



Open Access

10.11609/jott.2022.14.4.20811-20950

www.threatenedtaxa.org

26 April 2022 (Online & Print)

14(4): 20811-20950

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

Dr. Fred Pluthero

Toronto, Canada

Dr. Priya Davidar

Sigur Nature Trust, Chadapatti, Mavinahalla PO, Nilgiris, Tamil Nadu 643223, India

Dr. Martin Fisher

Senior Associate Professor, Battcock Centre for Experimental Astrophysics, Cavendish
Laboratory, JJ Thomson Avenue, Cambridge CB3 0HE, UK

Dr. John Fellowes

Honorary Assistant Professor, The Kadoorie Institute, 8/F, T.T. Tsui Building, The University of
Hong Kong, Pokfulam Road, Hong Kong

Prof. Dr. Mirco Solé

Universidade Estadual de Santa Cruz, Departamento de Ciências Biológicas, Vice-coordenador
do Programa de Pós-Graduação em Zoologia, Rodovia Ilhéus/Itabuna, Km 16 (45662-000)
Salobrinho, Ilhéus - Bahia - Brasil

Dr. Rajeev Raghavan

Professor of Taxonomy, Kerala University of Fisheries & Ocean Studies, Kochi, Kerala, India

English Editors

Mrs. Mira Bhojwani, Pune, India

Dr. Fred Pluthero, Toronto, Canada

Mr. P. Ilangoan, Chennai, India

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. Janarthnam, 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. 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: *Saproamanita praeclara*: Sporocarp in habitat © Kantharaja. R.



An abandoned nest of *Vespa affinis* (Hymenoptera: Vespidae)

Shanjida Sultana¹ & Sharmin Akter²

¹ Department of Zoology, University of Dhaka, Dhaka, Bangladesh.

² Entomology Laboratory, Department of Zoology, University of Dhaka, Dhaka, Bangladesh.

¹ shanjidasultana.zoo@du.ac.bd (corresponding author), ² moutusidu18@gmail.com

Although *Vespa affinis* is one of the most common hornets in subtropical and tropical Asia (Archer 1997), very few studies have been made on the taxonomy of this species in Bangladesh (Akter et al. 2020) and no studies have been reported yet on its nest structure in this southern Asian country. Therefore, we present some observations of an abandoned nest of *Vespa affinis* obtained from the southern part of Bangladesh.

The nest was collected from Barishal Sadar Thana (22.698N & 90.363E) of Barishal metropolitan area in Bangladesh (Figure 1) on 8 December 2019 after the whole colony had left the nest. It was built on the outer wall of a house (Image 1) and the nest bottom was approximately 1.6 m above the ground. According to Archer (2008), *Vespa* sp. maintain an annual colony cycle and the cycle length is longer in tropical regions for *Vespa affinis*; on the basis of this statement and our observation, we also found that the colony cycle length of this species was approximately eight months and the wasps vacated the nest just prior to the arrival of winter. On 19 December 2019, the nest was transferred to the Entomology Laboratory of the University of Dhaka, Dhaka.

The nest was found roughly pear-shaped, consisting of seven combs. The upper combs were comparatively larger in diameter than the lower ones, especially the

second comb which was found larger in diameter than the other six combs. Each comb was attached to the adjacent combs with the support of a varied number of both flattened and ribbon like pillars. The nest was surrounded by layers of envelopes, which were light in weight, with a single opening to the outside. It was unfortunate that the outer envelope was destroyed due to transportation and dryness (Image 2). The role of the layered envelope is to safeguard the colony against enemies and maintain constant humidity and temperature inside the nest (Klingner et al. 2005, 2006). The experimental nest had a blunt roof cone rather than a pronounced conical roof showed by van der Vecht (in Malaya, 1957). Van der Vecht (1957) had suggested that during heavy rains, the roof cone assists in shedding water from the nest.

We took some measurements of the nest. Maximum diameter of the nest was recorded at 45.5 cm and the total weight and height of the nest structure (without the external envelope) measured 913 g and 27 cm, respectively. The measurement of maximum diameter and height was done by using a measuring tape and weight was measured in a weight balance machine.

To count the total number of cells, Latter's formula was applied to each of the combs and the formula was: N (the total number of cells in one comb) = $(3n/2+1)$

Editor: Anonymity requested.

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

Citation: Sultana, S. & S. Akter (2022). An abandoned nest of *Vespa affinis* (Hymenoptera: Vespidae). *Journal of Threatened Taxa* 14(4): 20943–20945. <https://doi.org/10.11609/jott.7275.14.4.20943-20945>

Copyright: © Sultana & Akter 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: Self-funded.

Competing interests: The authors declare no competing interests.

Acknowledgements: We are thankful to Jannat Ara Jharna for collecting the nest from Barishal Sadar Thana.



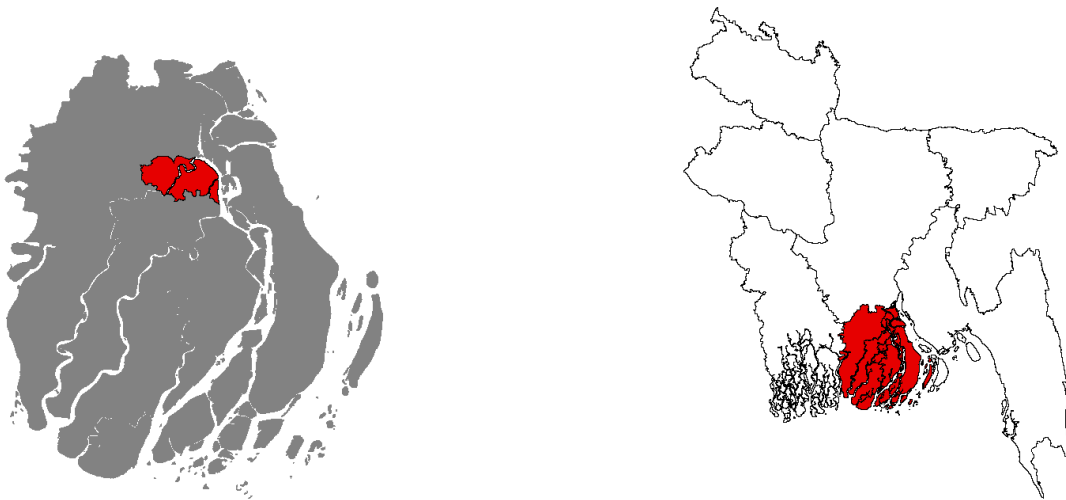


Figure 1. The right image shows the location of Barishal metropolitan in Bangladesh. The left image shows the location of Barishal sadar thana in Barishal metropolitan from where the nest of *Vespa affinis* was collected.



© Jannat Ara Jharna

Image 1. Nest of *Vespa affinis*.



Image 2. The same nest without the envelope.

$\times n/2$; where n is the number of cells counted across its maximum diameter (Latter 1935). By applying this formula, in total 10,639.25 cells were estimated from the whole nest. But unfortunately, the cells were found empty (without any eggs, larvae, and pupae). Like Seeley & Seeley (1980), we also assume that before leaving the nest the wasps had stopped the rearing of their offspring.

As wasps play an important role in ecology and some characters of nest structure has importance in taxonomy (i.e., supra-specific classification) (Yamane & Makino 1977), we suggest further research on the nest structure to better understand the taxonomy, distribution, nesting biology, and evolution of nests of this species.

References

- Akter, T., J.A. Jharna, S. Sultana, S. Akhter & S. Begum (2020). Identification and ecology of wasps (Apocrita: Hymenoptera) of Dhaka city. *Bangladesh Journal of Zoology* 48(1): 37–44. <https://doi.org/10.3329/bjz.v48i1.47874>
- Archer, M.E (2008). Taxonomy, distribution and nesting biology of species of the genera *Provespa* Ashmead and *Vespa* Linnaeus (Hymenoptera, Vespidae). *Entomologist's Monthly Magazine* 144: 69–101.
- Archer, M.E (1997). Taxonomy, distribution and nesting biology of *Vespa affinis* (L.) and *Vespa mocsaryana* du Buysson. *Entomologist's monthly magazine* 133: 27–38.
- Klingner, R., K. Richter & E. Schmolz (2006). Strategies of social wasps for thermal Homeostasis in light paper nests. *Journal of Thermal Biology* 31: 599–604. <https://doi.org/10.1016/j.jtherbio.2006.08.005>
- Klingner, R., K. Richter, E. Schmolz & B. Keller (2005). The role of moisture in the nest thermoregulation of social wasps. *Naturwissenschaften* 92: 427–430. <https://doi.org/10.1007/s00114-005-0012-y>
- Latter, O.H. (1935). A reason for the order in which the queen wasp constructs the cells of the comb, a method for computing the number of cells in a comb, and an instance of the limitation of the instincts of wasps. *Proceedings of the Royal Entomological Society of London* 10: 74–78.
- Seeley, T.D. & R.H. Seeley (1980). A nest of a social wasp *Vespa affinis*, in Thailand (Hymenoptera: Vespidae). *Psyche* 87: 299–304.
- van der Vecht, J. (1957). *The Vespinae of the Indo-Malayan and Papuan areas* (Hymenoptera, Vespidae), Brill, 82 pp.
- Yamane, S. & S. Makino (1977). Bionomics of *Vespa analis insularis* and *V. mandarinia latilineata* in Hokkaido, northern Japan, with notes on vespine embryo nests (Hymenoptera: Vespidae). *Insecta Matsumurana. New series* 12: 1–33.

Dr. John Noyes, Natural History Museum, London, UK
 Dr. Albert G. Orr, Griffith University, Nathan, Australia
 Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
 Dr. Nancy van der Poorten, Toronto, Canada
 Dr. Kareen Schnabel, NIWA, Wellington, New Zealand
 Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
 Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
 Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
 Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
 Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
 Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
 Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
 Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
 Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
 Dr. M. Nithyanandan, Environmental Department, La Ala Al Kuwait Real Estate. Co. K.S.C., Kuwait
 Dr. Himender Bharti, Punjabi University, Punjab, India
 Mr. Purnendu Roy, London, UK
 Dr. Saito Motoki, The Butterfly Society of Japan, Tokyo, Japan
 Dr. Sanjay Sondhi, TITLI TRUST, Kalpavriksh, Dehradun, India
 Dr. Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam
 Dr. Nitin Kulkarni, Tropical Research Institute, Jabalpur, India
 Dr. Robin Wen Jiang Ngiam, National Parks Board, Singapore
 Dr. Lionel Monod, Natural History Museum of Geneva, Genève, Switzerland.
 Dr. Asheesh Shivam, Nehru Gram Bharti University, Allahabad, India
 Dr. Rosana Moreira da Rocha, Universidade Federal do Paraná, Curitiba, Brasil
 Dr. Kurt R. Arnold, North Dakota State University, Saxony, Germany
 Dr. James M. Carpenter, American Museum of Natural History, New York, USA
 Dr. David M. Claborn, Missouri State University, Springfield, USA
 Dr. Kareen Schnabel, Marine Biologist, Wellington, New Zealand
 Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
 Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
 Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
 Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
 Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
 Dr. Priyadarsanan Dharma Rajan, ATREE, Bengaluru, India
 Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
 Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
 Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
 Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
 Dr. Keith V. Wolfe, Antioch, California, USA
 Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
 Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
 Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
 Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
 Dr. John T.D. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
 Dr. Priyadarsanan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

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

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
 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 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 Dharaia, 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 2019–2021

Due to pausity 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)

April 2022 | Vol. 14 | No. 4 | Pages: 20811–20950

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

DOI: 10.11609/jott.2022.14.4.20811-20950

www.threatenedtaxa.org

Communications

Study on the diversity of birds in the new abode of wetlands created by the 2004 tsunami in South Andaman

– Neelam Puri, V. Shiva Shankar, G. Narshimulu, Satyajit Halder, C. Ramayya & Ravi Pratap Singh, Pp. 20811–20820

Population abundance of Greater Flamingo *Phoenicopterus roseus* (Aves: Phoenicopteridae) in district Gurugram of Haryana, India

– Amit Kumar & Sarita Rana, Pp. 20821–20827

Freshwater fish diversity in hill streams of Saberi River in Eastern Ghats of Odisha, India

– Supriya Surachita & Sharat Kumar Palita, Pp. 20828–20839

Hatching in Coromandel Marsh Dart Damselfly *Ceriagrion coromandelianum* (Fabricius) (Zygoptera: Coenagrionidae): process and influence of the oviposition substrate

– Payal Verma, Nilesh Thaokar & Raymond Andrew, Pp. 20840–20847

Distribution of the genus *Pinguicula* (L., 1753) (Lentibulariaceae) in Gunma Prefecture, Japan with new records

– Hiro Shimai & Takehiro Ohmori, Pp. 20848–20858

Reproductive biology of two threatened and highly traded medicinal plants, *Salacia gambleana* and *Salacia oblonga*, from the Western Ghats of India

– P.S. Krishnasree, P.A. Jose, K. Subin & T.V. Sarath, Pp. 20859–20865

Cytotaxonomy and palynology study of some weed species from the state of Punjab, India

– Rai Singh & M.C. Sidhu, Pp. 20866–20872

Philately of mangroves: local to global reflection

– Mahesh Shindikar, Yogesh Deshpande, Prasad Kulkarni, Anand Billade & Ajit Vartak, Pp. 20873–20889

Amanitaceous fungi of central Western Ghats: taxonomy, phylogeny, and six new reports to Indian mycobiota

– Rangappa Kantharaja & Maddappa Krishnappa, Pp. 20890–20902

Short Communications

Distribution records of Dormer's Bat *Scotozous dormeri* (Dobson, 1875) (Mammalia: Chiroptera: Vespertilionidae) in Nepal

– Dibya Raj Dahal, Sanjan Thapa, Delip Singh Chand & Nanda Bahadur Singh, Pp. 20903–20907

A report on the butterfly (Lepidoptera: Rhopalocera) diversity of the Upper Ganga River Ramsar site in Uttar Pradesh, India

– Kritish De, Keshav Kumar, Amar Paul Singh, Virendra Prasad Uniyal & Syed Ainul Hussain, Pp. 20908–20914

Case report of hook worm *Grammocephalus hybridatus* and stomach bot *Cobboldia elephantis* infections in a free-ranging Asian Elephant *Elephas maximus* in Tamil Nadu, India

– Kaveri Theerthagiri Kavitha, Chirukandoth Sreekumar & Bhaskaran Ravi Latha, Pp. 20915–20920

Management of traumatic ulcerative keratitis in a Red Serow

– Deepjyoti Deka, Panchami Sharma, Arup Das, Kongkon J. Dutta, Syed A. Arif & Tinku Das, Pp. 20921–20925

Notes

Group size pattern and distribution of threatened Sambar *Rusa unicolor* (Artiodactyla: Cervidae) in Moyar River Valley, India

– Vedagiri Thirumurugan, Chandravilasam Sreedharan Nair Vishnu, Nehru Prabakaran & Chinnsamy Ramesh, Pp. 20926–20929

First photographic record of the presence of Smooth-coated Otter *Lutrogale perspicillata* in Ghaghra River, India

– Saurav Gawan, Ashish K. Panda & Aakash Mohan Rawat, Pp. 20930–20934

Back after 40 years: a rare sighting of Eurasian Siskin *Spinus spinus* (Linnaeus, 1758) (Aves: Passeriformes: Fringillidae) in Himachal Pradesh, India

– Paul Pop, Kuldeep Singh Barwal, Puneet Pandey, Harminder Pal Singh & Randeep Singh, Pp. 20935–20938

First record of the jumping spider *Pancorius changricus* Zabka, 1990

from India (Araneae: Salticidae)

– Anushka Gurung, Aita Hang Subba Limboo, Bhoj Kumar Acharya & Dhruv A. Prajapati, Pp. 20939–20942

An abandoned nest of *Vespa affinis* (Hymenoptera: Vespidae)

– Shanjida Sultana & Sharmin Akter, Pp. 20943–20945

Endemic *Primula xanthopa* Balf.f. & R.E. Cooper: rediscovery after 88 years from Bumdeling Wildlife Sanctuary, Bhutan

– Namgay Shacha, Karma Sangay, Tshering Dendup & Tez Bdr Ghalley, Pp. 20946–20950

Publisher & Host

