



Cover

Himalayan Red Panda *Ailurus fulgens* F.Cuvier 1825 [Photo: ZSI Headquarters]

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Monthly E-Newsletter from
Zoological Survey of India

Zoological Survey of India is committed to its duties amidst the Covid-19 pandemic and the survey explorations are gaining momentum. Surveys have been conducted in the protected area of Andaman and Nicobar Islands, Telangana besides different ecosystems in West Bengal and Arunachal Pradesh. In order to disseminate the knowledge on different faunal groups and ecosystems the ZSI conducted 14 webinars during the month and they were largely benefited by students, researchers, faculties and scientists

throughout the country. Altogether 12778 faunal specimens comprising 2122 species have been identified. One new genus and 16 new species have been described from insects and crustaceans. Forty-six DNA sequences have been generated and uploaded in NCBI and BOLD. Six books and 38 research papers were published, of which most of the papers published in SCI journals with impact factor. To enhance the scope for collaborative research in Zoology, a Memorandum of Understanding has been signed between ZSI and Himachal Pradesh University, Shimla. The grants-in-aid projects for understanding the biological corridors in Himachal Pradesh and Human-Wildlife Conflict in Himachal Pradesh have been initiated. The ZSI is presently compiling faunal diversity data in different Biogeographical Zones of India, of which North-East and Coasts have been completed during the month. I express my appreciation to all the officers and staff for their significant contribution towards the new species description and noteworthy publications.

Jai Hind.

Dr. KAILASH CHANDRA
Director

October 5, 2020
Kolkata

ZSI

E-NEWS



HEADQUARTERS, KOLKATA

Stalk-winged Damselfly
Platylestus kirani
Emiliyamma et al., 2020

Altogether 3288 specimens comprising 510 species belonging to Protozoa, Platyhelminthes, Nematoda, Acari, Arachnida, Collembola, Isoptera, Hemiptera, Hymenoptera, Lepidoptera, Odonata, Orthoptera, Diptera, Coleoptera, Annelida, Echinodermata, Crustacea, Mollusca, Pisces, Reptilia, Aves and Mammalia have been identified. *Abortelphusa namdaphaensis*, a new genus and new species of

freshwater crab (Decapoda, Brachyura, Gecarcinucidae) from Arunachal Pradesh; *Badistemon fulvum* Mitra, Monica & Waikhom, 2020 from a hill stream of Kamjong District of Manipur; *Kisaura sangtam*, *K. acuta* K. *rotunda* and *K. teestaensis* Pandher et.al. 2020 under Trichoptera, *Platylestus kirani* Emiliyamma Jafer and Charesh 2020 under Odonata and *Macroteleia shyaama* and *Macroteleia kairali* Abhilash and

Rajmohana, 2020 under Hymenoptera have been described as new species. Meat sample of Felis, Horn of Gaur and Tusk of Asiatic Elephant for Forest Department, West Bengal and Directorate of Revenue Intelligence, Siliguri, gills of ray fish *Mobula* to Customs Preventive Force, Manipur and inanimate coral sample to Judicial Magistrate No. II, Erode., Tamil Nadu have been identified. In addition, 21 birds belonging to 5 viz. Pesquet's Parrot *Psitttrichas*

fulgidus, Red-shouldered Macaw or Hahn's Macaw *Diopsittaca nobilis*, Blue-winged Macaw or Illiger Macaw *Primolius maracana*, Yellow-collared Macaw or Golden-collared Macaw *Primolius auricollis*, and Chestnut-fronted Macaw or Severe Macaw *Ara severa* have been identified for Directorate of Revenue Intelligence, Kolkata. Further, Dipteran specimens were identified for Dept. of Entomology, YSPUHF, Himachal Pradesh on request. Scientists reviewed the manuscripts for three journals and adjudicated the Ph.D. thesis for Bharathidasan University, Tiruchirappalli, Tamil Nadu. International Red Panda day on 19th September 2020, celebrated through a webinar, jointly hosted by ZSI-HQ, Amity University Noida and the Society for Conservation Biology- India chapter. Comments on the application of Gujarat Council of Science City, Ahmedabad for import of aquatic species for Aquatic Gallery at Gujarat Science City provided to Department of Fisheries, Ministry of Agriculture and Dairying, Government of India, New Delhi on 10th September 2020. Dr Kailash Chandra, Director, ZSI was honored to present the '12th Dr S. Pradhan Memorial Lecture' on 28th September 2020, as per the invitation from Head, Division of Entomology and the Director, Indian Agricultural Research Institute, Indian Council of Agricultural Research, Govt of India.

NORTH EASTERN REGIONAL CENTRE, SHILLONG, MEGHALAYA



Chrysolina grossa
(Fabricius, 1792)



Hindi Pakhwada at
ZSI-NERC. Shillong

Scientists of the centre conducted four local surveys to Mawalai, Umtyngar, Kyrdemkhla and Laitkyrhong, East Khasi Hills; Laitkynsew, Cherrapunjee, and Risa colony forest, Shillong. A total of 339 examples containing 59 spp. (Mammalia 2, Reptilia 5, Amphibia 5, Pisces 16, Crustacea 7, Coleoptera 16, Lepidoptera 6, Isopoda 2) have been identified. Hindi Pakhwada celebration

was organized on 14th September, 2020 by the Centre. Advisory services provided to Shillong College, University of Auckland, New Zealand. WRC, Pune, Himachal Pradesh University, Timberline Interpretation Centre, Dehradun. Scientist of the Centre reviewed a manuscript for *Journal of Bat Research and Conservation*, Spain

WESTERN REGIONAL CENTRE, PUNE, MAHARASHTRA



Freshwater Crab *Potamiscus takedai* Pati et al.

Scientists of the centre identified 305 specimens containing 61 species (Coleoptera 17, Orthoptera 7, Hymenoptera 1, Decapoda 8, Mollusca 4, Amphibia 10, and mammalia 1). Two DNA Barcode sequence of amphibian species *Fejervarya kalinga* (MN967170.1 and MN967170.1) were released for the public access on the GenBank. Identification and advisory services rendered to Forest Range Officer, Uran, Raigarh district, Maharashtra; WGRC, ZSI, Kozhikode; Maharashtra State Biodiversity Board; Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati; Ahmednagar College and Vasantdada Sugar Institute, Manjari (BK.), Haveli Taluka, Pune district, Maharashtra. Shri Sreejith S. Kumar, Senior Zoological Assistant became the winner of Online World Vulture Day Quiz 2020 organized by Madhya Pradesh Tiger Foundation Society. Shri Sreejith S. Kumar, Senior Zoological Assistant won prize for city level Hindi essay competition for Central Government officials in Pune city, conducted by CSIR-National Chemical Laboratory, Pune. The centre organized a talk on "राजभाषा और प्रयोजन मूलक हिंदी" by डॉ. एन लक्ष्मी अय्यर, सह आचार्य, हिंदी विभागाध्यक्ष, राजस्थान केंद्र विश्वविद्यालय, अजमेर over Google Meet on 18th September 2020 during हिन्दी पखवाडा समारोह.

CENTRAL ZONE REGIONAL CENTRE, JABALPUR, MADHYA PRADESH



.....
*Hemiphyllodactylus
minimus* Mohapatra
et al., 2020



.....
Sphaerotheca pashchima
Padhye, et al. 2020

Scientists of the Centre have identified 207 specimens containing 68 species (Lepidoptera 43, Amphibia 6, Reptilia 8, Mollusca 11). Identification and Advisory services were rendered to ICAR Krishi Vigyan Kendra, UAS, Dharwad, Karnataka in connection with the infestation of heartwood wood borer in Sal forests of Dharwad, Karnataka; submitted inputs for the SoP/ SoG to WII, Dehradun for Developing Guidelines for Mitigating Human-Snake Conflict for Ministry under the programme on Indo-German Technical Cooperation Project on 'Human-Wildlife Conflict Mitigation in India'; ZSI, DRC, Jodhpur for identification of moths and butterflies. Scientist of the centre reviewed three manuscripts for *Records of Zoological Survey of India*. Hindi Diwas and Pakwada celebrated with effect from 01.09.2020 to 14.09.2020.

DESERT REGIONAL CENTRE, JODHPUR, RAJASTHAN

Local surveys conducted to Plantation Plot AFRI Experimental site, Jhalamand, Jodhpur, Herbal Garden near Meharangarh Fort, Jodhpur, and Arna Jharna, Moklawas, Jodhpur. A total of 305 specimens containing 71 species (Lepidoptera 36, Coleoptera

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Euphylyctis cyanophlyctis
(Schneider, 1799)



.....
Ceryle rudis (Linnaeus, 1758)

6, Hymenoptera 12, Hemiptera 3, Scolopendromorpha 1 and Pisces 13) were identified. Organized quarterly workshop on Official Language Hindi on 23rd September 2020. World Ozone Day 2020 on 16th September 2020 and delivered a lecture on theme: Ozone for life on the occasion. Rendered advisory services to CAZRI (ICAR), Jodhpur, Rajasthan on the morphological and behavioural parameters of Great Indian Bustard: *Ardeotis nigriceps* (Vigors, 1831); to Mr. Rimal Sudhindran from Kota, Rajasthan on Pisces based on image.

NORTHERN REGIONAL CENTRE, DEHRADUN, UTTARAKHAND

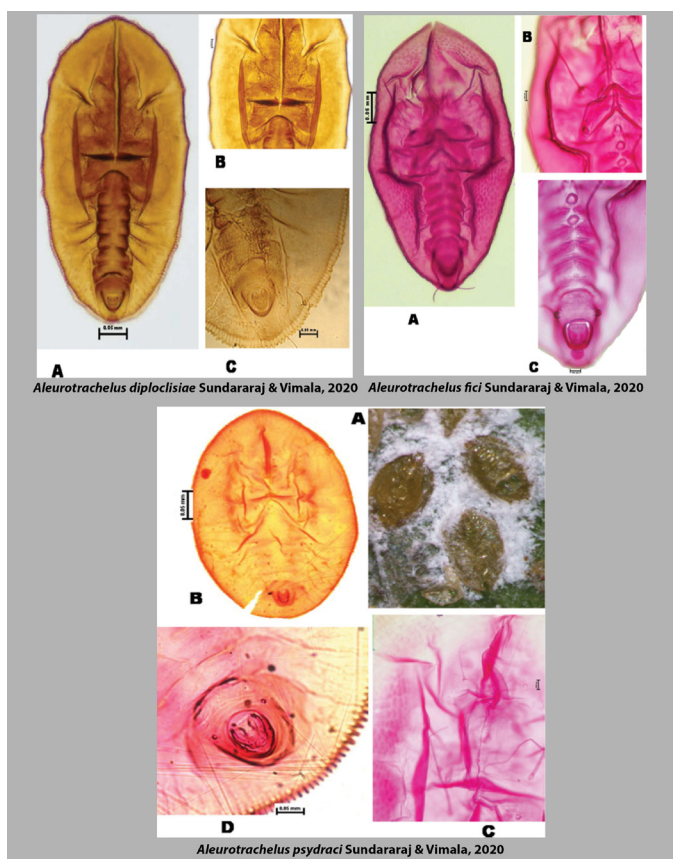
Scientists of the centre examined 284 specimens and identified 48 species including 05 species of Testate amoebae (Protozoa), 06 species of Nematoda, 11 species of Annelida, 20 species of Lepidoptera, 01 species of Odonata and 05 species of Pisces collected from different ecosystem of Punjab, Uttarakhand, Himachal Pradesh and Uttar Pradesh. The Scientists of the Centre published nine paper abstracts in the Abstracts book of *National Webinar on Faunal diversity of India*. The online submission through e-mail "Poster Painting Competition on theme Ozone for Life and Earth to Live" organized by ZSI, NRC, Dehradun in collaboration with IISWC, BSI & MAATY, Dehradun to celebrate "United Nation declared-International Day for the Preservation of the Ozone Layer" held on 16th September, 2020.

Drawing depicting importance of Ozone layer



SOUTHERN REGIONAL CENTRE, CHENNAI, TAMIL NADU

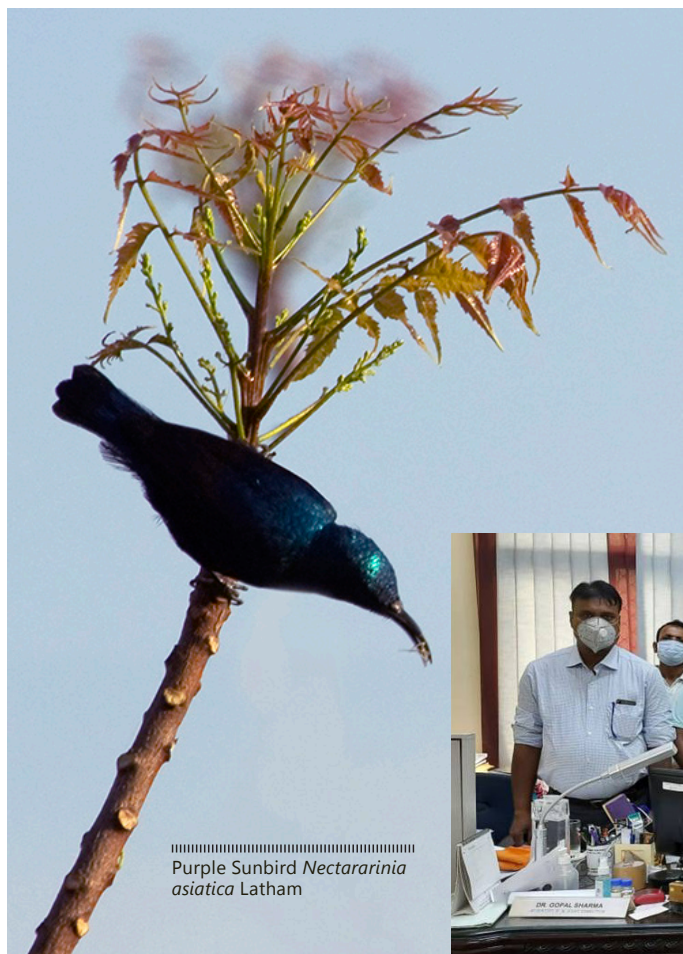
Scientists of the Centre identified 779 examples of different faunal groups collected from different surveys belonging to 74 species. Identification and advisory services were rendered to Pune University and Sheep Farm, TNAU, Kodaikanal. A monograph on Odonata (Insecta) of south Asia has been published in collaboration with seven international scientists. Three new species of whiteflies belonging to *Aleurotrachelus* Quaintance & Baker (Hemiptera: Aleyrodidae) were published. Six species of mayflies and one species of dragonfly was augmented to National Zoological Collections.



GANGETIC PLAINS REGIONAL CENTRE, PATNA, BIHAR

Ninety seven examples of Arthropoda and 18 examples of Reptilia identified by scientists of the Centre. Hindi Diwas was celebrated on 14th September 2020. Three species, *Nola infralba* Inoue, 1976, *Nola atrocinta* Inoue, 1998 and *Leucobaeta hemiphaea* (Hampson, 1905) were recorded for the first time from India.

Hindi Diwas celebration
at ZSI-GPRC



Purple Sunbird *Nectararinia asiatica* Latham



HIGH ALTITUDE REGIONAL CENTRE, SOLAN, HIMACHAL PRADESH



Eurema hecabe from
grasslands of Sirnour (HP)

Faunistic identification from the Centre includes Lepidoptera 38 species out of 114 examples from Himachal Pradesh, Punjab and Chandigarh; 01 species

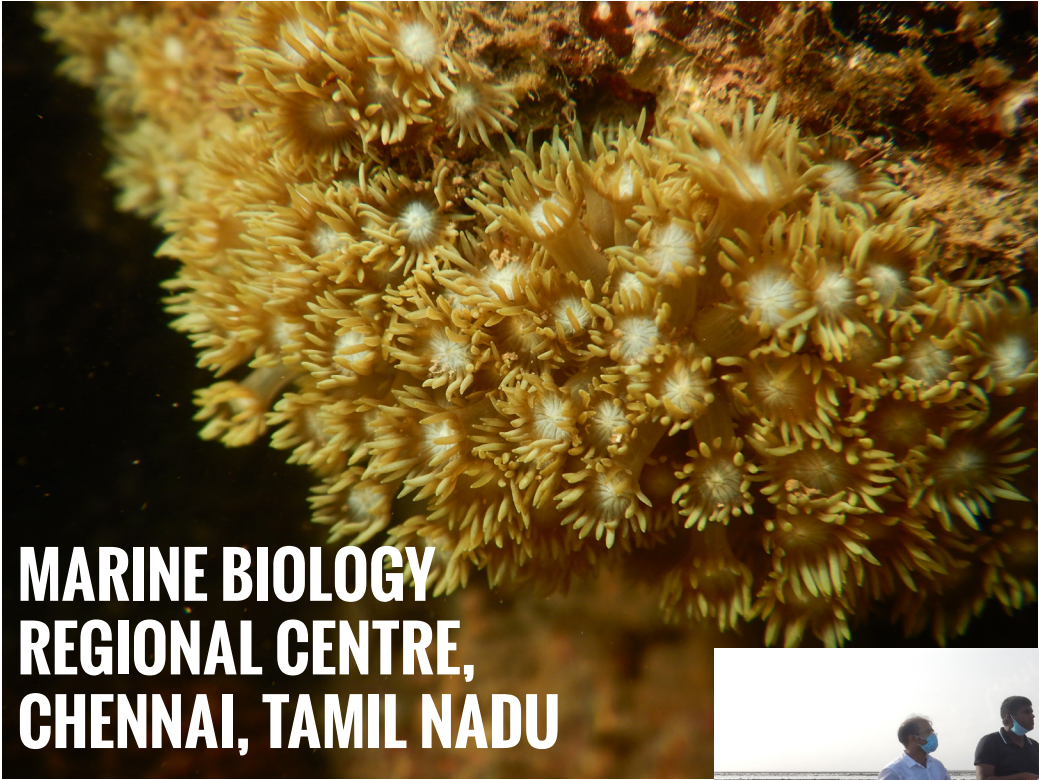
out of 14 examples of Hemiptera; 10 species out of 72 examples of Hymenoptera from Himachal Pradesh; 10 species under 66 examples of EPT complex from Himachal Pradesh and Ladakh; 06 species out of 121 examples of Herpetofauna from old

collections. Two papers on Lepidoptera (one in SCI journal and one in National Journal) and one paper on vertebrates for National Journal have been reviewed. One Research Scholar of Centre Mrs. Manpreet Kaur, submitted her PhD thesis on, "Taxonomic Studies on Family Pieridae (Papilionoidea: Lepidoptera) from India

with special emphasis on External Genitalia" on 09.09.2020 under the guidance of Dr. Avtar Kaur Sidhu. Two identification services on Lepidoptera and Ephemeroptera have been rendered by Scientists of the Centre. The centre also organised one day Hindi Karyashala through virtual meet on 22.09.2020.



Black Bulbul *Hypsipetes leucocephalus* (Gmelin, JF, 1789)



MARINE BIOLOGY REGIONAL CENTRE, CHENNAI, TAMIL NADU

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Goniopora sp.

Directorate of Fisheries, Chennai on request. A preliminary investigation to assess the feasibility of translocating corals from the proposed site of an oil pipeline was carried out by the Scientists of the Centre on an invitation from Indian Oil Corporation Limited (IOCL) and report submitted.

Scientists of this Centre identified a total of 54 species, from 170 specimens., which included Testate amoebae 16 species, Marine Sponges 11 species, Mollusca 05 species, Decapoda 03 species, Echinoderms 01 species and Pisces 18 species. Provided the information on number of marine, estuarine and freshwater fishes reported from Tamil Nadu, to Assistant Director of Fisheries (Statistics)

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Scientific team along with the IOCL officials at the designated site at Narara Bet - Gujarat



ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR

One long-term survey has been carried out to Narcondam Island Wildlife Sanctuary from 10th to 29th September 2020 to assess the population dynamics of Narcondam Hornbill and its associated fauna, two surveys to Rutland Island on 10th and 11th September 2020 and four surveys to Kalatang and Shoalbay, South Andaman during 5th, 12th, 19th and 27th September 2020 to assess the marine and terrestrial faunal diversity. A total of 311 species were identified, of these 75 species of scleractinian corals, 02 species of bryozoans, 58 species of molluscs, 04 species of fishes, 01 species of jelly fish, 02 species of isopoda, 05 species of sea anemone were identified from the marine environment and 87 species of Lepidoptera, 35 species of Arachnida, 07 species of Odonata, 06 species of Hemiptera, 02 species of Hymenoptera, 27 species of birds were identified from terrestrial environment. Provided mapping of coral reefs of Great Nicobar and Little Andaman Islands to Chief Secretary, Andaman and Nicobar Administration on request.



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Sarcophyton ehrenbergi von
Marenzeller 1886



.....
Citrine Wagtail
Motacilla citreola
Pallas 1776



SUNDERBAN REGIONAL CENTRE, CANNING, WEST BENGAL

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*Ocypode macrocera* H.Milne Edwards, 1852

specimens belonging to 9 species (3 species of Amphibia and 6 species of Reptilia) were identified from the Sagar Island survey.

One survey was undertaken to Sagar Island, West Bengal from 01.09.2020 to 08.09.2020. A total of 722 examples belonging to 17 groups were collected from 14 localities namely Annelida 06 exs, Orthoptera 91 exs, Coleoptera 38 exs, Hymenoptera 92 exs, Blattodea 09 exs, Diptera 64 exs, Lepidoptera 31 exs, Odonata 92 exs, Miscellaneous insects. 03 exs, Chilopoda (Centipede) 02 exs, Diplopoda (Millipede) 03 exs, Arachnida 48 exs, Crustacea 48 exs, Mollusca 116 exs, Echinodermata 1 ex., Fishes 69 exs, Amphibia 7 exs, Reptilia 02 exs. Approximately 20 species of birds were sighted and recorded in the field survey. Snakes (Checkered Keel back and Rainbow water snake) were rescued from fish net in the field area and released in the wild, far from human inhabited areas. 18



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 Insect collection at Sagar Island

FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD, TELANGANA

Three local surveys were conducted to Zaheerabad, Osman sagar and Mallelathertham during the month and one extensive survey to Amrabad and Tiger Reserve from 21st September to 4th October 2020. The scientists, staff and research scholars of the centre examined 1076 specimens from Koraput district, Odisha; Shahdol, Madhya Pradesh; Pune,

Maharashtra; Vizag, East Godavari districts, Andhra Pradesh; Nagarkurnool, Mancheril, Nirmal, Bhadrachalam, Rangareddy

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 pheasant-tailed jacana  
*Hydrophasianus chirurgus*  
 (Scopoli, 1786)



districts, Telangana; Amrabad and Kawal Tiger Reserve, Telangana; Himayat Sagar & Osman Sagar Lake, Telangana; and identified 5 species of decapods from 292 specimens, 10 species of aquatic coleoptera from 121 specimens., 13 species of aquatic Hemiptera from 103 specimens, 8 species of Ostracoda & Cladocera from 142 specimens, 10 species of Mollusca from 166 specimens, 35 species of fishes from 252 specimens.



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 Black naped Hare, *Lepus nigricollis* F. Cuvier, 1823

Forty four DNA sequences of fishes have been submitted to NCBI and BOLD. The Centre organised Hindi Diwas on 14th September and Ozone day on 16th September 2020.

WESTERN GHATS REGIONAL CENTRE, KOZHIKODE, KERALA

During the month, 4 species of preying mantids (Insecta: Mantodea), 11 species of spiders (Arachnida: Araneae) and 17 species of wasps (Hymenoptera: Crabronidae, Pompilidae, Pteromalidae, mutillidae, Sphecidae, Tiphidae and Vespidae), collected from Agasthyamalai Biosphere Reserve and other parts of Western Ghats were identified. Scientist



Trimeresurus malabaricus (Jerdon, 1854)

Varanus bengalensis (Daudin)

of the centre reviewed two research manuscripts on Hymenoptera for the *Journal Oriental Insects and Records of the Zoological Survey of India*. Photographic images of seven spider and three wasp specimens received from different institutes/NGOs were identified



ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR, ODISHA

During this month 1838 specimens were identified which includes fish, molluscs, crab, prawn and lice. A puffer fish *Chelonodontops bengalensis* Habib, Neogi, Oh, Lee, Kim 2018 is reported for the first time from the Indian waters on the basis of the specimen collected from the West Bengal coast. One lot of crab samples were identified under the Advisory services. Four deliberations were completed during this month under the Webinar series "Meet the Expert: let us discuss biodiversity".

Chelonodontops bengalensis Habib, Neogi, Oh, Lee, Kim 2018



ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR



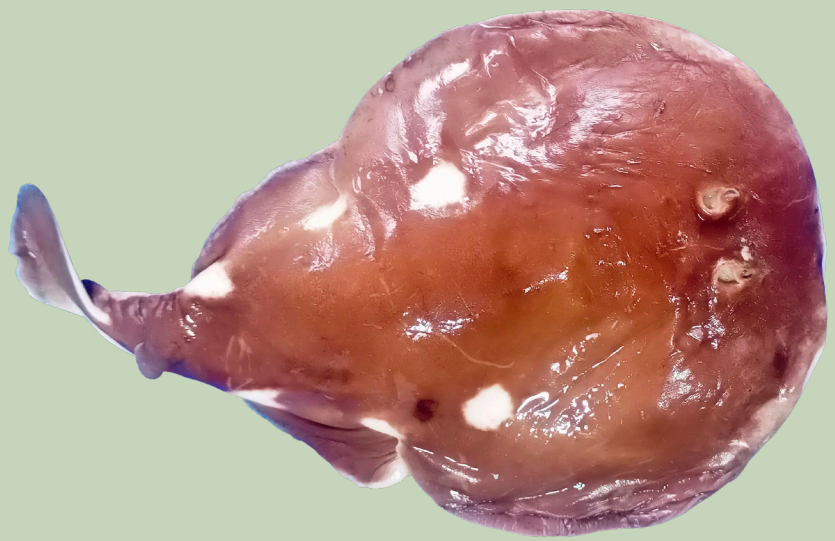
APRC team surveys Itanagar WLS



Balitora brucei Gray 1830

Scientists of the centre conducted local surveys to Itanagar Wildlife Sanctuary, Hollongi, District Papum Pare. Identified 30 species of Lepidoptera from Nyorch, Itanagar Wildlife Sanctuary, 4 species of Rotifera and 3 species of Cladocera from Koronu and Roing, L. Dibang Valley; 1 species of Amphibia and 3 species of Reptilia from ZSI campus, Itanagar and 3 species of Diplopoda and 12 species of fish from Lohit and Ranga nadi rivers. The Centre also observed the Hindi Pakhwada from 11-25 September, 2020.

MARINE AQUARIUM AND REGIONAL CENTRE, DIGHA, WEST BENGAL



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Narke dipterygia (Bloch
& Schneider, 1801)



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Triacanthus biaculeatus
(Bloch, 1786)

Conducted local surveys to Digha Shankarpur, Udaypur and Talsari Beach and collected Fishes, Molluscs, Crabs, Cnidaria, Softcoral, Sea anemone, Sea pen, Nudibranch, Sipuncula, Octopus, Hermitcrab, Horseshoe crab, Sea cucumber, Shrimp, Mantis shrimp and 1 tissue sample of Finless propoise. A total of 308 samples and 95 species were identified. Identification services rendered to Rishikesh forest Range for 2 samples of confiscated material suspected to be sea fan; to Berhampur University, Odisha by identifying 20 photos of Molluscs. Scientist of the centre reviewed one Ph.D. thesis and three manuscripts.

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38. Trivedi, J., Mitra, S., Patel, P, Gosavi, S., and Vachhrajani, K. 2020. Four New Records of Brachyuran Crabs (Crustacea: Decapoda: Brachyura) from India. *Thalassas: An International Journal of Marine Sciences*.1-10.

Book Chapters

1. Ghosh, J., Das, P., Bhunia, D., Gupta, D. and Chandra, K. 2020, Coleoptera: Scarabaeidae. In: Faunal Diversity of Bhoj Wetland, Bhopal, Madhya Pradesh, India (A Ramsar Site), *Wetland Ecosystem Series*, 22: 119-124.
2. Gupta, S.K., Chandra, K. and Chand, S.D. 2020. Insecta : Orthoptera. In: Faunal Diversity of Bhoj Wetland, Bhopal, Madhya Pradesh, India (A Ramsar Site), *Wetland Ecosystem Series*, 22: 75-85.
3. Kushwaha, S. and Chandra, K. 2020. Insecta : Hemiptera (Terrestrial). In: Faunal Diversity of Bhoj Wetland, Bhopal, Madhya Pradesh, India (A Ramsar Site), *Wetland Ecosystem Series*, 22: 91-103.
4. Kharkonger. I.J, B. Saikia, D. Khyntiam, J. Lyngdoh, R. Deb. 2020. Fauna of Majuli Island, Assam. *Records of the Zoological Survey of India*, Occasional Paper No. 402: 1–62.
5. Muhamed Jafer Palot. 2019. Aves. In: Fauna of Kerala (Part-1) Vertebrata, State Fauna Series, 25: 51-124 (Published by the Director Zool. Surv. India, Kolkata)

Popular Articles

1. Bhaskar Saikia, 2020 The Walking Frogs of *Nongkhyllem* for the local daily, The Meghalaya Guardian on 12 September, 2020.
2. Short documentary on Field workshop of 6th ALCS released by Shri Ravi Agrawal, Addl. Secretary, MoEFCC, New Delhi

Webinars Organized

1. NERC, Shillong organized a national webinar on “*In perpetual Darkness: The Amazing World of cave Animals*” on 23rd September 2020.
2. APRC Itanagar organized a national webinar on “Faunal diversity of higher vertebrates in Arunachal Pradesh” on 17th September 2020.
3. WRC, Pune organized a National Webinar on “*Taxonomy and its Applications: Learn from the Experts*” on 9th September 2020 and organized a talk on “राजभाषा और प्रयोजन मूलक हिंदी” by डॉ. एन लक्ष्मी अय्यर, सह आचार्य, हिंदी विभागाध्यक्ष, राजस्थान केंद्र विश्वविद्यालय, अजमेर over Google Meet on 18th September 2020 during हिन्दी पखवाडा समारोह ।
4. NRC, Dehradun organized National Webinar on ‘*Himalayan Day Celebrations*’ on 9th Sep 2020 and “*National Webinar on Faunal diversity of India (Webinar-02)*” on 23 September, 2020.
5. WGRC, Calicut organized the second webinar of the webinar series ‘*Taxonomy & Biodiversity*’ on 24th September, 2020.
6. GPRC, Patna organized National webinar on Wetlands of Gangetic Plains: Status and Challenges on 21.09.2020.
7. National webinar on “*Impact of Climate Change on Pollinators of High Altitudes of North-West Himalaya*” on the occasion of International Day for the preservation of Ozone layer at HARC, ZSI, Solan (HP) on 16.09.2020

8. ANRC, Port Blair organized a National Webinar on the occasion of world Ozone Day on 16th September 2020.
9. APRC, Itanagar organized a National Webinar on “Faunal diversity of higher vertebrates in Arunachal Pradesh” on 17th September 2020.
10. DRC, Jodhpur organized National Webinar on “Grassland Ecosystem of Arid Zone of India - A Faunal Diversity Perspective” on 18th September, 2020.
11. FBRC, Hyderabad has organized National Webinar on “Aquatic Entomofaunal Diversity in India” on 3rd September 2020
12. EBRC, Gopalpur on sea organized: “Amazing World of Coastal and Marine Fishes: Diversity and distribution in India ” on 04.09.2020, “Mammalian diversity & their conservation in India” on 11.09.2020, “Parasitic Hymenoptera of India- an Overview” on 18.09.2020” , “A journey to the top of the globe: Arctic fauna” on 25.09.2020.
13. MARC, Digha organized a webinar on 24th September 2020 as part of Unique Marine Fauna Webinar Series, Lecture No. 05, and the title was “Underwater Treasures-The Corals”
14. National Webinar on ‘Ozone for life’ organized by ENVIS Centre, ZSI Headquarters on 16th September 2020, to observe World Ozone Day.

Meetings Attended

1. Dr. Kailash Chandra, Director, ZSI attended the Departmental Promotion Committee (DPC) meeting for the post of Administrative Officer (AO), ZSI at UPSC, New Delhi on 8th September 2020.
2. Dr. Kailash Chandra, Director, ZSI chaired the Monthly Scientific Consultative virtual Meeting of ZSI HQs and Regional Centres at Bani Prasad Hall on 29th September, 2020.

3. Dr. Kailash Chandra, Director, ZSI addressed the 'National Webinar on Aquatic Entomofaunal Diversity in India' as a keynote speaker, organized by FBRC, ZSI, Hyderabad on 3rd September, 2020.
4. Dr. Kailash Chandra, Director, ZSI addressed the 'National Webinar on Taxonomy and its Application' as a Keynote speaker, organized by WRC, ZSI, Pune on 9th September, 2020.
5. Dr. Kailash Chandra, Director, ZSI addressed the webinar on 'Butterfly Conservation in India' organized by the Department of Zoology, Ravenshaw University in collaboration with Big Butterfly Monitoring Network, a consortium of conservation organizations, India, while celebrating the Big Butterfly Month, on 9th September 2020.
6. Dr. Kailash Chandra, Director, ZSI addressed the webinar on the 'Impact of Climate Change on Pollinators of High Altitudes of North-West Himalayas' as a keynote speaker organized by ZSI, HARC, Solan, H.P. on 16th September, 2020, on the occasion of 'International Day for the Preservation of Ozone Layer'.
7. Dr. Kailash Chandra, Director, ZSI addressed the inaugural speech on the National Webinar and Online Essay Writing Contest on 16th September, 2020, organized by ENVIS, ZSI HQs, Kolkata.
8. Dr. Kailash Chandra, Director, ZSI addressed the National Webinar on the occasion of 'International Day for the Preservation of Ozone Layer' as a keynote speaker organized by ANRC, ZSI, Port Blair on 16th September, 2020.
9. Dr. Kailash Chandra, Director, ZSI convened the webinar on the Red Panda on the occasion of International Red Panda Day organized by Amity Institute of Forestry & Wildlife (AIFW) & ZSI in collaboration with Society for Conservation Biology (SCB), India Chapter on 19th September, 2020.
10. Dr. Kailash Chandra, Director, ZSI addressed the Key Note address on 'Grassland Ecosystem in Arid Zone of India: A faunal Diversity Perspective' during the National Webinar organized by the Desert Regional Centre, ZSI, Jodhpur on 19th September 2020.
11. Dr. Kailash Chandra, Director, ZSI addressed the 'National Webinar on Wetland Fauna of Gangetic Plains: Status and Conservation Challenges' as a keynote speaker on 21st September, 2020, organized by GPRC, ZSI Patna.
12. Dr. C. Raghunathan, Scientist-E attended the inter-ministerial meeting on Environmental Statistics organized by Ministry of Statistics and Programme Implementation on 15th September 2020
13. Dr. Sanjeev Kumar, Scientist-E & Officer-in-charge attended and participated in the meeting of State Board of Wildlife of Rajasthan under the Chairmanship of Hon'ble Chief Minister of Rajasthan State on 10th September, 2020 through video conferencing organized by PCCF and CWLW, Forest Deptt. Govt. of Rajasthan.
14. Dr. Deepa Jaiswal, Scientist-E attended Hindi Diwas programme as Chief Guest organized by Botanical Survey of India on 14th September 2020
15. Dr. K. A. Subramanian, Scientist-E participated as a panelist in "Wilderness Tourism" symposium conducted by Tamil Nadu Tourism Department and Chennai Snake Park Trust.
16. Dr. C. Sivaperuman, Scientist-E attended meeting at Andaman and Nicobar Islands Development Corporation (ANIIDCO) on 30th August, meeting with Principal Chief Conservator of Forests (Wildlife) and Chief Wildlife Warden, Department of Environment and Forests, Andaman and Nicobar islands on 1st September 2020, meeting at Secretariat, under the

Chairmanship of Chief Secretary on 1st and 8th September 2020 in connection with the development projects at Great Nicobar and Little Andaman Island; attended meeting at Andaman and Nicobar Secretariat, under the Chairmanship of Ms. Vedika Reddy, IAS, in connection with the Red Oil Palm plantations in Little Andaman Island and Teressa Island on 4th August 2020

Lectures Delivered

1. Dr. C. Raghunathan, Scientist-E delivered a lecture on the Cave Ecosystem during the inaugural address of the webinar on "*In perpetual Darkness: The Amazing World of cave Animals*" organized by ZSI –NERC on 23rd September 2020.
2. Dr. P. M. Sureshan, Scientist-E delivered a talk on the topic "Insect diversity and decline" on 04.9.2020 in a Webinar organized by Zoology Teachers Association, Kozhikode.
3. Dr. Gaurav Sharma, Scientist-E delivered invited lecture on "*Mammalian Diversity & their Conservation in India*" in National Webinar organised by ZSI, EBRC, Gopalpur on 11th Sep., 2020.
4. Dr. Anil Kumar Scientist-E delivered invited lecture entitled, '*Avifauna of North-West Trans-Himalayan Landscape, India*' in a Webinar on "Environment Conservation and Socio-economic Development of the Indian Himalayan Region" on 3rd September, 2020, organized by GBP-NIHE, Himachal Regional Centre, Mohal, Kullu.
5. Dr. Anil Mohapatra, Scientist-E delivered a key note address on "Current trends in marine fish discovery in India" in the International Webinar on Perspectives on Fish Taxonomy, organised by Bajkul Milani Mahavidyalaya on 20th September, 2020 .

6. Dr. K. Rajmohana, Scientist-E delivered an invited talk on 'Parasitic Hymenoptera of India –An overview', at webinar , " on 18th Sept 2020 organised by EBRC, ZSI.
7. Dr. L. Kosygin Singh, Scientist-E delivered a lecture in the National Webinar on "Taxonomy, Diversity & Conservation of Freshwater Fishes of NE India" organized by the Presidency College, Manipur on 29 September, 2020
8. Dr. Deepa Jaiswal, Scientist-E delivered lecture on "Water Beetle diversity in India" in the Webinar- "Aquatic Entomofaunal Diversity in India" organised by FBRC, ZSI,Hyderabad on 3rd September, 2020.
9. Dr. Manpreet Singh Pandher, Scientist-C delivered lecture on 'Trichoptera Diversity in India' in a National Webinar organised by Freshwater Biology Regional Centre, ZSI Hyderabad, held on 3rd September, 2020
10. Dr. S. Prabhakaran, Scientist-E delivered lecture on The Cockroach diversity in India in the Webinar organized by FBRC, ZSI, Hyderabad on 3rd September.2020.
11. Dr Gopal Sharma, Scientist E delivered an invited lecture on "Conservation of Riverine fauna of Gangetic Plains" in a National Webinar organized by Patna Women's College , Patna University Patna on 22.09.2020
12. Dr. P.S. Bhatnagar, Scientist-E delivered a talk on "कोविड-19 मुक्त लक्ष्यदीप" on the occasion of हिन्दी दिवस on 14th September 2020.
13. Dr. Rajkumar Rajan, Scientist-E delivered a lecture titled 'Underwater Treasures – The Corals' at the webinar organized by Marine Aquarium Research Centre, Digha, on 24.09.2020.
14. Dr. K.P. Dinesh, Scientist-D presented a talk on 'Amphibian Taxonomy' to the participants of 'Amphi-Bio' workshop of Kalinga Centre for Rain forest Ecology, Agumbe on 5th September 2020.
15. Dr. K.P. Dinesh, Scientist-D presented a talk on 'Amphibians of India: Diversity status' to the First year M. Sc. Biodiversity students of Bharathiya Vidyapeeth, Pune on 27th September 2020.
16. Dr. D.S. Suman , Scientist- D delivered a lecture in National Webinar on "Aquatic Diptera wrf to Mosquito diversity in India, organized by FBRC, ZSI Chennai on 3rd Sept 2020
17. Dr. S.S. Talmale, Scientist-B delivered lecture on "Rodents of Agricultural Importance" in National Webinar on Taxonomy and its applications- learn from the experts organized by Western Regional Centre, Pune on 9th September 2020.
18. Dr Uttam Saikia, Sci-C, delivered a lecture on *Relevance & Scope of Animal Taxonomy in India*, in the webinar organized by the Zoological Society of Assam, Siphajhar College, Assam on 19 September, 2020.
19. Dr. Jasmine.P, Scientist- D delivered lecture on "A journey to the top of the world: Arctic Fauna" organized by EBRC, Gopalpur under the webinar series Let us discuss Biodiversity: Meet the Expert Programme.
20. Dr. S. S. Mishra, Scientist-D delivered a talk on "Amazing World of Coastal and Marine Fishes: Diversity and distribution in India " on 04.09.2020 at the National webinar organized by EBRC, Gopalpur.
21. Dr. Pratyush P., Scientist-D Mohapatra, Scientist-D delivered talks on "Scorpions of Madhya Pradesh, at Regional Museum of Natural History, Bhopal.
22. Dr. R. H. Raina, Scientist-D delivered an invited talk entitled "Impact of Climate Change on Hymenopteran Pollinators in North-West Himalaya on the occasion of National Webinar on "Impact of Climate Change on Pollinators of High Altitudes of North-West Himalaya" organized by Zoological Survey of India, High Altitude Regional Centre, Solan (H.P.) on 16th September 2020
23. Dr. Souvik Sen, Scientist-D delivered a lecture on "Spider fauna of Western Ghats" on 24.9.2020 in a Webinar organized by WGRC, Kozhikode.
24. Dr. P. Girish Kumar, Scientist-C delivered a lecture on "Vespid wasps of Western Ghats" on 24.9.2020 in a Webinar organized by WGRC, Kozhikode.
25. Dr. Sheela, S, Scientist- E delivered an invited talk on "Insect Taxonomy" to the students and teachers of colleges in Kerala organized by St. Peter's College, Ernakulam on 25.09.2020.

SUPERANNUATION

Mr. Dulal Ghosh, Administrative Officer, ZSI Headquarters has superannuated after 36 years of service and Mr. Dipak Roy Chowdhury, Office Superintendent, ZSI Headquarters has superannuated after 36 years of service from Head Quarters, Kolkata.