

Journal of Threatened Taxa



Open Access

10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

26 March 2024 (Online & Print)

16(3): 24819-25018

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

Building evidence
for conservation
globally for



years

silver jubilee issue



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

43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, 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),
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641006, India

Deputy Chief Editor

Dr. Neelesh Dahanukar

Noida, Uttar Pradesh, India

Managing Editor

Mr. B. Ravichandran, WILD/ZOO, Coimbatore, Tamil Nadu 641006, 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 641006, India

Dr. B.A. Daniel, ZOO/WILD, Coimbatore, Tamil Nadu 641006, 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, Mavinhalla 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. Ilangovan, Chennai, India

Ms. Sindhura Stothra Bhashyam, Hyderabad, India

Web Development

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

Typesetting

Mrs. Radhika, ZOO, Coimbatore, India

Mrs. Geetha, ZOO, Coimbatore India

Fundraising/Communications

Mrs. Payal B. Molur, Coimbatore, India

Subject Editors 2020–2022

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

Dr. Kiran Ramchandra Ranadive, Annasaheb Magar Mahavidyalaya, Maharashtra, 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, Department of Plant and Soil Science, Texas Tech University, Lubbock, Texas, USA.

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 Baños, 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. A.G. Pandurangan, Thiruvananthapuram, Kerala, India

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

Dr. Kannan C.S. Warriar, 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

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: The breathtakingly beautiful Silver Jubilee cover of JoTT is done in color pencils and ink by the 13-year old darling, Elakshi Mahika Molur.



Capturing the enchanting glow: first-ever photographs of bioluminescent mushroom *Mycena chlorophos* in Tamil Nadu, India

D. Jude¹ , Vinod Sadhasivan² , M. Ilayaraja³ & R. Amirtha Balan⁴

¹21/A10, Kamaraj Street, Maravankudieruppu, Kanyakumari, Tamil Nadu 629002, India.

²7/1d, Vini Nivas, Moovendhar Nagar, holy cross college road, Nagercoil, Tamil Nadu 629004, India.

³District Forest Officer, Kanyakumari Division, 175, College Road, Municipality Campus, Nagercoil, Tamil Nadu 629001, India.

⁴7/398A, Santhi Illam, Keezhavannan Vilai, Kanyakumari, Tamil Nadu 629501, India.

¹judetwild@gmail.com, ²svinod@gmail.com, ³ilayaraja180590@gmail.com, ⁴amirthabalanrs13@gmail.com (corresponding author)

Mushrooms belong to the group of organisms known as macrofungi under the phylum Ascomycotina and Basidiomycotina within the fungal kingdom. Mushrooms are fleshy, spore bearing-fruited bodies of the fungus (Chang & Miles 1987). Bioluminescent fungi are members of the order Agaricales, typically found in tropical, sub-tropical, and temperate climates, except for *Xylaria hypoxylon* (L.) Grev., which is an Ascomycete. Bioluminescence in fungi relies on oxygen and involves the interaction of substrates broadly categorized as luciferins. Luciferins are catalyzed by one or more diverse enzymes collectively referred to as luciferases (Kaskova et al. 2017; Patil & Yadav 2022). The chemical reaction results in the emission of light, characterizing it as cold light. The phenomenon of bioluminescence is primarily exhibited by 103 species of mushrooms (Desjardin et al. 2008; Chew et al. 2014; Desjardin et al. 2016; Weinstein et al. 2016; Karunarathna et al. 2020; Dauner et al. 2021; Oba & Hosaka 2023) of which seven species have been found in India, viz, *Mycena indica* Sarwal & Rawla (Manimohan & Leelavathy 1988), *Omphalotus olearius* (DC.) Singer (Vrinda et al. 1999), *Nohopanus eugrammus* (Mont.) Singer (Vrinda et al. 1999), *Mycena*

deeptha Aravind. & Manim. (Aravindakshan et al. 2012), *Roridomyces phyllostachydis* (Karunarathna et al. 2020), *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc. (Arya et al. 2021) and *Armillaria mellea* (Vahl) P. Kumm. (Patil & Yadav 2022).

An opportunistic survey was conducted within the protected area of Kanyakumari Wildlife Sanctuary (KKWS) of Tamil Nadu by a team of researchers in the Kulasekharam forest range (8.4064 °N, 77.4327 °E) during the monsoon season (July–September) on 21 Sept 2023. Around 1900 h, we encountered mycelial growth which was recognized as bioluminescent mushroom in the dead and decaying bamboo culms. The fungus was identified based on the current literature available as *M. chlorophos* (Berkeley & Curtis 1860; Kushwala & Hajirrnis 2016). The mushrooms were photographed using Canon EOS R3 with specific setting f/3.5, ISO-800, Exposure 10 sec. *M. chlorophos* exhibits luminescent basidiomata and mycelium, whereas its closely related species, *M. deeptha* (Aravindakshan et al. 2012) in Trivandrum, does not exhibit luminescent basidiomata.

M. chlorophos, was described in 1860 on the Bonin Islands, Japan (Berkeley & Curtis 1860). Recent

Editor: Sibdas Baskey, Uttar Banga Krishi Viswavidyalaya, Kalimpong, India.

Date of publication: 26 March 2024 (online & print)

Citation: Jude, D., V. Sadhasivan, M. Ilayaraja & R.A. Balan (2024). Capturing the enchanting glow: first-ever photographs of bioluminescent mushroom *Mycena chlorophos* in Tamil Nadu, India. *Journal of Threatened Taxa* 16(3): 2496–2498. <https://doi.org/10.11609/jott.8795.16.3.2496-2498>

Copyright: © Jude et al. 2024. 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: None.

Competing interests: The authors declare no competing interests.

Acknowledgements: We express our gratitude to Kanyakumari District Forest Department, Mr. Vidyadar ACF for granting permission, Mr. Maria Antony for his guidance and Velmurugan for assisting in the field, as well as to Dr. Utchimahali for providing valuable support for this study.

studies have reported the distribution of this species in both the old world and the new world from recent studies (Desjardin et al. 2010). Hence, it is considered a pantropical distribution (Desjardin et al. 2010). In *M. chlorophos*, the mature fruiting body is characterized by a pristine white disc morphology featuring a shallow central depression. It emits bright, greenish light in the dark from the basidioma and mycelium (Image 1c). The basidiomata is spherical in buds and has a shallow depression with whitish grey or brown disc like shape when matured. In wet weather, it looks viscid with a thick gluten/gelatinous cover (Image 1b). Pileus 25 mm diameter, parabolic to spherical in buds, surface dark brown to greyish brown, pellucid striate, glabrous, shiny, lamellae adnexed (Image 1d), white, edge concolorous to the sides. Basidioma with discoid stipe base. Mostly the luminescent mushroom (*M. chlorophos*) habitat was solitary to scattered on dead, decaying bamboo

culms rarely on other dead trees. The present study is the first photographic record of bioluminescent fungi in Kanyakumari, Tamil Nadu, India. Earlier *M. chlorophos* was reported from Western Ghats parts of Kerala (Arya et al. 2021).

The benefits of bioluminescent in fungi include their capacity to attract insects, facilitating their spore dispersal (Bermudes et al. 1992). An alternative hypothesis suggests that bioluminescence may be an incidental outcome of biochemical reactions, devoid of any discernible ecological function (Bermudes et al. 1992). The unsystematic collection/over exploitation of mushrooms inside protected areas leads to depletion of the macro fungal diversity. Habitat destruction is posing a serious threat to mushrooms, leading to their extinction (Swapana et al. 2008). Mushrooms are very sensitive to environmental changes such as increase in global temperature and change in rainfall pattern. This



Image 1. a—Mushroom buds | b—Basidiomata with viscid pileus | c—Dark exposure photograph of basidiomata | d—Lamellae | e—Bioluminescence observed in the early morning hours. © Jude D. and M. Siva Kumar.

leads to species diversity loss and change in mushroom species distribution. A detailed study on the spatio-temporal distribution of mushrooms is the need of the hour. At this juncture, it would also be highly desirable in understanding the ecological importance of the taxa around KKWLS.

References

- Aravindakshan, D.M., T.K.A. Kumar & P. Manimohan (2012). A new bioluminescent species of *Mycena* sect. Exornatae from Kerala State, India. *Mycosphere* 3(5): 556–561. <https://doi.org/10.5943/mycosphere/3/5/4>
- Arya, C.P., S. Ratheesh & C.K. Pradeep (2021). New record of luminescent *Mycena chlorophos* from Western Ghats of India. *Studies in Fungi* 6(1): 507–513. <https://doi.org/10.5943/sif/6/1/40>
- Berkeley, M.J. & M.A. Curtis (1860). "Characters of new fungi, collected in the North Pacific Exploring Expedition by Charles Wright". *Proceedings of the American Academy of Arts and Sciences* 4: 111–130.
- Bermudes, D., R.H. Peterson & K.N. Neason (1992). Low level bioluminescence detected in *Mycena haematopus* basidiocarps. *Mycologia* 84: 799–802.
- Chang, S.T. & P.G. Miles (1987). *Edible Mushroom and Their Cultivations*. CRC Press, Inc., Boca Raton, Florida, 336 pp.
- Chew, A.L.C., Y.S. Tan, D.E. Desjardin, M.Y. Musa & V. Sabaratnam (2014). Four new bioluminescent taxa of *Mycena* sect. *Calodontes* from Peninsular Malaysia. *Mycologia* 106: 976–988. <https://doi.org/10.3852/13-274>
- Dauner, L.A.P., S.C. Karunarathna, S. Tibpromma, J. Xu & P.E. Mortimer (2021). Bioluminescent fungus *Roridomyces viridiluminus* sp. nov. and the first Chinese record of the genus *Roridomyces*, from Southwestern China. *Phytotaxa* 487: 233–250. <https://doi.org/10.11646/phytotaxa.487.3.4>
- Desjardin, D.E., A.G. Oliveira & C.V. Stevani (2008). Fungi bioluminescence revisited. *Photochemical and Photobiological Sciences* 7: 170–182. <https://doi.org/10.1039/b713328f>
- Desjardin, D.E., B.A. Perry & C.V. Stevani (2016). New luminescent mycenoid fungi (Basidiomycota, Agaricales) from São Paulo State, Brazil. *Mycologia* 108: 1165–1174. <https://doi.org/10.3852/16-077>
- Desjardin, D.E., B.A. Perry, D.J. Lodge, C.V. Stevani & E. Nagasawa (2010). Luminescent *Mycena*: new and noteworthy species. *Mycologia* 102(2): 459–477. <https://doi.org/10.3852/09-197>
- Karunarathna, S.C., P.E. Mortimer, S. Tibpromma, A. Dutta, S. Paloi, Y. Hu, G. Baurah, S. Axford, C. Marciniak, T. Luangharn, S. Madawala, C. Zhao, J. Chen, K. Acharya, N. Kobmoo, M.C. Samarakoon, A. Karunarathna, S. Gao, J. Xu & S. Lumyong (2020). *Roridomyces phyllostachydis* (Agaricales, Mycenaceae), a new bioluminescent fungus from northeast India. *Phytotaxa* 459: 155–167. <https://doi.org/10.11646/phytotaxa.459.2.6>
- Kaskova, Z.M., F.A. Dorr, V.N. Petushkov, K.V. Purtov, A.S. Tsarkova, N.S. Rodionova & K.S. Mineev (2017). Mechanism and Color Modulation of Fungal Bioluminescence. *Science Advances* 3(4): e1602847. <https://doi.org/10.1126/sciadv.1602847>
- Kushwaha, V. & S. Hajirnis (2016). A review on bioluminescent fungi: a torch of curiosity. *International Journal of Life Sciences* A7: 107–110.
- Manimohan, P. & M. Leelavathy (1988). *Mycena indica*, a new species from southern India. *Mycologia* 80(6): 861–862.
- Oba, Y. & K. Hosaka (2023). The luminous fungi of Japan. *Journal of Fungi* 9: 615. <https://doi.org/10.3390/jof9060615>
- Patil, S.R. & S.V. Yadav (2022). Photographic record of *Armillaria mellea* a bioluminescent fungi from Lonavala in Western Ghats, India. *Journal of Threatened Taxa* 14(2): 20692–20694. <https://doi.org/10.11609/jott.7677.14.2.20692-20694>
- Swapana, S., A. Syed & M. Krishnappa (2008). Diversity of Macro Fungi in Semi Evergreen and Moist Deciduous Forests of Shimoga District-Karnataka, India. *Journal of Mycology and Plant Pathology* 38: 21–26.
- Vrinda, K.B., C.K. Pradeep & T.K. Abraham (1999). Bioluminescent agarics from Western Ghats. *Mushroom Research* 8(2): 31–33.
- Weinstein, P., S. Delean, T. Wood & A.D. Austin (2016). Bioluminescence in the ghost fungus *Omphalotus nidiformis* does not attract potential spore dispersing insects. *IMA Fungus* 7: 229–234. <https://doi.org/10.5598/imafungus.2016.07.02.01>

Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.
Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK
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 Dhabi, UAE.
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey
Prof. Chandrashekhar U. Rivonker, Goa University, Taleigão Plateau, Goa, India
Dr. S.R. Ganesh, Chennai Snake Park, Chennai, Tamil Nadu, India
Dr. Himansu Sekhar Das, Terrestrial & Marine Biodiversity, Abu Dhabi, UAE

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

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 Sundev, 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. P.A. Azeez, Coimbatore, Tamil Nadu, India

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 2020–2022

Due to pausivity of space, the list of reviewers for 2020–2022 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,
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore,
Tamil Nadu 641006, India
ravi@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)

March 2024 | Vol. 16 | No. 3 | Pages: 24819–25018

Date of Publication: 26 March 2024 (Online & Print)

DOI: 10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

Editorial

Celebrating 25 years of building evidence for conservation

– Sanjay Molur, Pp. 24819–24820

Articles

Identifying plants for priority conservation in Samar Island Natural Park forests (the Philippines) over limestone using a localized conservation priority index

– Inocencio Escoton Buot, Jr., Marne Ga Origenes, Ren Divien Del Rosario Obeña, Jonathan O. Hernandez, Noba F. Hilvano, Diana Shane A. Balindo & Edelyn O. Echapare, Pp. 24821–24837

Status of floristic diversity and impact of development on two sacred groves from Maval Tehsil (Maharashtra, India) after a century

– Kishor Himmat Saste & Rani Babanrao Bhagat, Pp. 24838–24853

Faunal inventory and illustrated taxonomic keys to aquatic Coleoptera (Arthropoda: Insecta) of the northern Western Ghats of Maharashtra, India

– Sayali D. Sheth, Anand D. Padhye & Hemant V. Ghate, Pp. 24854–24880

Communications

A checklist of wild mushroom diversity in Mizoram, India

– Rajesh Kumar & Girish Gogoi, Pp. 24881–24898

New plant records for the flora of Saudi Arabia

– Abdul Wali Al-Khulaidi, Ali M. Alzahrani, Ali A. Al-Namazi, Eisa Ali Al-Faify, Mohammed Musa Alfaifi, Nageeb A. Al-Sagheer & Abdul Nasser Al-Gifri, Pp. 24899–24909

Seagrass ecosystems of Ritche's Archipelago in the Andaman Sea harbor 'Endangered' *Holothuria scabra* Jaeger, 1833 and 'Vulnerable' *Actinopyga mauritiana* (Quoy & Gaimard, 1834) sea cucumber species (Echinodermata: Holothuroidea)

– Amrit Kumar Mishra, R. Raihana, Dilmani Kumari & Syed Hilal Farooq, Pp. 24910–24915

Styopodium Kütz. - a new generic record for India from the Bay of Bengal

– Y. Aron Santhosh Kumar, M. Palanisamy & S. Vivek, Pp. 24916–24922

First report of *Macrochaetus sericus* Thorpe, 1893 and *Lecane tenuiseta* Haring, 1914 (Rotifera: Monogononta) from Jammu waters (J&K), India

– Deepanjali Slathia, Supreet Kour & Sarbjeet Kour, Pp. 24923–24929

Spider diversity (Arachnida: Araneae) at Saurashtra University Campus, Rajkot, Gujarat during the monsoon

– Jyotil K. Dave & Varsha M. Trivedi, Pp. 24930–24941

Records of three gobioid fishes (Actinopterygii: Gobiiformes: Gobiidae) from the Gujarat coast, India

– Piyush Vadher, Hitesh Kardani, Prakash Bambhaniya & Imtiaz Beleem, Pp. 24942–24948

Species distribution modelling of Baya Weaver *Ploceus philippinus* in Nagaon District of Assam, India: a zoogeographical analysis

– Nilotpal Kalita, Neeraj Bora, Sandip Choudhury & Dhruvajyoti Sahariah, Pp. 24949–24955

Diversity and species richness of avian fauna in varied habitats of Soraipung range and vicinity in Dehing Patkai National Park, India

– Anubhav Bhuyan, Shilpa Baidya, Nayan Jyoti Hazarika, Sweeta Sumant, Bijay Thakur, Amit Prakash, Nirmali Gogoi, Sumi Handique & Ashalata Devi, Pp. 24956–24966

D'Ering Memorial Wildlife Sanctuary, a significant flyway and a preferred stopover (refuelling) site during the return migration of the Amur Falcon *Falco amurensis* (Radde, 1863)

– Tapak Tamir, Abprez Thungwon Kimsing & Daniel Mize, Pp. 24967–24972

Breeding of the 'Critically Endangered' White-rumped Vulture *Gyps bengalensis* in the Shan Highlands, Myanmar

– Sai Sein Lin Oo, Nang Lao Kham, Marcela Suarez-Rubio & Swen C. Renner, Pp. 24973–24978

Nurturing orphaned Indian Grey Wolf at Machia Biological Park, Jodhpur, India

– Hemsingh Gehlot, Mahendra Gehlot, Tapan Adhikari, Gaurav & Prakash Suthar, Pp. 24979–24985

Short Communications

New records of forty-nine herbaceous plant species from lateritic plateaus for Ratnagiri District of Maharashtra, India

– D.B. Borude, P.P. Bhalekar, A.S. Pansare, K.V.C. Gosavi & A.N. Chandore, Pp. 24986–24991

First report of moth species of the family Tineidae (Lepidoptera) in regurgitated pellets of harriers in India

– S. Thalavaipandi, Arjun Kannan, M.B. Prashanth & T. Ganesh, Pp. 24992–24995

Notes

Capturing the enchanting glow: first-ever photographs of bioluminescent mushroom *Mycena chlorophos* in Tamil Nadu, India

D. Jude, Vinod Sadhasivan, M. Ilayaraja & R. Amirtha Balan, Pp. 24996–24998

Extended distribution of *Clematis wightiana* Wall. (Ranunculaceae) in the Indian State of Arunachal Pradesh – a hitherto endemic species of the Western Ghats, India

– Debasmita Dutta Pramanick & Manas Bhaumik, Pp. 24999–25002

Smilax borneensis A.DC. (Smilacaceae): an addition to the flora of India

– Kishor Deka, Sagarika Das & Bhaben Tanti, Pp. 25003–25005

Recent record of True Giant Clam *Tridacna gigas* from the Sulu Archipelago and insight into the giant clam fisheries and conservation in the southernmost islands of the Philippines

– Richard N. Muallil, Akkil S. Injani, Yennyrisa T. Abduraup, Fauriza J. Saddari, Ebrahim R. Ondo, Alimar J. Sakilan, Mohammad Gafor N. Hapid & Haidisheena A. Allama, Pp. 25006–25009

A record of the Hoary Palmer *Unkana ambasa* (Moore, [1858]) (Insecta: Lepidoptera: Hesperidae) from Assam, India

– Sanath Chandra Bohra, Manmath Bharali, Puja Kalita & Rita Roy, Pp. 25010–25012

Sighting of Large Branded Swift *Pelopidas sinensis* (Mabille, 1877) (Hesperidae: Hesperinae) in Delhi, India

– Rajesh Chaudhary & Sohail Madan, Pp. 25013–25015

Rodent - a part of culture and revolution in India

– Hiranmoy Chetia & Murali Krishna Chatakonda, Pp. 25016–25018

Publisher & Host



Threatened Taxa