

Building evidence for conservation globally

Journal of Threatened Taxa



Open Access

10.11609/jott.2024.16.4.25019-25118

www.threatenedtaxa.org

26 April 2024 (Online & Print)

16(4): 25019-25118

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)



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, 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

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. Karthikeyan, 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. 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: A gravid praying mantis just before she laid her ootheca—digital art on procreate. © Aakanksha Komanduri.



New distribution record of fungi *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc. (Mycenaceae) from the Konkan region of Maharashtra, India

Yogesh Koli¹ , Umesh Pawar² , Mangesh Mangaonkar³ , Pravin Sawant⁴ & Gurunath Kadam⁵

^{1,4,5} Sant Rawool Maharaj Mahavidyalaya, Kudal, Maharashtra, 416520, India.

² PG Department of Botany, S. P. K. College, Sawantwadi, Maharashtra, 416510, India.

³ Hodawade, Parabwadi, Vengurla, Maharashtra, 416529, India.

¹ dryjkoli@gmail.com (corresponding author), ² ur99.pawar@gmail.com, ³ mangeshmangaonkar36@gmail.com,

⁴ pravinsawant2615@gmail.com, ⁵ gurukadam7@gmail.com

Abstract: Bioluminescence is the generation and emission of light by living things. In the present investigation, *Mycena chlorophos* is reported for the first time from the Konkan region of Maharashtra, India. We observed tiny, luminous clumps of *Mycena chlorophos* on a rotten bamboo substratum. The fungi grow in clusters of one or more individuals.

Keywords: Biodiversity, Bioluminescence, chemiluminescence, emission, fungi, Konkan, *Mycena chlorophos*, luciferin.

Mycologists have always been amazed by the fascinating diversity and evolution of bioluminescent fungi. Bioluminescence is the generation and emission of light by living things. It is a type of chemiluminescence. Many marine animals and invertebrates (Amaral et al. 2016), as well as certain fungi (Aravindakshan et al. 2012), microorganisms (Balachandar et al. 2010) and terrestrial arthropods (like fireflies) (Barua et al. 2007) exhibit bioluminescence (Chatragadda 2020). A complex compound such as luciferin is converted to light energy through oxidation under the action of luciferase which acts as a catalytic enzyme (Pandey & Sharon 2017). A full description of a biochemical process that produces bioluminescence in fungi has been published (Kotlobay

et al. 2018).

Bioluminescence is recorded across 17 phyla and more than 700 genera, both in marine and terrestrial environments (Lee 2015). A new distribution record of *Roridomyces*, a bioluminescent fungus has been recorded from Namdapha National Park, Arunachal Pradesh, India (Duta et al. 2023). Desjardin et al. (2008) in their review noted 64 luminescent species. Scientists have recognized a total of 109 luminescent fungi, which can be classified into four molecular lineages (Chew et al. 2015; Mihail 2015; Cortes-Perez et al. 2019; Chang et al. 2020; Karunarathna et al. 2020): 12 in the *Omphalotus* lineage, 10 in the *Armillaria* lineage, 85 in the Mycenoid lineage (mostly Mycenaceae), and two in the *Lucentipes* lineage.

Konkan, a biodiversity region in the Western Ghats, is home to a wide range of fungal species, yet there is still a dearth of information about bioluminescent fungi. In India, over the past few years, there have been a few reports on bioluminescence from fungi such as *Nothopanus eugrammus* and *Omphalotus olearius* (Vrinda et al. 1999), followed by a unique taxon from Kerala, *Mycena deeptha* (Aravindakshan &

Editor: Kiran Ranadive, Annasaheb Magar Mahavidyalaya, Maharashtra, India.

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

Citation: Koli, Y., U. Pawar, M. Mangaonkar, P. Sawant & G. Kadam (2024). New distribution record of fungi *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc. (Mycenaceae) from the Konkan region of Maharashtra, India. *Journal of Threatened Taxa* 16(4): 25094–25100. <https://doi.org/10.11609/jott.8816.16.4.25094-25100>

Copyright: © Koli 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: Self-funded.

Competing interests: The authors declare no competing interests.

Acknowledgements: We would like to thank the principal, Sant Rawool Maharaj College, Kudal for providing the necessary facilities for this research. We are thankful to Mr. Akshay Dalvi for his valuable help in creating the QGIS map. We are grateful to Mr. Tejas Sawant, Miss. Mayuri Chavan, Mr. Faiyz Talikot for their kind help during the fieldwork.

My Way
Journey
organization



Manimohan 2014) *Mycena chlorophos* (Arya et al. 2021) & *Armillaria mellea* (Patil & Yadav 2022). In India there are 54 species of *Mycena* species reported in Table 1 and some bioluminescent fungi from mushroom families reported in Table 2. In this article, we report the new distribution of *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc. (Agaricales, Mycenaceae) from Hodavade 15.866° N, 73.725° E (Image 1; Habitat) which is located in Tehsil Vengurla from Sindhudurg District a Konkan region of Maharashtra.

As we conducted a nocturnal survey on 22 July 2023, at 2100 h, for a study on nocturnal animals, we opportunistically discovered a small glowing clump of *Mycena chlorophos* on a rotten bamboo substratum (Image 2). We noted down the observable morphological characters and photographs were taken under both light and dark conditions (Image 3; Habit).

Field photographs of specimens were taken by Canon 760D with a 100 mm macro lens and Nikon 7500D with Tamron 90 mm lens. The fungus was identified

based on the articles available (Moser 1977; Kushwaha & Hajirnis 2016; Arya et al. 2021) and also record cited on www.indexfungorum.org. *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc., Syll. Fung. (Abellini) 5: 301 (1887) Figs 1–2 Index Fungorum number: IF147895; Faces of fungi number: FoF10625. The fungi grow in clusters of one or more individuals. Early on, the developing body, or pileus, is conical; as it matures, it becomes more rounded. Gills cover the hymenium.

REFERENCES

- Amaral, D.T., G. Oliveira, J.R. Silva & V.R. Viviani (2016). A new orange emitting luciferase from the southern Amazon *Pyrophorus angustus* (Coleoptera: Elateridae) click beetle: structure and bioluminescence color relationship, evolutionary and ecological considerations. *Photochemical & Photobiological Sciences* 15: 1148–1154.
- Aravindakshan, D. M. & P. Manimohan (2011). *Mycena* sect. Longisetae: a new species, a new name, and an addition. *Mycotaxon* 117: 239–246
- Aravindakshan, D. M. & P. Manimohan (2012). A new species of *Mycena* sect. Polyadelphia from southern India. *Mycosphere* 3(2):



Image 1. Habitat of *Mycena chlorophos*.

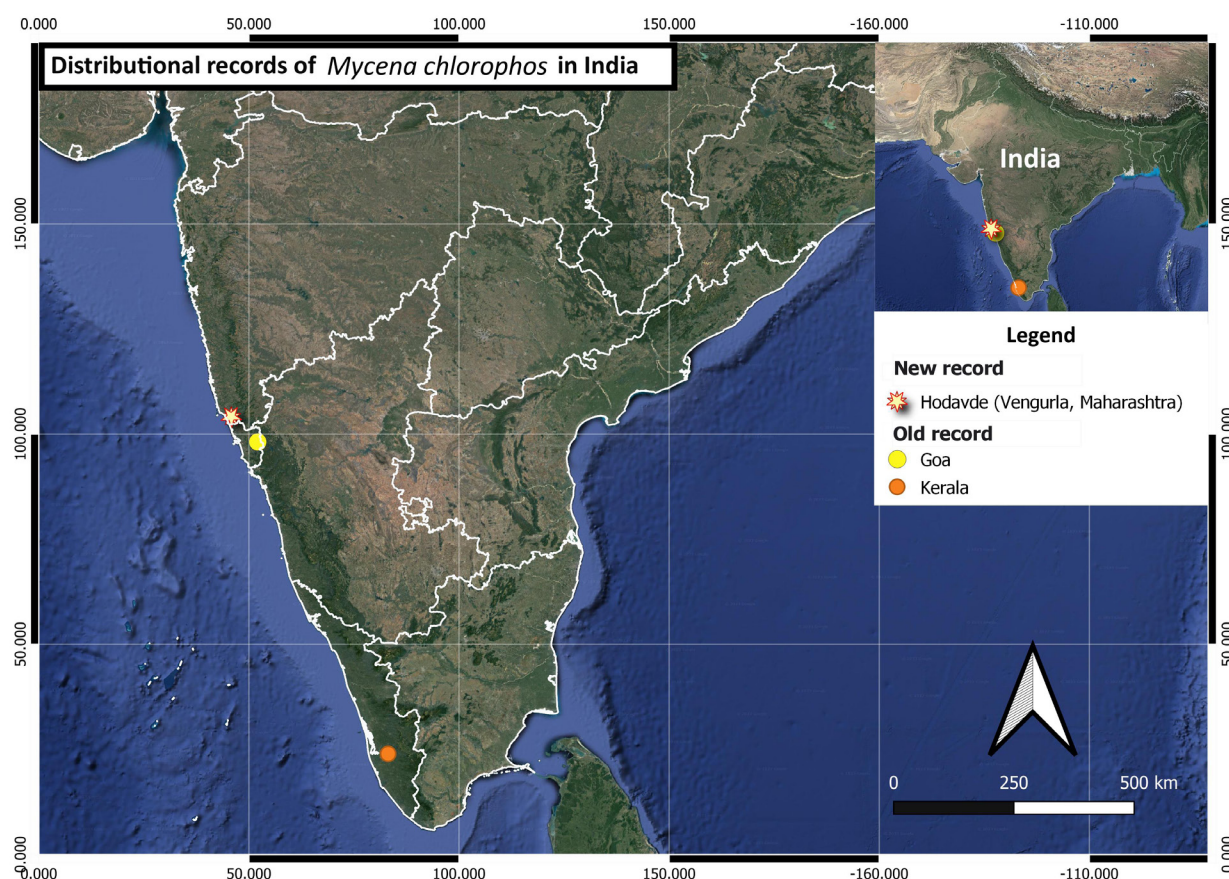
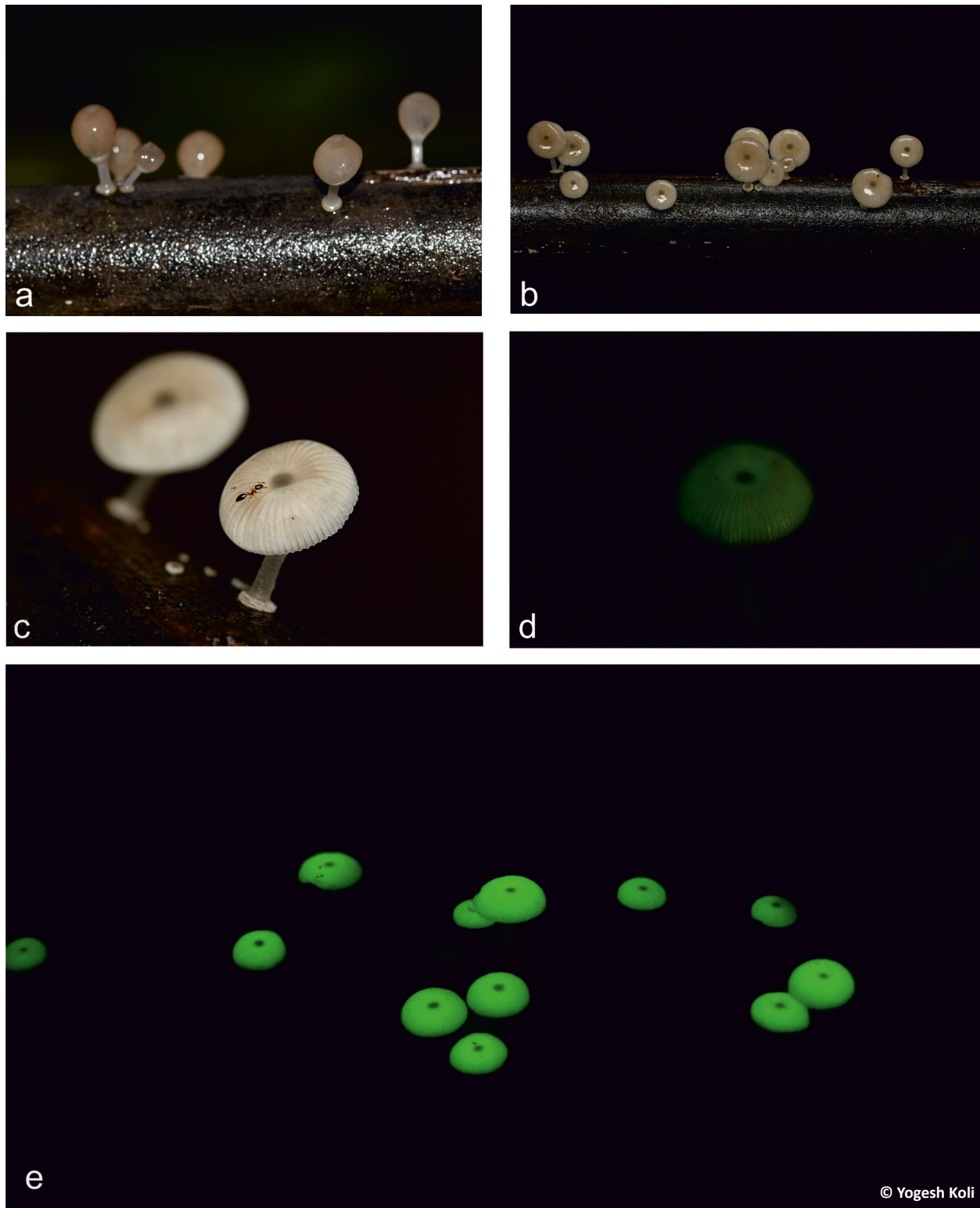


Image 2. Map of Sindhudurg district with distribution record of *Mycena chlorophos*.

- 241–243.
- Aravindakshan, D. M. & P. Manimohan (2013). A new section and two new species of *Mycena*. *Mycosphere* 4(5): 930–935.
- Aravindakshan, D. M. & P. Manimohan (2013c). A new section and two new species of *Mycena*. *Mycosphere* 4 (5): 930–935.
- Aravindakshan, D. M. & P. Manimohan (2013a). A new species of *Mycena* sect. *Exornatae* and some taxonomic observations. *Mycosphere* 4(1): 146–150.
- Aravindakshan, D.M. & P. Manimohan (2013b). *Mycena* sect. *Galactopoda*: two new species, a key to the known species and a note on the circumscription of the section. *Mycosphere* 4(4): 653–659.
- Aravindakshan, D.M. & P. Manimohan (2014). Three new species of *Mycena* sect. *Longisetae* *Mycosphere* 5(2): 290–297.
- Aravindakshan, D.M., T.K. Kumar & P. Manimohan (2012). A new bioluminescent species of *Mycena* sect. *Exornatae* from Kerala State, India. *Mycosphere* 3(5): 556–561.
- Arya, C.P., S. Ratheesh & C.K. Pradeep (2021). New record of luminescent *Mycena chlorophos* (Mycenaceae) from Western Ghats of India. *Studies in Fungi* 6(1): 507–513.
- Balachandar, R., M. Jayakumar, A. Thangaraja, B. Bharathiraja, P. Gurumoorthy & S.D. Bharathy (2010). Use of luminous bacteria as a biosensor for monitoring of heavy metal in marine water. *International Journal of Chemical Sciences* 8: 1553–1566.
- Barua, A.G., S. Hazarika, N. Saikia & G.D. Baruah (2007). Bioluminescence emissions of the firefly. *Nature Precedings* 2 <https://doi.org/10.1038/npre.2007.1351.1>
- Bechara, E. J. H. (2015). Bioluminescence: A Fungal Nightlight with an Internal Timer. *Current Biology* 25: 283–285.
- Berkeley M. J. (1850). Decades of fungi XXV–XXX, Sikkim Himalayan Fungi, collected by Hooker. *Hooker's Journal of Botany and Kew Miscellany* 2: 76–88.
- Berkeley M.J. (1852). Decades of fungi XXXVII–XXXVIII, Sikkim & Khasia Fungi. *Hooker's Journal of Botany and Kew Miscellany* 4: 97–107.
- Bhavanidevi, S. & M.C. Nair (1983). Addition to Indian Agaricales. In: Kaul TN, Kapoor BM. (eds.) *Indian Mushroom Science-II*. CSIR, New Delhi, 371–374.
- Bondar, V., A. Puzyr, K. Purtov, S. Medvedeva, E. Rodicheva & J. Gitelson (2011). The luminescent system of the luminous fungus *Neonothopanus nambi*. *Doklady Biochemistry and Biophysics* 438: 138–140.
- Capelari, M., D.E. Desjardin, B.A. Perry, T. Asai & C.V. Stevani (2011). *Neonothopanus gardneri*: a new combination for a bioluminescent agaric from Brazil. *Mycologia* 103: 1433–1440.
- Chang, C.C., C.Y. Chen, W.W. Lin & H.W. Kao (2020). *Mycena jingyinga*, *Mycena luguensis* and *Mycena venus*: three new species of bioluminescent fungi from Taiwan. *Taiwania* 65(3): 396–406.
- Chatragadda, R. (2020). Terrestrial and marine bioluminescent organisms from the Indian subcontinent: a review. *Environmental Monitoring and Assessment* 192(12): 747. <https://doi.org/10.1007/s10661-020-08685-5>
- Chew, A.L.C., D.E. Desjardin, Y.S. Tan, M.Y. Musa & V. Sabaratnam (2015). Bioluminescent fungi from Peninsular Malaysia taxonomic and phylogenetic overview. *Fungal Diversity* 70(1): 149–187.
- Chew, A., Y.S. Tan, D. Desjardin, M.Y. Musa & V. Sabaratnam (2014). Four new bioluminescent taxa of *Mycena* sect. *Calodontes* from Peninsular Malaysia. *Mycologia* 106: 976–988.
- Cortes-Perez, A., D.E. Desjardin, B.A. Perry, V. Ramirez-Cruz, F. Ramirez-Guillen, A.R. Villalobos-Arambula & A. Rockefeller (2019).



© Yogesh Koli

Image 3 (a–e). Fruiting bodies of *Mycena chlorophos*: a—Early staged fruiting bodies on rotten bamboo substratum | b—Fruiting bodies in cluster on the substratum | c—Mature staged fruiting bodies on rotten bamboo | d & e—Bioluminescent fruiting bodies on the substratum.

Table 1. *Mycena* species recorded from state/regions of India.

	Species	State/ Region	Author & Year
1	<i>Mycena abietina</i> Maas Geest.	Kashmir	Maas (1992d)
2	<i>Mycenaacrocephala</i> Maas Geest. & E. Horak.	Sikkim	Maas & Horak (1993)
3	<i>Mycena aetites</i> (Fr.) Quél.	Jammu & Kashmir	Watling & Gregory (1980)
4	<i>Mycena alcalina</i> (Fr.) P. Kumm.	Maharashtra	Sathe & Sasangan (1977)
5	<i>Mycena alphotophora</i> (Berk.) Sacc.	Kerala	Manimohan & Leelavathy (1989)
6	<i>Mycena arata</i> (Berk.) Sacc.	Sikkim	Berkeley (1850)
7	<i>Mycena atrocyanea</i> (Batsch) Gillet.	Jammu & Kashmir	Watling & Gregory (1980)
8	<i>Mycena auricolor</i> (Berk. & Broome) Petch	Kerala	Manimohan et al. (1988)
9	<i>Mycena avenacea</i> (Fr.) Quél.	Maharashtra	Trivedi (1972)
10	<i>Mycena babruka</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2013b)
11	<i>Mycena bicrenata</i> (Berk.) Sacc.	West Bengal	Berkeley (1850)
12	<i>Mycena colligata</i> (Berk.) Sacc.	Sikkim	Berkeley (1852)
13	<i>Mycena conocephala</i> Henn.	Uttar Pradesh	Hennings (1901)
14	<i>Mycena coalita</i> Maas Geest.	Uttar Pradesh	Maas (1992d)
15	<i>Mycena deeptha</i> Aravind. & Manim.	Kerala	Aravindakshan et al. (2012)
16	<i>Mycena dentosa</i> (Berk.) Sacc.	Sikkim	Berkeley (1852)
17	<i>Mycena discors</i> (Berk.) Sacc.	Sikkim	Berkeley (1852)
18	<i>Mycena elegantula</i> Peck.	Tamil Nadu	Natarajan & Ravin
19	<i>Mycena epipterygia</i> (Scop.) Gray	Sikkim	Berkeley (1852)
20	<i>Mycena flavominiata</i> (Berk.) Sacc.	Sikkim	Berkeley (1852)
21	<i>Mycena galericulata</i> (Scop.) Gray.	West Bengal	Berkeley (1852)
22	<i>Mycena galopus</i> (Pers.) P. Kumm.	Maharashtra	Thite & Patil (1983)
23	<i>Mycena haematopus</i> (Pers.) P. Kumm.	Kerala	Bhavanidevi & Nair (1983)
24	<i>Mycena himalayana</i> Rawla	North Western Himalayas	Rawla & Aarya (1991)
25	<i>Mycena inclinata</i> (Fr.) Quél.	Himachal Pradesh	Das (2010)
26	<i>Mycena indica</i> Sarwal & Rawla	Himachal Pradesh	Sarwal & Rawla (1983)
27	<i>Mycena jatila</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2014)
28	<i>Mycena juncicola</i> (Fr.) Gillet	Mumbai, Maharashtra	Sathe & Deshpande (1982)
29	<i>Mycena lohitha</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2013a)
30	<i>Mycena lohewagii</i> Singer	Tamil Nadu	Natarajan & Ravindran
31	<i>Mycena lomamaya</i> Aravind. & Manim.	Kerala	Aravindakshan & Mania (2014)
32	<i>Mycena lomavritha</i> Manim.	Kerala	Manimohan & Leelavathy (1988)
33	<i>Mycena indica</i> Manim. & Leelav.	Kerala	Aravindakshan & Manimohan (2014)
34	<i>Mycena macrothela</i> (Berk.) Sacc.	West Bengal	Berkeley (1852)
35	<i>Mycena manipularis</i> (Berk.) Sacc.	Himalaya	Berkeley (1850)
36	<i>Mycena mridula</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2013)
37	<i>Mycena metata</i> (Sacc. ex Fr.) P. Kumm.	Uttar Pradesh	Hennings (1901)
38	<i>Mycena mridula</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2013)
39	<i>Mycena myriadea</i> (Berk.) Sacc.	Sikkim	Berkeley (1850)
40	<i>Mycena pelava</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2014)
41	<i>Mycena prasia</i> (Berk.) Sacc.	Sikkim	Berkeley (1850)
42	<i>Mycena profusa</i> Manim. & Leelav.	Kerala	Manimohan & Leelavathy (1988a)
43	<i>Mycena puberula</i> (Berk.) Sacc.	Sikkim	Berkeley (1850)
44	<i>Mycena pura</i> (Pers.) P. Kumm.	Sikkim, Uttar Pradesh, Kerala	Berkeley (1852); Maas (1992d); Mohanan (2011)

	Species	State/ Region	Author & Year
45	<i>Mycena rasada</i> Aravind. & Manimohan.	Kerala	Aravindakshan & Manimohan (2013)
46	<i>Mycena rufopicta</i> (Berk.) Sacc.	West Bengal:	Berkeley (1850)
47	<i>Mycena russulina</i> (Berk.) Sacc.	West Bengal:	Berkeley (1850)
48	<i>Mycena saloma</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2011)
49	<i>Mycena saparna</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2012)
50	<i>Mycena snigdha</i> Aravind. & Manim.	Kerala	Aravindakshan & Manimohan (2013)
51	<i>Mycena speirea</i> (Fr.) Gillet.	Tamil Nadu	Nataraj (1982)
52	<i>Mycena stylobates</i> (Pers.) P. Kumm.	Maharashtra	Sathe & Deshpande (1982)
53	<i>Mycena subcaerulea</i> (Peck) Sacc.	Pune, Maharashtra	Sathe & Deshpande (1982)
54	<i>Mycena xanthophylla</i> (Berk.) Sacc.	West Bengal	Berkeley (1850)

Table 2. Bioluminescent fungi from the mushroom family.

Name of the species	Family	Reference
<i>Roridomyces phyllostachydis</i>	Mycenaceae	Karunarathna et al. 2020
<i>Mycena galopus</i> (Pers.: Fr.) P.Kumm.	Mycenaceae	Desjardin et al. 2016
<i>Mycena lucentipes</i> Desjardin, Capelari & Stevani	Mycenaceae	Bechara 2015
<i>Mycena rosea</i> Gramberg	Mycenaceae	Chew et al. 2014
<i>Mycena chlorophos</i> (Berk. & M.A.Curtis) Sacc.	Mycenaceae	Kenichi et al. 2011
<i>Mycena luxaeterna</i>	Mycenaceae	Desjardin et al. 2010
<i>Armillaria mellea</i> (Vahl:Fr.) P.Kummer	Physalacriaceae	Mihail 2015
<i>Flammulina velutipes</i> (Curtis) Singer	Physalacriaceae	Desjardin et al. 2008
<i>Omphalotus nidiformis</i> (Berk.) O.K.Mill.	Marasmiaceae	Weinstein et al. 2016
<i>Neonothopanus nambi</i> (Speg.) R.H.Peterson & Krisai, Persoonia	Marasmiaceae	Bondar et al. 2011
<i>Neonothopanus gardneri</i> (Berk. Capelari, Desjardin, B.A.Perry, T.Asai & Stevani)	Marasmiaceae	Capelari et al. 2011
<i>Gerronema viridilucens</i> (Desjardin, Capelari & Stevani)	Marasmiaceae	Mendes et al. 2008
<i>Nothopanus eugrammus</i> (Mont.) Singer	Marasmiaceae	Vrinda et al. 1999
<i>Omphalotus olearius</i> (DC ex Fr.) Singer	Marasmiaceae	Vrinda et al. 1999

New species and records of bioluminescent *Mycena* from Mexico. *Mycologia* 111(2): 319–338.

- Das, K. (2010). Diversity and conservation of wild mushrooms in Sikkim with special reference to Barsey Rhododendron Sanctuary. *NeBio* 1: 1–13
- Desjardin, D.E., A.G. Oliveira & C.V. Stevani (2008). Fungi bioluminescence revisited. *Photochemical & Photobiological Sciences* 7(2): 170–182.
- Desjardin, D., B.A. Perry, D. Lodge, C. Stevani & E. Nagasawa (2010). Luminescent *Mycena*: New and noteworthy species. *Mycologia* 102: 459–477.
- 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.
- Duta, A., S. Gupta, J.K. Roy & M.F. Ahmed (2023). New distribution record of *Roridomyces* cf. *phyllostachydis* (Agaricales: Mycenaceae), a bioluminescent fungus from Namdapha National Park, Arunachal Pradesh, India. *Journal of Threatened Taxa* 15(3): 22920–22923. <https://doi.org/10.11609/jott.8101.15.3.22920-22923>
- Hennings, P. (1901). Fungi Indiae Orientalis II. *Hedwigia* 40: 323–342.
- Karunarathna, S., P. Mortimer, S. Tibpromma, A. Dutta, S. Paloi, Y. Hu, G. Baurah, S. Axford, C. Marciniak, T. Luangharn, S. Madawala, C.L. Zhao, J.Z. 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.
- Kenichi, M., S. Kojima, M. Shojiro, H. Takashi & M. Haruki (2011). Bioluminescence characteristics of the fruiting body of *Mycena chlorophos*. *Luminescence*: 26: 604–610.
- Kotlobay A.A., K.S. Sarkisyan, Y.A. Mokrushina, M. Marcet-Houben, E.O. Serebrovskaya, N.M. Markina, L. Gonzalez Somermeyer, A. Y. Gorokhovatsky, A. Vvedensky, K.V. Purto, V.N. Petushkov, N. S. Rodionova, T.V. Chepurnyh, L. I. Fakhranurova, E.B. Guglya, R. Ziganshin, A.S. Tsarkova, Z.M. Kaskova, V. Shender, M. Abakumov, T.O. Abakumova, I.S. Povolotskaya, F.M. Eroshkin, A.G. Zaraisky, A.S. Mishin, S.V. Dolgov, T.Y. Mitouchkina, E.P. Kopantzev, H.E. Waldenmaier, A.G. Oliveira, Y. Oba, E. Barsova, E.A. Bogdanova, T. Gabaldón, C.V. Stevani, S. Lukyanov, I.V. Smirnov, J.I. Gitelson, FA. Kondrashov & I.V. Yampolsky (2018). Genetically encodable bioluminescent system from fungi. *PNAS* 115: 12728–12732. <https://doi.org/10.1073/pnas.1803615115>
- Kushwaha, V. & S. Hajirmis (2016). A review on bioluminescent fungi: a torch of curiosity. *International Journal of Life Sciences* A7: 107–110.
- Lee, J. (2015). Basic bioluminescence. Accessed on 23 June 2022. <http://photobiology.info/LeeBasicBiolum.html>
- Maas Geesteranus, R.A & E. Horak (1993). *Mycenaacrocephala*, a

- new member of section Abdomin from Sikkim. *Persoonia* 15(3): 341–343.
- Maas Geesteranus, R.A. (1992d).** Some Mycenae of the Himalayan foothills. *Persoonia* 15(1): 33–53.
- Manimohan, P. & K.M. Leelavathy (1988).** Rare agarics from Southern India. *Kavaka* 16: 50–56.
- Manimohan, P. & K.M. Leelavathy (1988a).** New agaric taxa from southern India. *Transactions of the British Mycological Society* 91(4): 573–576
- Manimohan, P. & K.M. Leelavathy (1989).** Two new varieties of *Mycena alphitophora* from southern India. *Mycological Research* 93(1): 118–120.
- Mendes, L.F., E.L. Bastos, D.E. Desjardin & C.V. Stevani (2008).** Influence of culture conditions on mycelial growth and bioluminescence of *Gerronema viridilucens*. *FEMS Microbiology Letters* 282:132–139.
- Mihail, J.D. (2015).** Bioluminescence patterns among North American *Armillaria* species. *Fungal Biology* 119 (6): 528–537.
- Mohan, C. (2011).** Macrofungi of Kerala. KFRI Handbook No. 27, Kerala Forest Research Institute, India, 597pp.
- Moser, M.M. & E. Horak (1977).** Verzeichnis der wichtigsten Publikationen von R. SINGER. *Sydowia Beihefte* 8: 1–25.
- Pandey, A.D. & M. Sharon (2017).** Bioluminescent organisms. *BAOJ Chemistry* 3(2): 029.
- Patil, S. & S. Yadav (2022).** Photographic record of *Armillaria mellea* a bioluminescent fungus 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>
- Rawla, G.S. & S. Arya (1991).** Studies on the agarics of north west India - new species. *Boletus* 15: 111–124.
- Sarwal, B.M. & G.S. Rawla (1983).** *Mycena indica* sp.nov. from India. *Current Science* 52: 564–565.
- Sathe, A.V. & K.C. Sasangan (1977).** Agaricales from South-West India III. *Biovigyanam* 3 (1): 119–121.
- Sathe, A.V. & S. Deshpande (1980).** Agaricales (Mushrooms) of Maharashtra State. Agaricales southern India. *Mycosphere* 3(2): 241–243.
- Thite, A.N. & M.S. Patil (1983).** Some fleshy fungi from Maharashtra. *Journal of Shivaji University* 21: 123–127.
- Trivedi, T.K. (1972).** Agaricales of Nagpur-I. *Botanique* 3: 53–54.
- Vrinda, K.B., C.K. Pradeep & T.K. Abraham (1999).** Bioluminescent agarics from Western Ghats. *Mushroom Research* 8(2): 31–33.
- Watling, R. & N.M. Gregory (1980).** Larger fungi from Kashmir. *Nowa Hedwigia* 32: 494–564.
- Weinstein, P., S. Delean, T. Wood, A. Andrew (2016).** Bioluminescence in the ghost fungus *Omphalotus nidiformis* does not attract potential spore dispersing insects. *International Mycological Association Fungus* 7: 229–234.



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 Dubai, UAE.
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey
Prof. Chandrashekhar 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, SAGON, 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. 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, SAGON, 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, SAGON, 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 2021–2023

Due to pausity of space, the list of reviewers for 2021–2023 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

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)

April 2024 | Vol. 16 | No. 4 | Pages: 25019–25118

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

DOI: 10.11609/jott.2024.16.4.25019-25118

Articles

Mitochondrial CO1 gene haplotype diversity of Sumatran Tiger *Panthera tigris sumatrae* (Pocock, 1929) (Mammalia: Carnivora: Felidae)

– Ashrifurrahman, Saruedi Simamora, Rusdian Ritonga, Wilson Novarino, Djong Hon Tjong, Rizaldi, Syaifullah & Dewi Imelda Roesma, Pp. 25019–25028

The population trend of the largest breeding colony of the Indian Swiftlet *Aerodramus unicolor*: is it on the verge of extinction?

– Dhanusha Kawalkar & Shirish S. Manchi, Pp. 25029–25039

DNA barcoding reveals a new population of the threatened Atlantic Forest frog *Sphaenorhynchus canga*

– Diego J. Santana, André Yves, Elvis A. Pereira, Priscila S. Carvalho, Lucio M.C. Lima, Henrique C. Costa & Donald B. Shepard, Pp. 25040–25048

Ecological values of Ourkiss wetland (Oum El Bouaghi province - Algeria), an overview of waterbirds diversity and richness

– Ryadh Aissaoui & Mouslim Bara, Pp. 25049–25056

Elliptic Fourier analysis of leaf shape of *Callicarpa pedunculata* and *Callicarpa rubella* (Lamiaceae)

– Jennifer S. Danila & Grecebio Jonathan D. Alejandro, Pp. 25057–25068

Communications

Checklist and comparison of the bird diversity from the Himachal Pradesh Agricultural University, India

– Praveen Kumar, Bharti Parmar & Pardeep Kumar, Pp. 25069–25081

Aquatic insects as bioindicators of stream water quality - a seasonal analysis on Western Ghats river, Muthirapuzha, in central Kerala, India

– M. Harinagaraj, Leenamma Joseph & V.S. Josekumar, Pp. 25082–25088

Short Communications

New distribution record of *Alstonia sebusii* (Van Heurck & Müll. Arg.) Monach. from Manipur, India

– Kazhuhrii Eshuo, Pp. 25089–25093

New distribution record of fungi *Mycena chlorophos* (Berk. & M.A.Curtis) Sacc. (Mycenaceae) from the Konkan region of Maharashtra, India

– Yogesh Koli, Umesh Pawar, Mangesh Mangaonkar, Pravin Sawant & Gurunath Kadam, Pp. 25094–25100

Notes

Potential first record of parrotfish *Scarus zufar* (Randall & Hoover, 1995) (Actinopterygii: Labriformes: Scaridae) from Indian waters, at Netrani Island, Karnataka, India

– Farai Divan-Patel, Abhishek Jamalabad, Venkatesh Charloo & Jeremy Josh, Pp. 25101–25102

First record of the phoretic association between *Pediculaster* sp. (Pygmephoridae) mites and *Musca crassirostris* (Muscidae) flies in India

– Ramandeep Achint & Devinder Singh, Pp. 25103–25106

Uniyala multibracteata (Gamble) H. Rob. & Skvarla (Asteraceae: Vernoniae): notes on its identity and rediscovery

– Reshma Raju, Joby Joseph, K.S. Divya, Chethana Badekar & Jomy Augustine, Pp. 25107–25110

Addition of two wild jasmines (*Jasminum caudatum* and *J. grandiflorum*) to Sikkim Himalaya, India

– Pramod Rai & Prakash Limboo, Pp. 25111–25113

Extended distribution of *Ceropegia bhatii* S.R. Yadav & Shendage (Apocynaceae)—an endemic plant from Haveri District, Karnataka, India

– Ningaraj S. Makanur & K. Kotresha, Pp. 25114–25116

Response

Small Paa Frog and Marbled Cascade Frog are not endemic to Nepal: a response to Tachamo-Shah et al. 2023

– Chandramani Aryal, Pp. 25117–25118

Publisher & Host



Threatened Taxa