

for conservation globally

Journal of Threatened TAXA



10.11609/jott.2022.14.7.21331-21486

www.threatenedtaxa.org

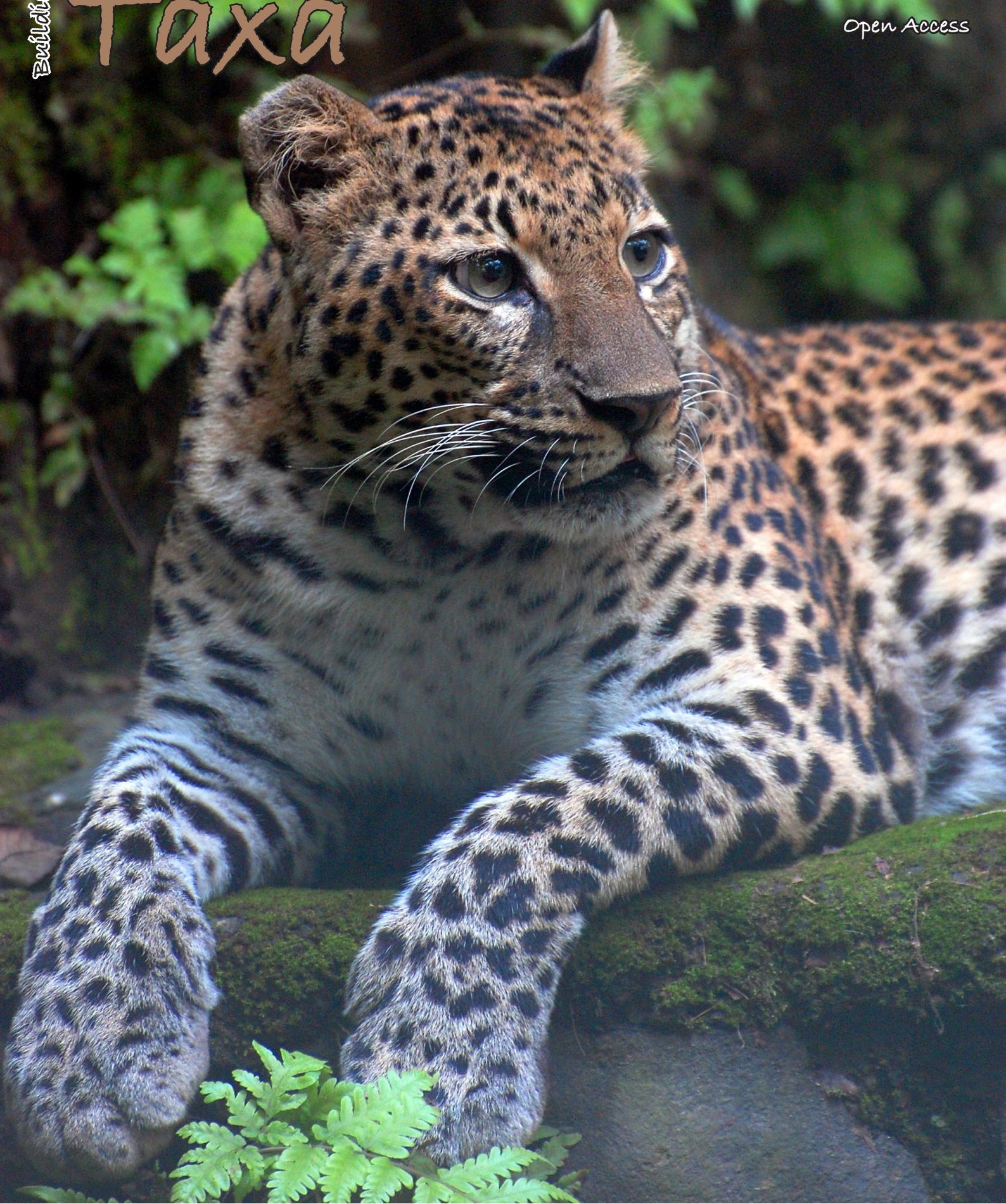
26 July 2022 (Online & Print)

14(7): 21331-21486

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

Open Access





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 - Kalappatti 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 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, Kuvenpu 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. Irudayraj, 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, 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 Ranjani Housing Society, Pune, Maharashtra, India

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

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

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

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

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

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

Dr. Larry R. Nobile, 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. Navendra Page, Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand, India

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

Invertebrates

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

Dr. D.B. Bastawde, 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, Brno, Czech Republic.

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

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

For Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>

For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: A female Javan Leopard *Panthera pardus melas* in rehabilitation phase at Cikananga Wildlife Center. © Yayasan Cikananga Konservasi Terpadu.



Extended distribution of *Impatiens scapiflora* (Balsaminaceae) to the flora of Eastern Ghats, India

T.S. Saravanan¹ , S. Kaliamoorthy² , M.Y. Kamble³  & M.U. Sharief⁴ 

¹⁻³ National Orchidarium & Experimental Garden, Botanical Survey of India, Southern Regional Centre, Yercaud, Salem District, Tamil Nadu 636602, India.

⁴ Botanical Survey of India, Southern Regional Centre, TNAU Campus, Lawley Road Post, Coimbatore, Tamil Nadu 641003, India.

¹ rammaheshsaran@gmail.com, ² skmoorthybsi@gmail.com (corresponding author), ³ mayurkamble1@rediffmail.com, ⁴ shariefbsi@yahoo.co.in

During the floristic exploration in the Shevaroy Hills, Yercaud, Salem district of Tamil Nadu, the authors have collected an interesting specimens belonging to the genus *Impatiens* in flowering condition. After critical examination of the specimens with pertinent literature (Ramamoorthy 1978; Yoganarasimhan et al. 1982; Vajravelu 1983; Almeida 1996; Vivekananthan et al. 1997; Mudaliar & Prasad 2000; Rathakrishnan et al. 2005; Dessai & Janarthanam 2011; Bhaskar 2012), it was identified as *Impatiens scapiflora* B. Heyne ex Roxb. Earlier records indicate that *Impatiens scapiflora* occurs only in the Western Ghats (Matthew 1983; Dessai & Janarthanam 2011; Nayar et al. 2014) and hitherto not reported in the Eastern Ghats. Therefore, the present collection from Shevaroy hills, Yercaud constitute new distributional record of *Impatiens scapiflora* for Eastern Ghats of Tamil Nadu.

Impatiens scapiflora B. Heyne ex Roxb. in Fl. Ind. 2: 464. 1824; Vajravelu in Nair & Henry, Fl. Tamil Nadu 1: 56. 1983; Sharma et al. in Fl. Karnataka 39. 1984; Almeida in Fl. Maharashtra 1: 196. 1996; Saldanha in Fl. Karnataka 2: 257. 1996; Vivekananthan et al. in Hajra et al., Fl. India 4: 208. 1997; Mudaliar & Prasad in Singh

& Karthikeyan, Fl. Maharashtra State Dicotyl. 1: 461. 2000; Rathakrishnan et al. in Daniel, Fl. Kerala 1:557. 2005. Dessai & Janarthanam in Rheedia 21(1): 35. 2011. (Image 1).

Terrestrial scapigerous herbs, up to 21.5 cm high. Rootstocks tuberous, 1.3 cm across, oblongoid. Stems acaulescent, usually rooting at lower nodes. Leaves radical, 7.5 x 5.8 cm, reniform-orbicular, cordate-rounded at base, margins obscurely crenate-serrate, acute-obtuse at apex, sparsely pubescent above, glabrous below; petioles 15.4 cm long, glabrous, pinkish-red. Inflorescence 5-many flowered raceme. Flowers 3.7 cm across, pinkish; bracts 0.3 x 0.2 cm, ovate, acute at apex, glabrous, persistent; pedicels 4.2 cm long, slender, deflexed in fruits, glabrous; lateral sepals 0.4 x 0.2 cm, ovate, obtuse at apex, glabrous; standard petal 0.8 x 1.2 cm, reniform, obcordate at apex, glabrous; wing petals tri-lobed; basal lobe 1.4 x 0.4 cm, oblong, obtuse at apex; mid-lobe 0.8 x 1.2 cm, ovate, obtuse at apex; distal lobe 1.5 x 0.5 cm, oblong, obtuse at apex; lip 7.8 x 0.5 cm, 0.4 cm deep, saccate, acute at apex, glabrous; spur 7.5 cm long, tubular, obtuse at apex, straight, glabrous; column 0.4 x 0.2 cm; stamens 5, anthers bi-locular;

Editor: A.G. Pandurangan, Centre for Innovation in Science & Social Action, Thiruvananthapuram, India.

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

Citation: Saravanan, T.S., S. Kaliamoorthy, M.Y. Kamble & M.U. Sharief (2022). Extended distribution of *Impatiens scapiflora* (Balsaminaceae) to the flora of Eastern Ghats, India. *Journal of Threatened Taxa* 14(7): 21484-21486. <https://doi.org/10.11609/jott.6321.14.7.21484-21486>

Copyright: © Saravanan 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: Botanical Survey of India in-house project.

Competing interests: The authors declare no competing interests.

Acknowledgements: The authors are thankful to the director, BSI, Kolkata and scientist 'E' & head of office, BSI, SRC, Coimbatore, for encouragement and providing facilities; forest department authorities of Shevaroy hills, Yercaud, Salem district, Tamil Nadu, for granting permission and guidance in field.





Image 1. *Impatiens scapiflora* B. Heyne ex Roxb.: A—Habit | B—Inflorescence (close up).

ovary 5 locular, ovate-lanceoloid, glabrous; capsules 1.2 cm long, lanceoloid, glabrous; seeds many, oblongoid, brown, hairy throughout.

Specimen examined: 136013 (MH), 11.ix.2014, India: Tamil Nadu, Salem district, Yercaud, Shevaroy temple, 11.817N, 78.216E, ± 1,577 m, coll. S. Kaliamoorthy, T.S. Saravanan, & M.Y. Kamble (Image 2).

Flowering and Fruiting: September–January.

Ecology: Growing along with grasses, *Impatiens balsamina* L., *Drosera burmanni* Vahl., and *D. peltata* Thunb., on wet and dripping open rocky slopes at elevations between 1,500 and 1,600 m.

Distribution: India: Karnataka, Kerala, Maharashtra, Tamil Nadu. Endemic to Peninsular India.

Conservation status: Less than 25 individuals were noticed during the field survey at Shevaroy temple, Yercaud. Extensive field study in similar habitats in the adjacent localities is required to determine its exact IUCN threat status. Live specimens brought from the study

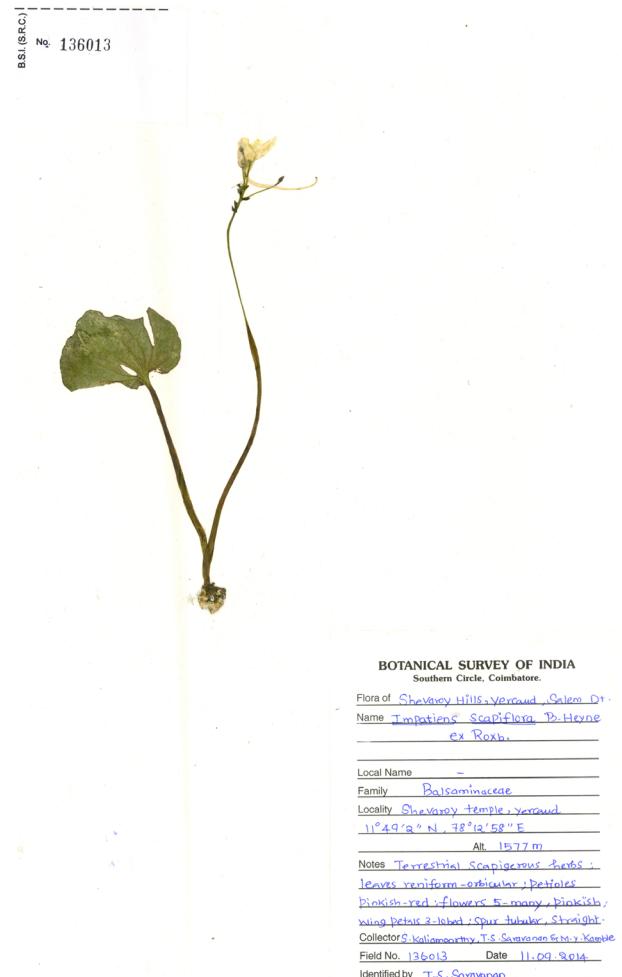


Image 2. Herbarium sheet of *Impatiens scapiflora* B. Heyne ex Roxb.

area are being multiplied and maintained as germplasm collection at NOEG, BSI, SRC, Yercaud.

Notes: Mathew (1983) collected the species *Impatiens scapiflora* in Yercaud hills and included in his floristic work entitled “The flora of Tamil Nadu Carnatic (VOL.3, p.194)”. Though the illustration of the species shown to be similar to *I. scapiflora* but was misidentified as *Impatiens acaulis*. This was kept unnoticed for nearly 38 years until the authors of this article collected and identified it as *Impatiens scapiflora*.

References

- Almeida, M.R. (1996). *Flora of Maharashtra*. Vol. 1. Orient Press, Mumbai, 296 pp.
- Bhaskar, V. (2012). *Taxonomic monograph on Impatiens L. (Balsaminaceae) of Western Ghats, South India: the key genus for endemism*. Centre for Plant Taxonomic Studies, Bangalore, 283 pp.
- Dessai, J.R.N. & M.K. Janarthanam (2011). The genus *Impatiens* (Balsaminaceae) in the northern and parts of central Western Ghats. *Rheedia* 21: 23–80.

- Matthew, K.M. (1983).** The Flora of Tamil Nadu Carnatic series. Vol. 3. The Rabinet Herbarium, Tiruchirapalli, Tamil Nadu, India, 1284 pp.
- Mudaliar, S.K. & V.P. Prasad (2000).** *Balsaminaceae*, pp. 444–463. In: Singh, N.P. & S. Karthikeyan (eds.). *Flora of Maharashtra State – Dicotyledones*. Vol. 1. Botanical Survey of India, Calcutta.
- Nayar, T.S., A.R. Beegam & M. Sibi (2014).** *Flowering Plants of the Western Ghats, India*. Vol. 1. Dicots. Jawaharlal Nehru Tropical Botanical Garden and Research Institute, Kerala, 933 pp.
- Ramamoorthy, T.P. (1978).** *Balsaminaceae*, pp. 399–404. In: Saldanha, C.J. & D.H. Nicolson (eds.). *Flora of Hassan District, Karnataka*. Amerind Publishers, New Delhi, 923 pp.
- Rathakrishnan, N.C., K. Vivekananthan & V.J. Nair (2005).** *Balsaminaceae*, pp. 524–565. In: Daniel, P. (ed.). *The Flora of Kerala*. Vol. 1. Botanical Survey of India, Kolkata, 883 pp.
- Vajravelu, E. (1983).** *Balsaminaceae*, pp. 53–57. In: Nair, N.C. & A.N. Henry (Eds.). *Flora of Tamil Nadu, India*. Ser. 1: Analysis. Vol. 1. Botanical Survey of India, Coimbatore, 184 pp.
- Vivekananthan, K., N.C. Rathakrishnan, M.S. Swaminathan & L.K. Ghara (1997).** *Balsaminaceae*, pp. 95–229. In: Hajra, P.K., V.J. Nair & P. Daniel (eds.). *Flora of India*. Vol. 4. Botanical Survey of India, Calcutta, 561 pp.
- Yoganarasimhan, S.N., K. Subramanyam & B.A. Razi (1982).** *Flora of Chikmagalur District, Karnataka, India*. International Book Distributor, Dehra Dun, 407 pp.



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

Amphibians

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

Reptiles

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

Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia
Mr. H. Byju, Coimbatore, Tamil Nadu, India
Dr. Chris Bowden, Royal Society for the Protection of Birds, Sandy, UK
Dr. Priya Davidar, Pondicherry University, Kalapet, Puducherry, India
Dr. J.W. Duckworth, IUCN SSC, Bath, UK
Dr. Rajah Jayapal, SACON, Coimbatore, Tamil Nadu, India
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India
Mr. J. Praveen, Bengaluru, India
Dr. C. Srinivasulu, Osmania University, Hyderabad, India
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA
Dr. Gombobaatar Sundev, Professor of Ornithology, Ulaanbaatar, Mongolia
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel
Dr. Taej Munduk, 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. Honnavalli N. Kumara, SACON, Anaikatty P.O., Coimbatore, Tamil Nadu, India
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraya, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Manda 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 Hellenn 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.

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 - Kalappatti Road,
Saravanampatti, Coimbatore, Tamil Nadu 641035, India
ravi@threatenedtaxa.org

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

NAAS rating (India) 5.64



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.

www.threatenedtaxa.org

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

July 2022 | Vol. 14 | No. 7 | Pages: 21331–21486

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

DOI: 10.11609/jott.2022.14.7.21331-21486

Articles

The Javan Leopard *Panthera pardus melas* (Cuvier, 1809) (Mammalia: Carnivora: Felidae) in West Java, Indonesia: estimating population density and occupancy

– Anton Ario, Senjaya Mercusiana, Ayi Rustiadi, Robi Gumiwang, I Gede Gelgel Darma Putra Wirawan & Toni Ahmad Slamet, Pp. 21331–21346

Breeding phenology and population dynamics of the endangered Forest Spiny Reed Frog *Afrixalus sylvaticus* Schiøtz, 1974 in Shimba Hills, Kenya

– Alfayo Koskei, George Eshiamwata, Bernard Kirui & Phylus K. Cheruiyot, Pp. 21347–21355

Ichthyofaunal diversity of Senkhi stream, Itanagar, Arunachal Pradesh: a comparative status between 2004–05 and 2018–19

– Koj Taro, Lakpa Tamang & D.N. Das, Pp. 21356–21367

First record of *Proceratium* Roger, 1863, *Zaspinctus* Wheeler, 1918, and *Vollenhovia* Mayr, 1865 (Hymenoptera: Formicidae) from the Western Ghats of peninsular India, description of three new species, and implications for Indian biogeography

– Kalesh Sadasivan & Manoj Kripakaran, Pp. 21368–21387

Communications

New queen? Evidence of a long-living Jaguar *Panthera onca* (Mammalia: Carnivora: Felidae) in Tikal National Park, Guatemala

– Carlos A. Gaitán, Manolo J. García, M. André Sandoval-Lemus, Vivian R. González-Castillo, Gerber D. Guzmán-Flores & Cristel M. Pineda, Pp. 21388–21395

First camera trap record of Striped Hyena *Hyaena hyaena* (Linnaeus, 1758) (Mammalia: Carnivora: Hyaenidae) in Parsa National Park, Nepal

– Pramod Raj Regmi, Madhu Chetri, Haribhadra Acharya, Prakash Sigdel, Dipendra Adhikari, Naresh Subedi & Babu Ram Lamichhane, Pp. 21396–21401

Range extension and new ecoregion records of the Crocodile Monitor *Varanus salvatorii* (Peters & Doria, 1878) (Reptilia: Varanidae) in Papua New Guinea

– Borja Reh & Jim Thomas, Pp. 21402–21408

A checklist of fish and shellfishes of the Poonthura estuary, southwestern coast of India

– Kiranya Bella, Pramila Sahadevan, Giri Bhavan Sreekanth & Rajeev Raghavan, Pp. 21409–21420

A new species of *Protosticta* Selys, 1885 (Odonata: Zygoptera: Platystictidae) from Western Ghats, India

– Kalesh Sadasivan, Vinayan P. Nair & K. Abraham Samuel, Pp. 21421–21431

A case study on utilization and conservation of threatened plants in Sechu Tuan Nalla Wildlife Sanctuary, western Himalaya, India

– Puneet Kumar, Harminder Singh & Sushil Kumar Singh, Pp. 21432–21441

A survey of ethno-medicinally important tree species in Nauradehi Wildlife Sanctuary, central India

– Tinku Kumar, Akash Kumar, Amit Jugnu Bishwas & Pramod Kumar Khare, Pp. 21442–21448

Short Communications

Effects of a Bengal Slow Loris *Nycticebus bengalensis* (Primates: Lorisidae) bite: a case study from Murlen National Park, Mizoram, India

– Amit Kumar Bal, Anthony J. Giordano & Sushanto Gouda, Pp. 21449–21452

First record of *Garra birostris* Nebeshwar & Vishwanath, 2013 (Cypriniformes: Cyprinidae) from Doyang and Dikhu rivers of Brahmaputra drainage, Nagaland, India

– Sophiya Ezung, Metevinu Kechu & Pranay Punj Pankaj, Pp. 21453–21457

Two new records of Lilac Silverline *Apharitis lilacinus* (Lepidoptera: Lycaenidae) from northeastern India

– Monsoon Jyoti Gogoi, Ngulkholai Khongsai, Biswajit Chakdar & Girish Jathar, Pp. 21458–21461

Illustrated description of the mantis *Mesopteryx platycephala* (Mantodea: Mantidae) collected from West Bengal, India

– Gauri Sathaye, Sachin Ranade & Hemant Ghate, Pp. 21462–21466

***Cetrelia isidiata* (Asahina) W.L. Culb. & C.F. Culb. (Parmeliaceae) – an addition to the Indian lichen biota**

– Gaurav K. Mishra, Pooja Maurya & Dalip K. Upreti, Pp. 21467–21469

Notes

A new southern distribution record for Pacific Marten *Martes caurina*

– Maximilian L. Allen, Brianne Kenny, Benjamin Crawford & Morgan J. Farmer, Pp. 21470–21472

First Asian record of Light-mantled Albatross *Phoebetria palpebrata* (Foster, 1785) from Rameswaram Island, Tamil Nadu, India

– H. Byju & N. Raveendran, Pp. 21473–21475

***Salvia misella* Kunth (Lamiaceae) - a new record for Eastern Ghats of India**

– Prabhat Kumar Das, Pradeep Kumar Kamila & Pratap Chandra Panda, Pp. 21576–21579

***Salsola oppositifolia* Desf. in Great Rann of Kachchh, Gujarat – a new record for India**

– Rakesh Gujar, Vinesh Gamit, Ketan Tatoo & R.K. Sugor, Pp. 21580–21483

Extended distribution of *Impatiens scapiflora* (Balsaminaceae) to the flora of Eastern Ghats, India

– T.S. Saravanan, S. Kaliamoorthy, M.Y. Kamble & M.U. Sharief, Pp. 21484–21486

Publisher & Host

