



Cover  
Indian Giant squirrel  
*Ratufa indica* (Erxleben, 1777)  
[Photo: ZSI-Southern  
Regional Centre, Chennai]

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Zoological Survey of India



It is my privilege to present the July 2020 issue of the E-News of Zoological Survey of India. The ZSI is gradually resuming normalcy in its progress amidst pandemic caused by COVID-19. The Annual Meeting of ZSI was conducted for the year 2019-20 during the month and it revealed that year 2019-20 is perhaps most successful year in the annals of ZSI in terms of its progress. During the last financial year ZSI conducted 110 surveys across the country, identified 115587 faunal specimens comprising 7053 species, newly described 128 species under different faunal groups, added 65 species new to country, made 569 publications including 29 books and 154 papers in SCI journals with impact factors, generated 1324 DNA barcodes with 283 species, rendered identification services to 205 departments/institutions and organized 13 workshop/conference/training programme are worth mentioning.

The month of July 2020 witnessed the identification of 6628 specimens with 1832 species under different faunal groups covering protozoa to mammalia including new description of five species and new record of 5 species and 2 genera to India. The interesting findings of ZSI have been published in 34 papers in different journals of scientific repute of which 15 papers in SCI journals. Thirty nine DNA sequences for 20 species have been submitted and uploaded in BOLD and NCBI by Regional Centres. In order to create awareness and conservation of faunal diversity in Indian context five webinars on different topics have been organized by ZSI Headquarters and Regional Centres which were benefited by thousands of students and researchers across the country. In order to cope with global standards for modern molecular taxonomy, two more regional centres namely Estuarine Biology Regional Centre, Gopalpur-on-Sea, Odisha and High Altitude Regional Centre, Solan, Himachal Pradesh have been strengthened with DNA Molecular Laboratory facilities. The International Day for Conservation of Mangrove Ecosystem – 2020 and International Tiger Day – 2020 were celebrated by organizing lectures and conducting elocution competition for the benefit of students and researchers. It is worth to state that 30 new research programmes have been inducted during the financial year to address the gap areas in taxonomic and ecological research. I commend the significant contributions made by all the officers and staff of ZSI for the progress of department in spite of unrest due to deadly viral spread across the globe.

*Jai Hind.*

**Dr. KAILASH CHANDRA**  
Director

August 3, 2020  
Kolkata

# ZSI E-NEWS





## HEADQUARTERS, KOLKATA

Royal  
Bengal Tiger  
*Panthera  
tigris tigris*  
Linnaeus,  
1758

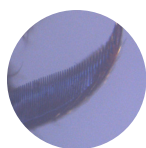
The faunal species identification during July 2020 is to the tune of 737 species from 3261 specimens under various groups including Protozoa, Porifera, Acari, Arachnida, Platyhelminthes, Nematelminthes, Collembola, Hemiptera, Hymenoptera, Trichoptera, Isoptera, Odonata, Lepidoptera, Orthoptera, Coleoptera, Diptera, Zooplankton, Crustacea, Echinodermata, Mollusca, Pisces, Reptilia and Mammalia. The hymenopteran insect *Vernevania indica* Kazmi & Rameshkumar, moths *Toccolosida ganeshgudiensis* N. Singh, Kirti & Ranjan and *Porcellanola sikkima* Joshi, Singh & László, and a catfish *Pseudecheneis nagalandensis* Shangningam & Kosygin, have been described as new to science. Further a genus *Porcellanola* Laszlo, Ronkay & Witt, 2006 and *Porcellanola sukhothai* Laszlo, Ronkay & Witt, 2006 and *Porcellanola langtangi* Laszlo, Ronkay & Witt, 2010 under Lepidopteran

insects, a genus *Vernevania* Huben & Deans under Hymenoptera along with flatworm *Stenostomum sphagnetorum*, ctenophore *Beroe gracilis* Kunne, 1939, and fish *Ophichthus sangjuensis* (Ji and Kim, 2011) were reported new addition to Indian fauna. The shawls made from Tibetan Antelope, *Pantholops hodgsonii* identified for Office of the Commissioner of Customs, New Delhi and other advisory services on faunal identifications have been rendered to West Bengal Forest Department, Uttar Banga Krishi Vishwavidyalaya, West Bengal and Burdwan University. The registration details of freshwater Bryozoans has been provided to Dr. Timothy S. Wood, Professor Emeritus, Department of Biological Sciences, Wright State University, USA upon his request. To commemorate the International Day for Conservation of the Mangrove Ecosystem – 2020 and International Tiger Day – 2020, ZSI observed these occasions on 27th

July 2020 with invited lecture by Dr. K. Kathiresan, Honorary Professor, CAS in Marine Biology, Annamalai University on Significance of Mangroves. During his inaugural address Dr. Kailash Chandra, Director, ZSI highlighted the importance of mangrove ecosystem in faunal perspective, while scientists of ZSI Headquarters Dr. C. Raghunathan delivered a lecture on mangrove faunal diversity in India, Dr. Mukesh Thakur made a presentation on DNA match of tigers in Sunderban and Dr. Sujeet Kumar Singh delivered a talk on separate conservation unit for Sunderban tigers and the event was moderated by Dr. K. Rajmohana, The ZSI also organized national webinar on 'Wildlife Conservation and Management with special focus on threatened species of India' in collaboration with Chaman Lal Mahavidhyalaya, Haridwar on 14th July 2020 in which Dr. Kailash Chandra, Director, highlighted the conservation status of protected animals in India.

Dr. C. Raghunathan, Dr. Mukesh Thakur and Dr. Koushik Dueti made the presentations on various groups of protected animals in marine and terrestrial habitats of India. The programme was concluded by vote of thanks proposed by Dr. Lalit Kumar Sharma. As required by the Central Water Commission, Ministry of Jhal, the data on the faunal diversity of Ramsar site wetlands, Rivers and Estuaries of India for the preparation of Aquatic Habitat Atlas has been provided. Faunal Diversity data for 26 States have been provided to Ministry of Statistics and Programme Implementation. Annual Progress Meeting of ZSI Headquarters and Regional Centres was organized online on 9th and 10th July 2020. Divisional-in-Charge of various Divisions and the Officers-in-Charge of 16 Regional Centres made the presentations on the progress of year 2019-20. The meeting was attended by all the officers and staff of ZSI through virtual mode.





Comb clawed  
Beetle



## NORTH EASTERN REGIONAL CENTRE, SHILLONG, MEGHALAYA

Bat *Rhinolophus affinis*  
Horsfield, 1823



Surveys conducted to Nongkhylllem Wildlife Sanctuary, Lailad Forest, Ri-Bhoi District Meghalaya on 1st and 2nd July 2020. Thirty nine species from 205 specimens including 6 spp., of Lepidoptera, 7 spp. of Coleoptera, 1 sp. of Crustacea, 12 spp. of Pisces, 7 spp., of Amphibia, 2 spp. of Reptilia and 4

spp. of Mammalia have been identified. Scientific inputs have been provided to Divisional Forest Officer, Jaintia Hills Wildlife Division, Meghalaya Forest Department regarding major faunal groups for the development of Mobile App. Scientist of the Centre reviewed a paper for the *Journal of Threatened Taxa*.

## WESTERN REGIONAL CENTRE, PUNE, MAHARASHTRA

Lonar Crater Lake, Buldhana district, Maharashtra has been surveyed on 3rd to 5th July 2020. *Olepa schleini chandrai* Kalawate, 2020 (Lepidoptera, Erebidae, Arctiinae) from Suryamal, Palghar district, Maharashtra described as new species while *Olepa schleini* Witt, Müller, Kravchenko, Miller, Hausmann & Speidel, 2005 (Lepidoptera, Erebidae, Arctiinae) from Nandurbar, Maharashtra reported as new record to India. Altogether 20 species including 7 spp. of Odonata, 8 spp. of Lepidoptera and 5 spp. of Amphibia have been identified from 45 specimens. One DNA Barcode sequence for a moth species, *Pygospila tyres* (MT776312) was generated.



*Olepa schleini  
chandrai* Kalawate,  
2020



Indian paradise flycatcher *Terpsiphone paradisi* (Linnaeus, 1758)



Blackbuck *Antelope cervicapra* (Linnaeus, 1758)

Globe Skimmer Dragonfly, *Pantala flavescens* (Fabricius, 1798)



## NORTHERN REGIONAL CENTRE, DEHRADUN, UTTARAKHAND

The Centre identified 7 spp. of Protozoa, 9 spp. of Lepidoptera, 2 spp. of Odonata, 5 spp. of Nematoda and 7 spp. of Pisces collected from different ecosystems of Punjab, Uttarakhand and Uttar Pradesh. The Scientists of the Centre reviewed four papers on Insect and Aves studies for different journals.

## CENTRAL ZONE REGIONAL CENTRE, JABALPUR, MADHYA PRADESH

Forty eight species comprising 5 spp. of Lepidoptera, 6 spp. of Scorpionida, 7 spp. of Mollusca, 1 spp. of Amphibia and 2 spp. of Reptilia from 211 specimens have been identified,



*Pterodes exustus* (Temminck, 1828)

## DESERT REGIONAL CENTRE, JODHPUR, RAJASTHAN

Two hundred and seventeen specimens of different faunal groups such as one species of Coleoptera, 12 spp, of Hymenoptera, 14 spp, of Lepidoptera, 18 spp. of Pisces and 1 spp. of Reptilia were identified. Scientist of the Centre reviewed a manuscript for its suitability for publication in *Journal of Biological Studies*.

*Raiamas bola* (Hamilton, 1822)





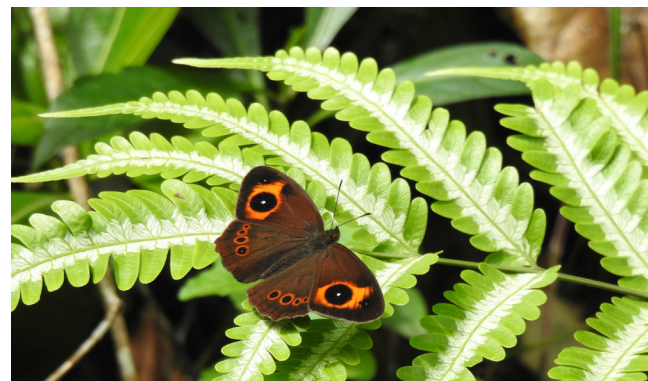
## SOUTHERN REGIONAL CENTRE, CHENNAI, TAMIL NADU



Painted-Spur fowl-  
*Galloperdix lunulata*  
(Valenciennes, 1825)

Red Disc Bush Brown-  
*Telinga oculus* (Marshall, 1880)

During the month one new species of dragonfly from Great Nicobar Island and a new species of mayfly from eastern Himalaya was described. The scientists of the Centre attended webinars on Horseshoe crab and Mangrove fauna. Ninety three species belonging to different faunal groups were identified and 20 DNA barcodes were generated and uploaded in NCBI.



## GANGETIC PLAINS REGIONAL CENTRE, PATNA, BIHAR

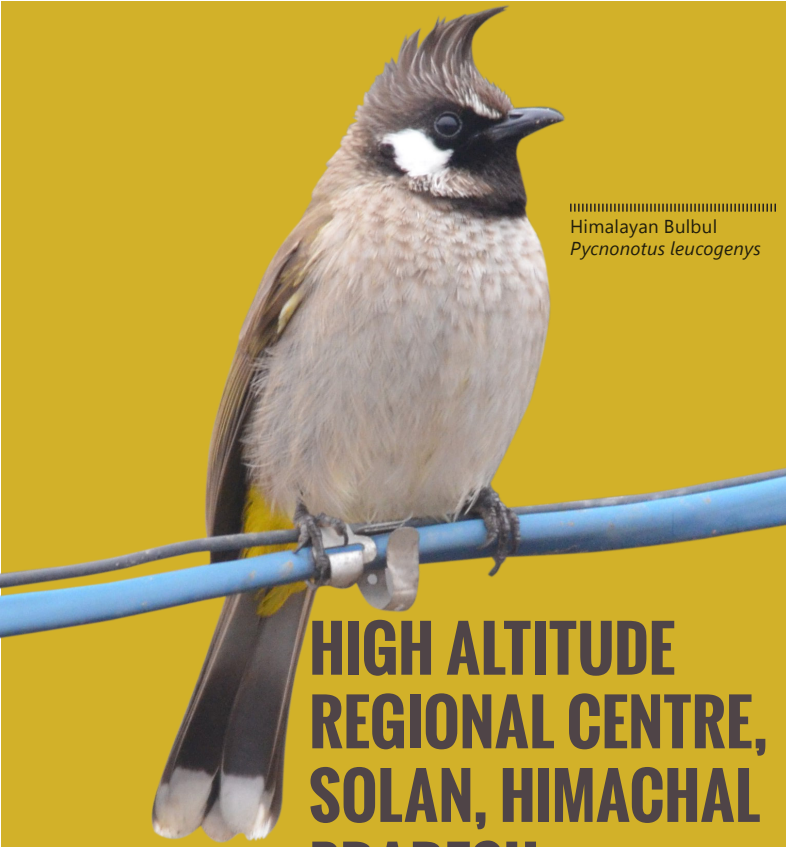
*Keratella tropica* Apstein, 1907

Forty two specimens belonging to 10 species of moths and 16 species of molluscs were identified. A moth *Porcellanola sikkima* Joshi, Singh & Laszlo, 2020 described as new species while *Porcellanola sukhothai* Laszlo, Ronkay & Witt, 2006 *Porcellanola langtangi* Laszlo, Ronkay & Witt, 2006 were reported as new record to India. A "National webinar on Different Dimensions of House Sparrow Conservation" has been organized on 19.07.2020. One manuscript has been reviewed by the Scientist of the Centre.



*Porcellanola langtangi* Laszlo  
Ronkay Witt  
2006





Himalayan Bulbul  
*Pycnonotus leucogenys*

## HIGH ALTITUDE REGIONAL CENTRE, SOLAN, HIMACHAL PRADESH

Faunistic identification from the Centre includes 53 specimens belonging to 8 species of Papilionoidea from Punjab Shiwaliks and 37 specimens referable to 8 species of families Sphingidae, Erebidae, Zygaenidae and Eupteriotidae from Punjab Shiwaliks and Grasslands of Districts Sirmour and Shimla, Himachal Pradesh; 49 examples with 05 species of Orthoptera from Spiti Valley and Sangla valley, 50 specimens under 11 species and 9 genera of group Ephemeroptera, Plecoptera and Trichoptera from UT of Jammu & Kashmir and Grasslands of Himachal Pradesh and 48 examples belonging to 5 species of Reptiles. The centre organized a webinar on 28.07.2020 on World Nature Conservation Day on "COVID-19 and its link with Environment and its Biodiversity". The lectures in this webinar were delivered on the topics viz., Environment and its Biodiversity by Dr.

Kaialsh Chandra, Director, Zoological Survey of India, Covid-19 and message from Nature by Sh. B. S. Rana, IFS, Chief Conservator of Forests, Nahan Forest Circle, HP Forest Department and Corona Virus Lockdown, Environment & Lessons to be learnt by Dr. S. K. Bhardwaj, Professor & Head, Department of Environmental Sciences, College of Forestry, Dr. Y. S. Parmar University, Nauni, Solan. More than 100 teachers, researchers, scientists, foresters and students of various institutions all over India participated in it. One paper on Lepidoptera was reviewed for National Journal and 11 species of Lepidoptera identified for Guru Granth Sahib, World University, Fatehgarh Sahib, Punjab.



Egyptian Vulture  
*Neophron percnopterus*  
(Linnaeus, 1758)

## MARINE BIOLOGY REGIONAL CENTRE, CHENNAI, TAMIL NADU

Coral reefs of Gulf of Kachchh are experiencing bleaching during this time of the year, which were earlier shown to be resistant to bleaching. The surveys to assess the bleaching were conducted by the team of researchers working under the 'Coral Restoration Project' in Gulf of Kachchh. Interestingly the observers noticed that the most prevalent and dominant *Dipsastrea favus* (Forsk. 1775) is the worst affected among the hard corals of Gulf of Kachchh. The researchers are trying to find out the most resilient species, as they are also monitoring the colonies of corals attached to the 'Biorock' structures for any bleaching stress and whether the biorock structures if given different levels of energy could be used as a mitigating option from the bleaching stress. Scientists of the centre identified and registered 62 species, under 299 exs., which include Testate amoebae 22 species, Marine Sponges 12 species, Molluscs 09 species, Arthropods 02 species, Echinoderms 02 species and Pisces 15 species.

Coral bleaching observation in Gulf of Kachchh







Common Moorhen  
*Gallinula chloropus*  
Linnaeus 1758

## ANDAMAN AND NICOBAR REGIONAL CENTRE, PORT BLAIR

Fourteen days local field surveys have been carried out in South Andaman to assess the terrestrial faunal diversity during July 2020. A total of 349 species comprised of 69 spp. of Scleractinian corals, 51 spp. of Molluscs, 13 spp. of Echinoderms, 6 spp. of Bryozoa, 36 spp. of Fishes, 5 spp. of Crustaceans

marine environment and 100 spp. of Lepidoptera, 3 spp. of Odonata, 21 spp. of Arachnida, 1 sp. of Hemiptera, 44 spp. of Birds were identified from terrestrial habitat. Meta data for 1000 registered specimens has been prepared. Discussions made with ICMR-RMRC, Port Blair to explore the possibilities for collaborative study on marine microbes.

Common Redshank  
*Tringa tetanus*  
Linnaeus 1758



## SUNDERBAN REGIONAL CENTRE, CANNING, WEST BENGAL

Local survey was conducted to Matla River on 18.06.2020. A total of 12 species were identified including one species of turtle, five species of lizards and six species of snakes. World Snake Day - 2020 was celebrated by the Centre on 16.07.2020 through webinar and live Snake handling training has been given to the office staff.



*Ptyas mucosa*  
Linnaeus 1758



## FRESHWATER BIOLOGY REGIONAL CENTRE, HYDERABAD, TELANGANA

Two local surveys were conducted to Wyra Lake, Telangana on 25th July 2020 and Krishna River, Sangameshwar, Telangana on 27th July 2020. Examined 1217 specimens from Kurnool, Kandaman, Visakhapatnam, East Godavari districts in Andhra Pradesh; Jaypore and

Ganjam districts in Odisha; Chitrokote waterfall, Chattisgarh; Shabad, Gadwal, Nagarkurnool, Rangareddy districts in Telangana; Amrabad and Kawal Tiger Reserve in Telangana; Godavari River in Andhra Pradesh and Telangana; Nasik district in Maharashtra. One hundred and twenty one species including 7 species of Decapods, 9 species of aquatic insects, 34 species of butterflies, 11 species of Ostracods, 60 species of fishes from Godavari River and East Godavari district have been identified. Seventeen DNA sequences of fishes were submitted to NCBI and BOLD.

Painted stork *Mycteria leucocephala* (Pennant, 1769)



*Macroglossum stellatarum* (Linnaeus, 1758)



Grizzled Giant Squirrel *Ratufa macroura* (Pennant, 1769)

## WESTERN GHATS REGIONAL CENTRE, KOZHIKODE, KERALA

Hymenoptera: Apoidea) of India, Tiphiidae (Insecta: Hymenoptera: Vespoidea) of India and Sphecidae (Insecta: Hymenoptera: Apoidea) of India were prepared and updated in ZSI website. Scientist of the centre reviewed 1 research manuscript on Hymenoptera for the journal *Oriental Insects*. Identified photographic images of two preying mantid, seven spider & sixty-six wasp specimens received from different institutes/NGOs as a part of identification and advisory services

Scientists of the Centre identified 2 species of preying mantids, 12 species of spiders, 16 species of wasps and 6 species of reptiles from Agasthyamalai Biosphere Reserve and other parts of Kerala and Western Ghats. A checklist of Ampulicidae (Insecta:

Malabar Pied Hornbill - *Anthraceroceros coronatus* (Boddaert, 1783)





## ESTUARINE BIOLOGY REGIONAL CENTRE, GOPALPUR, ODISHA

During the month total 153 specimens belonging to 55 species were identified which includes fishes, lice, crabs, prawns etc. *Ophichthus sangjuensis* (Ji and Kim, 2011) is reported for the first time from the Indian waters as well as from Indian Ocean on the basis of 8 specimens collected from West Bengal

coast. A webinar series “Meet the experts: Let us discuss biodiversity” was started from 21st July 2020. The first lecture was delivered by Dr. Kailash Chandra, Director, Zoological Survey of India on “Fauna of India: an overview” on 21.07.2020 in which 1200 participants have participated through

Google meet and Facebook live options and the video on face book had been viewed by more than 3200 people so far. The second lecture of the series is delivered by Dr. C. Raghunathan, ZSI Headquarters, Kolkata on the “Marine faunal diversity in India-Status and Trends” on 31.07.2020.

|||||  
*Ophichthus sangjuensis*  
(Ji and Kim, 2011)



## ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Local surveys conducted to Poma River, Itanagar WLS and Kulia basti, Jotte village, Papumpare during the month. A total of 189 specimens comprising 37 spp. of Rhopalocera, 13 spp. of Fishes, 2 spp. of Cladocerans, 2 spp. of Diplopoda, 3 spp. of Amphibians and 1 sp. of Mammal were identified.

|||||  
*Bradybaena cestus*  
Benson 1836



|||||  
*Zhangixalus smaradinus*  
Gunther, 1858










|||||  
*Salmacis virgulata* L. Agassiz  
in L. Agassiz & Desor, 1846

## MARINE AQUARIUM AND REGIONAL CENTRE, DIGHA, WEST BENGAL



|||||  
*Littoraria  
melanostoma*  
(Gray, 1839)

Local survey conducted to assess the landing of by-catch fauna in the Digha Shankarpur fish landing Centre on 17.07.2020. A total of 330 specimens belonging to 81 species which include 6 spp. of Mollusca, 6 spp. of Arthropoda, 11 spp. of Cnidaria, 1 sp. of Echinodermata and 2 spp. of Pisces were identified. Five species of Opisthobranchs namely *Aldisa andersoni*, *Gymnodoris bicolor*, *Gymnodoris subflava*, *Elysia subornata* and *Philineopsis cyanea* reported as first record to Indian water from Gulf of Mannar. One manuscript on "Seasonal and Spatial Accumulation of Heavy Metals in *Cystoseira barbata* from Northeastern Black Sea Coasts" has been reviewed for the journal. The Centre organized a webinar on 'The Wonders of the Toothless Sea Giants-Baleen Whales' on 24th July 2020 in which a lecture was delivered by Dr. Siba Prasad Parida, Associate professor, Department of Zoology, Centurion University, Bhubaneswar, Odisha. Prior to the main lecture, Dr. Kailash Chandra, Director, ZSI and Dr. C. Raghunathan, ZSI Headquarters, Kolkata delivered their messages on Unique Marine Fauna. The programme was attended by 1500 participants from 21 States and 3 UTs of which about 950 attended the webinar through Google meet link and You tube live streaming.





## BOOKS

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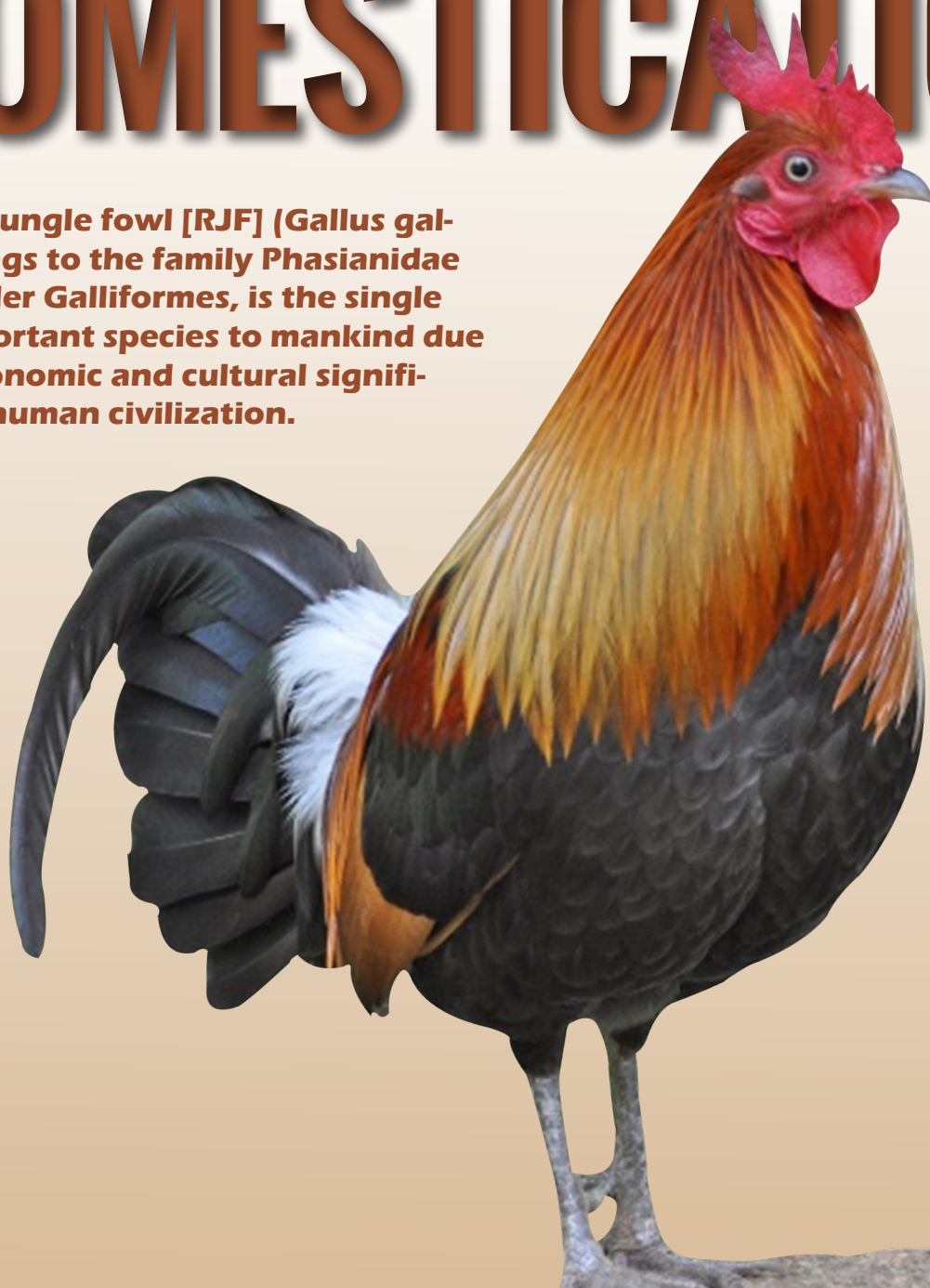
## SUPERANNUATION

Shri G. Sankaran, Photographer Gr.-II superannuated on 31st July 2020 after 34 years of dedicated service to the Zoological Survey of India. Shri Sankaran was a skilled photographer, participated in several surveys and his photographs were featured in many publications of ZSI.



# CHICKEN DOMESTICATION

**The Red Jungle fowl [RJF] (*Gallus gallus*) belongs to the family Phasianidae of the order Galliformes, is the single most important species to mankind due to the economic and cultural significance to human civilization.**







1. Cochin-Chinese RJF (*G.g gallus*) - occurs in Cambodia, Central and South Vietnam, Central and South Laos and Eastern Thailand. The neck hackles of cock long and golden orange to bright red and ear lappets large and white.
2. Burmese RJF (*G.g spadiceus*) - occurs in South-West Yunnan (China) and northeastern parts of India, Myanmar, Thailand, peninsular Malaysia and North Sumatra. In comparison to *G.g. gallus* the neck hackles golden yellow, comb and facial lappet red and all are short.
3. Javan RJF (*G.g. bankiva*) - occurs in South Sumatra, Java and Bali. The neck hackles rounded, golden-yellow and even shorter.

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