

Building evidence for conservation globally

Journal of Threatened Taxa



Open Access

10.11609/jott.2022.14.2.20539-20702

www.threatenedtaxa.org

26 February 2022 (Online & Print)

14(2): 20539-20702

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

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 Illustration, 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. Karthigeeyan, 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 Vidyapeeth (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

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

Dr. George Mathew, Kerala Forest Research Institute, Peechi, India

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: *Geodorum laxiflorum* Griff.—inflorescence (Orchidaceae) © Ashish Ravindra Bhojwar.



OPEN
ACCESS

NOTE

Geodorum laxiflorum Griff. (Orchidaceae), a new distribution record for Maharashtra state of India

Ashish Ravindra Bhojar¹ , Swapnil Nandgawe² , Syed Abrar Ahmed³ & Saduram Madavi⁴

^{1,2,3} Post Graduate Department of Botany, Government Science College, Gadchiroli, Maharashtra 442605, India.

³ Department of Botany, Government College of Arts and Science, Aurangabad, Maharashtra 431004, India.

⁴ Biodiversity Management Committee, Tukum, Dhanora Dist. Gadchiroli, Maharashtra 442606, India.

¹imashu90@gmail.com, ²snandgawe1@gmail.com, ³sdabrar645@gmail.com (corresponding author), ⁴madavisaduram@gmail.com

Orchidaceae is one of the most diverse and largest families of Angiosperms comprising more than 28,000 recognised plants in around 763 genera (Willis 2017; Jain et al. 2021). In India, around 1,331 species coming under 186 genera represent around 5.98% of the world's orchid flora and 6.83% of the flowering plants in India (De 2020). Recent botanical explorations in Maharashtra, revealed the presence of 32 genera with 106 taxa. The most dominant genus is *Habenaria* with 23 species, followed by *Dendrobium* with 11, *Eulophia* and *Oberonia* with seven, and *Peristylus* with six species (Jalal & Jayanthi 2018). The genus *Geodorum* Jackson is an Indo-Malesian group of about 12 species (Bhatt et al. 2015; Govaerts et al. 2017). In India only six species are found, namely, *Geodorum appendiculatum* Griff., *G. densiflorum* (Lam.) Schlr., *G. laxiflorum* Griff., *G. pallidum* D. Don, *G. recurvum* (Roxb.) Alston., and *G. attenuatum* Griff. (Misra 2007; Kumar et al. 2008; Bhatt et al. 2015; Govaerts et al. 2015). During our exploration we came across a plant which was blooming in the deep forest of Dhanora Tehsil (20.233N, 80.346E) (Figure 1) in Gadchiroli district of Maharashtra, India. The flowering plant looked like pearls spread on the green belt of

earth; our curiosity led us to investigate it further.

Markagaon forest range (20.233N, 80.346E) (Figure 1) in the southern part of Dhanora tehsil is well known for its dense dry deciduous forest. Dhanora tehsil is covered with hills and forests and is considered a tribal area. Gadchiroli District mainly receives rain from the south-west monsoon. The average rainfall is 1,562 mm. The climatic conditions are extreme with temperatures reaching 47.3 °C in summer and 9.4 °C in winter.

During our thorough exploration in the Gadchiroli district, we observed the taxa with some interesting characters and is described technically as follows:

Geodorum laxiflorum Griff.

Calcutta J. Nat. Hist. 5: 356 (1845); Hook.f., Fl. Brit. India 6: 18 (1890); G. Seidenfaden, Opera Botanica 72: 51 (1983); S. Misra, Orch. Orissa: 560 (2004); Bhatt et al., Richadiana: 333 (2015).

Plant terrestrial, 30–50 cm tall (including leaves); corm 4.5–5 cm, ovoid, slightly compressed, greenish-brown, with scars of fallen leaves; roots few, vermiform, ca. 0.2 cm thick; pseudo stem ca. 10 × 1 cm, enclosed by four foliar imbricating sheaths; leaves 2–4, cauline,

Editor: Jeewan Jalal Singh, Botanical Survey of India, Kolkata, India.

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

Citation: Bhojar, A.R., S. Nandgawe, S.A. Ahmed & S. Madavi (2022). *Geodorum laxiflorum* Griff. (Orchidaceae), a new distribution record for Maharashtra state of India. *Journal of Threatened Taxa* 14(2): 20689–20691. <https://doi.org/10.11609/jott.7643.14.2.20689-20691>

Copyright: © Bhojar 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: None.

Competing interests: The authors declare no competing interests.

Acknowledgements: The authors are thankful to the principal, Government Science College, Gadchiroli for providing laboratory facilities; and Dr. Mandar Paingankar, head, Department of Zoology for support and valuable suggestions while preparing this manuscript.

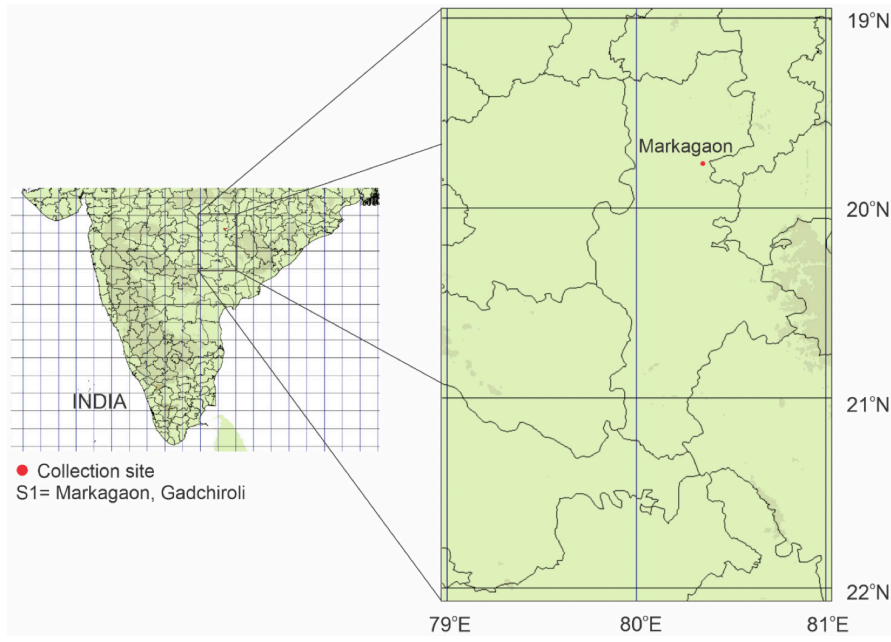


Figure 1. Distribution map showing the occurrence (red dot) of *Geodorum laxiflorum*.



Image 1. *Geodorum laxiflorum* Griff.: A—habitat | B&C—inflorescence | D—closeup of flower | E—fruiting stage. © Ashish Ravindra Bhoyar

alternate, elliptic lanceolate, acute, undulate, subequal, 13–36 × 8–12 cm, many veined, midvein prominent beneath; inflorescence lateral from the base of newly developed leafy shoot and shorter than it, 20–30 cm; peduncle erect, 20–27 × 0.2 cm, green, decurved at the top, with four membranous tubular sheaths; raceme laxly flowered with 6–12 medium sized flowers; rachis decurved, ca. 2.5– 4 cm long with two sterile bracts; bracts green, oblong lanceolate, ca. 1.1 × 0.3 cm, membranous with acute apex, 3 veined; pedicel with ovary 1.3 cm long, ribbed; flowers white off-white, sepals and petals spreading, 1.5– 2.5 cm across; sepals subequal, 5-veined, oblong lanceolate; dorsal sepal ca. 2.1 × 0.6–0.7 cm; lateral sepals ca. 2.2 × 0.8 cm; petals broader, obovate oblong, ca. 2.3 × 1.2 cm, apex acute obtuse, 7-veined; lip ca. 2.1 × 1.5–1.7 cm, broadly obovate, emarginated, sessile on the base of column, entire, ventricose at the base; sides of the hypochile erect; epichile undulate, edge deflexed, two irregular rows of thick warts starting from the base of the epichile and ending before the apex, hypochile golden brown within, epichile yellow at base and pink at apex; column stout, short, oblong, slightly dilated, ca. 0.5–0.6 × 0.3 cm long; stigma squarish, ca. 0.2 cm long, anther broadly ovate orbicular in outline, ca. 0.3–0.4 cm, off-white with brown tinge, the locules pouch like; pollinia yellow, obliquely oblong ovoid, porate behind, ca. 0.2 × 0.15 cm, stipe hyaline, subquadrate (Image 1).

Flowering: June–July; Fruiting: August–October.

Ecology: Extremely rare in dry deciduous forests, at an elevation range of about 263 m.

Distribution: Endemic to India Assam, Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Odisha, Telangana, and Maharashtra (this report).

Specimen examined: GSC/Gad/Bot.Sp.No. 263, 27.vii.2021, Markagaon forest range, Gadchiroli district, Maharashtra, India, coll. Syed Abrar Ahmed. The

specimen is preserved in the Department of Botany, Government Science College, Gadchiroli.

Recently, *Geodorum laxiflorum* was reported from southern peninsular India from Nallamalai hills, part of the Eastern Ghats of Andhra Pradesh (Rao & Prasad 2011) and from the Western Ghats, Waghai taluka of Dangs district, Gujarat state (Bhatt et al. 2015).

References

- Bhatt, M.R., J.S. Jalal & P.S. Nagar (2015). Extended distribution of *Geodorum laxiflorum* (Orchidaceae) in Gujarat, India. *Richardiana* 3596(September): 333–341.
- De, L. (2020). Conservation of rare and threatened orchids of India. *Proceedings of the Mordovian State Natural Reserve named after P.G. Smidovich* Vol. 25. 97–122.
- Govaerts, R., P. Bernet, K. Kratochvil, G. Gerlach, G. Carr, P. Alrich, A.M. Pridgeon, J. Pfahl, M.A. Campacci, D.H. Baptista, H. Tigges, J. Shaw, P. Cribb, A. George, K. Kreuz & J. Wood (2015). World Checklist of Orchidaceae. The Board of Trustees of the Royal Botanic Gardens, Kew. Accessed 27 July 2015. <http://www.kew.org/wcsop/monocots/>
- Hooker, J.D. (1890) Orchidaceae, pp. 1–198. In: Hooker, J.D. (ed.). *Flora of British India - Vol. 6*. Reeve, London.
- Jain, A., S. Sarsaiya, J. Chen, Q. Wu, Y. Lu & J. Shi (2021). Changes in global Orchidaceae disease geographical research trends: recent incidences, distributions, treatment, and challenges. *Bioengineered* 12(1): 13–29. <https://doi.org/10.1080/21655979.2020.1853447>
- Jalal, J.S. & J. Jayanthi (2018). An updated checklist of the orchids of Maharashtra, India. *Lankesteriana* 18(1): 23–62. <https://doi.org/10.15517/lank.v18i1.32699>
- Kumar, P. (2008). Systematics and some aspects of ecology of Orchids in Jharkhand State, India. Ph.D. Thesis. Forest Research Institute University, Dehradun, 457 pp.
- Misra, S. (2004). *Orchids of Orissa*. Bishen Singh Mahendra Pal Singh, Dehradun, 774 pp.
- Misra, S. (2007). *Orchids of India - A Glimpse*. Bishen Singh Mahendra Pal Singh, Dehradun, 402 pp.
- Rao, B.R.P. & K. Prasad (2011). *Geodorum laxiflorum* Griffith (Orchidaceae), a new distributional record for southern peninsular India. *Journal of India Biologica*. 90(1&2): 195–196.
- Seidenfaden, G. (1983). Orchid Genera in Thailand XI. Cymbidieae Pflz. *Opera Botanica* 72: 1–123.
- Willis, K.J. (ed.) (2017). *State of the World's Plants*. Royal Botanical Gardens, Kew, London, U.K., 100 pp.



Threatened Taxa

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, Kalpvriksh, 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

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, 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
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, Budhanilankantha 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 paucity 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.

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

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



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)

February 2022 | Vol. 14 | No. 2 | Pages: 20539–20702

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

DOI: 10.11609/jott.2022.14.2.20539-20702

www.threatenedtaxa.org

Article

Distribution, diet, and trophic level of *Arvicanthis abyssinicus* and *Tachyoryctes splendens* around the area of recently extinct Ethiopian Wolf *Canis simiensis* on Mount Guna, northwestern Ethiopia

– Hirpasa Teressa, Wondimu Ersino & Tadele Alemayo, Pp. 20539–20549

Communications

Seasonal composition of avian communities in different habitats of Harike Wetland, a Ramsar site in Punjab, India

– Jagdeep Singh & Onkar Singh Brraich, Pp. 20550–20565

Temporal changes in species richness of waterfowl (Anseriformes) community in D’Ering Memorial Wildlife Sanctuary, Arunachal Pradesh, India

– Tapak Tamir & Daniel Mize, Pp. 20566–20575

Reptilian assemblages in the wetlands of Amboli hill complex, northern Western Ghats, Maharashtra, India during the monsoon season

– Sachinkumar R. Patil & Kiran Choudaj, Pp. 20576–20583

Butterfly diversity and composition at Chemerong Amenity Forest, Terengganu, Malaysia

– Muhammad Hafiz Sulaiman, Abdul Munir Mohd Zaki, Geok Chin Yap, Nur Atiqah Aniruddin & Ju Lian Chong, Pp. 20584–20596

Ecological niche modeling for reintroduction and conservation of *Aristolochia cathcartii* Hook.f. & Thomson (Aristolochiaceae), a threatened endemic plant in Assam, India

– Bhaskar Sarma & Bhaben Tanti, Pp. 20597–20605

New host plant records of Fig Wax Scale *Ceroplastes rusci* (Linnaeus, 1758) (Hemiptera: Coccoomorpha: Coccidae) from India

– Arvind Kumar & Renu Pandey, Pp. 20606–20614

Seasonal variations influencing the abundance and diversity of plankton in the Swarnamukhi River Estuary, Nellore, India

– Krupa Ratnam, V.P. Limna Mol, S. Venkatnarayanan, Dilip Kumar Jha, G. Dharani & M. Prashanthi Devi, Pp. 20615–20624

Short Communications

First record of *Prosopeonoides* Millidge & Russell-Smith, 1992 (Araneae: Linyphiidae) from India, with the description of a new species

– Anusmitha Domichan & K. Sunil Jose, Pp. 20625–20630

Rediscovery of *Platerus pilcheri* Distant (Hemiptera: Reduviidae), a forgotten assassin bug from India, with comments on its range extension

– H. Sankararaman, Anubhav Agarwal, Valérie A. Lemaître & Hemant V. Ghate, Pp. 20631–20636

First Indian DNA barcode record for the moth species *Pygospila tyres* (Cramer, 1780) (Lepidoptera: Crambidae: Spilomelinae) distributed in Asia and Australia

– Aparna S. Kalawate, A. Shabnam & K.P. Dinesh, Pp. 20637–20642

First record and description of female *Onomarchus leuconotus* (Serville, 1838) (Insect: Orthoptera: Tettigoniidae) from peninsular India

– Sunil M. Gaikwad, Yogesh J. Koli & Gopal A. Raut, Pp. 20643–20647

New records of odonates (Insecta: Odonata), *Archibasis oscillans* Selys, 1877 and *Merogomphus tamaracherriensis* Fraser, 1931 from Maharashtra, India

– Akshay Dalvi & Yogesh Koli, Pp. 20648–20653

A checklist of dragonflies & damselflies (Insecta: Odonata) of Kerala, India

– Sujith V. Gopalan, Muhamed Sherif & A. Vivek Chandran, Pp. 20654–20665

***Aldama macbridei* (Heliantheae: Compositae): notes on its distribution and vulnerable habitats in central Peru**

– Daniel B. Montesinos-Tubée & Federico García-Yanes, Pp. 20666–20671

Lichens and animal camouflage: some observations from central Asian ecoregions

– Mahmood Soofi, Sandeep Sharma, Barbod Safaei-Mahroo, Mohammad Sohrabi, Moosa Ghorbani Organli & Matthias Waltert, Pp. 20672–20676

Notes

First photographic evidence of Asiatic Black Bear *Ursus thibetanus* in Kaziranga Tiger Reserve, India

– Priyanka Borah, Jyotish Ranjan Deka, Mujahid Ahamad, Rabindra Sharma, Ruchi Badola & Syed Ainul Hussain, Pp. 20677–20679

First record of Small Minivet *Pericrocotus cinnamomeus* (Aves: Passeriformes: Campephagidae) from Kashmir, India

– Zakir Hussain Najjar, Bilal A. Bhat & Riyaz Ahmad, Pp. 20680–20682

***Cotesia anthelae* (Wilkinson, 1928) (Hymenoptera: Braconidae) a natural parasitoid of *Cirrochroa thais* (Fabricius, 1787) (Lepidoptera: Nymphalidae), first report from the Oriental region**

– Ankita Gupta & P. Manoj, Pp. 20683–20685

***Melastoma imbricatum* Wall. ex Triana (Melastomataceae): a new addition to the flora of Manipur, India**

– Rajkumari Jashmi Devi, Deepashree Khuraijam, Peimichon Langkan & Biseshwori Thongam, Pp. 20686–20688

***Geodorum laxiflorum* Griff. (Orchidaceae), a new distribution record for Maharashtra state of India**

– Ashish Ravindra Bhojar, Swapnil Nandgawe, Syed Abrar Ahmed & Saduram Madavi, Pp. 20689–20691

Photographic record of *Armillaria mellea* a bioluminescent fungi from Lonavala in Western Ghats, India

– Swanand R. Patil & Shubham V. Yadav, Pp. 20692–20694

Response & Reply

Correction to Catalogue of herpetological specimens from Meghalaya, India at the Sálím Ali Centre for Ornithology and Natural History (SACON)

– Pandi Karthik, Pp. 20695–20697

Reply to the “Correction to Catalogue of herpetological specimens from Meghalaya, India at the Sálím Ali Centre for Ornithology and Natural History (SACON)” by P. Karthik

– S.R. Chandramouli, R.S. Naveen, S. Sureshmarimuthu, S. Babu, P.V. Karunakaran & Honnavalli N. Kumara, Pp. 20698–20700

Book Review

Conservation Kaleidoscope: People, Protected Areas and Wildlife in Contemporary India

– L.A.K. Singh, Pp. 20701–20702

Publisher & Host

