and climate change thus acting as important indicators of environmental degradations. The present study compares the diversity and abundance of moth fauna (Order Lepidoptera: Heterocera) between urban and rural areas in Hooghly district of West Bengal. The areas of study include Serampore (Lat 22.756676° Long 88.338967°) and Kamarkundu (Lat 22.821588° Long 88.205282°). Out of two Serampore is urban and Kamarkundu is rural. The research was conducted in two contrasting habitats: an urban area characterized by high anthropogenic influence and a rural area with little human disturbance. Moth sampling was carried out for six-month period using simple light traps. Species identification, diversity indices, and abundance data were analysed to assess the ecological differences between the two regions. The study revealed significant variations in species richness and abundance, with the rural area supporting a greater diversity of moth species and higher abundance. The moth community was more uniform in urban areas, which was probably caused by pollution and habitat fragmentation. Out of all, moths of family Geometridae, Erebidae and Noctuidae are most common. These findings highlight the importance of habitat conservation and the need for further research to understand the impacts of urbanization on nocturnal insect populations.

Keywords: Hooghly, Moth, Diversity, Lepidoptera, Light trap

Role of People's Biodiversity Register in Documenting Ethnozoological Practices and Conserving Indigenous Species

Sudeep Kumar Behera*, Subhashree Dehury, Priyadarshani Swain and Sudiptasonali Mohapatra

Odisha Biodiversity Board

**Presenting Author: Sudeep Kumar Behera*
**Email Id of Presenting Author: sudeepbehera5555@gmail.com*

Abstract

The Biological Diversity (Amendment) Act, 2002 and recently amended in 2023 mandates local bodies to establish a Biodiversity Management Committee (BMC) to prepare the People's Biodiversity Register (PBR) for biodiversity conservation, sustainable use, and equitable sharing of bio-resources. Data were collected through interviews with local communities across 50 selected Gram Panchayats in and around the Similipal Biosphere Reserve, Odisha. Notably, the ethnozoological practices were recorded using NBA-2013 formats i.e. format- 5, 15, 16, 20, and 28 through discussions with local traditional healers (Vaidyas, Hakims), forest dwellers, and villagers. Examples include the Monitor Lizard (*Varanus bengalensis*, family Varanidae), whose skin is used to make the drum head of the "Khanjani" instrument in Odisha and is also utilized in the treatment of rheumatism and arthritis. The Red Weaver Ants (*Oecophylla smaragdina,* family Formicidae) were documented for their use in chutneys consumed as food and for curing common cold and cough, and are also sold in local markets across the Gram Panchayats. Additionally, the PBR documentation supports local and indigenous communities, including primitive tribal groups, in conserving native species by rearing traditional domestic animals and preserving cultural practices. Breeds such as the Black Bengal Goat and Aseel Chicken, previously registered with the National Bureau of Animal Genetic Resources (NBAGR) of India, were highlighted. Their culture, traditions, and lifestyle align with the sustainable existence of indigenous species without threats. Following the documentation of the PBR, the department aims to raise awareness among local communities about permitted and prohibited practices, and implement appropriate mitigation measures. Statistical analysis indicates that biodiversity conservation can be effectively achieved starting at the basic unit level, such as the gram panchayat. Future studies will explore broader applications of the register.

Keywords: Biological Diversity, ethonozoology, Similipal, indigenous, Odisha

First record of Snail-Killing Sciomyzids (Diptera: Sciomyzidae) from the Andaman and Nicobar Islands, India, with the Report of Three Sepedon Species

Sudip Mondal*, Koustav Mukherjee, Debdeep Pramanik, Atanu Naskar and Dhriti Banerjee

Zoological Survey of India, Prani Vigyan Bhawan, 535, M – Block, New Alipore, Kolkata – 700053

**Presenting Author: Sudip Mondal*
**Email Id of Presenting Author: mondalsudip847@gmail.com*

Abstract

The dipteran family Sciomyzidae, often referred to as marsh flies or snail-killing flies, is reported for the first time from the Andaman and Nicobar Islands, India. During surveys conducted in 2022 and 2023, three species belonging to the genus Sepedon were identified: *Sepedon ferruginosa* Wiedemann, 1824, *Sepedon aenescens* Wiedemann, 1830, and *Sepedon plumbella* Wiedemann, 1830. While *S. ferruginosa* and *S. aenescens* were documented in the Andaman Islands and the Great Nicobar Island, *S. plumbella* was only seen in the Great Nicobar Island. Sciomyzid species are known for their affinity for freshwater habitats exhibiting malacophagous behavior by acting as predators or parasitoids of aquatic snails. Certain species have been investigated as potential biocontrol agents against mollusks, who often serve as vectors of parasitic diseases like schistosomiasis in humans and fascioliasis in livestock. This finding not only expands the known distribution record of the family but also highlights the need to document lesser known Diptera fauna from the archipelago, which is a unique biodiversity hotspot with a rare ecological setting and a wide array of insect fauna.

Keywords: Diptera, Sciomyzidae, snail-killing flies, Andaman and Nicobar Islands, India

Comparative Study on Indian Gray Mongoose in Two Selected Sites of West Bengal

Suparna Adhikary*, Shubhendu Mazumdar and Soumyajit Banerjee

Serampore College, University of Calcutta

**Presenting Author: Suparna Adhikary*
**Email Id of Presenting Author: asuparna4@gmail.com*

Abstract

The Indian Gray Mongoose (*Herpestes edwarsii*) is a small carnivorous mammal, belonging to the family Herpestidae, native to the Indian subcontinent. It has a significant role in controlling pest populations and maintaining ecosystem balance. The present study is based on two selected sites; one in Nadia, the semi urban areas and another one in North 24 Parganas, urban area. The objective is to see the distribution of Indian Gray Mongoose in these two sites, urban and semi-urban. The methodology used here is line count, direct sightings and then questionnaire survey, secondary data from local people. The study till now indicates where mongooses get their food and they are less disturbed, they are frequently seen there. Other studies and locals suggest they are in less numbers now, highlighting the need for conservation and actions for their decreasing numbers.

Keywords: Mongoose, Urban, Semi-urban, Distribution

Avifaunal Diversity and the Feeding Guild of Most Abundant Family in Acharya Jagadish Chandra Bose Indian Botanic Garden, Howrah, West Bengal

Swapnali Ghosh*, Subhendu Mazumdar, and Soumyajit Banerjee

Department of Zoology for UG & PG studies, Serampore College

**Presenting Author: Swapnali Ghosh*
**Email Id of Presenting Author: swapnalighosh2002@gmail.com*

Abstract

Avifaunal diversity is one of the most important ecological indicators to evaluate the status of habitats as the condition and variety of available habitats can be inferred from the diversity of birds in a particular area. Birds are the crucial group of an ecosystem which maintains a trophic level. Therefore, detail study on avifauna and their ecology is important to protect them. The present study was performed to investigate bird diversity and feeding guilds of the most abundant bird family at Acharya Jagadish Chandra Bose Indian Botanic Garden, West Bengal, India (22.555125° N, 88.291302° E). The garden exhibit a wide variety of rare plants and a total collection of over 12,000 specimens spread over 109 hectares. The garden, with its rich flora and varied habitats, serves as a crucial refuge for a diverse range of bird species. Field survey were conducted over a period of six months to document bird species and their feeding behaviours by line transect, point count and direct sightings with the help of binoculars. This area boasts a diverse range of bird species, including residential, passerine, and migratory birds from families such as Psittaculidae, Sturnidae, Picidae, Nectariniidae, Ardeidae, Oriolidae, Dicruridae, Cuculidae, Pycnonotidae, Accipitridae, Muscicapidae, and Columbidae. Some common birds which are observed perennially are Pond heron, Cattle egret, White breasted kingfisher, Jungle babbler, Common myna, Rose ringed parakeet. The identification is done using field guides, relevant literature, online bird data depositories and experts. Feeding guild of most abundant family, Sturnidae, which include common myna is studied. The results highlight the importance of garden to maintain avian diversity in rapidly changing landscapes and conservation strategies in urban green spaces.

Keywords: Botanic Garden, Family, Birds, Diversity, Feeding Guild

Genetic Studies of Nilgiri Langur (*Semnopithecus johnii*) from Western Ghats, Southern India Using Mitochondrial Cyt b Gene

Swetha.S* and Ranjana Bhaskar

DNA Barcoding Lab, Zoological Survey of India, Southern Regional Centre,130 Santhome High Road, Chennai- 600028, Tamil Nadu

**Presenting Author: Swetha. S*
**Email Id of Presenting Author: swethasivakumar1207@gmail.com*

Abstract

The Nilgiri langur (*Semnopithecus johnii*) is a member of the subfamily Colobinae, a broad group of leaf-eating monkeys found in South Asia. Endemic to the Western Ghats, the Nilgiri langur is an arboreal primate found in Tamil Nadu, Kerala, and Karnataka. The IUCN Red List has classified the Nilgiri langur as Vulnerable due to habitat loss and fragmentation of its forest habitat, and it continues to face challenges to its long-term survival in natural settings across its distribution range. Less than 10,000 mature individuals can be found in various dispersed localities. Non-invasive sampling was employed to identify the species and assess its genetic diversity. Genomic DNA was extracted from fecal samples of a Nilgiri langur, and Sanger's sequencing method was used to amplify a 330-bp fragment of the mitochondrial Cyt b gene. We compared our sequences with those of other Indian langurs obtained from the GenBank database. A maximum likelihood (ML) tree was constructed to understand the phylogenetic relationships. The phylogenetic analysis revealed a single cluster of the species. Therefore, conservation efforts must prioritize protecting genetically endangered populations of the Nilgiri langur to prevent the loss of unique populations across its distribution range.

Keywords: Nilgiri, Cyt b, Conservation, Vulnerable, Mitochondrial

The Clockwork of Nature: How Temporal Variation of Floral Resources Shape Insect Foraging Activity in Mangroves

Tania Chatterjee[1*], Souparna Chakrabarty[2], Bulganin Mitra[3] and Punarbasu Chaudhuri[1]

[1]Department of Environmental Science, University of Calcutta, Kolkata, India
35, Ballygunge Circular Rd., Kolkata 700019, West Bengal, India
[2]Department of Chemical Biology, Memorial Sloan Kettering Cancer Center, New York, NY 10065, USA
[3]Centre for Insect Taxonomy & Pollinator Research, RKMVC College, Rahara,
Khardaha 700118, West Bengal, India

**Presenting Author: Tania Chatterjee*
**Email Id of Presenting Author: tcenvs_rs@caluniv.ac.in*

Abstract

Understanding insect foraging behaviour is crucial because it reveals how insects gather resources efficiently, which directly impacts their survival and their ability to pollinate. Successful pollination, in turn, plays a vital role in the reproduction of plants. However, the link between insect foraging and floral resource availability remains unclear, particularly in sensitive ecosystems like mangrove forests. This study investigates how variations in floral resource availability across two consecutive flowering seasons and across different times of day affect insect foraging activity in two dominant mangrove species, *Aegiceras corniculatum* and *Acanthus ilicifolius*, over two years (2022–2023) in mangrove forests of Purba Medinipur, W.B., India. Seasonal and diurnal floral resource availability was assessed by measuring nectar secretion and open flower percentage. Insect foraging behaviour was quantitatively analysed through calculating mean handling time and mean flight time relative to resource availability. A total of 25 insect species from Hymenoptera (52%), Lepidoptera (36%), and Diptera (12%) were recorded. Nectar secretion peaked between 9:30 and 10:30 am before declining with rising temperatures. Maximum nectar availability coincided with peak flowering in mangrove community. This study showed, during peak nectar secretion, insect visitors significantly reduced their mean handling time, increasing their foraging speed, thus able to visit more flowers within unit time and improving the chances of successful pollination. When examining relation between foraging activity and floral abundance, plant specific significant variations were observed. In *Aegiceras corniculatum*, mean handling time was highest when floral abundance was moderate (50-60%) and lowest during peak flowering (80-100%) in community. On contrary, in *Acanthus ilicifolius*, handling time consistently remained low regardless of floral abundance. This is the first quantitative study, revealing the role of floral resource dynamics in shaping insect foraging and pollination success. Understanding these interactions is crucial for predicting how environmental changes may impact pollinator efficiency and successful plant reproduction.

Keywords: Insect foraging activity, Floral resources, Handling time, Flight time, Mangroves

Anthropogenic Activities Impacting Dolphin Habitat with Special Reference to Sand Mining

Tanu Singh

Jai Prakash University, Chapra, Saran, Bihar

Email Id of Presenting Author: tanu.s07@gmail.com

Abstract

The Ganga River Dolphin (*Platanista gangetica*), an endangered species, faces significant challenges due to anthropogenic activities, particularly sand mining. Already reported by many researches that mechanised boats are the biggest threat to freshwater dolphins. Direct count method was used for dolphin as well as mechanised boats to understand the impact of anthropogenic disturbances on dolphin behaviour and habitat. Based on observations, dolphins were seen to be distributed unevenly across the river channel within a certain range where there is little or no current, which helps them save energy, however, they dive into deeper water upon sensing any danger. They venture into prey-rich areas for feeding mostly in the morning and evening but generally stay confined to zones with a preferred depth of 4-10 feet. Most sightings occurred in such areas which could be identified as their home ranges. In low water season, the Ganga – Ghaghara confluence has very low water level with varying depth due to sedimentation. Sometimes the depth ranges between 10 inches to 4-5 feet only, restricting the free movement of dolphins. On the other hand, when the water level is high especially in the monsoon season, illegal sand mining is at peak, so there is heavy traffic of sand carrying mechanised boats movement which restricts the free movements of dolphins. It was observed that boat traffic (>2 boats/5 mins) disturbs the dolphin movements and might create stress and hinders feeding and other behaviour. Findings of this work recommend conscious sand mining and restricted mechanised boat movements which do not disturb the megafauna of the freshwater ecosystem.

Keywords: *Platanista gangetica*, Anthropogenic activity, Sand mining, Ganga, Ghaghara

Exploring Fish Diversity of Bakhira Wetland of Uttar Pradesh, India

Virendra Kumar*, Rajeev K. Singh, Rejani Chandran, Kantharajan G., Lalit K. Tyagi and Uttam Kumar Sarkar

ICAR-National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh

**Presenting Author: Virendra Kumar*
**Email Id of Presenting Author: virendrak604@gmail.com*

Abstract

Bakhira wetland, an Internationally important Ramsar site is a permanent natural freshwater lake or marsh with an area of about 2894 ha. It falls under the middle Gangetic Plain region and is connected with the River Rapti (a tributary of the River Ganga). The present study was carried out to determine the fish diversity of the Bakhira wetland. The fish specimens were collected from 8 sampling sites through experimental fishing conducted in 2024 (three seasons i.e., Winter, Premonsoon and Monsoon) by operating gill nets, traps, and pointed iron rods. The specimens were identified by standard literature. A total of 59 fish species were recorded from the study site belonging to 9 orders, 22 families and 38 genera. Overall, the order Cypriniformes contributed 44% of total species followed by Siluriformes (22%) and Anabantiformes (15%). Family Cyprinidae was the most contributed fish species with 25%. The fisheries potential of the wetland was mainly dominated by small indigenous fishes. The wetlands play an important role in flood control during monsoon season, habitat and breeding grounds for many species, providing water for irrigation crops, food and nutritional security, fish and fisheries and supporting the livelihoods of the local community. Wetland supports rich biodiversity and is highly productive but it's under anthropogenic pressure due to being heavily infested with aquatic weeds, unsustainable fishing practices, domestic sewage and intensive agricultural activities (use of insecticides, weedicide, and heavy amounts of ammonium and phosphate fertilizer in agricultural farms) around the wetland which leads to habitat degradation, water quality deterioration and eutrophication. Promotion of sustainable fishing practices, conversion of private land of wetland into government, awareness among people, proper patrolling, eradication of unwanted aquatic weeds, and proper management of domestic sewage also lead to positive outcomes.

Keywords: Fish diversity, Anthropogenic threats, Conservation and management, Bakhira Wetland, Ramsar site

New Distributional Records of Thrips (Insecta: Thysanoptera) from West Bengal, India

Soumi Dey[1,2], Anindita Datta[1,2], Sandip Mandal[1,2], Shruti Kumari[1], Amit Kumar Ghosh[1,2], Vikas Kumar[1*], Kaomud Tyagi[1*]

[1]Centre for DNA Taxonomy, Molecular Systematics Division, Zoological Survey of India, Kolkata, West Bengal, India
[2]Department of Zoology, University of Calcutta, Kolkata, West Bengal, India

**Presenting Author: Soumi Dey*
**Email Id of Presenting Author: soumidey2710@gmail.com*

Abstract

To explore the species diversity of order Thysanoptera, several extensive field surveys are conducted in the West Bengal, India from 2022-2024. The vegetation beating method was used to collect specimens from different plant families and collected specimens were preserved in 75% ethanol. A total of 10 species of thrips were identify to be new for this state under three subfamilies of two families of order Thysanoptera: Thripidae (6) and Phaleothripidae (4). The subfamily Panchaetothripinae was represented by *Helinothrips aino* (Ishida); subfamily Thripinae by *Arorathrips mexicanus* (D.L. Crawford), *Ctenothrips transeolineae* Chen, *Megalurothrips usitatus* (Bagnall), *Taenothrips orchidi* Ananthakrishnan, *Thrips florum* Schumtz; subfamily Phaleothripinae by *Androthrips flavipes* Schmutz, *Gynaikothrips cecidii* Ananthakrishnan, *Liophlaeothrips ablusus* Ananthakrishnan, *Mesandrothrips flavitibia* Ananthakrishnan & Jagadish. The species diagnosis, along with distribution details are also provided. The study highlights the rich yet understudied diversity of thrips in West Bengal and underscores the need for continued faunistic exploration.

Keywords: New records, Thysanoptera, Phlaeothripidae, Thripidae, India, West Bengal.

Diversity of Anurans Selected Habitats of Sattari Taluka, Goa

Mahi Sirsat

Goa University

**Email Id of Presenting Author: mahisirsat9306@gmail.com*

Abstract

The study was carried out in three habitats of Sattari Taluka, Goa, namely Monoculture Plantation, Mixed Culture Plantation, and Forest, in aquatic and terrestrial environments, anuran's reproductive activities aid in the cycling of nutrients, and their predation helps control insect populations. Furthermore, their presence can affect soil composition and plant growth, supporting the ecological balance of a variety of environments, from July 2023 to January 2024. A total of 15 anuran species were recorded using a combination of transect and audio-visual methods. Among the species observed, only one species, *Hylarana malabarica*, was categorized as Vulnerable under the IUCN Red List. Three species were listed under Schedule IV of the Wildlife Protection Act 1972, namely *Haplobatrachus tigeranus*, *Euphlyctis cyanophilatus*, and *Clinotarsus curtipes*. The study found the highest abundance of anurans in the Forest habitat compared to the other two areas. The Dicroglossidae family exhibited the highest abundance across all three habitats. Additionally, the study provided valuable insights into the interrelation between abiotic factors and species abundance and richness.

Keywords: Anurans, Monoculture Plantation, Mixed Culture Plantation, Forest Habitat

New Distributional Records of the Subfamily Panchaetothripinae (Insecta: Thysanoptera: Terebrantia) from Puducherry, India

Madhurima Sarma[1,2*] and Abhishek Ghosh[1,2]

[1]Centre for DNA Taxonomy, Molecular Systematics Division, Zoological Survey of India, Kolkata, West Bengal, India.
[2]Department of Zoology, University of Calcutta, Kolkata, West Bengal, India

**Presenting Author: Madhurima Sarma*
**Email Id of Presenting Author: madhusarma97@gmail.com*

Abstract

A faunistic survey of Thysanoptera (Insecta) conducted across diverse habitats in Puducherry, a Union territory of India, has led to the documentation of 5 species of subfamily Panchaetothripinae recorded for the first time from this region. Notably, this study represents the first ever record of Thysanoptera from Puducherry, a region that was previously unexplored in terms of thrips diversity. Field surveys were conducted in the Mahe district, located on the western Malabar Coast, surrounded by Kerala state, during the period 2024-2025. Five new records of thrips were recorded first time from this region. These newly recorded species are belonging to subfamily Panchaetothripinae under family Thripidae. These five species are *Caliothrips graminicola* (Bagnall & Cameron,), *Retithrips syriacus* (Mayet), *Rhipiphorothrips pulchellus* Morgan, *Selenothrips rubrocinctus* (Giard), *Phibalothrips peringueyi* (Faure). Detailed species diagnoses, material examined, distributional data, and illustrations are also provided in this study.

Keywords: New records, Thysanoptera, Thripidae, Puducherry, India.

Notes:

भारतीय प्राणि सर्वेक्षण
ZOOLOGICAL SURVEY OF INDIA
Director's Phone : 033-2400-6820
E-mail : director@zsi.gov.in

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest and Climate Change
भारत सरकार
Government of India

प्राणि विज्ञान भवन
Prani Vigyan Bhawan
'एम'ब्लॉक, न्यु अलीपुर
'M' Block, New Alipore
कोलकाता/Kolkata - 700 053

Telefax : 033-2400-8595
E-mail : hoo@zsi.gov.in
Website : www.zsi.gov.in