Blue tailed bee-eater
Merops philippinus Linnaeus, 1766
[Photo: ZSI- Headquarters]

ZSI enews

सत्यमेव जयते

Ministry of Environment, Forest and Climate Change

Zoological Survey of India,1916

From the Director's Desk

It is my pleasure to present the April 2021 issue of E News to the readers. In spite of pandemic preceding financial year i.e. 2020-21 marked with significant progress by identifying 1,20,403 specimens comprising 6626 species, conducting 34 surveys, describing 116 new species, reporting 106 species new to India, publishing 18 books, 770 papers/book chapters and generating 807 DNA barcodes for 351 species. Faunal diversity documentation of all 10 biogeographic zones have been completed, of which 8 biogeographic zones were published. During April 2021, 9338 specimens with 1647 species have been identified. It is noteworthy to state that 6 new species and one genus have been described while 4 species are first report to country. Altogether 63 publications including 5 books, 17 papers, 39 book chapters and 2 popular articles have been published during the month. Four books viz. *Faunal Diversity of Biogeographic Zones of India: North-East* at NERC, Shillong, *Faunal Diversity of Biogeographic Zones of India: Deserts and Faunal Diversity of Biogeographic Zones of India: Semi-arid, Mammalian Osteology [National Zoological Collections], Annual Report 2019-20* at ZSI headquarters and *Faunal Diversity of Agroecosystems of India* at Punjab Agricultural University, Ludhiana have been released. Mobile App for faunistic surveys was released on 20th April 2020 for in-situ documentation of the field data. MoU has been signed with North Odisha University, Odisha and Bhagalpur University, Bihar for conducting research and Ph.D. programmes. I congratulate all the officers and staff of ZSI for the remarkable achievement during the month.

Further I take this opportunity to express my gratitude to all the officers and staff of ZSI and the officials of Ministry of Environment, Forest and Climate Change, Government of India for their unstinted support during my tenure in ZSI over 32 years in different capacities. I extend my heartfelt wishes to my fellow colleagues to continue to uphold the flag of ZSI to the higher sky with their relentless services.

Jai Hind

Dr.Kailash Chandra
Director
April 30, 2021, Kolkata

April 2021
Vol. 26

Monthly E-Newsletter from Zoological Survey of India

Published by
The Director, Zoological Survey of India, Kolkata, INDIA

Edited by
Dr. Kailash Chandra
Dr. C. Raghunathan
Dr. S. Sheela

Citation:
Zoological Survey of India, 2021: E-NEWS, 26: 1-24

Email: director@zsi.gov.in
Website: www.zsi.gov.in

HEADQUARTERS, KOLKATA

Field surveys undertaken to Bibhutibhushan Wildlife Sanctuary and Murshidabad district in West Bengal. Altogether, 4383 specimens comprising 540 species under different faunal groups represented from Protozoa to Mammalia have been identified. The crustacean new genus *Abormon* Mitra, Pati and Ng, 2021 from the family Potamidae and two new species *Abormon capillosum* Mitra, Pati and Ng, 2021 and *Abormon praecalvum* Mitra, Pati and Ng, 2021were described. Besides two hemipteran insects *Stenotus rubricatum* (Distant, 1904) and *Calocoris dohertyi* Distant, 1904 have been recorded as new to India. Sixteen DNA barcodes have been generated for 12 species of Dipteran flies were uploaded in BOLD. Christ College, Trissur, Kerala and Department Agricultural Entomology, Coochbiar, West Bengal were benefited for the identification of hemipteran insect and mite specimens respectively. Annual Scientific Progress meeting of ZSI was organized on 20th and 21st April 2021 in which the all the Officers-in-Charge from Regional Centres and Divisional-in-Charge of different Divisions of ZSI Headquarters made a presentation virtually. Thirteenth meeting of Research Advisory and Monitoring Committee (RAMC) meeting also been organized on 22nd April 2021. Scientist adjudicated a Ph.D. thesis to University of Madras on request.

Spot billed pelican
Pelecanus philippensis
Gmelin 1789

NORTH EASTERN REGIONAL CENTRE, SHILLONG, MEGHALAYA

Book release function at NERC, Shillong

Survey has been conducted to Risa Colony Forest, Shillong on 9th April, 2021. A total of 112 species have been identified which include 15 spp. of Dermaptera, 54 spp. of Lepidoptera, 1 sp. of Crustacea, 8 spp. of Coleoptera, 20 spp. of Fishes, 2 spp. of Reptiles and 2 spp, of Mammals have been identified. A bat *Eudiscopus denticulus* has been reported as a new generic record for India. Ceremonial release of "Faunal diversity of Biogeographic zones of India: North East" was held on the 1st April, 2021. Dr. Kailash Chandra, Director, ZSI and senior officials of Meghalaya Forest Department and senior scientists from ZSI participated in the function.

Eudiscopus denticulus

WESTERN REGIONAL CENTRE, PUNE, MAHARASHTRA

Altogether 71 species belonging to Coleoptera 3 spp., Lepidoptera 5 spp., Odonata 58 spp., and Amphibia 5 spp. have been identified. The beetles, *Bolboceras bopdevense* Kalawate & Hillert, 2021 (Arthropoda: Insecta: Coleoptera: Bolboceratidae: Bolboceratinae) and *Bolboceras trimbakense* Kalawate & Hillert, 2021 (Arthropoda: Insecta: Coleoptera: Bolboceratidae: Bolboceratinae) from Maharashtra, India were newly described. One amphibian sequence was submitted to GenBank. Advisory services rendered to University of Indonesia regarding the measurements of *Eutropis innotata* present in the collection of WRC; Forest Range Officer, Ratnagiri, Maharashtra regarding the identification of bird feathers (Indian Peafowl) and the identity of the Wild Boar; comments to the Maharashtra State Biodiversity Board on two projects under Rule 17 of the Maharashtra Biological Diversity Rules. Insect specimens were identified for Department of Zoology, University of Calicut, Kerala and College of Horticulture, Kerala Agricultural University, Thrissur.

Psalis pennulata Fabricius 1793

CENTRAL ZONE REGIONAL CENTRE, JABALPUR, MADHYA PRADESH

Scopula emissari Walker 1861

Scientist of the Centre identified and registered 66 specimens of Lepidoptera (moths) belonging to 31 species and 30 genera in 08 families. *Scopula emissaria* Walker, 1861 (Lepidoptera: Geometridae: Sterrhinae) and *Psalis pennulata* (Fabricius, 1793) (Lepidoptera: Erebidae: Lymantriinae) are new record to Madhya Pradesh reported from Kanha Tiger Reserve & National Park.

DESERT REGIONAL CENTRE, JODHPUR, RAJASTHAN

Thirty-four species including 10 spp. of Lepidoptera, 3 spp. of Coleoptera, 1 sp. of Hemiptera and 16 spp. of Hymenoptera have been identified.

Dineutus Protodineutus indicus Aube 1938

Sandracottus dejeani Aube 1838

Papilio polymnestor Crammer 1775

Scientists of the Centre examined 438 examples belonging to 101 species of Ephemeroptera, Lepidoptera, Odonata, Hemiptera, Psocodea, Fishes and Reptiles. Ph.D. thesis was evaluated for RTM University, Nagpur and Gauhati University, Guwahati and the manuscript was reviewed to the *Journal of Threatened Taxa*. Expert opinion provided to Wildlife Crime Control Bureau, Southern Region on spiders confiscated by Customs at Chennai International Airport.

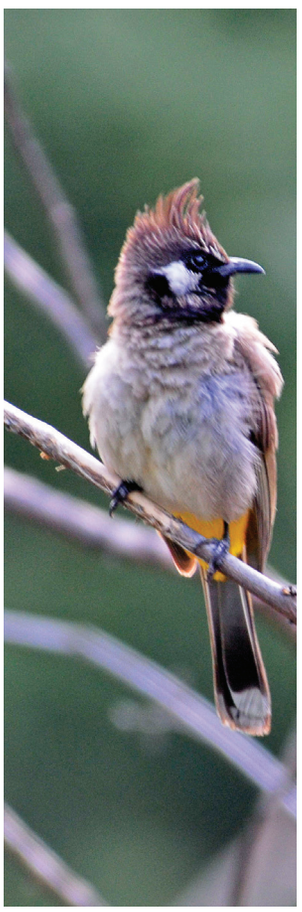
SOUTHERN REGIONAL CENTRE, CHENNAI, TAMIL NADU

Heliocyph bisignata Hagen in Selys, 1853

Jungle Babbler, *Argya striata* (Dumont, 1823)

NORTHERN REGIONAL CENTRE, DEHRADUN, UTTARAKHAND

Scientists of the centre examined 152 examples and identified 64 species of different faunal groups (i.e. 4 spp. of Protozoa, 6 spp. of Nematoda, 9 spp. of Odonata, 17 spp. of Lepidoptera, 12 spp. of Annelida, 6 spp. of Pisces and 10 spp. of Aves) from Uttarakhand, Punjab and Uttar Pradesh. The twelve saplings planted in the campus on Earth Day 22 April, 2021.



Himalayan Bulbul, *Pycnonotus leucogenys* (Gray, JE, 1835)

GANGETIC PLAINS REGIONAL CENTRE, PATNA, BIHAR

Total 224 examples under 7 species of Mollusca were identified and registered

Large silver stripe
Childrena childreni
Gray 1831

HIGH ALTITUDE REGIONAL CENTRE, SOLAN, HIMACHAL PRADESH

Scientists of this Centre identified 42 species includes 13 species belongs to Lepidoptera, 12 species of EPT complex; 05 species of Orthoptera; 06 species of Hymenoptera; 03 species of group Amphibia; 03 Species of Reptilia by examining 249 specimens. Practical training on taxonomic studies of subfamily Polyommatine to Ph.D. student on the topic, 'Molecular Studies on Subfamily Polyommatinae (Lycaenidae: Papilionoidea: Lepidoptera) from Himachal Pradesh' has been provided.

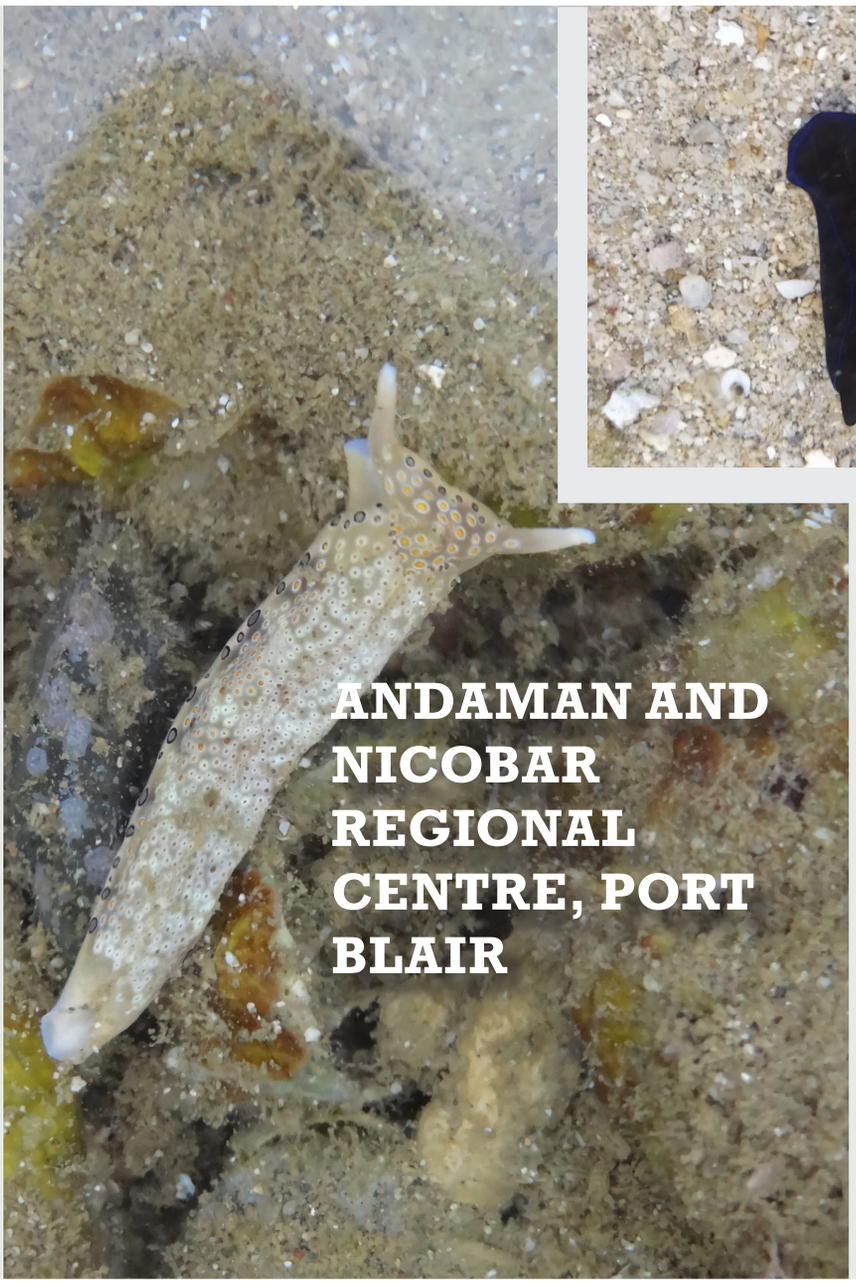
Northern palm squirrel
Funambulus pennantii
Wroughton, 1905

MARINE BIOLOGY REGIONAL CENTRE, CHENNAI, TAMIL NADU

Chlorodiella nigra (Forskål, 1775)

Cyphastrea serialia on one of the Biorocks

Scientists of the Centre identified and registered 47 species from 199 examples, including Moss inhabiting Testate Amoebae 12 species, Marine Sponges 03 species, Nematoda 02 species, Crab 03 species, Mollusca 04 species, Echinodermata 01 species, Pisces 15 species, Orthoptera 07 species. In the project 'Restoration of reefs using Electricity – A suitable technology to enhance and conserve Gulf of Kachchh reefs,' a field survey was conducted to monitor the health status of the corals attached to the Biorock structures at Arambhada and Mithapur. Twelve species of scleractinian corals were identified from the site. A training programme on 'Collection, Preservation, Identification include sorting, labelling and registering the specimens' was organized for five days from 31.03.2021 for the B.Sc. Zoology students of a college in Chennai.



Philinopsis gardineri
Eliot 1903

Plakobranchus ocellatus
van Hasselt 1824

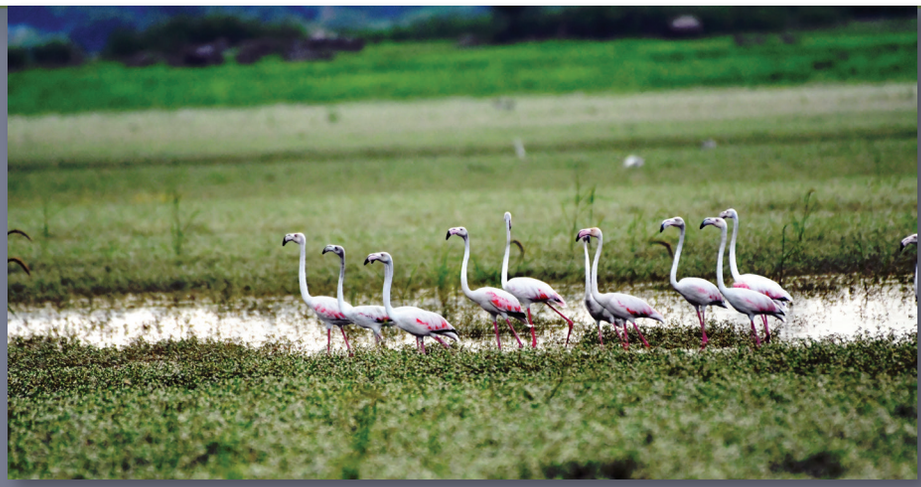
ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR

A month long surveys conducted to Great Nicobar Island during April 2021 to study the 'Status, distribution patterns and habitat modeling of Nicobar Megapode *Megapodius nicobariensis* Blyth, 1846: An impact assessment after fifteen years of the tsunami 2004' and to North Andaman from 15th to 27th April 2021 to study the terrestrial faunal diversity were conducted. Besides, local surveys were conducted from 16th to 25th April 2021 to North Bay, Burmanella, Chatham, Siscostris Bay, South Andaman to assess the marine faunal diversity. A total of 201 species comprised of Fishes - 20 spp., Sea anemone - 2 spp., Mollusca - 37 spp., Decapoda - 31 spp., Coral - 73 spp., were identified from marine environment and Lepidoptera - 25 spp., Odonata - 6 spp., Hemiptera - 7 spp. were identified from terrestrial environment.

SUNDERBAN REGIONAL CENTRE, CANNING, WEST BENGAL

Thirty species including 13 spp. of Mollusca, 8 spp. of Pisces, 3 spp. of Amphibia and 6 spp. of Reptilia were identified. Four species under Molluscs, Reptiles and Fish were augmented to National Zoological Collections.

Checkered keelback snake *Fowlea piscator* (Schneider, 1799)

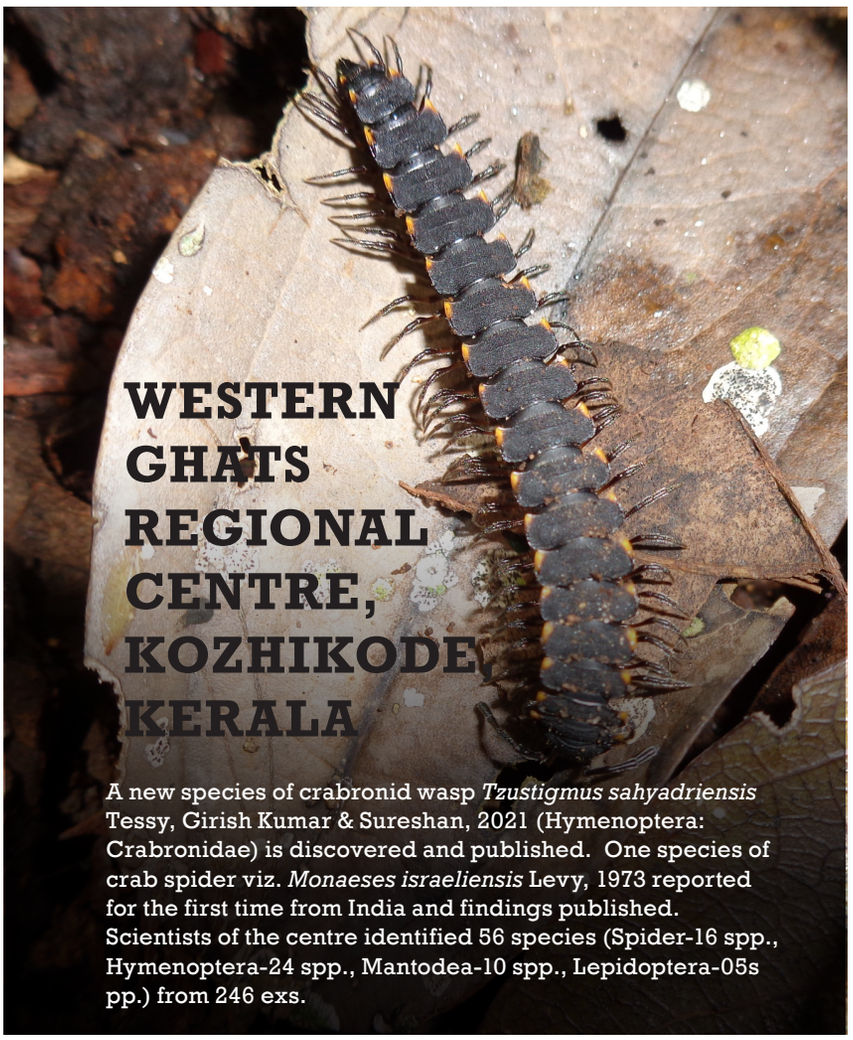


Greater flamingo
Phoenicopterus roseus
Pallas 1811

FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD, TELANGANA

The scientists, staff and research scholars of the Centre examined 798 specimens from Amrabad & Kawal Tiger Reserve, Singur dam, Lower Maner dam, Ameenpur lake, Wyra lake, Telangana; Krishnaraj Sagar Reservoir, Mandya, Karnataka; East Godavari and Visakhapatnam districts Andhra Pradesh; Sindhudurg district, Maharashtra; Kabar lake, Bihar and identified 15 species of aquatic Coleoptera, 6 species of decapods, 5 species of Cladocera, 9 species of Mollusca, 31 species of fishes and 25 species of butterflies. As a part of the digitization of the National Zoological Collections of the Centre, 127 specimens were digitized.

Spot-billed Pelican
Pelecanus philippensis
J.F. Gmelin 1789



WESTERN GHATS REGIONAL CENTRE, KOZHIKODE, KERALA

A new species of crabronid wasp *Tzustigmus sahyadriensis* Tessy, Girish Kumar & Sureshan, 2021 (Hymenoptera: Crabronidae) is discovered and published. One species of crab spider viz. *Monaeses israeliensis* Levy, 1973 reported for the first time from India and findings published. Scientists of the centre identified 56 species (Spider-16 spp., Hymenoptera-24 spp., Mantodea-10 spp., Lepidoptera-05s pp.) from 246 exs.

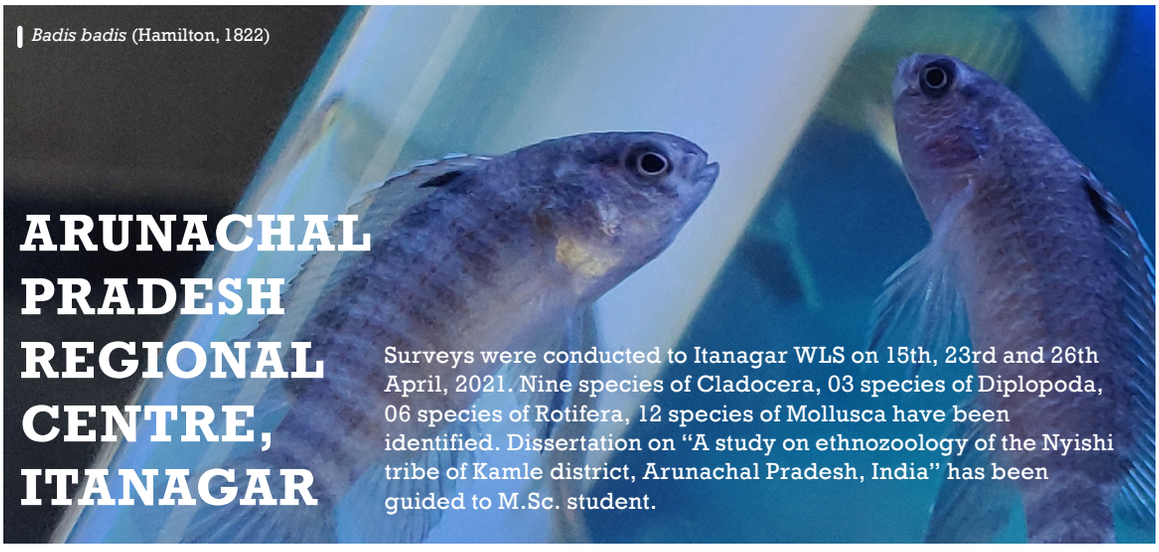
Gyrodrepanum lamprum (Chamberlin, 1920)

Thelyphonus sepiaris (Butler, 1873)

ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR-ON-SEA, ODISHA

A total of 529 specimens were identified which includes lice, crabs, molluscs, fishes, amphibians and reptiles. Ten days local surveys of *Phthirapteran ectoparasites* infesting Common Poultry of Odisha along Ganjam and Gajapati district were carried out from which 04 lots of specimens were collected. Fifteen days of survey on Sea turtle tagging to different parts of Odisha coast was also conducted and a total of 289 turtles were tagged onshore during this month. Three DNA barcodes were uploaded in the BOLD database.

Egg laying of Olive Ridley turtle



Badis badis (Hamilton, 1822)

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Surveys were conducted to Itanagar WLS on 15th, 23rd and 26th April, 2021. Nine species of Cladocera, 03 species of Diplopoda, 06 species of Rotifera, 12 species of Mollusca have been identified. Dissertation on "A study on ethnozoology of the Nyishi tribe of Kamle district, Arunachal Pradesh, India" has been guided to M.Sc. student.

Disparalona leei (Chien, 1970)

Marcia recens
(Holten, 1802)

MARINE AQUARIUM AND REGIONAL CENTRE, DIGHA, WEST BENGAL

Sixty-six species including 1 sp. of Polychaete, 5 spp, Arthropod, 1 sp. of Brachiopoda, 15 spp. of Fishes, 6 spp. of Cnidaria, 3 spp. Echinodermata, 34 spp. of Mollusca and 1 sp. of Nemertea were identified.

Mudflat in Odisha coast

NEW DISCOVERIES AND NEW RECORDS

NEW SPECIES

Tzustigmus sahyadriensis
Tessy, Girish Kumar & Sureshan, 2021

Abormo capillosum
Mitra, Pati, Ng, 2021

Abormon praecalvum
Mitra Pati, Ng, 2021

Bolboceras bopdevense
Kalawate Hillert 2021

Bolboceras trimbakense
Kalawate Hillert 2021

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39. Valarmathi, K. and Mitra, S. 2021. Crustacea, Pp. 161-172. In: Faunal diversity of biogeographic zones of India: North-East (Published by the Director, ZSI, Kolkata), ISBN 978-81-8171-565-4.

POPULAR ARTICLES

1. Palot, M.J. 2021. Climate change. *Eureka, a Science Fortnightly for Children,* 42(20): 6–9

2. Uttam Saikia, 2021. "*The Earth needs our help*" published in The *Shillong Times* on the 19th April, 2021

MEETINGS ATTENDED

1. Dr. C. Raghunathan attended the West Bengal State Biodiversity Board meeting on 16th April 2021 for the evaluation of PBRs; attended State Board of Wildlife, Odisha State meeting on 23rd April 2021; convened the Ph.D. viva-voce examination for the student from Madurai Kamaraj University on 12th April 2021.

2. Dr. C. Sivaperuman, Scientist-E attended the review meeting for providing extension of probation period of the Driver in Regional Medical Research Centre, ICMR, Port Blair on 13th April 2021; served as a Chairman for the accounts committee to review the budget related activities of Regional Centres on 22nd April 2021, attended the Webinar on Biotechnology as driver of aquaculture and blue economy on 24th April 2021 organized by Indian Society for Agricultural Scientists, Mumbai.

3. Dr. P.S. Bhatnagar, Scientist-E attended a meeting (virtual) with CF (Wildlife), Pune for declaration of state animal on 12th April 2021; attended a meeting (virtual) with CF (Wildlife), Pune for declaration of state animal on 22nd April 2021.

4. Dr. S.S. Talmale, Scientist-B attended a meeting (virtual) for declaration of state symbols in various categories on 22nd April 2021.

5. Dr. M.J. Palot, Scientist-B attended the meeting (Online) convened by the Principal Chief Conservator of Forests, Pune regarding the 'Declaration of State symbols-criteria and listing of species' on 12th April 2021

LECTURES DELIVERED

1. Dr. C. Raghunathan Attended the function for release of book 'Faunal Diversity of Biogeographic Zones – North-East' at NERC, Shillong and delivered a lecture on the overview of biodiversity of North-East region on 2nd April 2021 and attended the function for release of book, 'Faunal Diversity of Agro-ecosystems of India' at Punjab Agricultural University, Ludhiana on 6th April 2021 and delivered a lecture on 'Agroecosystem of India'

2. Dr. K. A. Subramanian, Scientist-E, delivered a lecture on Freshwater Macro invertebrates of the Western Ghats in a workshop titled "Freshwater Biodiversity of the Western Ghats" organized by ARI, Pune on 19/04/2021 and delivered a lecture on Biodiversity and conservation challenges of the Western Ghats to students of PSG, Krishnamal College, Coimbatore on 27/04/2021

SUPERANNUATION

Dr. Kailash Chandra (born on 7th April 1961) was awarded Ph. D. degree from Kurukshetra University in 1986 for his thesis titled *'Taxonomic Studies on Pleurostict Scarabaeid Beetles of North–West India'*. Dr Chandra joined as Research Associate in Division of Entomology, I.A.R.I in October 1985 and surveyed various parts of the country till 1988 and published scientific papers on beetle taxonomy. He worked in Malaria Research Centre, Jabalpur, for one year from 1988 to 1989. Dr Chandra was selected as Scientist 'SD' in the Zoological Survey of India (ZSI) and joined its HQs at Kolkata in November 1989. For the last 32 years, he has served at various Regional Centres of ZSI like High Altitude Zoology Regional Centre, Solan (1989-1991), Andaman Nicobar Regional Centre (ANRC), Port Blair (1991-1998), and Central Zone Regional Centre (CZRC), Jabalpur (1998-2011) on various capacities from Scientist 'D' to 'F' and later on posted at HQs, Kolkata from 2011 from Scientist 'F' to 'G'. For the last six years, Dr Chandra has been heading the Zoological Survey of India as the Director of the organisation.

Dr Chandra possesses 39 years of research experience in zoological research with particular reference to insect taxonomy. During this period, he has undertaken 43 major faunistic surveys in various ecosystems, protected areas, and biogeographic zones in India and collected over 52,052 specimens, identified and registered more than 23,000 specimens in the National Zoological Collection of ZSI.

He has been instrumental in establishing the permanent infrastructure of ANRC at Port Blair and CZRC at Jabalpur. He also represented ZSI in XXI Indian Scientific Expedition to Antarctica to study the faunal elements of Schirmacher Oasis during 2001-2002. He completed seven Environmental Impact Assessment studies for MOEF&CC, New Delhi and the corporates.

Dr Chandra published the fauna of various states (Chhattisgarh, Madhya Pradesh, Maharashtra, Sikkim, Tamil Nadu, Punjab, Kerala, Andaman & Nicobar Islands, Punjab, Haryana, Himachal Pradesh) and the fauna of more than 80 protected areas of these states along with seven districts of Chhattisgarh, and Jabalpur district in Madhya Pradesh. The comprehensive account of faunal diversity of various ecosystems such as marine ecosystem (20,444 spp.), freshwater ecosystem (9,456 spp.), estuarine ecosystems (3,392 spp.), mangrove ecosystem (4826 spp.), soil fauna (22,566 species), seagrass ecosystem (1,059 species) and agroecosystems (5,820 spp.) were published. The detailed checklist of faunal diversity of biogeographic zones such as Indian Himalaya (30,377 spp), Trans-Himalayas (3,324 spp.), Desert (3,346 spp.), Semi-Arid (7,802 spp.), Islands (11,009 spp.), Western Ghats (17,099 spp.), Coasts (11,882 spp.) and North East (18,527 spp.) were also published.

Dr Chandra has described 98 species and four genera new to science and reported over 100 species new records to India. Eleven students have been awarded PhD under his guidance, and still, eight are registered and pursuing their PhD programmes from different Universities.

Altogether he had published 83 books, 5 proceedings and abstract books, 212 scientific articles in SCI journals, 285 research papers in National and International journals, 352 book chapters and 37 abstracts on different group of animals, mostly pertaining to insects. He is a member of various national committees also the recipient of various awards by prestigious societies. Recently he has been awarded the prestigious Janaki Ammal Award for his excellent contributions to Animal Taxonomy by MOEF&CC, Government of India.

He has completed twenty in-house research programme and ten externally funded projects and three large grant projects, which are funded by the National Mission of Himalayan Studies, MoEFCC; Biodiversity Assessment

DR. KAILASH CHANDRA, DIRECTOR, ZSI

Superannuated on 30th April 2021 after rendering 32 years of services in ZSI.

through Long-term Monitoring plots in Indian Himalayan Landscape, Lepidoptera (Insecta) as potential indicator taxa for climate change in the Indian Himalayan Landscape, and Conservation of Threatened Vertebrate Fauna in Indian Himalayan Region through Long-Term Monitoring and Capacity Building.

More than 1,000 DNA barcodes of beetles, moths, bees, flies, thrips and grasshoppers were also published and uploaded in NCBI database. He has been Chief Editor of Records of the Zoological Survey of India and editor of the publications made by ZSI since 2015. He has edited and reviewed 6 volumes of Records of the ZSI, three parts of Memoirs of ZSI, 32 occasional papers, two volumes of Fauna of India, 14 handbooks, one ecosystem series, 18 special publications, 11 conservation area series and five wetland documents. He has also represented the country in international conferences like COP, IUCN, CITES and other scientific conferences held in various countries. He has been invited to present his findings as a lead lecture in various seminars, symposia and conferences and participated in seminars (28), symposia (10), National (17) and International Conferences (20), workshops (43) and training programmes (7). Several national and international conferences (2), training programmes (5), symposia (2), seminars (3) and workshops (12) for disseminating knowledge to governmental and non-governmental agencies in the field of taxonomy, wildlife forensics, DNA barcoding, and taxidermy were also organized.

Entire fraternity of ZSI extend wishes for his happy and healthy post ZSI life