





ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

Publisher
Wildlife Information Liaison Development Society
www.wild.zooreach.org

Host
Zoo Outreach Organization
www.zooreach.org

No. 12, Thiruvannamalai Nagar, Saravanampatti - Kalapatti Road, Saravanampatti,
Coimbatore, Tamil Nadu 641035, India
Ph: +91 9385339863 | www.threatenedtaxa.org
Email: sanjay@threatenedtaxa.org

EDITORS

Founder & Chief Editor

Dr. Sanjay Molur

Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO),
12 Thiruvannamalai Nagar, Saravanampatti, Coimbatore, Tamil Nadu 641035, India

Deputy Chief Editor

Dr. Neelesh Dahanukar

Noida, Uttar Pradesh, India

Managing Editor

Mr. B. Ravichandran, WILD/ZOO, Coimbatore, India

Associate Editors

Dr. Mandar Paingankar, Government Science College Gadchiroli, Maharashtra 442605, India

Dr. Ulrike Streicher, Wildlife Veterinarian, Eugene, Oregon, USA

Ms. Priyanka Iyer, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India

Dr. B.A. Daniel, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India

Editorial Board

Dr. Russel Mittermeier

Executive Vice Chair, Conservation International, Arlington, Virginia 22202, USA

Prof. Mewa Singh Ph.D., FASC, FNA, FNASC, FNAPsy

Ramanna Fellow and Life-Long Distinguished Professor, Biopsychology Laboratory, and
Institute of Excellence, University of Mysore, Mysuru, Karnataka 570006, India; Honorary
Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore; and Adjunct
Professor, National Institute of Advanced Studies, Bangalore

Stephen D. Nash

Scientific Illustrator, Conservation International, Dept. of Anatomical Sciences, Health Sciences
Center, T-8, Room 045, Stony Brook University, Stony Brook, NY 11794-8081, USA

Dr. Fred Pluthero

Toronto, Canada

Dr. Priya Davidar

Sigur Nature Trust, Chadapatti, Mavinahalla PO, Nilgiris, Tamil Nadu 643223, India

Dr. Martin Fisher

Senior Associate Professor, Battcock Centre for Experimental Astrophysics, Cavendish
Laboratory, JJ Thomson Avenue, Cambridge CB3 0HE, UK

Dr. John Fellowes

Honorary Assistant Professor, The Kadoorie Institute, 8/F, T.T. Tsui Building, The University of
Hong Kong, Pokfulam Road, Hong Kong

Prof. Dr. Mirco Solé

Universidade Estadual de Santa Cruz, Departamento de Ciências Biológicas, Vice-coordenador
do Programa de Pós-Graduação em Zoologia, Rodovia Ilhéus/Itabuna, Km 16 (45662-000)
Salobrinho, Ilhéus - Bahia - Brasil

Dr. Rajeev Raghavan

Professor of Taxonomy, Kerala University of Fisheries & Ocean Studies, Kochi, Kerala, India

English Editors

Mrs. Mira Bhojwani, Pune, India

Dr. Fred Pluthero, Toronto, Canada

Mr. P. Ilangoan, Chennai, India

Web Development

Mrs. Latha G. Ravikumar, ZOO/WILD, Coimbatore, India

Typesetting

Mr. Arul Jagadish, ZOO, Coimbatore, India

Mrs. Radhika, ZOO, Coimbatore, India

Mrs. Geetha, ZOO, Coimbatore India

Fundraising/Communications

Mrs. Payal B. Molur, Coimbatore, India

Subject Editors 2019–2021

Fungi

Dr. B. Shivaraju, Bengaluru, Karnataka, India

Dr. R.K. Verma, Tropical Forest Research Institute, Jabalpur, India

Dr. Vatsavaya S. Raju, Kakatiya University, Warangal, Andhra Pradesh, India

Dr. M. Krishnappa, Jnana Sahyadri, Kuvempu University, Shimoga, Karnataka, India

Dr. K.R. Sridhar, Mangalore University, Mangalagangothri, Mangalore, Karnataka, India

Dr. Gunjan Biswas, Vidyasagar University, Midnapore, West Bengal, India

Plants

Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India

Dr. N.P. Balakrishnan, Ret. Joint Director, BSI, Coimbatore, India

Dr. Shonil Bhagwat, Open University and University of Oxford, UK

Prof. D.J. Bhat, Retd. Professor, Goa University, Goa, India

Dr. Ferdinando Boero, Università del Salento, Lecce, Italy

Dr. Dale R. Calder, Royal Ontario Museum, Toronto, Ontario, Canada

Dr. Cleofas Cervancia, Univ. of Philippines Los Baños College Laguna, Philippines

Dr. F.B. Vincent Florens, University of Mauritius, Mauritius

Dr. Merlin Franco, Curtin University, Malaysia

Dr. V. Irudayaraj, St. Xavier's College, Palayamkottai, Tamil Nadu, India

Dr. B.S. Kholia, Botanical Survey of India, Gangtok, Sikkim, India

Dr. Pankaj Kumar, Kadoorie Farm and Botanic Garden Corporation, Hong Kong S.A.R., China

Dr. V. Sampath Kumar, Botanical Survey of India, Howrah, West Bengal, India

Dr. A.J. Solomon Raju, Andhra University, Visakhapatnam, India

Dr. Vijayasankar Raman, University of Mississippi, USA

Dr. B. Ravi Prasad Rao, Sri Krishnadevaraya University, Anantpur, India

Dr. K. Ravikumar, FRLHT, Bengaluru, Karnataka, India

Dr. Aparna Watve, Pune, Maharashtra, India

Dr. Qiang Liu, Xishuangbanna Tropical Botanical Garden, Yunnan, China

Dr. Noor Azhar Mohamed Shazili, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia

Dr. M.K. Vasudeva Rao, Shiv Ranjani Housing Society, Pune, Maharashtra, India

Prof. A.J. Solomon Raju, Andhra University, Visakhapatnam, India

Dr. Mandar Datar, Agharkar Research Institute, Pune, Maharashtra, India

Dr. M.K. Janarthanam, Goa University, Goa, India

Dr. K. Karthigeyan, Botanical Survey of India, India

Dr. Errol Vela, University of Montpellier, Montpellier, France

Dr. P. Lakshminarasimhan, Botanical Survey of India, Howrah, India

Dr. Larry R. Noblick, Montgomery Botanical Center, Miami, USA

Dr. K. Haridasan, Pallavur, Palakkad District, Kerala, India

Dr. Analinda Manila-Fajard, University of the Philippines Los Banos, Laguna, Philippines

Dr. P.A. Sinu, Central University of Kerala, Kasaragod, Kerala, India

Dr. Afroz Alam, Banasthali Vidyapith (accredited A grade by NAAC), Rajasthan, India

Dr. K.P. Rajesh, Zamorin's Guruvayurappan College, GA College PO, Kozhikode, Kerala, India

Dr. David E. Boufford, Harvard University Herbaria, Cambridge, MA 02138-2020, USA

Dr. Ritesh Kumar Choudhary, Agharkar Research Institute, Pune, Maharashtra, India

Dr. Navendu Page, Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand, India

Dr. Kannan C.S. Warrior, Institute of Forest Genetics and Tree Breeding, Tamil Nadu, India

Invertebrates

Dr. R.K. Avasthi, Rohtak University, Haryana, India

Dr. D.B. Bastawade, Maharashtra, India

Dr. Partha Pratim Bhattacharjee, Tripura University, Suryamaninagar, India

Dr. Kailash Chandra, Zoological Survey of India, Jabalpur, Madhya Pradesh, India

Dr. Ansie Dippenaar-Schoeman, University of Pretoria, Queenswood, South Africa

Dr. Rory Dow, National Museum of Natural History Naturalis, The Netherlands

Dr. Brian Fisher, California Academy of Sciences, USA

Dr. Richard Gallon, Llandudno, North Wales, LL30 1UP

Dr. Hemant V. Ghate, Modern College, Pune, India

Dr. M. Monwar Hossain, Jahangirnagar University, Dhaka, Bangladesh

Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.

Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK

For Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_scope
For Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>
For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: Fish species recorded in the Gowthami-Godavari Estuary, Andhra Pradesh: *Lutjanus johnii* (top left), *Triacanthus biaculeatus* (top right), *Acentrogobius cyanomos*, *Elops machnata*, *Trypauchen vagina*, *Oxyurichthys microlepis*. © Paromita Ray.



An unusual morph of *Naja naja* (Linnaeus, 1758) (Squamata: Serpentes) from Goa, India

Nitin Sawant¹ , Amrut Singh² , Shubham Rane³ , Sagar Naik⁴ & Mayur Gawas⁵

¹⁻⁵ Department of Zoology, Goa University, Taleigao Plateau, Taleigao, Goa 403206, India.

¹ nitin.sawant@unigoa.ac.in (corresponding author), ² amrutsnake@gmail.com, ³ shubhamrane7036@gmail.com, ⁴ sagarnaik1018@gmail.com, ⁵ mithilgawas0987@gmail.com

Pigmentation serves a protective role in many animals, including snakes, it functions in camouflage, warning, mimicry or thermoregulation (Bechtel 1978; Krecsák 2008). Body coloration is a multifunctional trait often characterized by sophisticated variation (Kemp et al. 2005; Bury et al. 2020). Therefore, discontinuous phenotypes are generally thought to bear fitness costs as a result of the primary functions of a given color variation having been lost (Bury et al. 2020). The maintenance of such phenotypes within populations, i.e., color polymorphism, thus represents an interesting evolutionary phenomenon (Forsman 1995; Forsman et al. 2008; Bury et al. 2020). Melanistic individuals exhibit an increased amount of dark pigmentation, a possible adaptive hypothesis for melanism in snakes is protection against sun damage (Lorioux et al. 2008; Jablonski & Kautman 2017).

Melanism is an example of color polymorphism in which a phenotype is characterized by over concentration of melanin compared to the typical color (Trullas et al. 2007; Bury et al. 2020). In small vertebrates, melanistic individuals are known to bear an elevated risk of predation (Andren & Nilson 1981; Bury et al. 2020). In the past few years there has been an increase in the

reports of abnormal colorations among Indian serpents, which includes cases of albinism and leucism (Devkota et al. 2020; Deshmukh et al. 2020; Mukherjee & Mohan 2021). The spectacled cobra *Naja naja* is a large, venomous snake distributed throughout most of India except the far north-east, altitudes above 2,000 m, and the Andaman & Nicobar Islands (Daniel 2002; Das 2002; Whitaker & Captain 2004; Whitaker & Martin 2015).

On 27 May 2021, an abnormal looking *N. naja* was rescued at Modelo wado, Assonora (15.618°N, 73.897°E), Goa at 1005 h. The snake was initially sighted by an elderly woman who then reported it to other members of the family, who called the rescuer. The snake was brownish black in colour on dorsal side and brownish grey on ventral side (Image 1), eye with visible eye ball (Image 2) and with a scarcely visible spectacle mark on the hood (Image 3). Ventral scales were counted as per Dowling (1951). The unsexed individual possessed 187 ventral scales, 25 undivided subcaudal scales and an undivided anal plate. Dorsal scales at neck: mid-body: tail, were in 24:21:15 rows, respectively. Nasal scale 1 on each side separated by a pair of pre frontals, 1 frontal, 2 parietals and 2+3 temporal scales on each side, supralabials 7 on right and 8 on left with 3rd & 4th supralabial contacting the

Editor: S.R. Ganesh, Chennai Snake Park, Chennai, India.

Date of publication: 26 August 2022 (online & print)

Citation: Sawant, N., A. Singh, S. Rane, S. Naik & M. Gawas (2022). An unusual morph of *Naja naja* (Linnaeus, 1758) (Squamata: Serpentes) from Goa, India. *Journal of Threatened Taxa* 14(8): 21736–21738. <https://doi.org/10.11609/jott.7955.14.8.21736-21738>

Copyright: © Sawant et al. 2022. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use, reproduction, and distribution of this article in any medium by providing adequate credit to the author(s) and the source of publication.

Funding: Ministry of Environment, Forest and Climate Change, Government of India, New Delhi. [Project No. 22018-02/2019-CS (Tax)]

Competing interests: The authors declare no competing interests.

Acknowledgements: We thank the rescue team of Animal Rescue Squad (ARS) for giving us the opportunity to examine the rescued snake. We also thank the Goa Forest Department for successfully releasing the snake in the wild upon examining. We thank Ms. Seema Vishwakarma for helping in proofreading and giving her inputs.





Image 1. Full body view of *Naja naja* rescued at Modelo wado, Assonora, Goa. © Durgesh Singh.

eye, infralabials 8 on right and 9 on left, cuneate scale is present on both the sides, 1 preocular, 3 postocular and 1 supra ocular (Image 2). After recording the meristic data, the specimen was handed over to the Goa Forest Department to be released in a suitable habitat.

The snake was identified to be Spectacled Cobra *Naja naja*. The ventral scale count was in the range provided by Captain & Whitaker (2004) but the observed subcaudal scale count for complete tail was below the normally recorded range for *N. naja*. Such black color morph individuals are been recorded in northwestern region of India where such morphs are said to be common (Whitaker & Martin 2015; Litschka-Loen et al. 2019). The snake being rescued from a locality where no major transportation activity occurs reduces the chances of snake being transported from the region where they are commonly found. Observed pigmentation is the first reported case of melanism from this region and appropriate documentation of these types of individuals will farther our understanding of this phenomenon in *N. naja*.

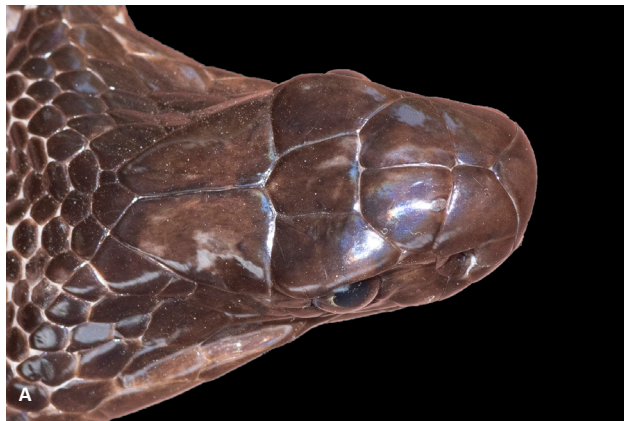


Image 2. A—Dorsal head portrait | B—Ventral head portrait | C—Right lateral head portrait | D—Left lateral head portrait of *Naja naja* rescued from Modelo wado, Assonora, Goa on 27 May 2021 at 1005 h. © Mayur Gawas.



Image 3. *Naja naja* hood: A—Dorsal view | B—Ventral view. © Durgesh Singh.

References

- Andr n, C. & G. Nilson (1981). Reproductive success and risk of predation in normal and melanistic colour morphs of the adder, *Vipera berus*. *Biological Journal of the Linnean Society* 15(3): 235–246. <https://doi.org/10.1111/j.1095-8312.1981.tb00761.x>
- Bechtel, H.B. (1978). Color and pattern in snakes (Reptilia, Serpentes). *Journal of Herpetology* 12(4): 521–532. <https://doi.org/10.2307/1563357>
- Bonnet, X., S. Lorient, F. Brischoux & M. De Crignis (2008). Is melanism adaptive in sea kraits? *Amphibia-Reptilia* 29(1): 1–5.
- Bury, S., T.D. Mazgajski, B. Najbar, B. Zaj c & K. Kurek (2020). Melanism, body size, and sex ratio in snakes—new data on the Grass Snake (*Natrix natrix*) and synthesis. *The Science of Nature* 107(3): 1–7. <https://doi.org/10.1007/s00114-020-01678-x>
- Daniel, J.C. & Bombay Natural History Society (2002). *The Book of Indian Reptiles and Amphibians*. Bombay Natural History Society, Oxford University Press, 238 pp.
- Das, I. (2002). *A photographic guide to snakes and other reptiles of India*. New Holland Publishers Ltd., 144 pp.
- Deshmukh, R.V., S.A. Deshmukh, S.A. Badhekar, J. Rewatkar, V.P. Pachare & S.B. Kawale (2020). First records of albinism or leucism in six species of snakes from central India. *Reptiles & Amphibians* 26(3): 174–179.
- Devkota, K., D.N. Mandal, G. Sah, M. O'Shea & H. Kaiser (2020). First report of leucism for the kraits *Bungarus walli* Wall, 1907 and *B. niger* Wall, 1908, with updates on their geographic distribution in Nepal (Serpentes, Elapidae). *Herpetology Notes* 13: 817–825.
- Dowling, H.G. (1951). A proposed standard system of counting ventrals in snakes. *British Journal of Herpetology* 1: 97–99.
- Forsman, A. (1995). Opposing fitness consequences of colour pattern in male and female snakes. *Journal of Evolutionary Biology* 8: 53–70. <https://doi.org/10.1046/j.1420-9101.1995.8010053.x>
- Forsman, A., J. Ahnesj , S. Caesar & M. Karlsson (2008). A model of ecological and evolutionary consequences of color polymorphism. *Ecology* 89: 34–40. <https://doi.org/10.1890/07-0572.1>
- Jablonski, D., & J. Kautman (2017). Melanism in *Natrix tessellata* (Serpentes: Colubridae) from Slovakia. *Herpetology Notes* 10: 173–175.
- Kemp, D.J., R.L. Rutowski & M. Mendoza (2005) Colour pattern evolution in butterflies: a phylogenetic analysis of structural ultraviolet and melanic markings in North American sulphurs. *Evolutionary Ecology Research* 7: 133–141.
- Krecs k, L. (2008). Albinism and leucism among European Viperinae: a review. *Russian journal of Herpetology* 15(2): 97–102.
- Litschka-Loen, T., J. Pons, P. Tiglao, J. D. Commandante, E. Santamaria, M.J. Sarmiento, R. Whitaker, A. Jesudasan, A. Kartik, C. Gnaneswar, P. Kadam, D.B. Majumdar, J.C. Menon, S. Raut, F. Sirur, V. Santra, D.J. Williams & R.A. Harrison (2019). RSTMH Special Report on Snakebite. Royal Society of Tropical Medicine and Hygiene, UK, 30 pp.
- Mukherjee, S. & R. Mohan (2021). Albinism and leucism in free-ranging snakes rescued in Gujarat and Tamil Nadu, India. *Reptiles & Amphibians* 28(3): 485–487.
- Trullas, S.C., J.H. van Wyk & J.R. Spotila (2007). Thermal melanism in ectotherms. *Journal of Thermal Biology* 32(5): 235–245.
- Whitaker, R. & A. Captain (2004). *Snakes of India – The Field Guide*. Draco books, Chengelpet, India.
- Whitaker, R. & G. Martin (2015). Diversity and Distribution of Medically Important Snakes of India, pp. 115–136. In: Gopalakrishnakone, P., A. Faiz, R. Fernando, C. Gnanathasan, A. Habib & C.C. Yang (eds.). *Clinical Toxinology in Asia Pacific and Africa. Toxinology, vol 2*. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-6386-9_16

Dr. George Mathew, Kerala Forest Research Institute, Peechi, India
Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Kareen Schnabel, NIWA, Wellington, New Zealand
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
Dr. M. Nithyanandan, Environmental Department, La Ala Al Kuwait Real Estate. Co. K.S.C., Kuwait
Dr. Himender Bharti, Punjabi University, Punjab, India
Mr. Purnendu Roy, London, UK
Dr. Saito Motoki, The Butterfly Society of Japan, Tokyo, Japan
Dr. Sanjay Sondhi, TITLI TRUST, Kalpavriksh, Dehradun, India
Dr. Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam
Dr. Nitin Kulkarni, Tropical Research Institute, Jabalpur, India
Dr. Robin Wen Jiang Ngiam, National Parks Board, Singapore
Dr. Lionel Monod, Natural History Museum of Geneva, Genève, Switzerland.
Dr. Asheesh Shivam, Nehru Gram Bharti University, Allahabad, India
Dr. Rosana Moreira da Rocha, Universidade Federal do Paraná, Curitiba, Brasil
Dr. Kurt R. Arnold, North Dakota State University, Saxony, Germany
Dr. James M. Carpenter, American Museum of Natural History, New York, USA
Dr. David M. Claborn, Missouri State University, Springfield, USA
Dr. Kareen Schnabel, Marine Biologist, Wellington, New Zealand
Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
Dr. Priyadarsanan Dharma Rajan, ATREE, Bengaluru, India
Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
Dr. Keith V. Wolfe, Antioch, California, USA
Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
Dr. John T.D. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
Dr. Priyadarsanan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

Dr. Neelesh Dahanukar, IISER, Pune, Maharashtra, India
Dr. Topiltzin Contreras MacBeath, Universidad Autónoma del estado de Morelos, México
Dr. Heok Hee Ng, National University of Singapore, Science Drive, Singapore
Dr. Rajeev Raghavan, St. Albert's College, Kochi, Kerala, India
Dr. Robert D. Sluka, Chiltern Gateway Project, A Rocha UK, Southall, Middlesex, UK
Dr. E. Vivekanandan, Central Marine Fisheries Research Institute, Chennai, India
Dr. Davor Zanella, University of Zagreb, Zagreb, Croatia
Dr. A. Biju Kumar, University of Kerala, Thiruvananthapuram, Kerala, India
Dr. Akhilesh K.V., ICAR-Central Marine Fisheries Research Institute, Mumbai Research Centre, Mumbai, Maharashtra, India
Dr. J.A. Johnson, Wildlife Institute of India, Dehradun, Uttarakhand, India
Dr. R. Ravinesh, Gujarat Institute of Desert Ecology, Gujarat, India

Amphibians

Dr. Sushil K. Dutta, Indian Institute of Science, Bengaluru, Karnataka, India
Dr. Annemarie Ohler, Muséum national d'Histoire naturelle, Paris, France

Reptiles

Dr. Gernot Vogel, Heidelberg, Germany
Dr. Raju Vyas, Vadodara, Gujarat, India
Dr. Pritpal S. Soorae, Environment Agency, Abu Dubai, UAE.
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey
Prof. Chandrashekher U. Rivonker, Goa University, Taleigao Plateau, Goa. India
Dr. S.R. Ganesh, Chennai Snake Park, Chennai, Tamil Nadu, India
Dr. Himansu Sekhar Das, Terrestrial & Marine Biodiversity, Abu Dhabi, UAE

Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia
Mr. H. Byju, Coimbatore, Tamil Nadu, India
Dr. Chris Bowden, Royal Society for the Protection of Birds, Sandy, UK
Dr. Priya Davidar, Pondicherry University, Kalapet, Puducherry, India
Dr. J.W. Duckworth, IUCN SSC, Bath, UK
Dr. Rajah Jayapal, SACON, Coimbatore, Tamil Nadu, India
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India
Mr. J. Praveen, Bengaluru, India
Dr. C. Srinivasulu, Osmania University, Hyderabad, India
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA
Dr. Gombobaatar Sunde, Professor of Ornithology, Ulaanbaatar, Mongolia
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel
Dr. Taej Mundkur, Wetlands International, Wageningen, The Netherlands
Dr. Carol Inskipp, Bishop Auckland Co., Durham, UK
Dr. Tim Inskipp, Bishop Auckland Co., Durham, UK
Dr. V. Gokula, National College, Tiruchirappalli, Tamil Nadu, India
Dr. Arkady Lelej, Russian Academy of Sciences, Vladivostok, Russia
Dr. Simon Dowell, Science Director, Chester Zoo, UK
Dr. Mário Gabriel Santiago dos Santos, Universidade de Trás-os-Montes e Alto Douro, Quinta de Prados, Vila Real, Portugal
Dr. Grant Connette, Smithsonian Institution, Royal, VA, USA
Dr. M. Zafar-ul Islam, Prince Saud Al Faisal Wildlife Research Center, Taif, Saudi Arabia

Mammals

Dr. Giovanni Amori, CNR - Institute of Ecosystem Studies, Rome, Italy
Dr. Anwaruddin Chowdhury, Guwahati, India
Dr. David Mallon, Zoological Society of London, UK
Dr. Shomita Mukherjee, SACON, Coimbatore, Tamil Nadu, India
Dr. Angie Appel, Wild Cat Network, Germany
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India
Dr. Mewa Singh, Mysore University, Mysore, India
Dr. Paul Racey, University of Exeter, Devon, UK
Dr. Honnavalli N. Kumara, SACON, Anaikatty P.O., Coimbatore, Tamil Nadu, India
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraja, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Mandar S. Paingankar, University of Pune, Pune, Maharashtra, India (Molecular)
Dr. Jack Tordoff, Critical Ecosystem Partnership Fund, Arlington, USA (Communities)
Dr. Ulrike Streicher, University of Oregon, Eugene, USA (Veterinary)
Dr. Hari Balasubramanian, EcoAdvisors, Nova Scotia, Canada (Communities)
Dr. Rayanna Hellem Santos Bezerra, Universidade Federal de Sergipe, São Cristóvão, Brazil
Dr. Jamie R. Wood, Landcare Research, Canterbury, New Zealand
Dr. Wendy Collinson-Jonker, Endangered Wildlife Trust, Gauteng, South Africa
Dr. Rajeshkumar G. Jani, Anand Agricultural University, Anand, Gujarat, India
Dr. O.N. Tiwari, Senior Scientist, ICAR-Indian Agricultural Research Institute (IARI), New Delhi, India
Dr. L.D. Singla, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India
Dr. Rupika S. Rajakaruna, University of Peradeniya, Peradeniya, Sri Lanka
Dr. Bahar Baviskar, Wild-CER, Nagpur, Maharashtra 440013, India

Reviewers 2019–2021

Due to pausity of space, the list of reviewers for 2018–2020 is available online.

The opinions expressed by the authors do not reflect the views of the Journal of Threatened Taxa, Wildlife Information Liaison Development Society, Zoo Outreach Organization, or any of the partners. The journal, the publisher, the host, and the partners are not responsible for the accuracy of the political boundaries shown in the maps by the authors.

Print copies of the Journal are available at cost. Write to:
The Managing Editor, JoTT,
c/o Wildlife Information Liaison Development Society,
No. 12, Thiruvannamalai Nagar, Saravanampatti - Kalapatti Road,
Saravanampatti, Coimbatore, Tamil Nadu 641035, India
ravi@threatenedtaxa.org

Journal of Threatened Taxa is indexed/abstracted in Bibliography of Systematic Mycology, Biological Abstracts, BIOSIS Previews, CAB Abstracts, EBSCO, Google Scholar, Index Copernicus, Index Fungorum, JournalSeek, National Academy of Agricultural Sciences, NewJour, OCLC WorldCat, SCOPUS, Stanford University Libraries, Virtual Library of Biology, Zoological Records.

NAAS rating (India) 5.64



www.threatenedtaxa.org

OPEN ACCESS



The Journal of Threatened Taxa (JoTT) is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at www.threatenedtaxa.org. All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use, reproduction, and distribution of articles in any medium by providing adequate credit to the author(s) and the source of publication.

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

August 2022 | Vol. 14 | No. 8 | Pages: 21487–21750

Date of Publication: 26 August 2022 (Online & Print)

DOI: 10.11609/jott.2022.14.8.21487-21750

Article

Dietary preference of Assamese Macaque *Macaca assamensis* McClelland, 1840

(Mammalia: Primates: Cercopithecidae) in Dampa Tiger Reserve, India

– Ht. Decemson, Sushanto Gouda, Zothan Siam & Hmar Tlawmte Lalremsanga, Pp. 21487–21500

Reviews

Natural history notes on three bat species

– Dharmendra Khandal, Ishan Dhar, Dau Lal Bohra & Shyamkant S. Talmale, Pp. 21501–21507

The checklist of birds of Rajkot district, Gujarat, India with a note on probable local extinction

– Neel Sureja, Hemanya Radadia, Bhavesh Trivedi, Dhavalkumar Varagiya & Mayurdan Gadhavi, Pp. 21508–21528

Alien flora of Uttarakhand, western Himalaya: a comprehensive review

– Shikha Arora, Amit Kumar, Khima Nand Balodi & Kusum Arunachalam, Pp. 21529–21552

Communications

New records of *Nyctalus leisleri* (Kuhl, 1817) and *Myotis nattereri* (Kuhl, 1817) (Mammalia: Chiroptera: Vespertilionidae) from National Park “Smolny” and its surroundings, Republic of Mordovia

– Dmitry Smirnov, Nadezhda Kirillova, Alexander Kirillov, Alexander Ruchin & Victoria Vekhnik, Pp. 21553–21560

Avifaunal diversity in unprotected wetlands of Ayodhya District, Uttar Pradesh, India

– Yashmita-Ulman & Manoj Singh, Pp. 21561–21578

Can the Sri Lankan endemic-endangered fish *Labeo fischeri* (Teleostei: Cyprinidae) adapt to a new habitat?

– Dinelka Thilakarathne & Gayan Hirimuthugoda, Pp. 21579–21587

An overview of the fish diversity and their threats in the Gowthami-Godavari Estuary in Andhra Pradesh, India

– Paromita Ray, Giridhar Malla, J.A. Johnson & K. Sivakumar, Pp. 21588–21604

DNA barcoding of a lesser-known catfish, *Clupisoma bastari* (Actinopterygii: Ailiidae) from Deccan Peninsula, India

– Boni Amin Laskar, Harikumar Adimalla, Shantanu Kundu, Deepa Jaiswal & Kailash Chandra, Pp. 21605–21611

Description of the larva of *Vestalis melania* (Selys, 1873) (Odonata: Calopterygidae) identified through DNA barcoding

– Don Mark E. Guadalquivir, Olga M. Nuneza, Sharon Rose M. Tabugo & Reagan Joseph T. Villanueva, Pp. 21612–21618

Checklist of Carabidae (Coleoptera) in the Chinnar Wildlife Sanctuary, a dry forest in the rain shadow region of the southern Western Ghats, India

– M.C. Sruthi & Thomas K. Sabu, Pp. 21619–21641

Zoophily and nectar-robbing by sunbirds in *Gardenia latifolia* Ait. (Rubiaceae)

– A.J. Solomon Raju, S. Sravan Kumar, L. Kala Grace, K. Punny, Tebesi Peter Raliengoane & K. Prathyusha, Pp. 21642–21650

A new population record of the Critically Endangered *Dipterocarpus bourdillonii* Brandis from the Anamalai Tiger Reserve, India

– Navendu Page, Srinivasan Kasinathan, Kshama Bhat, G. Moorthi, T. Sundarraj, Divya Mudappa & T.R. Shankar Raman, Pp. 21651–21659

Checklist of the orchids of Nokrek Biosphere Reserve, Meghalaya, India

– Bikarma Singh & Sneha, Pp. 21660–21695

Morphological assessment and partial genome sequencing inferred from matK and rbcL genes of the plant *Tacca chantrieri*

– P.C. Lalbiaknii, F. Lalnunmawia, Vanlalhruii Ralte, P.C. Vanlalnunpuia, Elizabeth Vanlalruati Ngamlai & Joney Lalnunpuui Pachauu, Pp. 21696–21703

Short Communications

Conservation status of freshwater fishes reported from Tungabhadra Reservoir, Karnataka, India

– C.M. Nagabhushan, Pp. 21704–21709

Species diversity and distribution of large centipedes (Chilopoda: Scolopendromorpha) from the biosphere reserve of the western Nghe An Province, Vietnam

– Son X. Le, Thuc H. Nguyen, Thinh T. Do & Binh T.T. Tran, Pp. 21710–21714

Eremotermes neoparadoxalis Ahmad, 1955 (Isoptera: Termitidae: Amitermitinae) a new record from Haryana, India

– Bhanupriya, Nidhi Kakkar & Sanjeev Kumar Gupta, Pp. 21715–21719

New state records of longhorn beetles (Insecta: Coleoptera: Cerambycidae) from Meghalaya, India

– Vishwanath Duttatray Hegde, Sarita Yadav, Prerna Burathoki & Bhaskar Saikia, Pp. 21720–21726

Range extension of lesser-known orchids to the Nilgiris of Tamil Nadu, India

– M. Sulaiman, K. Kiruthika & P.B. Harathi, Pp. 21727–21732

Notes

Opportunistic sighting of a Sperm Whale *Physeter macrocephalus* Linnaeus, 1758 in Lakshadweep Archipelago

– Manokaran Kamalakannan, C.N. Abdul Raheem, Dhriti Banerjee & N. Marimuthu, Pp. 21733–21735

An unusual morph of *Naja naja* (Linnaeus, 1758) (Squamata: Serpentes) from Goa, India

– Nitin Sawant, Amrut Singh, Shubham Rane, Sagar Naik & Mayur Gawas, Pp. 21736–21738

Drape Fin Barb *Oreichthys crenuchoides* (Schäfer, 2009) (Cypriniformes: Cyprinidae) a new fish species report for Nepal

– Tapil Prakash Rai, Pp. 21739–21741

New distribution record of *Gazalina chrysolopha* Kollar, 1844 (Lepidoptera: Notodontidae) in the Trans-Himalayan region of western Nepal

– Ashant Dewan, Bimal Raj Shrestha, Rubina Thapa Magar & Prakash Gaudel, Pp. 21742–21744

First record of *Xanthia (Cirrha) icteritia* (Hufnagel, 1766) (Noctuidae: Xyleninae) from India

– Muzafar Riyaz & K. Sivasankaran, Pp. 21745–21748

First report of the mymarid genus *Proarescon* Huber (Hymenoptera: Chalcidoidea: Mymaridae) from India

– Ayyavu Athithya & Sagadai Manickavasagam, Pp. 21749–21750

Publisher & Host

