

Zoological Survey of India

ZSI e-NEWS

Vol. 10

October – December 2018

FROM THE DIRECTOR'S DESK



Zoological survey of India (ZSI) is a premier institute being actively involved in inventorying faunal resources of India. Along with its 16 regional centres, spread across the country, ZSI is devoted for conducting surveys and to prepare the baseline data of the faunal components for the interest of the nation. The data generated supports the ecologists, molecular biologists, conservation biologists, policy makers and researchers for a sustainable maintenance and conservation of our natural resources.

In the last three months (October to December 2018), ZSI along with its regional centres carried out several faunal surveys for the collection of specimens belonging to different faunal groups which are registered along with photographs under the digitisation scheme. The proper documentation of the collected specimens will serve as a reference in management and biomonitoring studies. Further, ZSI and its centres provided a platform to visitors and researchers to have a glimpse of the diversity without being entering in the forest.

ZSI is also contributing in Green Skill Development Program (GSDP) to train the para-taxonomists for enhancing their skills in documenting the faunal resources at various levels. Several lectures were also delivered for

ministry officials, researchers and students of colleges and schools emphasizing the activities of ZSI research and contributions.

Efforts are also being made towards obtaining the DNA barcodes of the specimens collected based on the universal genes. In the last three months sequence of over 200 specimens were barcoded and deposited in international database like NCBI, BOLD etc. The ZSI has also helped in solving the wildlife forensic cases and has provided reports on 8 confiscated material obtained from various agencies for identification.

Sustained publications are also being made in peer reviewed national and international SCI journals as well as popular articles were published newspapers and magazines on the species prevalence, ecology and molecular phylogenetics.

Zoological Survey of India will continue their ongoing efforts for cataloguing the diversity and generating the baseline data for all the faunal groups, i.e., Protozoa to Mammalia.

Dr. Kailash Chandra

Director

Zoological Survey of India, Kolkata

HEADQUARTERS, KOLKATA

Highlights for the month of October, 2018

ZSI HQ scientists and staffs conducted field surveys at Zeilad & Bunning Wildlife Sanctuaries, Manipur, Purba and Paschim Medinipur, and Chilika. From the collections, 11 fishes, 41 birds, 16 odonates, 6 trichopterans and 34 hymenopterans species were identified.

During this month, three species of Caddis flies (Insecta: Trichoptera) namely, *Polyplectropus kailashchandrai* Pandher and Parey, 2018, *P. sainii* Pandher and Parey, 2018, *P. himachalica* Pandher and Parey, 2018 from the Indian Himalaya have been reported new to science.

Department has provided identification and advisory services to Nirmala College, Coimbatore.

The HQ was visited by several national and international visitors including Jeroen van Steenis, Research Associate, Naturalis, Biodiversity Center, Leiden, Netherland; Mrs. Pandey, HOD, Department of Biology, La Martiniere, School, Kolkata; Mr. Shakunt Pandey, Science reporter and a team of 42 students along with Mr. Rijuana Ahmed, Assistant Professor, Moregaon College, Assam. Training and Extension Division, ZSI, Headquarter organized four days "Orientation Workshop on Collection, Preservation and Identification of Zoological Specimens" at Zoological Survey of India HQ from 8th October to 11th October 2018. A total of 52 participants took part in the workshop and lectures, and a field tour to Botanical Garden, Howrah was organised for practical demonstration.

ZSI HQ scientists provided services to the universities as Ph.D. examiners and served as a resource person for training programmes.

Dr. D.S. Suman, Scientist-D, has delivered an invited lecture on "Surveillance of mosquitoes: Recent advances" 11th National Conference of

Medical Arthropodology at DAV College, Dehradun, Uttarkhand on 26-27th October, 2018. Dr. Suman was conferred with Prof. T.N. Ananthakrishnan Oration Award by Society of Medical Arthropodology.

Highlights for the month of November, 2018

Survey tours were conducted to Mahananda WLS, Buxa Tiger Reserve, Lakshadweep islands and local tour to East Kolkata Wetlands, Eco Park, Kolkata, Nicobar islands and Gurumara National park. From the faunal surveys, 1 annelid, 13 molluscs, 14 crustaceans, 37 hymenopterans, 15 dipterans and 4 species of animal fossils from Kalibangan Archeological site, Rajasthan were identified.

ZSI HQ scientists and staffs provided identification and advisory services such as Dr. R. Leena, Assistant Prof. Department of Zoology, Scott Christian College (Autonomous) Nagercoil; Dr. M. Nasser, Department of Zoology, University of Calicut; Dr. Subba Rao, Ex-Scientist, ZSI and Dr. Girida Kalita, Associate Professor, Guwahati college, Assam; and Dr. P. Mukhopadhyay, Assistant Professor, Dept. of Zoology, Victoria College, Kolkata. ZSI has also received requests from international researchers for identification and advisory services including Ting Hui NG, Ph.D., Postdoctoral Fellow, Animal Systematics Research Unit, Department of Biology, Chulalongkorn University, Thailand and Dr. Min Kyaw Thu, Research Associate, Changshu Institute of Technology, Changshu, Jiangsu, China.

During November, ZSI was the attraction points since several visitors have been visited the institution for various purposes including Dr. Vishwanath Wakhomi from Manipur, Mr. Jeroen van Steenis, Leiden University,

Netherlands, Dr. S.C. Gairola, IFS, Dr. M. Sudhakar, Director, CMRE, Kerala and Director, ICAR, Mr. P. Maity, Research fellow, Excavation branch Baroda, Archaeological survey of India, Gujarat. ZSI has organized the Research Advisory and Monitoring Committee (RAMC) meeting to discuss the research areas being undertaken and other issues.

Dr. L. Kosygin Singh, Scientist-D, attended national seminar on “Environmental changes and its impact on faunal diversity in Indian agro-ecosystems” organised by the Department of Zoology, Punjab Agricultural University, Ludhiana. Dr. G. Maheswaran, Scientist-E, has participated in “2nd Himalayan Scientist Consortium organized by National Mission on Himalayan Studies (NMHS) of G.B. Pant National Institute of Himalayan Environment and Sustainable Development, Almora” to assess progress of research works funded by NMHS on 26th and 27th November, 2018. Mr. Imran Alam, Sr. Zoological Assistant has attended one International Conference (ICECS, 2018) at Central University of Jharkhand, Ranchi, from 31st October to 2nd November, 2018, where he presented a poster on “Nest composition of house crow, *Corvus splendens* in an urban ecosystem of Kolkata”. ZSI HQ published several articles in high repute of scientific national and international journals, and books.

New species/Records

A species new to science i.e. *Spilomena keralaensis* Rajan, Sureshan & Girish Kumar (Hymenoptera: Crabronidae) has been published.

Highlights for the month of December, 2018

The scientists of HQ have conducted several faunal surveys to Coringa WLS, Andhra Pradesh; Ranipur Wildlife Sanctuary; Dudhwa National Park, Uttar Pradesh and Great

Nicobar Biosphere Reserve. Local surveys were also performed.

During the month, Director, ZSI has participated in the ‘5th Asian Lepidoptera Conservation Symposium (ALCS-5)’, held at University of Hong Kong, Hong Kong and delivered a talk on “Lepidoptera as Potential Indicator taxa for Climate change: An initiative undertaken in Indian Himalayan Landscape”. He also attended the “Dissemination Workshop on the Outcome of CEBPOL” organized by MoEF&CC, New Delhi and National Biodiversity Authority, Chennai in technical collaboration with Norwegian Environment Agency (NEA), Ministry of Norway, Norway at “The Theatre” Habitat World, India Habitat Centre, New Delhi, and “Brainstorming-cum-Consultation Meeting of Earth Biogenome Project” in Conference New Delhi to discuss India’s participation in the Global Mission on Earth Biogenome Project. Dr. L. Kosygin Singh attended the 23rd meeting of the National Committee on the introduction of exotic aquatic species into Indian waters held in the Krishi Bhawan, New Delhi and provided valuable information about the importance of Biodiversity conservation.

In December, three requests for the identification of seized materials were received from various enforcement agencies.

DNA sequences of 17 species have been submitted to NCBI and BOLD and eight publications including one book were made:

1. Maity, P., Rizvi, A.N., Bursey, C.R. and Basu, P. (2018) Description of a new species of *Rhabdias* Stiles and Hassall, 1905 (Nematoda: Rhabdiasidae) from Western Himalayan foothills (Uttarakhand), India. *Acta Parasitologica*, **63**: 750-758.
2. Vondel, B.J. and Ghosh S.K. (2018) “Re-evaluation of Vazirani’s *Haliphus* species from India (Coleoptera: Haliplidae).” *Tijdschrift*

- voor *Entomologie* **161**: 3–10.
3. Ghosh, S.K., Chakraborti, U., and Mitra, B. (2018) “Aquatic beetle fauna of Dadra & Nagar Haveli, Daman & Diu, India with a taxonomic notes on *Eretes griseus* (Fabricius 1781) of national collections in zoological survey of India”. *The Pharma Innovation Journal*: **7**: 439-444.
 4. Mukhopadhyay, E., Hazra, S. and Banerjee, D. (2018) First record of *Maekistocera filipes filipes* (Fabricius, 1805) (Diptera, Tipulidae) from the Oriental region. *Journal of Asia Pacific Entomology*.
 5. Mazumdar, P.C., Kazmi, S.I. and Kumar, P.G. (2018) Further distributional record of *Chalybion bengalense* (Dahlbom) (Insecta: hymenoptera: Sphecidae) from indian states. *J. Environ. & Sociobiol.* : **15**(2) : 217-220
 6. Das, S.K., Das, A., Roy, M. and Mitra, B. (2018) A preliminary study on the orthopteran insects from the coastal area of Purba Medinipur district and an updated list from the coastal zone of West Bengal. *The Pharma Innovation Journal* 2018; **7**(11): 542-545.
 7. Bharti, D., Kumar, S., Varatharajan, G.R., Kamra, K., La Terza A. (2018) Shedding light on the polyphyletic behavior of the genus *Sterkiella*: The importance of ontogenetic and molecular phylogenetic approaches. *PLoS ONE* **13**(11): e0207688.
 8. Chandra, K. and Raghunathan, C. 2018 *Faunal Diversity of Biogeographic Zones: Islands of India* : 1-523. (Published by the Director, Zoological Survey of India, Kolkata, India).
- Moreover, scientists have also identified two species new to Indian fauna, *Orientalicesa confasciatus* Tan & Carpenter, 2018 (Hymenoptera: Vespidae) and One *Blaps orientalis*, Solier, (Coleoptera).

SUNDERBANS REGIONAL CENTRE, CANNING

Highlights for the month of October, 2018

A combined survey was undertaken at the Sagar Island under the project “Fauna of Sagar Island” in which 726 molluscs and 158 insects

were collected. Further, fishes, crustaceans and planktons were also collected from other regions and identified by the scientists of the Headquarter.

Some molluscs from the Coringa Wildlife Sanctuary



Agaronia gibbosa (Born, 1778)



Agaronia propatula (Conrad, 1849)



Assiminea grayana J. Fleming, 1828



Babylonia spirata (Linnaeus, 1758)



Bufonaria crumena
(Lamarck, 1816)



Cerithidea obtusa (Lamarck,
1822)



Conus betulinus Linnaeus,
1758



Hiatula diphos (Linnaeus,
1771)



Notocochlis tigrina (Roding,
1798)



Pila globosa Roding, 1798



Placuna placenta (Linnaeus,
1758)



Polinices mammilla
(Linnaeus, 1758)



Protapes gallus (Gmelin,
1791)



Scutarcopagia pulcherrima
(G.B. Sowerby I, 1825)



Solen ceylonensis Leach, 1814



Umbonium vestiarium
(Linnaeus, 1758)

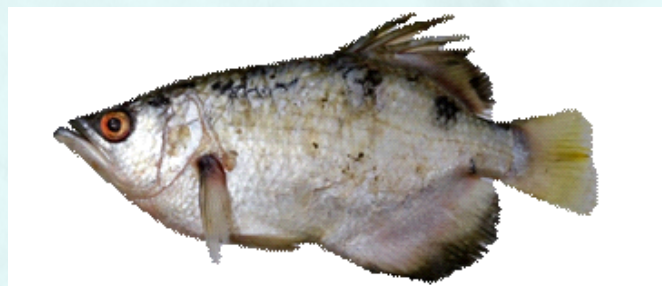
Highlights for the month of November, 2018

Local surveys were made to collect the fish fauna of Sunderban Biosphere Reserve. A total of 72 species were collected. Museum was visited by scientists and research staff of

EGREE foundation, Kakinada. Dr. C.R. Sreeraj, Scientist-C and Officer-In-Charge was invited as a Chief Guest at De Paul School where he delivered a talk on the "Historical importance of Canning".



Notopterus notopterus (Pallas, 1769)



Toxotes jaculatrix (Pallas, 1767)



Lutjanus johnii (bloch, 1792)



Hyporhamphus limbatus (Valenciennes, 1847)



Glossogobius giuris (Hamilton, 1822)

Highlights for the month of December, 2018

A combined survey was undertaken to Coringa Wildlife Sanctuary, Andhra Pradesh. During the survey 26 molluscs and 13 polycladida were

collected. A Monocled Cobra (*Naja kaouthia* Lesson, 1831) was collected and identified.

Monocled Cobra (*Naja kaouthia* Lesson, 1831)



NORTHERN REGIONAL CENTRE, DEHRADUN

Highlights for the month of October, 2018

The center conducted identification and documentation of several faunal groups including orthopterans, fishes, reptiles and prepared metadata of nematodes and Acridoids as well.

Scientists and staffs delivered lectures and demonstrated practicals on various topics in

the GSDP training programmes and other educational institutes. Dr. Anil Kumar, Scientist, participated in one day workshop on “Convention of Migratory Species of Wild Animals”, in MoEFCC, New Delhi. A book chapter on “Overview of Agroecosystem, Haryana” by Dr. Bahuguna was published in Ecosystem Fauna Series.

MARINE AQUARIUM & REGIONAL CENTRE, DIGHA**Highlights for the month of October, 2018**

A survey was undertaken at Digha coast by scientists and staff with collection of 250 specimens of Mollusca, Arthropoda Echinodermata and Chordata. During this month, around 20 specimens of live marine ornamental exhibits were collected for exhibition in aquarium galleries. The marine aquarium of the centre was visited by 22,301 tourists. Scientists provided advisory services to Department of Biotechnology, Sharmila Institute of Medicinal Products Research Academy (SIMPRA), Bharathidasan University, Tiruchirappalli, Tamil Nadu, India. Three manuscript were received for review. Five publications were made:

1. Arun, G., R. Rajaram, and J.S. Yogesh Kumar (2018) Distribution list of Hydrozoa in Indian Coast. *International Journal of Scientific Research and Reviews*, 7: 1527-1538.
2. Balakrishnan, S., V. Sekar. and P.C. Tudu (2018) Marine polychaetes. *Current Status of Faunal Diversity in Island Ecosystem of India. Zool. Sur. India (Chapter -5).*
3. Yogesh Kumar, J.S. (2018). *Octocorals*. Faunal diversity of biogeographical zone Islands of India (Chapter - 5), *Zoological Survey of India, Kolkata, India.*
4. Yogesh Kumar, J.S. (2018) *Echiurans*. Faunal diversity of biogeographical zone Islands of India (Chapter - 18), *Zoological Survey of India, Kolkata, India.*
5. Raghunathan, C., T. Mondal, R. Raghuraman, S. Kumaralingam, and J.S. Yogesh Kumar (2018) Status of corals and

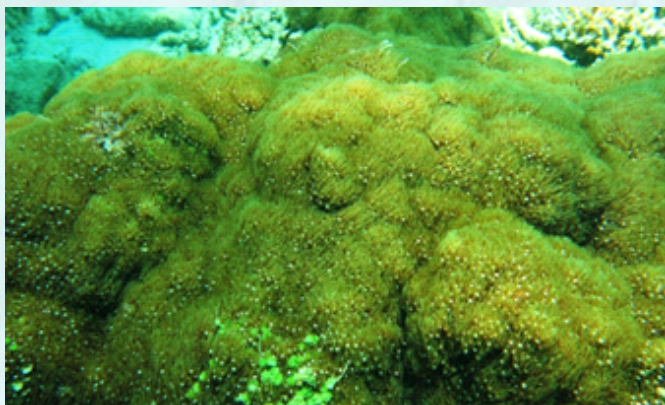
reef associated faunal communities in Rani Jhansi Marine National Park, Andaman and Nicobar Islands. *Rec. Zool. Surv. India, Occ. Paper No. 1-164*(ISBN 978-81-8171-680-0).

Highlights for the month of November, 2018

The staff conducted local survey at Dagara sea beach and collected specimens of molluscas, crabs, prawn, fishes and other chordates. A survey was conducted at Mandapam group of Islands with collection of 301 specimens. During this month, around 20 examples of live marine ornamental exhibits were collected for exhibition in aquarium galleries. The marine aquarium was visited by a total numbers of 16,014 tourists.

Scientists provided advisory services on reviewing Ph.D. synopsis received from Bharathidasan University, Trichy. Three manuscripts were received for the review. Two publications were made:

1. Tudu, P.C., Ghorai, N., Prasanna Y. and Balakrishnan S. (2018) Marine and Estuarine Mollusc of West Bengal Coast: An Overview. *Rec. Zool. Surv. India*, 118 (3)/ 217-241. DOI:10.26515/rzsi/v118/i3/2018/120799.
2. Geetha, S., Kumar J.S.Y., Raghunathan C. and Sornaraj R. (2018) Space competition studies between *Briareum violaceum* (Octocorallia: Alcyonacea) and Scleractinian corals in Shark Island, North Andaman, India. *Indian Journal of Geo Marine Sciences*, 47(12): 2390-2394.

New report of black and soft coral from Andaman and Nicobar Islands (2012 - 2015)

Briareum violaceum (Quoy & Gaimard, 1833)



Trissopathes tetracrada Opresko, 2003

Highlights for the month of December, 2018

Surveys were undertaken to west coast under the project “Taxonomic studies on Meiofauna with special reference to free-living marine nematodes of West coast” and at Kasafal sea beach, Odisha. Specimens of annelids, molluscan, crabs and fishes were collected. Another survey was conducted to Coringa Wildlife Sanctuary, Andhra Pradesh. From the centre, 400 specimens were identified comprising 310 molluscs, 60 chordates, 27 arthropods, 1 cnidaria, 1 brachiopod and 1

echinoderm. Around 20 live marine ornamental exhibits were collected for aquarium exhibition. The marine aquarium received a total numbers of 29,379 tourist. Scientists provided advisory services on reviewing a Ph.D. thesis and a manuscript. A paper was published by Chandrasekar *et al.* (2018) on “New observation of intertwined annulated sea snake *Hydrophis cyanocinctus* (Reptilia: Elaphidae: Hydrophiinae) from Piroton Island, Gulf of Kachchh” in *Indian Journal of Geo-Marine Sciences*.

FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD**Highlights for the month of October, 2018**

Scientists and staffs conducted field surveys under “Taxonomic studies on freshwater ostracods of Eastern Ghats, India” from 8th to 17th October 2018. The centre examined 262 specimens collected from Dindi reservoir, Amrabad Tiger Reserve, Nellore, Vizag and Kurnool (Andhra Pradesh), and Bastar and Jagdalpur (Chhattisgarh). These specimens belong to aquatic insects, crustaceans, molluscs and fishes. Total 57 specimens were digitized.

Forty students of Tumkar University, Karnataka visited the centre. Mrs. Rehnuma Sulthana, Asstt. Zoologist and Dr. Boni Laskar, Scientist-D, delivered lectures on collection, preservation of zoological specimens and DNA techniques, respectively.

Eleven DNA sequences have been submitted to NCBI and BOLD. Dr. A. Pathak, Scientist-F, Director-in-Charge, Botanical Survey of India, Kolkata visited the centre on 12th October 2018.

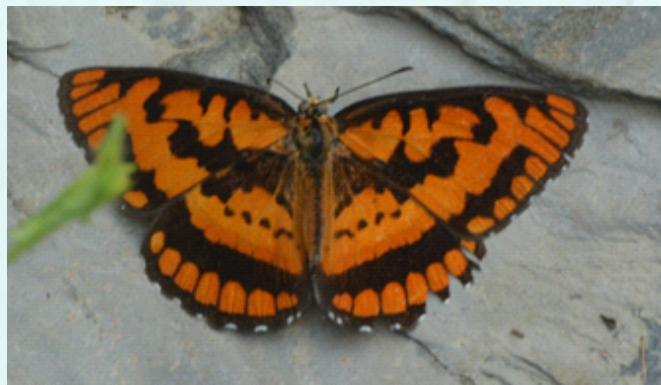


Dr. A. Pathak, Scientist-F, Director-in-Charge, BSI, Kolkata at FBRC, ZSI, Hyderabad

Butterflies collected during Eastern Ghat Survey



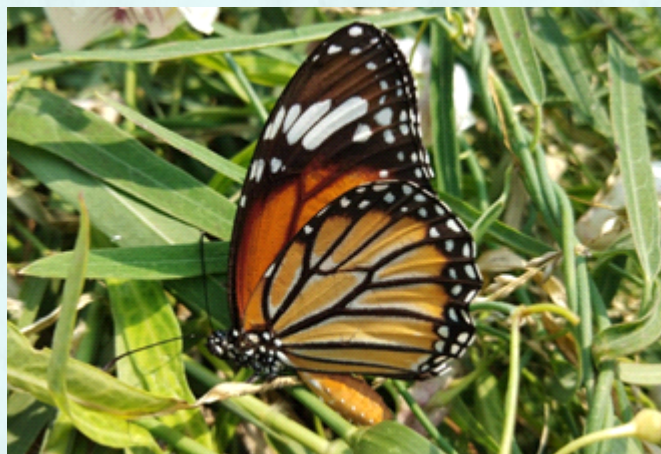
Papilio crino Fabricius, 1792



Byblia ilithyia (Drury, 1773)



Papilio Polymnestor Cramer, 1775



Danaus genutia (Cramer, 1779)

Highlights for the month of November, 2018

Scientists and staffs conducted local surveys to Palair and Wyra lakes, Himayatsagar, Osmansagar lakes and lower Manair dam. The centre examined 651 specimens from Himayatsagar and Osmansagar lake, Amrabad and Kawal Tiger Reserve, Telangana; Eastern Ghat, Vizag district, Tungabhadra and Krishna

river, Kurnool district. From the collection, 57 specimens of aquatic insects, crustaceans, molluscs, decapods and fishes were identified and 83 species were digitized.

Vigilance awareness week observed on 4th November 2018. Sixteen DNA sequences have been submitted to NCBI and BOLD.

Faunal observations during the survey to Amrabad and Kawal Tiger Reserve, Telangana

Macaca mulatta (Zimmermann, 1780)



Axis axis (Erxleben, 1777)



Elanus caeruleus (Desfontaines, 1789)



Pycnonotus jocosus (Linnaeus, 1758)



Calotes rouxii Dumeril & Bibron, 1837



Hottentotta tamulus (Fabricius, 1798)

Highlights for the month of December, 2018

The scientists, staffs and research scholars of the centre examined 612 specimens from lower Manair dam, Thattiguda water fall, Amrabad and Kawal Tiger Reserve, Telangana; Eastern Ghat, Nellore and Krishna river, Kurnool, Andhra Pradesh. From the collection, species of 2 aquatic insects, 7 blattodians, 16 molluscs, 5 decapods and 15 fishes have been identified.

The centre has digitized 62 species from the National Zoological Collections.

Scientists and staffs from the centre conducted the faunistic survey to Amrabad and Kawal Tiger Reserve, Telangana, Pennar river, Nellore, Eastern Ghat and Coringa Wildlife Sanctuary, Kakinada, Andhra Pradesh. Seventeen DNA sequences were submitted to NCBI and BOLD.

Blattodea collection from Amrabad and Kawal Tiger Reserve, Telangana



Blattella germanica Linnaeus, 1767



Princisola pulchra (Shelford, 1910)



Pycnoscelus surinamensis (Linnaeus, 1758)



Therea petiveriana (Linnaeus, 1758)

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Highlights for the month of October, 2018

The scientists of the centre collected 118 specimens from the surveys of Pare Dam site, Papumpare district, Pakke-Kessang area of E. Kameng district and Midpu village, Papum Pare belonging to decapods, molluscs, archynchobdelids, arthropods, insects, hemipterans, lepidopterans etc. From the surveys, 8 species were registered and digitized. Night collections of the U. Subansiri and

Kamle with over 800 specimens of insects were collected.

Advisory services were provided to four research scholars from ZSI HQ, Kolkata, and students and teachers from Delhi Public School, Itanagar on the topic “Sustainability and biodiversity”. From the centre, scientific articles were published in *Journal of Threatened Taxa* and *Bulletin of Arunachal Forest Research*.



Amolops marmoratus (Blyth, 1855)

Highlights for the month of November, 2018

Local surveys were conducted in Papumpare with a collection of 134 faunal examples of various groups. The identified collection have



Creteuchiloglanis kamengensis

been registered and digitized.

The centre started the 2nd batch of GSDP training jointly with BSI, Itanagar.



Papum River at Langdung

Highlights for the month of December, 2018

Local surveys to Parang area, Papumpare district was conducted with a collection of 67 specimens. The identified specimens have been registered and digitized. Dr. B. Sinha, Scientist D, was invited to the 18th Annual Conference of the Heads of Science Centres/Museums, India organized by A. P. State Council of Science & Technology on 8th December 2018. Further, advisory services were provided on aquatic

fauna of Arunachal Pradesh with special reference to protected taxa to Sh. Aje Dollo of State Remote Sensing Application Centre, Government of Arunachal Pradesh, Itanagar. Dr. Temjenmongla, Scientist-C attended the Buyer Training Session on GeM 3.0 (Government e-Marketplace) at AIMA - All India Management Association, New Delhi. More than 50 visitors visited the centre during the month.

DESERT REGIONAL CENTRE, JODHPUR**Highlights for the month of October, 2018**

The centre identified and registered 6 bees, 1 scolid wasp, 9 beetles, 1 bug, 2 moths, 3 butterflies, 11 fishes species and recorded 17 species of birds and digitized 147 specimens from NZC for RFD. As special invitee, Dr. Sanjeev Kumar, Scientist-D & Officer-in-charge attended Foundation Day celebrations

of CAZRI organized by ICAR, Central Arid Zone Research Institute, Jodhpur on 1st October, 2018. He also attended a Foundation Day Lecture on “Future of Indian Agriculture: Challenges and Opportunities” delivered by Honorable Shri Gajendra Singh Shekhawat, Minister of State for Agriculture and Farmers Welfare, Govt. of India, New Delhi. As a Co-

ordinator of Para-Taxonomy including PBR Course (Faunal Diversity), the scientists and staffs of the centre organized field tour for 11 trainees from ZSI/BSI of Para-Taxonomy Course, accompanied by two Master Trainers and three faculty members. They visited Biotic Province “3A” – the Kachchh Desert: Desert Wildlife Sanctuary [Area Beyond India Bridge up to Bediya Bet (Indo-Pak Border)], Kalla Dunger (White Rann), Gujarat Institute of Desert Ecology, Bhuj, Gir National Park, Sasan Gir, Mudflats of Coastal Marine & Mangrove Ecosystem of Diu and GEER Foundation, Gandhinagar, Gujarat. Dr. Kumar delivered a lecture on “Importance of Wildlife

Conservation and role of ZSI” to a group of 86 Foresters of State Forest Dept., Rajasthan State on 12th October, 2018 at the centre. Dr. H.S. Banyal, Scientist-D, delivered a lecture on Mandate of ZSI & also provided scientific information on the fauna displayed in the museum of the Centre to the said group of foresters. Lectures on taxonomy of various faunal groups to the students of four month's Para-Taxonomy Course including People's Biodiversity Register under GSDP of ENVIS framework of MoEF&CC, New Delhi organized at ZSI Campus, Jodhpur. The course was completed successfully on 29.10.2018.



A group of 86 Foresters of State Forest Dept., Rajasthan visited the Centre on 12th October, 2018



Field Tour of GSDP Trainees to Kachchh, Gujarat

Highlights for the month of November, 2018

The centre identified and registered/recorded 67 species of various faunal groups including bees, wasps, beetles, moths, butterflies, gastropods, fishes and 17 birds and digitized 167 specimens from NZC for RFD. Dr. Sanjeev Kumar, Scientist-D, has delivered two invited lectures on “Overview on Zoological Survey of India and Studies on Birds of India” to 46 students of Pre-Ph.D. Course work – 2018 (Zoology) at the Dept. of Zoology, J.N.V. University, Jodhpur. Dr. Banyal has also delivered invited lecture on “Intraspecific and

Interspecific relationships and effect of abiotic and biotic factors on insect life” to aforementioned students of Dept. of Zoology, J.N.V. University, Jodhpur. As special invitee Dr. Banyal, and Dr. R.H. Raina, Scientist-D, attended a lecture of Prof. Dr. C.V.R. Murthy, Director, IIT (Jodhpur) organized by Indian Society of Remote Sensing (ISRS) and Indian National Cartographic Association (INCA) (Jodhpur Chapters) on 14th November, 2018 at RRSC (W)/NRSC/ISRO, Jodhpur. Dr. Banyal delivered a lecture on Mandate of ZSI and also provided scientific information on the fauna

displayed in the museum of the centre to a group of students and teachers of Bal Mandir

Vishisht Pre Elementary & Girl's High Secondary School, Jodhpur at DRC, ZSI.



A group of students and teachers of Bal Mandir Vishisht Pre Elementary & Girl's High Secondary School, Jodhpur visited the museum of the Centre on 26th November, 2018

Highlights for the month of December, 2018

Scientists identified and registered/recorded 39 species of hymenopterans, coleopterans, fishes and birds and digitized 230 specimens from NZC for RFD. Under the research programme "Exploration of Ichthyofaunal diversity in some selected tributaries of Chambal riverine system, Rajasthan, India", Scientist and staff surveyed 25 main riverine habitats/localities of Kalisindh, Parbati, Parwan, Ahu, Brahmani, Mej and Banas rivers in Rajasthan and collected/recorded 1,335 examples of various faunal groups including fishes, amphibians, reptiles, birds and mammals. Dr. H.S. Banyal, Scientist-D, delivered invited lecture on Integrated Pest Management (IPM) to 46 students of Pre-Ph.D. Course work – 2018 (Zoology) at the Dept. of Zoology, J.N.V. University, Jodhpur. Dr. R.H. Raina, Scientist-D, delivered a lecture on mandate of Zoological Survey of India and principals of insect

classification and also provided scientific information on the fauna displayed in the museum of the centre to a group of students and teachers of Alok Higher Secondary School Bilara, Jodhpur. Dr. Raina, also provided Identification services on bumblebees, butterflies, beetles and hawk moth to the Ph.D. Scholar of Defense Institute of High-Altitude Research (DRDO), Leh at the centre. Dr. Kumar attended Town Official Language Implementation Committee (TOLIC) meeting at DRM Office, North-Western Railway, Jodhpur on 12th December, 2018. Dr. Kumar organized Quarterly Workshop on Official Language Hindi on 13th December, 2018 at the centre. All the officers and staff members participated in the said event. A popular article was published by H.S. Banyal and Sanjeev Kumar on *Rajasthan ke Thar marusthal ki anuthi prani vivadhta. Suryodya Patrika* in TOLIC Publication, Jodhpur.

GANGETIC PLAINS REGIONAL CENTRE, PATNA

Highlights for the month of October – December, 2018

Scientists have identified 14 species of moth. Vikramshila Gangetic Dolphin Sanctuary Management Plan prepared by ZSI, was released by the Dy. CM, Bihar on 5th Oct 2018 in Sanjay Gandhi Biological Park, Patna. *Bastilla angularis* (Boisduval, 1833) (Lepidoptera: Erebidae) from Bihar and Jharkhand, a new record to Oriental region was accepted for publication.

A local survey was conducted on Ganga Dolphin in November. Centre identified 16 species of moth during the month.

In December, scientists identified a total of 17 species of moths, 21 species of zooplanktons and 12 species of Molluscs. One research article was published in SCI journal with the identification of two endangered dolphins based on DNA barcoding. The scientist of the center attended 6 monthly Hindi meeting on 20th December, 2018 at Income Tax Office, Patna.

WESTERN REGIONAL CENTRE, PUNE

Highlights for the month of October, 2018

Scientists and staffs of the centre conducted the faunal Survey in Daman & Diu (U.T.) and a local survey of Mulshi taluka, Pune district. Scientist identified 1 lobster, 22 crabs, 1 gall midge, 8 odonates, 6 darkling beetles, 9 moths and 3 amphibian species. Identification services were provided to other organizations on the faunal groups dung beetles, rats, molluscs and skin of Leopard (*Panthera pardus*) which is in Schedule-I of Wildlife Protection Act, 1972 for crime branch, Thane city. Lectures were delivered in academic institutes, attended workshop/symposiums and presented papers. A total of 128 visitors visited the museum in the month of October. A paper was published by Dr. P.S. Bhatnagar, Scientist-D, on “Linking taxonomy and conservation” in Indian Forester journal.

Highlights for the month of November, 2018

Centre conducted the faunal survey of Yawal Wildlife Sanctuary, Maharashtra. Scientists and

staff identified 5 odonates, 6 beetles, 3 crabs and 5 amphibians. A total of 223 visitors visited the museum in the month of November. Three publications were made:

1. Kalawate, A. (2018) First record of orange yellow moth, *Aegoceravenulia* (Cramer) (Noctuoidea: Noctuidae) from Maharashtra, India. *Rec. Zool. Surv. India*, **118** (3): 314-317. <https://doi.org/10.26515/rzsi/v118/i3/2018/121858>.
2. Kalawate, A.S. (2018) A record after 92 years, and a first report of the moth *Mecodinametagrapt* Hampson, 1926 (Lepidoptera: Erebidae: Aganainae) from the Western Ghats' part of Maharashtra, India, *Journal of Threatened Taxa*, **10** (13): 12847–12849. <https://doi.org/10.11609/jot.4600.10.13>.
3. Hegde, V.D. and Vasanthakumar, D. (2018) Updated Check-List of Darkling Beetles (Coleoptera: Tenebrionidae) of West Bengal, India. *Rec. Zool. Surv. India*: **118** (3): 281-286.



Valedictory function and Certificate distribution of Green Skill Development Programme (GSDP) at WRC, ZSI, Pune

NORTH EASTERN REGIONAL CENTRE, SHILLONG

Highlights for the month of October, 2018

Scientist conducted one faunal survey to Murlen National Park, Mizoram with collection and identification of 4 bats, 2 rodents, 62 fishes, 28 amphibians, 25 crabs and 10 reptiles. Scientists rendered the advisory services on evaluating a Doctoral thesis of Gauhati University (Dept. of Zoology, faculty of Science) at the request of Academic Registrar, Gauhati University. Moreover, lectures were delivered and field excursions were made to academic institute master students. Inputs on the Bat fauna of Meghalaya, threats and conservation issues for a news item on the environmental portal Mongabay were provided. Three research papers were also published from the centre.

Highlights for the month of November, 2018

During the month, 28 lepidopterans, 24 fishes, 5 reptiles and 77 amphibian were identified and registered and metadata of 156 specimens were digitized. Three research papers by the scientists of the centre were published during

the month. Advisory service was rendered to Wildlife Institute of India (WII), Dehradun on the information on rodent and bat diversity of Meghalaya by Dr. Uttam Saikia, Scientist-C. Dr. Saikia also identified three confiscated samples sent by DFO (Wildlife), Jowai, Meghalaya. Scientific staff attended the closing ceremony of the 3rd India International Autumn Cherry Festival at Polo, Shillong and 2nd Joint Meeting of Town Official Language Implementation Committee, Shillong.

Highlights for the month of December, 2018

Faunal survey to Siju Cave, South Garo Hills, Meghalaya were undertaken and collected 1058 specimens of various faunal groups. During the month, 9 bats, 50 fishes, 5 reptiles and 46 amphibians were identified and registered; besides, data on a total of 109 specimens were also digitized. One research paper was accepted for publication. Scientists rendered advisory services to Dr. Debnath, Ex-Scientist, BSI, Kolkata on the fauna of certain areas of East Khasi Hills, Meghalaya.

HIGH ALTITUDE REGIONAL CENTRE, SOLAN

Highlights for the month of November, 2018

Two extensive surveys *viz.* temperate & alpine grasslands of the Himalaya: Phase-I and state of Jammu and Kashmir have been undertaken by the scientists and staff. The areas of Nauradhar, Haripudhar, Renuka, Nahan of district Sirmour (1,000 to 2,800 m altitude) have been surveyed. From the temperate and alpine grasslands, 555 specimens of 13 faunal groups have been collected. Five districts of Jammu and Kashmir *i.e.* Kathua, Udhampur, Jammu, Reasi and Samba (315 to 2,414 m altitudes) have been covered. From the survey of Jammu and Kashmir, 889 specimens of 20 faunal groups have been collected. The centre

identified 14 species of Papilionoidea from Jammu and Kashmir; six species of Ephemeroptera, Trichoptera and Plecoptera from district Shimla; eight species of Orthoptera from Himachal Pradesh and six species of Pisces from Himachal Pradesh and Haryana. The identified collections have been registered and digitized. Dr. Avtar Kaur Sidhu, Scientist-D and Officer-in-Charge attended the senior officers meeting at Port Blair and acted as member of scientific committee. A book chapter on “Faunal Diversity of Spiti Valley and Chandertal Lake” was published in *Himalayan Ecosystem Series*.

SOUTHERN REGIONAL CENTRE, CHENNAI

Highlights for the month of October – December, 2018

Scientists conducted surveys to Agathiamalai Biosphere Reserve, South Andaman Islands and Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands, Western Ghats (Theni Dist).

Identification/Advisory services were provided to Regional Plant quarantine station, GST Road, Chennai; Miss. Nishra Banu, Research Scholar, J.B.A.S College, Chennai and Miss. Ramya, Research Scholar, Coimbatore and Dr. J.M.V. Kalaarasi, Dept. of Advance Zoology & Bio Tech, Loyola College, Chennai. Dr. Ranjana Bhaskar Scientist-D, delivered one lecture class on DNA barcoding to B.F.Sc. Students, Dr. J. Jayalalithaa Fisheries

University, Tamil Nadu. Seven publications were made:

1. Basu, S., Chandra, K., Subramanian, K.A. and Saha, G.K. (2018) Water bugs (Insecta:Hemiptera: Heteroptera) of Himalayan and sub-Himalayan regions of West Bengal, India. *Journal of Threatened Taxa* **10** (12): 12619–12714. <https://doi.org/10.11609/jott.3060.10.12.12619-12714>
2. Babu, R. and Subramanian, K.A. (2018) Twenty-two new records of Odonata for Andhra Pradesh state, India (Lestidae, Calopterygidae, Coenagrionidae, Platycnemididae, Gomphidae, Libellulidae) *Notulae Odonatologicae* **9** (2) 2018: 67-71 – DOI:10.5281/zenodo.1481081.
3. Subramanian, K.A. and Babu, R. 2018

- Insecta: Odonata. In: *Faunal Resources of Cold Desert Spiti Valley and Chandertal Lake, Himalayan Ecosystem Series*, 4: 25-27. Published by Director, Zoological Survey of India, Kolkata.
4. Babu, R. and Subramanian, K.A. 2018 Insecta: Odonata. In: *Faunal Diversity of Chail Wildlife Sanctuary, Conservation Area Series*, 63: 31-44. Published by Director, Zoological Survey of India, Kolkata.
5. Babu, R. and Subramanian, K.A. 2018 Twenty-two new records of Odonata for Andhra Pradesh state, India (Lestidae, Calopterygidae, Coenagrionidae, Platycnemididae, Gomphidae, Libellulidae). *Notulae Odonatologicae*, 9 (2): 67-71.
6. Sajan, S. K., Tripathy, B., Biswas, T and Varadaraju. 2018 Species inventory of land and freshwater Molluscs from Andhra Pradesh and Telangana states of India. *J. Rec. zool. Surv. India*. 118 (2): 141-155.
7. Praveen, K. 2018 Taxonomic studies of leafhoppers from Maharashtra, India. *Natl. J. Life. Sci.*, 15 (1): 1-7.

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Citation:

Zoological Survey of India [ZSI] (2019). ZSI e-NEWS Oct.-Dec., 2018.
Zoological Survey of India, New Alipore, Kolkata, India [Eds. Suman DS, Kumar S]. 10: 1-19.
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