

Building evidence for conservation globally

# Journal of Threatened Taxa



Open Access

10.11609/jott.2025.17.1.26331-26442

[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

26 January 2025 (Online & Print)

17(1): 26331-26442

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

zOreach® 4.0







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

Publisher  
**Wildlife Information Liaison Development Society**  
[www.wild.zooreach.org](http://www.wild.zooreach.org)

Host  
**Zoo Outreach Organization**  
[www.zooreach.org](http://www.zooreach.org)

Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatti, Coimbatore, Tamil Nadu 641035, India  
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India  
Ph: +91 9385339863 | [www.threatenedtaxa.org](http://www.threatenedtaxa.org)  
Email: [sanjay@threatenedtaxa.org](mailto:sanjay@threatenedtaxa.org)

#### EDITORS

##### Founder & Chief Editor

**Dr. Sanjay Molur**

Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO),  
Coimbatore, Tamil Nadu 641006, India

##### Deputy Chief Editor

**Dr. Neelesh Dahanukar**

Noida, Uttar Pradesh, India

##### Assistant Editor

**Dr. Chaithra Shree J.**, WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

##### Managing Editor

**Mr. B. Ravichandran**, WILD/ZOO, Coimbatore, Tamil Nadu 641006, India

##### Associate Editors

**Dr. Mandar Paingankar**, Government Science College Gadchiroli, Maharashtra 442605, India

**Dr. Ulrike Streicher**, Wildlife Veterinarian, Eugene, Oregon, USA

**Ms. Priyanka Iyer**, ZOO/WILD, Coimbatore, Tamil Nadu 641006, India

##### Editorial Board

**Dr. Russel Mittermeier**

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

**Prof. Mewa Singh Ph.D., FASc, FNA, FNASC, FNAPs**

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, Mavinhalla PO, Nilgiris, Tamil Nadu 643223, India

**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

**Ms. Sindhura Stothra Bhashyam**, Hyderabad, India

##### Web Development

**Mrs. Latha G. Ravikumar**, ZOO/WILD, Coimbatore, India

##### Typesetting

**Mrs. Radhika**, ZOO, Coimbatore, India

**Mrs. Geetha**, ZOO, Coimbatore India

#### Fundraising/Communications

**Mrs. Payal B. Molur**, Coimbatore, India

#### Subject Editors 2021–2023

##### Fungi

Dr. B. Shivaraju, Bengaluru, Karnataka, India

Dr. R.K. Verma, Tropical Forest Research Institute, Jabalpur, India

Dr. Vatsavaya S. Raju, Kakatiya University, Warangal, Andhra Pradesh, India

Dr. M. Krishnappa, Jnana Sahyadri, Kuvempu University, Shimoga, Karnataka, India

Dr. K.R. Sridhar, Mangalore University, Mangalagangothri, Mangalore, Karnataka, India

Dr. Gunjan Biswas, Vidyasagar University, Midnapore, West Bengal, India

Dr. Kiran Ramchandra Ranadive, Annasaheb Magar Mahavidyalaya, Maharashtra, India

##### Plants

Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India

Dr. N.P. Balakrishnan, Ret. Joint Director, BSI, Coimbatore, India

Dr. Shonil Bhagwat, Open University and University of Oxford, UK

Prof. D.J. Bhat, Retd. Professor, Goa University, Goa, India

Dr. Ferdinando Boero, Università del Salento, Lecce, Italy

Dr. Dale R. Calder, Royal Ontario Museum, Toronto, Ontario, Canada

Dr. Cleofas Cervancia, Univ. of Philippines Los Baños College Laguna, Philippines

Dr. F.B. Vincent Florens, University of Mauritius, Mauritius

Dr. Merlin Franco, Curtin University, Malaysia

Dr. V. Irudayaraj, St. Xavier's College, Palayamkottai, Tamil Nadu, India

Dr. B.S. Kholia, Botanical Survey of India, Gangtok, Sikkim, India

Dr. Pankaj Kumar, Department of Plant and Soil Science, Texas Tech University, Lubbock, Texas, USA.

Dr. V. Sampath Kumar, Botanical Survey of India, Howrah, West Bengal, India

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

Dr. Vijayasankar Raman, University of Mississippi, USA

Dr. B. Ravi Prasad Rao, Sri Krishnadevaraya University, Anantpur, India

Dr. K. Ravikumar, FRLHT, Bengaluru, Karnataka, India

Dr. Aparna Watve, Pune, Maharashtra, India

Dr. Qiang Liu, Xishuangbanna Tropical Botanical Garden, Yunnan, China

Dr. Noor Azhar Mohamed Shazili, Universiti Malaysia Terengganu, Kuala Terengganu, Malaysia

Dr. M.K. Vasudeva Rao, Shiv Ranjani Housing Society, Pune, Maharashtra, India

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Dr. A.G. Pandurangan, Thiruvananthapuram, Kerala, India

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

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

##### Invertebrates

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

Dr. D.B. Bastawade, Maharashtra, India

Dr. Partha Pratim Bhattacharjee, Tripura University, Suryamaninagar, India

Dr. Kailash Chandra, Zoological Survey of India, Jabalpur, Madhya Pradesh, India

Dr. Ansie Dippenaar-Schoeman, University of Pretoria, Queenswood, South Africa

Dr. Rory Dow, National Museum of Natural History Naturalis, The Netherlands

Dr. Brian Fisher, California Academy of Sciences, USA

Dr. Richard Gallon, Llandudno, North Wales, LL30 1UP

Dr. Hemant V. Ghate, Modern College, Pune, India

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

For Focus, Scope, Aims, and Policies, visit [https://threatenedtaxa.org/index.php/JoTT/aims\\_scope](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](https://threatenedtaxa.org/index.php/JoTT/policies_various)

continued on the back inside cover

Cover: Illuminating the cruelty of Pangolin trade in India for the purpose of black magic, for the sanctity of protection. Using an animal's shell, ripping its armor against the world to protect oneself. When does one become the evil they are trying to ward off? — Acrylic on wood. © Maya Santhanakrishnan.



many parts of the world due to their massive seasonal outbreaks (Klein et al. 2021).

In Thar Desert, the Desert National Park (DNP) is an important grassland ecosystem with vast expanses of grassland intermixed with shrubs and small trees. Earlier Rathore (2004) reported only 10 species of Orthoptera from DNP. There is paucity of information about the orthopteran species in the Thar landscape, specially the DNP, being the only prominent protected area representative of India's north-western arid biogeographic zone. Therefore, the aim of our study was to understand how many different type of orthopteran species are there.

## METHODS

The Thar Desert occupies nearly 385,000 km<sup>2</sup> and about 9% of the area of India (Islam & Rahmani 2004). Thar is occupied mainly by dry open grassland or grassland interspersed with trees and shrubs with broad topographic features like gravels, plains, sand-soil mix, dunes, and rocky hillocks (Sharma & Mehra 2009). The Desert National Park (DNP); actually a Wildlife Sanctuary encompasses about 3,162 km<sup>2</sup> in the Jaisalmer District and another 1,262 km<sup>2</sup> in the Barmer Districts of Rajasthan. Several areas within the national park are protected by fencing where the human activity is restricted to conserve the habitat for important

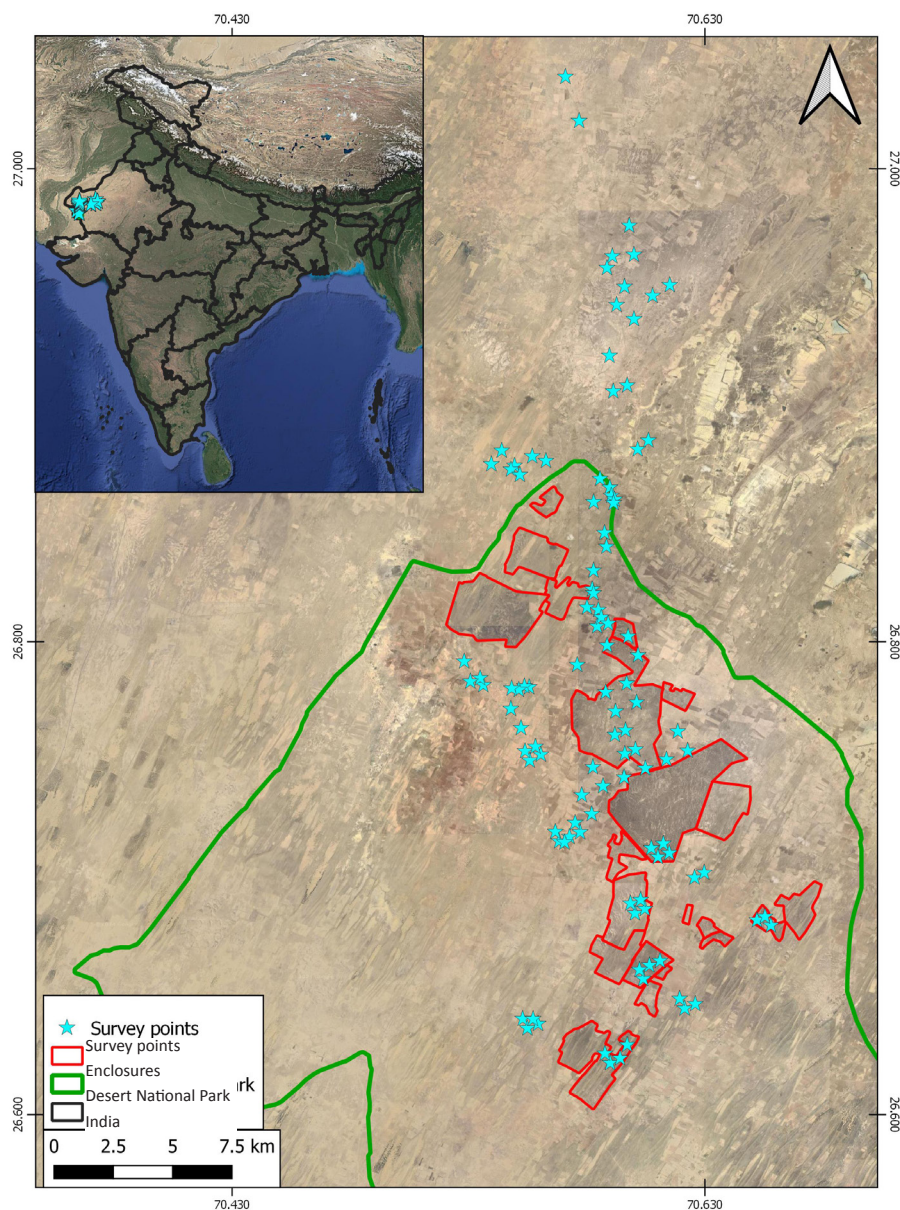


Image 1. Orthoptera sampling inside and outside Desert National Park, Rajasthan, India.



wildlife species like the Great Indian Bustard, where the vegetation is natural. Within the DNP several areas outside the enclosures experience unrestricted human interference and movements, where the vegetation of the few areas is natural and few areas are cultivated. The study was carried out in different enclosures and unprotected agro-pastoral areas of DNP (Image 1). The size of the enclosures are different, wherein, the minimum size of the survey enclosures are 3 km<sup>2</sup> and the maximum is 12 km<sup>2</sup>. We surveyed these enclosures and adjoining unprotected areas in summer, monsoon and winter seasons from June 2021 to December 2023. We visited the sampling area multiple times in three monsoon, two winter and two summer seasons.

Sampling was done at random points generated inside the study area. Sweep netting (Rudd & Jensen 1977) was done in a 50 x 4 m<sup>2</sup> belt transect, following a standard approach of about 100 strokes and the samples were collected in a container after every 20 strokes. After that four adult individuals of different sexes of each species were collected from the sample container. Preservation of the collected specimen was done using wet and dry methods. For the dry preservation insects were pinned and kept in a storage box and (Image 2) for

the wet preservation 70% ethanol were used. All the preserved insects were studied under Nikon stereozoom microscope and identified using taxonomic keys by Uvarov (1977). In addition, we also used the species identification information from the Orthoptera Species File (<http://Orthoptera.SpeciesFile.org>) last accessed on April 2024. The collected specimens are deposited in the Great Indian Bustard Conservation Breeding Center (Wildlife Institute of India), Pokhran, Rajasthan, India.

## RESULTS AND DISCUSSION

A total of 24 species of Orthoptera were recorded from different enclosures (Protected) and unprotected agro-pastoral areas. These species belong to five families, 11 subfamilies, represent 20 genera, and four subgenera (Table 1). Notably 12 species were recorded in summer (April & May) while 24 species were observed during monsoon (July & August) and eight species in winter (November & December). These species belong to four major types of habitats, viz., grassland, scrubland, agricultural land, and barren land (Image 3).

The DNP is mainly covered by grassland, and the dominant grass species include *Dactyloctenium aegyptium*, *Dactyloctenium scindicum*, *Aristida*



Image 2. Orthoptera specimen from the Desert National Park and associated areas of Thar landscape. © Anshuman Pati.

Table 1. Orthoptera from Desert National Park during 2021–2023.

| Family           | Subfamily           | Genera                          | Subgenus               | Species                                                          | Habitat                                |
|------------------|---------------------|---------------------------------|------------------------|------------------------------------------------------------------|----------------------------------------|
| Acrididae        | Acridinae           | <i>Truxalis</i>                 |                        | <i>Truxalis indica</i> (Bolívar, 1902)                           | Grassland, Scrubland                   |
|                  | Calliptaminae       | <i>Acorypha</i>                 |                        | <i>Acorypha glaucopsis</i> (Walker, 1870)                        | Grassland                              |
|                  | Cyrtacanthacridinae | <i>Schistocerca</i>             |                        | <i>Schistocerca gregaria</i> (Forskål, 1775)                     | Agriculture land, Grassland            |
|                  |                     | <i>Anacridium</i>               |                        | <i>Anacridium rubrispinum</i> Bey-Bienko, 1948                   | Grassland, Scrubland                   |
|                  | Eyprepocnemidinae   | <i>Heteracris</i>               |                        | <i>Heteracris littoralis</i> (Rambur, 1838)                      | Scrubland                              |
|                  | Gomphocerinae       | <i>Cruciotacris</i>             |                        | <i>Cruciotacris decisa</i> (Walker, 1871)                        | Grassland                              |
|                  |                     | <i>Leva</i>                     |                        | <i>Leva indica</i> (Bolívar, 1902)                               | Grassland                              |
|                  |                     | <i>Ochrilidia</i>               |                        | <i>Ochrilidia geniculata</i> (Bolívar, 1913)                     | Grassland                              |
|                  |                     |                                 |                        | <i>Ochrilidia gracilis</i> (Krauss, 1902)                        | Grassland                              |
|                  |                     |                                 |                        | <i>Ochrilidia hebetata</i> (Uvarov, 1926)                        | Grassland                              |
|                  | Oedopodinae         | <i>Acrotylus</i>                |                        | <i>Acrotylus humbertianus</i> Saussure, 1884                     | Grassland                              |
|                  |                     |                                 |                        | <i>Acrotylus longipes</i> (Charpentier, 1845)                    | Scrubland, Grassland, Agriculture land |
|                  |                     | <i>Oedaleus</i>                 |                        | <i>Oedaleus senegalensis</i> (Krauss, 1877)                      | Scrubland, Grassland                   |
|                  |                     | <i>Scintharista</i>             |                        | <i>Scintharista notabilis</i> (Walker, 1870)                     | Barren land                            |
|                  |                     | <i>Sphingonotus</i>             | <i>Neosphingonotus</i> | <i>Sphingonotus (Neosphingonotus) paradoxus</i> Bey-Bienko, 1948 | Barren land                            |
|                  |                     |                                 | <i>Sphingonotus</i>    | <i>Sphingonotus (Sphingonotus) rubescens</i> (Walker, 1870)      | Barren land                            |
|                  | Catantopinae        | <i>Diabolocatantops</i>         |                        | <i>Diabolocatantops pinguis</i> (Stål, 1861)                     | Scrubland                              |
| Pyrgomorphidae   | Pyrgomorphinae      | <i>Chrotogonus</i>              | <i>Chrotogonus</i>     | <i>Chrotogonus (Chrotogonus) trachypterus</i> (Blanchard, 1836)  | Barren land                            |
|                  |                     | <i>Poecilocerus</i>             |                        | <i>Poecilocerus pictus</i> (Fabricius, 1775)                     | Scrubland                              |
|                  |                     | <i>Pyrgomorpha</i>              | <i>Pyrgomorpha</i>     | <i>Pyrgomorpha (Pyrgomorpha) bispinosa</i> Walker, 1870          | Agriculture land                       |
|                  |                     |                                 |                        | <i>Pyrgomorpha (Pyrgomorpha) conica</i> (Olivier, 1791)          | Agriculture land                       |
|                  |                     | <i>Tenuitarsus</i>              |                        | <i>Tenuitarsus orientalis</i> Kevan, 1959                        | Barren land                            |
| Tetrigidae       | Tetriginae          | <i>Paratettix</i> Bolívar, 1887 |                        | <i>Paratettix</i> sp.                                            | Grassland                              |
| Schizodactylidae | Schizodactylinae    | <i>Schizodactylus</i>           |                        | <i>Schizodactylus monstrosus</i> (Drury, 1773)                   | Barren land                            |
| Tettigoniidae    | Conocephalinae      | <i>Euconocephalus</i>           |                        | <i>Euconocephalus incertus</i> (Walker, 1869)                    | Grassland                              |

*depressa*, *Cenchrus biflorus*, *Lasiurus indicus*; apart from these, a few shrub species are present comprising *Aerva pseudotomentosa*, *Crotalaria burhia*, *Dipterygium glaucum*, and *Fagonia cretica* (Charan & Sharma 2016). During the monsoon all the 24 species of Orthoptera were found which can be attributed to the availability of green vegetation compared to other seasons when the vegetation becomes predominantly dry. Acrididae was the most abundant family recorded during the study followed by Pyrgomorphidae, Tettigoniidae, Schizodactylidae, and Tetrigidae. The present study adds to the existing knowledge of the orthopteran fauna of DNP.

## REFERENCES

- Bazelet, C.S. & M.J. Samways (2011). Identifying grasshopper bioindicators for habitat quality assessment of ecological networks. *Ecological Indicators* 11(5): 1259–1269. <https://doi.org/10.1016/j.ecolind.2011.01.005>
- Chand, D.S., S.K. Das, R. Chakraborty & H. Kumar (2024). *Checklist of Fauna of India: Arthropoda: Insecta: Orthoptera*. Version 1.0. Zoological Survey of India, 29 pp. <https://doi.org/10.26515/Fauna/1/2023/Arthropoda:Insecta:Orthoptera>
- Charan, P.D. & K.C. Sharma (2016). Floral diversity of Thar Desert of western Rajasthan, India. *Journal of Phytological Research* 29(1 & 2): 55–71.
- Cigliano, M.M., H. Braun, D.C. Eades & D. Otte (2024). Orthoptera Species File (version Apr 2024). In: Bánki, O., Y. Roskov, M. Döring, G. Ower, D.R. Hernández Robles, C.A. Plata Corredor, T. Stjernaegard Jeppesen, A. Örn, L. Vandepitte, D. Hobern, P. Schalk, R.E. DeWalt, K. Ma, J. Miller, T. Orrell, R. Aalbu, J. Abbott, R. Adlard & C. Aedo. *Catalogue of Life Checklist (Version 2024-04-26)*. Catalogue of Life. Amsterdam, Netherlands. <https://doi.org/10.48580/dg4lg-388>
- Dutta, S. & Y.V. Jhala (2021). Devil is in the detail: behaviorally explicit habitat selection by the Critically Endangered great Indian bustard.



**Image 3.** Different major habitat of sampling area in Desert National Park: A—Grassland | B—Scrubland | C—Agriculture Land | D—Barren land. © Anshuman Pati

*Endangered Species Research* 45: 55–69. <https://doi.org/10.3354/esr01126>

**Dutta, S., A.R. Rahmani & Y.V. Jhala (2010).** Running out of time? The Great Indian Bustard *Ardeotis nigriceps*—status, viability, and conservation strategies. *European Journal of Wildlife Research* 57(3): 615–625. <https://doi.org/10.1007/s10344-010-0472-z>

**Islam, M.Z. & A.R. Rahmani (2004).** *Important Bird Areas in India: Priority Sites for Conservation*. Indian Bird Conservation Network: Bombay Natural History Society and BirdLife International (UK), xviii+1133 pp.

**Klein, I., N. Oppelt & C. Kuenzer (2021).** Application of remote sensing data for locust research and management: a review. *Insects* 12(3): 233. <https://doi.org/10.3390/insects12030233>

**Rathore, N.S. (2004).** *Conservation Area Series*. Zoological Survey of India, Kolkata, 19: 1–135.

**Roffey, J. & G. Popov (1968).** Environmental and behavioural processes in a desert locust outbreak. *Nature* 219(5153): 446–450.

**Rudd, W.G. & R.L. Jensen (1977).** Sweep Net and Ground Cloth Sampling for Insects in Soybeans. *Journal of Economic Entomology* 70(3): 301–304. <https://doi.org/10.1093/jee/70.3.301>

**Sharma, K.K. & S.P. Mehra (2009).** The Thar of Rajasthan (India): Ecology and Conservation of a Desert Ecosystem, pp. 1–11. In: Sivaperuman, C., Q.H. Baqri, G. Ramaswamy & M. Naseema (eds.). *Faunal Ecology and Conservation of the Great Indian Desert*. Springer, Berlin, Heidelberg, xviii + 222 pp. [https://doi.org/10.1007/978-3-540-87409-6\\_1](https://doi.org/10.1007/978-3-540-87409-6_1)

**Uvarov, B. (1977).** *Grasshoppers and Locusts Vol. II*. Centre for Overseas Pest Research, London, 613 pp.

**White, R., S. Murray & M. Rohweder (2000).** *Pilot Analysis of Global Ecosystems: Grassland Ecosystems*. World Resources Institute, Washington, D.C., 81 pp.





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

Fishes

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

Amphibians

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

Reptiles

Dr. Gernot Vogel, Heidelberg, Germany  
Dr. Raju Vyas, Vadodara, Gujarat, India  
Dr. Pritpal S. Soorae, Environment Agency, Abu Dubai, UAE.  
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey  
Prof. 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, SAGON, Coimbatore, Tamil Nadu, India  
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India  
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India  
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India  
Mr. J. Praveen, Bengaluru, India  
Dr. C. Srinivasulu, Osmania University, Hyderabad, India  
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA  
Dr. Gombobaatar Sunde, Professor of Ornithology, Ulaanbaatar, Mongolia  
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel  
Dr. Taej Mundkur, Wetlands International, Wageningen, The Netherlands  
Dr. Carol Inskipp, Bishop Auckland Co., Durham, UK  
Dr. Tim Inskipp, Bishop Auckland Co., Durham, UK  
Dr. V. Gokula, National College, Tiruchirappalli, Tamil Nadu, India  
Dr. Arkady Lelej, Russian Academy of Sciences, Vladivostok, Russia  
Dr. Simon Dowell, Science Director, Chester Zoo, UK  
Dr. Mário Gabriel Santiago dos Santos, Universidade de Trás-os-Montes e Alto Douro, Quinta de Prados, Vila Real, Portugal  
Dr. Grant Connette, Smithsonian Institution, Royal, VA, USA  
Dr. P.A. Azeez, Coimbatore, Tamil Nadu, India

Mammals

Dr. Giovanni Amori, CNR - Institute of Ecosystem Studies, Rome, Italy  
Dr. Anwaruddin Chowdhury, Guwahati, India  
Dr. David Mallon, Zoological Society of London, UK  
Dr. Shomita Mukherjee, SAGON, Coimbatore, Tamil Nadu, India  
Dr. Angie Appel, Wild Cat Network, Germany  
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India  
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK  
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA  
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.  
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India  
Dr. Mewa Singh, Mysore University, Mysore, India  
Dr. Paul Racey, University of Exeter, Devon, UK  
Dr. Honnavalli N. Kumara, SAGON, Anaikatty P.O., Coimbatore, Tamil Nadu, India  
Dr. Nishith 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 2021–2023

Due to pausity of space, the list of reviewers for 2021–2023 is available online.

The opinions expressed by the authors do not reflect the views of the Journal of Threatened Taxa, Wildlife Information Liaison Development Society, Zoo Outreach Organization, or any of the partners. The journal, the publisher, the host, and the partners are not responsible for the accuracy of the political boundaries shown in the maps by the authors.

Print copies of the Journal are available at cost. Write to:  
The Managing Editor, JoTT,  
c/o Wildlife Information Liaison Development Society,  
3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore,  
Tamil Nadu 641006, India  
ravi@threatenedtaxa.org & ravi@zooreach.org

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

NAAS rating (India) 5.64



[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

OPEN ACCESS



The Journal of Threatened Taxa (JoTT) is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at [www.threatenedtaxa.org](http://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)

January 2025 | Vol. 17 | No. 1 | Pages: 26331–26442

Date of Publication: 26 January 2025 (Online & Print)

DOI: 10.11609/jott.2025.17.1.26331-26442

## Articles

### Waterhole utilization pattern of mammals in Jigme Singye Wangchuck National Park, Bhutan

– Kunninpurathu Sivanandan Aswin, Ugyen Dorji, Karma Sherub & Mer Man Gurung, Pp. 26331–26340

### Dietary composition of Black-necked Crane *Grus nigricollis* Przewalski, 1876 (Aves: Gruiformes: Gruidae) in its winter habitat: insights from fecal analysis in Bumdeling, Trashiyangtse, Bhutan

– Jigme Wangchuk, Ugyen Tenzin, Tsethup Tshering, Karma Wangdi, Sangay Drukpa, Tshering Chopel, Ugyen Wangmo, Jigme Tshering & Sherub, Pp. 26341–26352

### Checklist of forensically significant Rove beetles (Coleoptera: Staphylinidae: Staphylininae: Staphylinini) from India

– Meenakshi Bharti & Shweta Sharma, Pp. 26353–26369

### Distribution and habitat suitability of *Amorphophallus gigas* with MaxEnt modeling in north Sumatra, Indonesia

– Ridahati Rambey, Rahmawaty, Abdul Rauf, Esther Sorta Mauli Nababan, Delvian, T. Alief Aththorick, M. Hasmadi Ismail, Muhammad Hadi Saputra, Seca Gandaseca & M. Nazip Suratman, Pp. 26370–26384

### Taxonomy, distribution, and ecology of *Impatiens violacea* (Balsaminaceae) a steno-endemic species in Pettimudi, an area of endemism in southern Western Ghats, India

– Arjun Thomas & J. Jameson, Pp. 26385–26393

## Communications

### Assessing the conservation status of *Elaphoglossum stigmatolepis* (Fee) T.Moore (Dryopteridaceae), an endemic fern in the Western Ghats of India

– A. Benniamin, Sakshi Pandey & Rajat Mondal, Pp. 26394–26400

## Review

### Management challenges in marine protected areas: a field note from the Malvan Marine Sanctuary, India

– Neenu Somaraj, Pp. 26401–26408

## Short Communications

### A preliminary checklist of butterflies (Lepidoptera: Rhopalocera) of Dhorpatan Valley, Dhorpatan Hunting Reserve, Nepal

– Kiran Rayamajhi, Bhैया Khanal & Prakash Chandra Aryal, Pp. 26409–26416

### New species records of sericine chafer beetles (Coleoptera: Scarabaeidae: Melolonthinae) from Goa and Maharashtra, India

– Aparna Sureshchandra Kalawate & Shruti Baban Sonkusare, Pp. 26417–26420

### Survey of Orthoptera in the Desert National Park, Rajasthan, India

– Anshuman Pati, Indranil Paul & Sutirtha Dutta, Pp. 26421–26425

### Phenology of *Rhododendron wattii* Cowan (Ericales: Ericaceae) - a threatened plant of Nagaland, India

– Imtilila Jing & S.K. Chaturvedi, Pp. 26426–26430

### *Phalaenopsis wilsonii*: a new addition to the orchid flora of Manipur, India

– Ngasheppam Malemnganbi Chanu, Thongam Nourenpai Khanganba & Thongam Biseshwori, Pp. 26431–26434

## Notes

### Confirmation of the presence of Red Pierrot *Talicauda nyseus nyseus* (Lepidoptera: Lycaenidae) in Assam, India

– Renu Gogoi, Bijay Basfore, Roshan Upadhaya, Ruksha Limbu, Anjana Singha Naorem & Rezina Ahmed, Pp. 26435–26439

### A note on *Pterospermum obtusifolium* Wight ex Mast. (Malvaceae), a rare endemic evergreen tree of southern Western Ghats, India

– K. Narayanan & Shamsudheen Abdul Kader, Pp. 26440–26442

Publisher & Host



Threatened Taxa