

Journal of Threatened Taxa

Building evidence for conservation globally



Open Access

[10.11609/jott.2021.13.12.19675-19886](https://doi.org/10.11609/jott.2021.13.12.19675-19886)
www.threatenedtaxa.org

26 October 2021 (Online & Print)
Vol. 13 | No. 12 | Pages: 19675–19886

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



Publisher

Wildlife Information Liaison Development Societywww.wild.zooreach.org

Host

Zoo Outreach Organizationwww.zooreach.org

No. 12, Thiruvannamalai Nagar, Saravanampatti - Kalapatti Road, Saravanampatti,

Coimbatore, Tamil Nadu 641035, India

Ph: +91 9385339863 | www.threatenedtaxa.org

Email: sanjay@threatenedtaxa.org

EDITORS**Founder & Chief Editor****Dr. Sanjay Molur**Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO),
12 Thiruvannamalai Nagar, Saravanampatti, Coimbatore, Tamil Nadu 641035, India**Deputy Chief Editor****Dr. Neelesh Dahanukar**

Noida, Uttar Pradesh, India

Managing Editor**Mr. B. Ravichandran**, WILD/ZOO, Coimbatore, India**Associate Editors****Dr. Mandar Paingankar**, Government Science College Gadchiroli, Maharashtra 442605, India**Dr. Ulrike Streicher**, Wildlife Veterinarian, Eugene, Oregon, USA**Ms. Priyanka Iyer**, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India**Dr. B.A. Daniel**, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India**Editorial Board****Dr. Russel Mittermeier**

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

Prof. Mewa Singh Ph.D., FASc, FNA, FNAsc, FNAPsy

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

Stephen D. Nash

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

Dr. Fred Pluthero

Toronto, Canada

Dr. Priya Davidar

Sigur Nature Trust, Chadapatti, Mavinahalli 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**Web Maintenance****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 2018–2020****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, Kuvenpura University, Shimoga, Karnataka, India

Dr. K.R. Sridhar, Mangalore University, Mangalagangotri, 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. Vijaysankar Raman, University of Mississippi, USA

Dr. B. Ravi Prasad Rao, Sri Krishnadevaraya University, Anantapur, 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 Ranjan 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. Janarthanan, Goa University, Goa, India

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

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

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

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

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

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

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

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

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

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

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

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

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. Hemanth V. Ghate, Modern College, Pune, India

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

Dr. Jatishwor Singh Irungbam, Biology Centre CAS, Brno, 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

For Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_scopeFor 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

Caption: Stripe-backed Weasel *Mustela strigidorsa*. Medium—digital, Software—procreate, Device—iPad + Apple pencil © Dhanush Shetty.



NOTE

Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India

Kumar Vinod Chhotupuri Gosavi¹ , Sanjay Gajanan Auti² , Sharad Suresh Kambale³ & Munivenkatappa Sanjappa⁴

^{1,2} Department of Botany, HPT Arts & RYK Science College, Nashik, Maharashtra 422005, India.

³ Department of Botany, Maratha Vidya Prasarak Samaj's Arts, Commerce & Science College, Tryambakeshwar, Maharashtra 422212, India.

⁴ Mahatma Gandhi Botanical Garden, University of Agricultural Sciences, GKVK, Bengaluru, Karnataka 560065, India.

¹ kumarvinodgosavi@gmail.com, ² autisanjay66@gmail.com, ³ skambalesu@gmail.com (corresponding author), ⁴ sanjappam@ymail.com

Tribe Indigofereae (Leguminosae: Papilionoideae) represented by seven genera *Cyamopsis*, *Indigasarum*, *Indigofera*, *Microcharis*, *Phylloxyton*, *Rhynchotropis*, and *Vaughania*. Of these, the first three occur in India. The genus *Indigofera* is widely distributed in tropical and subtropical regions of the world (Sanjappa 1995) with 750 species. In India, it is represented by 60 species and 10 varieties (Sanjappa 2021 in press). Of these 13 species and seven varieties are endemic to the country (Singh et al. 2015).

While surveying the hills in northern Western Ghats, the authors collected an interesting species of *Indigofera* from Ganeshkhind, Junnar (Pune district, Maharashtra), Anjaneri Hill, Pahine, Dhodamb Fort, Bordaiwat (Nashik district, Maharashtra), and Chinchali ghat (Dang district, Gujarat). After perusal of literature (Kothari 2001) it was identified as *Indigofera santapaui* Sanjappa. This species was described based on the Santapau's collection from Purandhar (Santapau 11397 (BLAT)) and is unique in the

genus in having yellow flowers which turn orange after pollination. Perusal of literature (Kothari 2001; Mishra & Singh 2001; Gaikwad et al. 2014) available on the species clearly indicates that this species is critically endangered and known from type locality only.

A detailed description, image, habitat, and distribution map are provided to facilitate identification and distribution.

***Indigofera santapaui* Sanjappa**, Bull. Bot. Surv. India 25: 202.1985; M. Ahmed. & M.P. Nayar Endemic Pl. Indian Region 99. 1987; Sanjappa, Legumes of India 194.1992 & in P.K.Hjra et al., Fasc. Fl. India 21: 117. 1995; M.J. Kothari in N.P. Singh & S. Karthikeyan, Fl. Maharashtra State 1: 711. 2000; D.K. Mishra & N.P. Singh, Endemic Threat. Pl. Maharashtra 93. 2001 (Image 1).

Type: India, Maharashtra, Pune district, Vazirgad-Purandar, 09.x.1950, coll. H. Santapau (holotype, 11397 (BLAT!)).

Annual herbs up to 40 cm high; stems sparsely

Editor: Anonymity requested.

Date of publication: 26 October 2021 (online & print)

Citation: Gosavi, K.V.C., S.G. Auti, S.S. Kambale & M. Sanjappa (2021). Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India. *Journal of Threatened Taxa* 13(12): 19870–19873. <https://doi.org/10.11609/jott.6468.13.12.19870-19873>

Copyright: © Gosavi et al. 2021. 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: Authors (KVCG, SGA & SSK) thank the principals of H.P.T. Arts & R.Y.K. Science College, Nashik and MVP Samaj's Arts, Commerce & Science College, Tryambakeshwar for the necessary facilities. SGA thanks the Board of College and University Development, Savitribai Phule Pune University, Pune, for financial assistance and Mr. Uttam Chaudhari for help in the field work. We also thank the authorities of Maharashtra Forest Department (Mr. Pankaj Garg, Mr. Sujit Bokade, Mr. Dnyaneshwar Shinde, Mr. Haribhau Nimbekar, Mr. Sanjay Badade, and Mr. Kailas Nimbekar) for necessary help and permission to work in the Anjaneri Conservation Reserve.



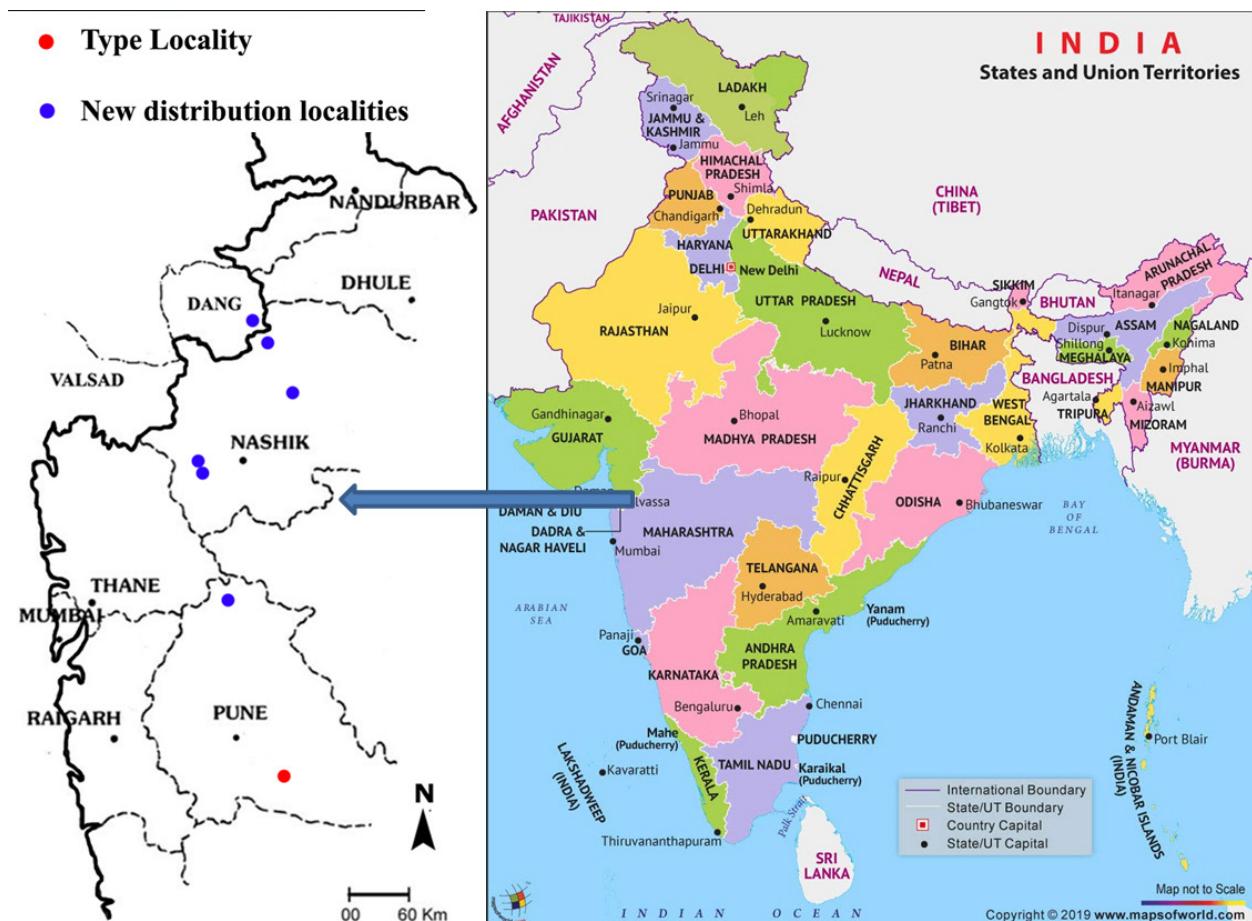


Figure 1. Distribution of *Indigofera santapaui* Sanjappa.

branched from the base, branches adpressed blackish-brown pubescent. Leaves pinnately trifoliate, 3–7 cm long, petiole 1–2 cm long, obscurely canaliculated, adpressed pubescent; leaflets obovate to obovate-oblong, 2.5–5 × 1–2 cm, cuneate at base, obtuse to rounded and mucronate at apex, adpressed pubescent, gland-dotted beneath; stipules 2–3 mm long, subulate, pubescent; petiolules 1.5–2 mm long, pubescent; exstipellate. Racemes 4–6 mm long, axillary, sessile, 5–12-flowered; rachis pubescent interspersed with glandular hairs, axillary. Flowers 4.5–5 mm long, yellow turning orange; pedicels 1–1.5 mm long similar to rachis in pubescens; bracts ca. 1 mm long, caducous. Calyx ca. 2 mm long, adpressed pubescent mixed with glandular hairs; tube short, lobes 5, up to 1 mm long. Standard ca. 4 × 3 mm, obovate, mucronate, yellow, blackish-brown strigose mixed with a few glandular hairs outside; wing petals 2.8–3 × 1.2 mm, yellow, glabrous; keel petals 2.6–4 mm long, dark strigose mixed with a few glandular hairs, spurred on sides. Stamens 10 (9+1), diadelphous, staminal sheath 2.5–3 mm long; anthers

ca. 1 mm long. Ovary 1.5–2 mm long, oblong, adpressed puberulous mixed with glandular hairs; style ca. 1 mm long, glabrous; stigma capitate. Pods up to 2 cm long, sub-cylindrical, torulose, straight, reflexed, adpressed pubescent mixed with glandular hairs, sutures obscurely winged, endocarp smooth, 2–4-seeded, hairy. Seeds smooth, shining, reddish-brown.

Flowering and fruiting: Mid-August to October.

Distribution: India, Maharashtra (Pune and Nashik districts), Gujarat (Dang district) (Figure 1).

Ecological Note: *Indigofera santapaui* grows on hill slopes with well-drained soil in association with *Apluda mutica* L., *Arthraxon lancifolius* (Trin) Hochst, *Arundinella pumila* (Hochst.) Steud., *Impatiens balsamina* L., *Lavandula bipinnata* (Roth) Kuntze, and *Lobelia heyneana* Schult.

Specimens examined: SSK 14, 18.ix.2016, India, Maharashtra, Nashik district, Tryambakeshwar, Anjaneri, coll. S.S. Kambale, K.V.C. Gosavi & S.G. Auti; SSK 27, 30.ix.2017, Dhodamb Fort, coll. S.S. Kambale & K.V.C. Gosavi; SSK 28, 01.x.2017, Malimba (Bordaiwat), coll.



Image 1. *Indigofera santapaui* Sanjappa: a—habit | b—flowering twig | c—flowers | d—pods. © K.V.C. Gosavi

S.S. Kambale & K.V.C. Gosavi, Gujarat; SSK 29, 02.x.2017, Dang district, Chinchali ghat, coll. S.S. Kambale & K.V.C. Gosavi (Herbarium, Dept. of Botany, RYK Science College, Nashik) (Image 2); 1403 (HIFP), 14.xii.1993, Pune district, Junnar, Ganeshkind Ghat, coll. B.R. Ramesh, D.De Franchschi & P.B. Viet; Sanjappa 2008, 21.ix.2014, Pune district, Junnar, Ganeshkind Ghat, 905m, coll. M. Sanjappa & A.N. Sringswara (Herbarium specimens deposited in University of Agricultural Sciences, Bangalore, Botanical Survey of India, Western Circle Pune, Central National Herbarium Kolkata and Madras

Herbarium, Coimbatore).

References

- Gaikwad, S.P., R.D. Gore, K.U. Garad & S. Gaikwad (2014). Endemic flowering plants of northern Western Ghats (Sahyadri Ranges) of India: A checklist. *Check List* 10(3): 461–472. <https://doi.org/10.15560/10.3.461>
- Kothari, M.J. (2001). Fabaceae, pp. 692–717. In: Singh, N.P. & S. Karthikeyan (eds.). *Flora of Maharashtra State, Dicotyledonae - Vol. 1*. Botanical Survey of India, Kolkata.
- Mishra, D.K. & N.P. Singh (2001). *Endemic and Threatened Flowering Plants of Maharashtra*. Botanical Survey of India, Kolkata, 93pp.

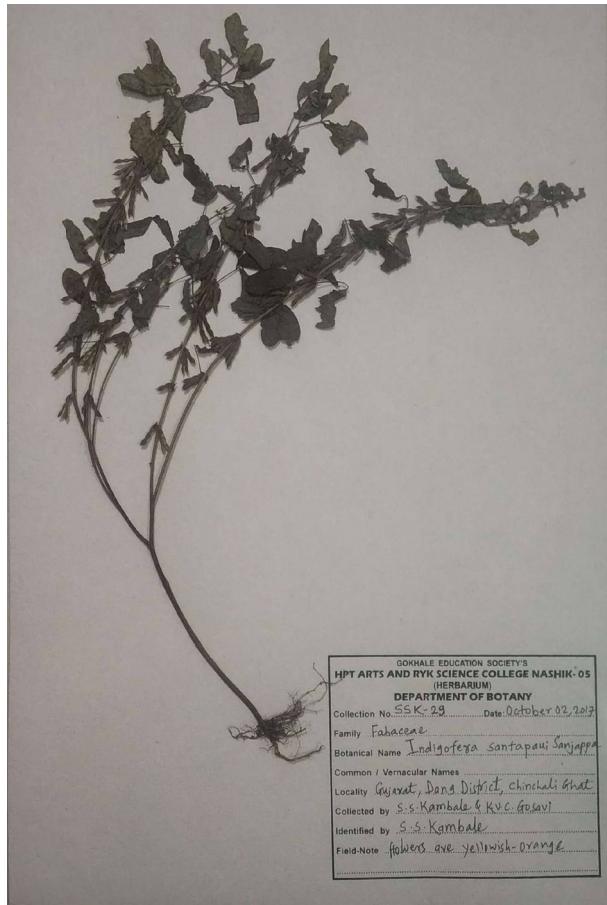


Image 2. Herbarium sheet of *Indigofera santapaui* (# SSK 29).

Sanjappa, M. (1992). *Legumes of India*. Bishen Singh Mahendra Pal Singh, Dehradun.

Sanjappa, M. (1995). Tribe: Indigofereae (Leguminosae-Papilionoideae). In: Hajra, P.K., A.R.K. Sastry & M. Sanjappa (eds.). *Fascicles of Flora of India: Fascicle 21*. Botanical Survey of India, Kolkata, 167pp.

Sanjappa, M. (2020). *Flowering Plants of India, a check-list of Dicotyledones, Volume 2*. Botanical Survey of India, Kolkata (in press).

Singh, P., K. Karthigeyan, P. Lakshminarasimhan & S.S. Dash (2015). *Endemic Vascular Plants of India*. Botanical Survey of India, Kolkata.



Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Karen 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 Al Al Kuwait Real Estate. Co. K.S.C., Kuwait
Dr. Himender Bharti, Panjab 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. Karen 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. Priyadarshan 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. Priyadarshan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

Dr. Neelash 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. Chandrashekher U. Rironker, 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

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
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 Jayopal, 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. Gombobaataa 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 Inskip, Bishop Auckland Co., Durham, UK
Dr. Tim Inskip, 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. Honnallini 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 2018–2020

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.

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](#) 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)

October 2021 | Vol. 13 | No. 12 | Pages: 19675–19886

Date of Publication: 26 October 2021 (Online & Print)

DOI: [10.11609/jott.2021.13.12.19675-19886](https://doi.org/10.11609/jott.2021.13.12.19675-19886)

www.threatenedtaxa.org

Articles

Roosting habits and habitats of the Indian Flying Fox *Pteropus medius* Temminck, 1825 in the northern districts of Tamil Nadu, India
– M. Pandian & S. Suresh, Pp. 19675–19688

Diversity and distribution of avifauna at Warathenna-Hakkinda Environmental Protection Area in Kandy, Sri Lanka
– Dinelka Thilakarathne, Tithira Lakkana, Gayan Hirimuthugoda, Chaminda Wijesundara & Shalika Kumburegama, Pp. 19689–19701

Grass species composition in tropical forest of southern India

– M. Ashokkumar, S. Swaminathan & R. Nagarajan, Pp. 19702–19713

Communications

Habitat use and conservation threats to Wild Water Buffalo *Bubalus arnee* (Mammalia: Artiodactyla: Bovidae) in Koshi Tappu Wildlife Reserve, Nepal
– Reeta Khulal, Bijaya Neupane, Bijaya Dhami, Siddhartha Regmi, Ganesh Prasad Tiwari & Manita Parajuli, Pp. 19714–19724

Get my head around owls: people perception and knowledge about owls of Andaman Islands

– Shamugavel Sureshmarimuthu, Santhanakrishnan Babu, Nagaraj Rajeshkumar & Honnavalli Nagaraj Kumara, Pp. 19725–19732

Abundance and diversity of threatened birds in Nangal Wetland, Punjab, India

– Rajwinder Kaur & Onkar Singh Brach, Pp. 19733–19742

Evaluation of fish diversity and abundance in the Kabul River with comparisons between reaches above and below Kabul City, Afghanistan

– Ugen Kelzang, Ahmad Farid Habibi & Ryan J. Thoni, Pp. 19743–19752

New record of *Myrmarachne melanocephala* MacLeay, 1839 (Araneae: Salticidae) from Jharkhand, India and biogeographical implications of the co-occurrence of its ant model *Tetraponera rufonigra* Jerdon, 1851

– Rahul Kumar, Mirtunjay Sharma & Ajay Kumar Sharma, Pp. 19753–19761

Diversity of spiders (Arachnida: Araneae) and the impact of pruning in Indian sandalwood plantations from Karnataka, India

– S. Padma 1 & R. Sundararaj, Pp. 19762–19772

New records of cheilostome Bryozoa from the eastern coast of India encrusting on the exoskeleton of live horseshoe crabs of Indian Sundarbans

– Swati Das, Maria Susan Sanjay, Basudev Tripathy, C. Venkatraman & K.A. Subramanian, Pp. 19773–19780

On the pteridophytes of Bherjan-Borajan-Padumoni Wildlife Sanctuary, Assam, India

– Pranjal Borah & Jayanta Barukial, Pp. 19781–19790

Population status of *Heritiera fomes* Buch.-Ham., a threatened species from

Mahanadi Mangrove Wetland, India

– Sudam Charan Sahu, Manas Ranjan Mohanta & N.H. Ravindranath, Pp. 19791–19798

Additions to the lichenized and lichenicolous fungi of Jammu & Kashmir from Kishtwar High Altitude National Park

– Vishal Kumar, Yash Pal Sharma, Siljo Joseph, Roshinikumar Ngangom & Sanjeeva Nayaka, Pp. 19799–19807

Short Communications

Is release of rehabilitated wildlife with embedded lead ammunition advisable? Plumbism in a Jaguar *Panthera Onca* (Mammalia: Carnivora: Felidae), survivor of gunshot wounds
– Eduardo A. Díaz, Carolina Sáenz, E. Santiago Jiménez, David A. Egas & Kelly Swing, Pp. 19808–19812

New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India

– Yumnam Rameshori, Yengkhom Chinglemba & Waikhom Vishwanath, Pp. 19813–19817

Field identification characters to diagnose *Microhyla mukhlesuri* from closely related *M. mymensinghensis* (Amphibia: Microhylidae) and range extension of *M. mukhlesuri* up to West Bengal State, India

– Suman Pratihar & Kaushik Deuti, Pp. 19818–19823

First report of *Scipinia horrida* (Stål) (Heteroptera: Reduviidae) from Assam, with comments on related genus *Irantha* Stål

– Anjana Singha Naorem, Santana Saikia, Anandita Buragohain, Rubina Azmeera Begum, Swapnil S. Boyane & Hemant V. Ghate, Pp. 19824–19830

Flesh fly (Diptera: Sarcophagidae): male terminalia, diversity and expanded geographical distribution from India

– Kanholi Sreejith, Shuvra Kanti Sinha, Santanu Mahato & Edamana Pushpalatha, Pp. 19831–19836

Checklist of moths (Heterocera) of Tadong, Sikkim, India

– Prayash Chettri, Yuki Matsui, Hideshi Naka & Archana Tiwari, Pp. 19837–19848

New distribution records of *Begonia* L., *B. murina* Craib and *B. poilanei* Kiew (Begoniaceae: Cucurbitales) for Laos

– Phongphayboun Phonepaseuth, Phetsaly Souladeth, Soulinvan Lanorsavanh, Shuichiro Tagane, Thyraphon Vongthavone & Keooudone Souvannakhoummane Pp. 19849–19854

Notes

A recent sighting of the Stripe-backed Weasel *Mustela strigidorsa* (Mammalia: Carnivora: Mustelidae) in Hkkabro Razi Landscape, Myanmar

– Sai Sein Lin Oo, Tun Tun, Kyaw Myo Naing & Paul Jeremy James Bates, Pp. 19855–19859

Are the uplifted reef beds in North Andaman letting nesting Olive Ridley Sea Turtle *Lepidochelys olivacea* stranded?

– Nehru Prabakaran, Anoop Raj Singh & Vedagiri Thirumurugan, Pp. 19860–19863

First record of the orb-weaving spider *Araneus tubabdominus* Zhu & Zhang, 1993 (Araneae: Araneidae) from India

– Souvik Sen, John T.D. Caleb & Shelley Acharya, Pp. 19864–19866

The genus *Catapiestus* Perty, 1831 (Coleoptera: Tenebrionidae: Cnadaloniini) from Arunachal Pradesh with one new record to India

– V.D. Hegde & Sarita Yadav, Pp. 19867–19869

Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India

– Kumar Vinod Chhotupuri Gosavi, Sanjay Gajanan Auti, Sharad Suresh Kambale & Munivenkatappa Sanjappa, Pp. 19870–19873

Additional distribution records of *Ceropegia anjanerica*, an endemic and 'Endangered' lantern flower of the northern Western Ghats, India

– Samir Shrikant Maiti, Ajay Natha Gangurde, Sharad Suresh Kambale, Avinash Ramchandra Gholave, Avinash Asraji Adsul, Ganesh Babaso Pawar & Kumar Vinod Chhotupuri Gosavi, Pp. 19874–19877

Notes on the extended distribution of *Impatiens megamalayana*, a recently described balsam in Western Ghats, India

– Anoop P. Balan & A.J. Robi, Pp. 19878–19883

Book Review

A look over on the scented tree of India (*Santalum album*)

– S. Suresh Ramanan & A. Arunachalam, Pp. 19884–19886

Publisher & Host

