



सत्यमेव जयते



Ministry of Environment,  
Forest and Climate Change



Zoological Survey  
of India, 1916

## Cover

Desert Fox *Vulpes vulpes*  
(Linnaeus, 1758)

[Photo: ZSI Headquarters]

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Monthly E-Newsletter from  
Zoological Survey of India

# ZSI E-NEWS



I am happy to present the November 2020 issue of E News to the readers. Zoological Survey of India is coping with new normal in pandemic and gradually resuming its survey activities. Surveys were undertaken in protected areas of Maharashtra, Andaman and Nicobar Islands, Andhra Pradesh, Telangana, Arunachal Pradesh and Meghalaya to assess the faunal diversity. Altogether 10,194 specimens comprising about 1,787 species have been identified by the scientists of ZSI during the month. Among them 7 species and one genus have been newly described while 10 species are new to India. In addition, 41 species are first time augmented to the National Zoological Collections while twenty-three DNA barcodes have been generated for various faunal group and submitted to NCBI and BOLD. Research findings of the ZSI have been published as 20 papers, of which 8 are in SCI journals. Two webinars on Invasive species and Soil Fauna were organized for the benefit of researchers, academicians and policy makers. In order to promote the collaborative research, ZSI entered a Memorandum of Understanding with Chatrapati Shahu Maharaj University, Kanpur on 27<sup>th</sup> November 2020 which will also encourage the Scientists of ZSI for guiding Ph.D. students in various aspects of Zoology. I acknowledge all the officers and staff of ZSI for making a significant progress in scientific affairs of ZSI.

Jai Hind.

**Dr. KAILASH CHANDRA**  
Director

December 4, 2020  
Kolkata



## HEADQUARTERS, KOLKATA

Flag-off of first survey of faunal diversity in Golden Quadrilateral Highway at ZSI Headquarters

The faunal identification was made from 3780 specimens comprising 595 species under different groups viz. Protozoa, Platyhelminthes, Nematoda, Acari, Arachnida, Collembola, Isoptera, Hemiptera, Hymenoptera, Lepidoptera, Odonata, Orthoptera, Diptera, Coleoptera, Annelida, Echinodermata, Crustacea, Mollusca, Pisces, Reptilia, Birds and Mammals. A new species of isopod *Annina hugliensis* Mitra & Tabassum, 2020 has been described while Neuropteran

insects *Necyla sacra* Nayas, 1914, *Eumantispia pseudoharmandi* Yang & Liu, 2010 and *Eumantispia tibetana* Yang, 1988, and a Trichopteran insect *Dipseudopsis doehleri* Ulmer, 1929 have been reported as new record to India. Nineteen species under Nematoda, Trichoptera, Hemiptera, Hymenoptera and Odonata were newly augmented to National Zoological Collections. Confiscated wildlife material, the skin of Leopard has been identified for Forest Department,

Government of West Bengal; Dipteran species for Scott Christian College, Nagercoil, Tamil Nadu; Dermapteran specimens for University of Agricultural and Horticultural Sciences, Shimoga, Karnataka; Hymenopteran specimens for Central Silk Board, Ranchi, Jharkhand. Scientists reviewed two papers for journals and evaluated two Ph.D. theses for Bharathidasan University, Tiruchirappalli. First survey for newly inducted research programme, Faunal

Diversity of Highways of India – Golden Quadrilateral has been flagged-off by Dr. Kailash Chandra, Director, ZSI on 27<sup>th</sup> November 2020. Research, Advisory and Monitoring Committee Meeting of ZSI was convened on 19<sup>th</sup> November 2020 through virtual mode. The half yearly progress meeting of ZSI Headquarters and Regional Centres was conducted on 19<sup>th</sup> and 20<sup>th</sup> November 2020 in which all the Officers-in-Charge of Regional Centres and Sections presented the progress.

## NORTH EASTERN REGIONAL CENTRE, SHILLONG, MEGHALAYA



*Platyrhopalopsis badgleyi* Fowler, 1912

Two local surveys were conducted to Dain Thlen and Lait Ryngew Sohra on 9<sup>th</sup> November 2020 and to Fruit Garden, Shillong, East Khasi Hills District, Meghalaya on 12<sup>th</sup> November 2020. Forty five species were identified including Mammalia 02 spp., Reptilia 09 spp., Amphibia 04 spp., Coleoptera 11 spp., Crustacea 05 spp., Hemiptera 01 sp., Mollusca

02 spp., Blattodea 01 sp., Chilopoda 03 spp., Arachnida 03 spp., Orthoptera 03 spp., Collembola 01 sp. Certain morphometric information of some Indian *Miniopterus* spp. has been rendered to Department of Agricultural Biology, University of Ruhuna, Sri Lanka.



# WESTERN REGIONAL CENTRE, PUNE, MAHARASHTRA

Cricket Frog, *Minervarya syhadrensis* (Annandale, 1919)



Faunistic surveys were conducted to Yawal Wildlife Sanctuary and Gautama Autramghat Wildlife Sanctuary Maharashtra from 27<sup>th</sup> October to 5<sup>th</sup> November 2020 and 18<sup>th</sup> October to 27<sup>th</sup> November 2020 respectively. Identified 45 spp. including Coleoptera (16), Orthopteran (6), Hymenoptera (1), Lepidoptera (8), Decapoda (5), Tardigrada (1), Amphibia (7) and Mammalia (2). Six DNA

Barcode sequences were released for the public access on the GenBank. Identified horns of the Indian Gazelle, *Gazella bennettii* Sykes, 1831 and antlers of Sambhar, *Rusa unicolor* (Kerr, 1792) for the Police Department, Sangli, Maharashtra, leopard skin (*Panthera pardus*) for the Assistant Police Inspector, Crime Branch, Unit-1, Thane City, Maharashtra and a turtle specimen from image for the Wildlife Crime Control Bureau Regional

Office, Chennai. Further, dung beetles for Principal, Dapoli Education Society, 9 insect specimens (7 Odonata, 1 Diptera and 1 Hemiptera) for Department of Zoology, Hutatama Rajaguru College, Pune have also been identified. Submitted comments to the Maharashtra State

Biodiversity Board, Nagpur, Maharashtra on five applications for access to biological resources and associated traditional knowledge under rule 17 of the Maharashtra Biological Diversity Rules, 2008 for research purpose.

# CENTRAL ZONE REGIONAL CENTRE, JABALPUR, MADHYA PRADESH



Buff-striped keelback *Amphiesma stolata* (Linnaeus 1758)



Indian pond heron *Ardeola grayii* (Sykes, 1832)

Scientists of the Centre identified 61 species including 09 spp. of Lepidoptera (Moths), 19 spp. of Lepidoptera (Butterflies), 8 spp. of Orthoptera, 11 spp. of Amphibia, 8 spp. of Reptilia and 06 spp. of Mollusca. Scientist of the Centre reviewed two manuscripts for the journal. *Microhylla mymensinghensis* Hasan et al., 2014 (Amphibia: Anura: Microhylidae) from Odisha is augmented to the National Zoological Collections.

## DESERT REGIONAL CENTRE, JODHPUR, RAJASTHAN



Garra mullya (Sykes, 1839)

During the month, 29 species of Lepidoptera, 17 species of Hymenoptera, 7 species of Coleoptera, 8 species of fishes and 1 species of Reptilia were identified. Scientists of the Centre attended webinars on various topics.



Merops orientalis Latham, 1801

## NORTHERN REGIONAL CENTRE, DEHRADUN, UTTARAKHAND



Painted Lady, *Vanessa cardui* (Linnaeus, 1758)

Scientists of the Centre identified 47 species including 06 spp. of Protozoa, 08 spp. of Nematoda, 07 spp. of Annelida; 11 spp. of Lepidoptera, 03 spp. of Pisces, 2 spp. of Amphibia and 10 spp. of Aves from photographs from three states: Haryana, Uttarakhand and Uttar Pradesh. Six DNA barcode sequences of Lepidoptera have been generated.

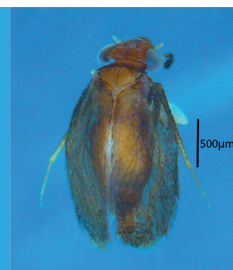


Brown-headed barbet, *Psilopogon zeylanicus* (Gmelin, 1788)

## SOUTHERN REGIONAL CENTRE, CHENNAI, TAMIL NADU

Scientists of the Centre discovered one new species of dragonfly belonging to the genus *Orthetrum* Newman, 1833 from Great Nicobar Biosphere Reserve, Andaman and Nicobar Islands. The scientists also rediscovered a new species of *Soa*

Enderlein, 1904 under Psocoptera from the southern Western Ghats. 722 examples belonging to 48 species from different taxonomic groups were identified while generating 50 DNA sequences. Scientists delivered two lectures on freshwater biodiversity conservation



*Soa papanasam* Ramesh et al. 2020

and dragonflies during IX Refresher Course Zoology teachers organized by University of Madras, Chennai.



*Orthetrum erythronigrum* Subramanian et al. 2020



# GANGETIC PLAINS REGIONAL CENTRE, PATNA, BIHAR

Conducted a survey to assess the impact of bridge construction across the river from Sultanganj to Aguwani Ghat in Bhagalpur district, Bihar on Gangetic Dolphin from 21<sup>st</sup> to 25<sup>th</sup> November 2020. During the survey altogether 49

dolphins were sighted in 24 km river stretch of Ganga near proposed site. Identified 27 species of Lepidoptera and 17 species of Mollusca from Eastern Ghats, Terai Grassland and backlog collections.



Woolly-necked Stork  
*Ciconia episcopus*  
Boddaert 1783

Flock of Bar-headed Geese  
*Anser indicus* Latham 1790



# HIGH ALTITUDE REGIONAL CENTRE, SOLAN, HIMACHAL PRADESH



Indian Grey Hornbill *Ocyroceros birostris* (Scopoli 1786)

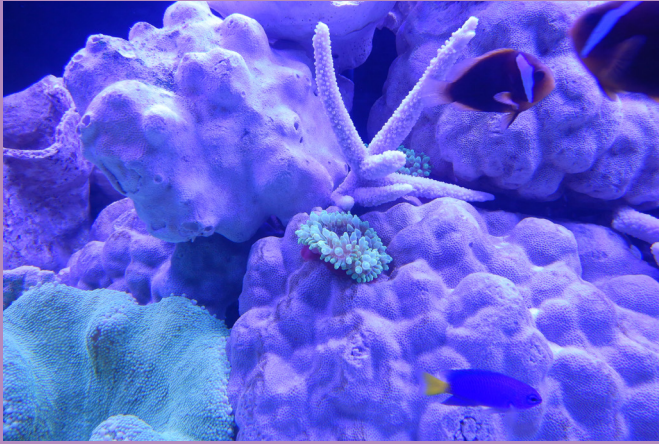


*Junonia lemonias* (Linnaeus, 1758)

Faunistic identification from the Centre includes 33 species of Lepidoptera from 48 specimens of Himachal Pradesh and U.T. of Jammu and Kashmir. A lepidopteran *Samia canningi* was reported from Grasslands of Himachal Pradesh. Grasshoppers have been identified for Himachal Pradesh University, Shimla based on photographs.



# MARINE BIOLOGY REGIONAL CENTRE, CHENNAI, TAMIL NADU



View of the newly set up marine aquarium in MBRC

Scientists of the Centre identified 46 species containing moss inhabiting testate Amoebae 12 species, marine Sponges 12 species,



Bubble tentacle sea anemone

Mollusca 04 species, Pisces 18 species, and Orthoptera 05 species. In addition, 4 exs. of Decapoda and 7 exs. of fishes received from Annamalai University were added to the National Zoological Collections. A total of 61 examples of wildlife confiscated material includes 34 exs. of bivalves, 17 exs. of gastropods and 10 examples of scleractinian corals have been identified. A marine aquarium tank was newly erected to display a coral reef vignette, with the display of three species of sea anemones and 5 species of fishes.

# ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR



*Stenopus hispidus* Olivier 1811

Survey has been carried out to Narcondam Island Wildlife Sanctuary from 1<sup>st</sup> to 22<sup>nd</sup> November 2020 to assess the population dynamics of

Narcondam Hornbill and its associated fauna and twelve local surveys during 6<sup>th</sup> to 13<sup>th</sup> November 2020 to Kalatang, Mount Harriet, Chidiyatappu, Shoal Bay, BSI Botanical Garden, South Andaman to assess the terrestrial faunal



*Culcitas chmideliana* Bruzelius 1805

diversity; 6<sup>th</sup> to 9<sup>th</sup> November 2020 to North Bay and Snake Island Wildlife Sanctuary to assess the marine faunal diversity. Aerial Survey in South Andaman to assess the nesting, breeding habitats of birds in the vicinity of Airport and its surroundings on 4<sup>th</sup> November 2020. A total of 381 species were identified comprising 120 spp. of Lepidoptera, 04 spp. of Odonata, 04 spp.

of Hemiptera, 20 spp. of Arachnida from terrestrial environment and 5 spp. of Echinodermata, 20 spp. of Pisces, 7 spp. of Fish parasite, 54 spp. of Molluscs, 13 spp. of Hydrozoa, 12 spp. of Decapoda, 03 spp. of Bryozoa and 119 spp. of Corals from marine environment. Identified confiscated mollusc *Cassia cornuta* (Linnaeus, 1758) to the Department of Environment and Forests, Port Blair.



# SUNDERBAN REGIONAL CENTRE, CANNING, WEST BENGAL



Wuhanlinigobius polylepis (Wu & Ni, 1985)

(Wu & Ni, 1985) and *Wuhanlinigobius malayensis* Huang, Zeehan & Chen, 2013 were found new record to India and one species *Stigmatogobius minima* (Hora, 1923) new record to West Bengal.

Two local surveys were conducted at Sunderban, Pakhir Island and Pakhiralaya on 07.11.2020 and 14.11.2020. Twenty-five species of

fishes were identified from the backlog collection. Four species of fish from Sunderban viz. *Amoya gracilis* (Bleeker, 1875), *Acentrogobius moloanus* (Herre, 1927), *Wuhanlinigobius polylepis*

Stigmatogobius minima (Hora, 1923)



# FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD, TELANGANA

Hypothymis azurea (Boddaert, 1783),



Herpestes edwardsi E. Geoffroy Saint-Hilaire, 1818



The scientists, staff and research scholars of the Centre identified 8 species of aquatic Coleoptera, 5 species of aquatic Hemiptera, 26 species of Lepidoptera, 2 species of Ostracoda, 7 species of Branchiopoda, 8 species of Mollusca, 7 species of Decapoda and 30 species of Pisces from Nashik and Satara District, Maharashtra, Kandhmal district, Odisha, East Godavari district, Andhra Pradesh; Wyra lake, Himayat sagar, Telangana; Amrabad and Kawal Tiger Reserve, Telangana. Eleven DNA sequences of fishes have been generated.



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*Raorchestes ochlandrae*  
Gururaja et al.



## WESTERN GHATS REGIONAL CENTRE, KOZHIKODE, KERALA

Scientists of the Centre identified 15 species of spiders, 01 species of Chilopoda, 04 species of mantids, 11 species of moths (Lepidoptera), 24 species of wasps and 05 species of reptiles collected from Agasthyamalai Biosphere Reserve, Lakshadweep and other parts of Western Ghats. Three new species

of Hymenoptera viz. *Foenatopus andamanensis* Binoy et al., *Carinostigmus nepalensis* Tessy et al., and *Carinostigmus parliensis* Tessy et al. were discovered and published. The orb-weaving spider *Arachnura melanura* Simon, 1867 recorded from Neyyar Wildlife Sanctuary, Western Ghats, Kerala after 78 years since it was first reported from India. *Carinostigmus costatus* Krombein, 1984 (Hymenoptera: Crabronidae) found new record for Goa, Kerala and Uttarakhand. Scientists of the Centre reviewed 01 research manuscript on Hymenoptera.



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*Nasikabatrachus sahyadrensis*  
Biju & Bossuyt, 2003

## ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR, ODISHA

During this month 318 specimens were identified which includes fish, molluscs, crab, prawn, lizard and frogs. *Gymnothorax aurocephalus* Nashad, Mohapatra, Varghese &

Bineesh, 2020 a new species described from Andaman waters. *Paratrypauchen microcephalus* (Bleeker, 1860) reported for the first time from Odisha coast. A survey to Tampara Lake was

carried out. Also two days local Survey of Phthirapteran ectoparasites infesting Common Poultry of Odisha along Ganjam district was conducted.

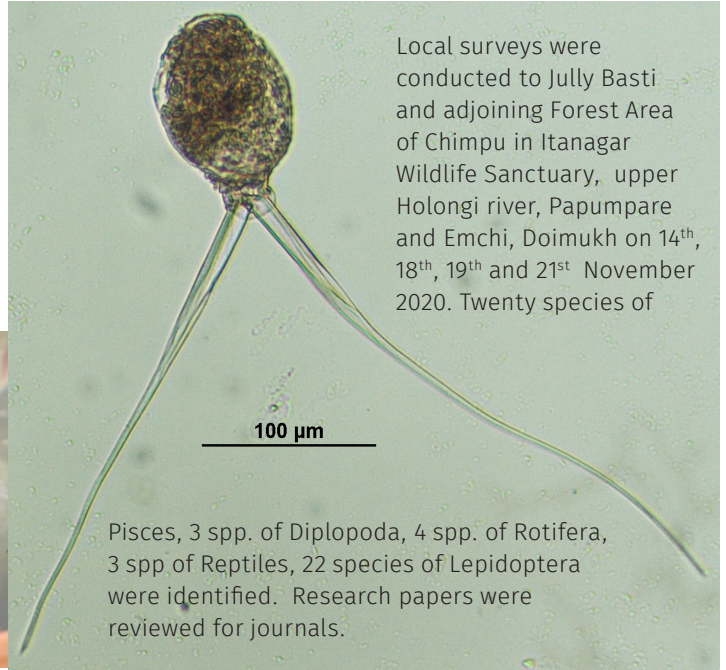


.....  
*Gymnothorax aurocephalus*  
Nashad et al., 2020



# ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

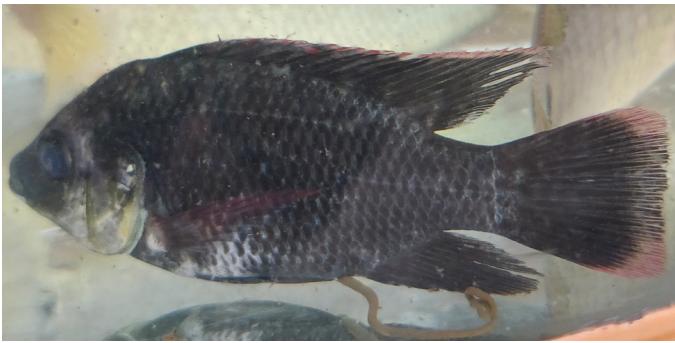
Monommata longiseta (Muller, 1786)



Local surveys were conducted to Jully Basti and adjoining Forest Area of Chimpu in Itanagar Wildlife Sanctuary, upper Holongi river, Papumpare and Emchi, Doimukh on 14<sup>th</sup>, 18<sup>th</sup>, 19<sup>th</sup> and 21<sup>st</sup> November 2020. Twenty species of

Pisces, 3 spp. of Diplopoda, 4 spp. of Rotifera, 3 spp. of Reptiles, 22 species of Lepidoptera were identified. Research papers were reviewed for journals.

Oreochromis mossambicus Peters 1852



# MARINE AQUARIUM AND REGIONAL CENTRE, DIGHA, WEST BENGAL

Local surveys were conducted to Digha, Shankarpur in West Bengal and Talsari in Odisha on 21<sup>st</sup> November 2020. A total of 104 species were identified including Fishes, Cnidaria and Crab from backlog collections. Scientists of the Centre evaluated three Ph.D. theses for Bharatidasan University, Madurai Kamaraj University and M.S. University.

Eutrichocheles modestus (Herbst, 1796)



Architectonica purpurata (Hinds, 1844)



# PUBLICATIONS

## Papers

1. Amina, P., Rajmohana, K. and Shilimol A. C. 2020. A new species and a new record of *Dicuspiditermes* Krishna (Blattodea: Isoptera: Termitidae) from the Kerala part of Western Ghats, India, *Oriental Insects*. DOI: 10.1080/00305316.2020.1844815
2. Binoy, C., Girish Kumar, P. and Dubey, A.K. 2020. A new species of *Foenatopus* Smith (Hymenoptera: Stephanidae) from Andaman Islands, India. *Zootaxa*, 4869(2): 290-294.
3. Goutham Bharathi, M. P. and Raghunathan, C. 2020. New records of three cheilostomatous bryozoans from the Andaman and Nicobar Islands, India. *Regional Studies in Marine Science* [Elsevier], 40 (2020) 101515. DOI <https://doi.org/10.1016/j.rsma.2020.101515>
4. Habib K.A., Islam M.J., Neogi A.K., Nahar N. and Mishra S.S. 2020. New records of two parrotfish (Perciformes: Scaridae) from Saint Martin's Island of the Bay of Bengal, Bangladesh. *Fish Taxa*, 17: 32-38.
5. Kaur, S. Pandher, M.S. and Chandra, K. 2020. New records of family Mantispidae (Insecta: Neuroptera) from India. *Rec. zool. Surv. India*. 120(3) 251-256.
6. Mandal, G.P. K.K. Suman and K.K. Bhattacharya. 2020. Collembola Fauna of Duars region of Northern West Bengal & Shola grassland of Western Ghats. *Rec. Zool. Surv. India*. 120(3) 225-240.
7. Mitra, S., Sahnaz, T., 2020. A new species of the genus *Annina* (Crustacea: Isopoda: Cirolanidae) from the Hugli River of West Bengal, India., *Rec. Zool. Surv. India*. Vol. 120(3), 203-210.
8. Mohanty, S. R., Mohapatra, A.L. and Murmu, K. 2020. Occurrence of rare smalleye snake eel, *Allips concolor* McCosker, 1972 (Anguilliformes : Ophichthidae) along Paradeep from the Odisha coast, India. *Records of Zool. Surv. India* 120 (3): 277 – 280.
9. Nabasri, B., Rameshkumar, A., Sheela, S. and Kazmi, S. I. 2020. On the collection of Chalcididae (Hymenoptera: Chalcidoidea) from Dadra and Nagar Haveli, India. *Rec. zool. Surv. India*:Vol. 120(3), 257-262.
10. Nashad, M. Mohapatra, A., Bineesh, K. K., Varghese, S. P., Mohanty, S. R. and L. Ramalingam, L. 2020. A new white-spotted moray eel, *Gymnothorax aurocephalus* sp. nov. (Muraenidae: Muraeninae) from Andaman Sea, India. *Zootaxa* 4877 (2): 361 – 372.
11. Pandher, M.S. & Garima, D. 2020. New record of *Dipseudopsis doehleri* Ulmer, 1929 (Trichoptera: Dipseudopsidae) from Manipur, India. *Rec. zool. Surv. India*. 120(3) 267-269
12. Phuge, S., Patil, A.B., Pandit, R., Kulkarni, N.U., Chennakeshavamurthy, B.H., Deepak, P. and Dinesh, K.P. 2020. Importance of genetic data in resolving cryptic species: A century old problem of understanding the distribution of *Minervarya syhadrensis* Annandale 1919, (Anura: Dicroglossidae). *Zootaxa*, 4869 (4): 451-492.
13. Ramesh, G., Babu, R. and Subramanian, K.A. 2020. New species of *Soa* Enderlein, 1904 (Psocodea: 'Psocoptera': Lepidopsocidae) from the Western Ghats of India. *Zootaxa*, 4881 (2): 383-392.
14. Roy, S. Ahmed, R., Sheela S. and Babu A. 2020. Diversity of Top Soil and Litter Inhabiting Ants (Hymenoptera: Formicidae) in Three Different Tea Agro Systems in Assam, India. *Proc. Entomol. Soc. Washington*. 122(4), 2020, pp. 1031-1034.
15. Ruidas, H., Mohanty, S. R., Rana, S., Roy, S. and Mohapatra, A. 2020. First report of genus *Paratrypauchen* Murdy 2008 (Gobiformes: Gobiidae: Amblyopinae) from the Odisha coast, India. *Records of Zool. Surv. India* 120 (3): 289 – 291.
16. Saikia, B. and Saikia, U. 2020. A report on *Ingerana borealis* (Annandale, 1912) (Anura: Dicroglossidae) from inside a cave. *Rec. zool. Surv., India*, 120(3): 247-250
17. Sen, S. and Sureshan, P. M. 2020. Rediscovery of scorpion tailed orb-weaver, *Arachnura melanura* Simon, 1867 (Araneae: Araneida) from India. *Rec. Zool. Surv. India*, 120 (3): 285-288.
18. Subramanian, K.A., Babu, R. and Kalkman, V.J. 2020. *Orthetrum erythronigrum* sp. nov. (Odonata: Libellulidae) from the Great Nicobar Island, India. *Zootaxa*, 4869 (2): 242-250.
19. Tessy Rajan, Sureshan, P. M. and Girish Kumar, P. 2020. Additions to the knowledge on the genus *Carinostigmus* Tsuneki (Hymenoptera: Crabronidae: Pemphredoninae) from the Indian subcontinent with the description of two new species. *Zootaxa*, 4881(1): 152-164.
20. Thilak, J and R. Sakthivel. 2020. Studies on the freshwater Ostracoda from Villupuram, Trichy, Thiruvannamalai, Nilgiri and Chennai Districts of Tamil Nadu, India. *International Journal of Global Science Research*, 7 (2), 1353-1375.
21. Palot, M.J. 2020. *Nammude Kadal Pakshikal* [Sea Birds of Kerala]. *Sasthra Keralam* (A science fortnightly in Malayalam), 52 (6): 22-24.

## Popular articles

21. Palot, M.J. 2020. *Nammude Kadal Pakshikal* [Sea Birds of Kerala]. *Sasthra Keralam* (A science fortnightly in Malayalam), 52 (6): 22-24.



22. Kumar, Sanjeev 2020. *Population structure and assessment of the Desert Locust in Jodhpur district of Rajasthan*. Theme: Insects of Economic Importance: Locust. ENVIS Centre on Biodiversity (Fauna). *ENVIS Newsletter* Vol. No. 27 Issue No.1: 7 (September, 2020).

## Webinars Organized

1. ZSI Headquarter, Kolkata organized a Webinar on “Soil Fauna of India - Exploring the Unexplored” on 11<sup>th</sup> November, 2020.
2. Southern Regional Centre, Zoological Survey of India, Chennai organized a webinar on “Impact of Invasive Alien Species on Biodiversity Conservation” on 04<sup>th</sup> November 2020.

## Meetings Attended

1. Dr. Kailash Chandra, Director, ZSI chaired the Half Yearly Meeting of Officer-in-Charges of Regional Centres and Headquarters of ZSI for Review of Progress of Annual Programme of Research 2020-21 via video conferencing on 19<sup>th</sup> and 20<sup>th</sup> November, 2020.
2. Dr. Kailash Chandra, Director, ZSI chaired the Monthly Scientific Consultative Meeting of Regional Centres and different Sections of ZSI via video conferencing on 29<sup>th</sup> November, 2020.
3. Dr. C. Raghunathan chaired the interview board for the recruitment of JRFs/SRFs/PDFs in ZSI on 23<sup>rd</sup> to 25<sup>th</sup> November 2020 and chaired the Scientific Consultative Committee Meeting for Junior and Senior Zoological Assistants of ZSI on 26<sup>th</sup> November 2020.
4. Dr. P. M. Sureshan, Scientist-E and Dr. Souvik Sen, Scientist-D attended a virtual meeting of experts for

the programme ‘Assessment of Threatened Taxa of Kerala’ (funded by Kerala State Biodiversity Board) on 17.11.2020.

5. Dr. Avtar Kaur Sidhu, Scientist-E attended meeting of Wildlife Board for the Union Territory of Jammu & Kashmir under the Chairmanship of the Hon’ble Lieutenant Governor of UT of J&K and Chief Secretary of J&K on 23<sup>rd</sup> November 2020.
6. Dr. V. D. Hegde, Scientist-E attended the Governing Council Meeting of Meghalaya Zoo Project Implementation Society held at PCCF & HoFF Office, Sylvan House, Lower Lachumiere, Shillong on 4<sup>th</sup> November 2020.
7. Dr. C. Sivaperuman, Scientist-E attended meeting of State Level Environment Impact Assessment Committee to review the EIA proposal submitted by various agencies on 2<sup>nd</sup> November 2020 at Department of Science and Technology, A & N Administration; attended meeting at INS Utkrosh in connection with the birds hazards/ bird safety in Port Blair airport on 3<sup>rd</sup> November 2020.
8. Dr. Deepa Jaiswal, Scientist-E participated as Invited Speaker on “World Science Day for Peace and Development” on 10<sup>th</sup> November, 2020 observed by Little Flower High School, Hyderabad; attended Andhra Pradesh Biodiversity Board Meeting on 25<sup>th</sup> November, 2020 to discuss Project proposals on Protected Area of Andhra Pradesh.
9. Dr. C. Venkatraman, Scientist-E attended review meeting on evaluation of Biodiversity research studies under West Bengal Forest Biodiversity Conservation on 10.11.2020 organized by Forest department, West Bengal.
10. Dr. Pratyush P Mohapatra, Scientist-D, attended consultation meeting on Developing Guidelines for Mitigating Human-Snake Conflict on 27.11.2020 organized by Deutsche Gesellschaft fur Internationale

Zusammenarbeit, Indo-German Biodiversity Programme Office, New Delhi through Virtual mode.

11. Dr. Jasmine, P., Scientist-E participated the training programme of General management programme for women scientists in online platform conducted by Administrative Staff College of India from 23<sup>rd</sup> November to 4<sup>th</sup> December 2020.
12. Dr. D.S. Suman, Scientist-D participated in Central Insecticide Board (CIB), DGHS, Nirman Bhawan, New Delhi Meeting on 12 November 2020 and Optimizing One health and Global Vector Control Response to reach the 2030 NTD Roadmap goals on 19<sup>th</sup> November 2020.

## Lectures Delivered

1. Dr. Kailash Chandra, Director, ZSI delivered keynote on the ‘Impact of Invasive Alien Species on Biodiversity Conservation’ in a webinar organized by Southern Regional Centre, ZSI, Chennai on 4<sup>th</sup> November, 2020; Delivered a keynote lecture in the ‘National Webinar on Soil Fauna of India- Exploring the Unexplored’ via video conferencing on 11<sup>th</sup> November, 2020, organized by Training and Extension Division, ZSI, Kolkata;
2. Dr. C. Raghunathan delivered a lecture on *Marine Invasive Species in India* in a Webinar “Impact of Invasive Alien Species on Biodiversity Conservation’ organized by ZSI-SRC, Chennai on 4<sup>th</sup> November 2020 and a lecture on *Soil fauna – diversity, ecosystem services and threats* in the Webinar on Soil Fauna of India – Exploring the unexplored organized by ZSI Headquarters on 11<sup>th</sup> November 2020
3. Dr. P. M. Sureshan, Scientist-E delivered a talk on topic “Your Environment your responsibility” to the graduate students of Malabar Christian College, Calicut

during the Orientation Programme on 5.11.2020; on “Awareness on Environment and wildlife” to graduate students of St. Xavier’s College, Calicut during the Orientation Programme Alpha 2020 on 6.11.2020 in virtual mode.

4. Dr. C. Sivaperuman, Scientist-E delivered a talk on the Biodiversity of A & N Islands to the trainees of Assistant Conservator of Forests, Forest Range Officers on 31<sup>st</sup> October 2020 organized by Forest Training Academy, Coimbatore, Tamil Nadu; delivered a talk on the Avifauna of A & N Islands to the teachers of A & N Islands and mainland on 10<sup>th</sup> November 2020 organized by CPREEC, Chennai as a part of Wipro Earthian 2020-2021.
5. Dr. Dhriti Banerjee, Scientist-E delivered a lecture on “Soil Entomo fauna- Concepts and practices in managing soil health” at National webinar on “Soil Fauna of India- Exploring the Unexplored” organized by ZSI Headquarters on 11<sup>th</sup> November 2020.
6. Dr. K. Rajmohana, Scientist-E delivered a talk on Exploring the Unknown: A taxonomist’s perspective. in the webinar series on Progress and Prospects in Zoology, on 8<sup>th</sup> Nov. 2020
7. Dr. D.S. Suman, Scientist-D delivered a talk at the International Webinar Organized by Govt. PG College, Jiwaji University, Sheopur, MP on 9<sup>th</sup> November 2020.
8. Dr. S.D. Gurumayum, Scientist-D delivered a talk on National webinar organized by Natural Science Association, St Joseph’s college, Bengaluru on Fishes of Arunachal Pradesh on 9<sup>th</sup> November 2020
9. Dr. C. R. Sreeraj, Scientist-C delivered a lecture on Slug trails:

Basics of the diverse molluscan group”. for the Zoology students of Kannur University, Kerala on 6<sup>th</sup> November 2020.

10. Dr. Muhamed Jafer Palot, Scientist-B, delivered a talk on “Mangrove Biodiversity of Kerala” at the international conference on “Mangrove Ecosystems: Synergies for Fishery Potential (CMESFP)” jointly organized by the Department of Environmental Sciences, University of Kerala, Thiruvananthapuram and the Estuarine & Coastal Science Association (ECSA), U.K. on 20<sup>th</sup> November 2020; delivered a talk on “Faunal Diversity of Kerala” in the webinar series (ENWENAR Session) jointly organized by the Department of Zoology, Christian College, Chengannur and the Kottayam Nature Society, Kottayam, Kerala on 22<sup>nd</sup> November 2020.