

Journal of Threatened Taxa



Open Access

10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

26 March 2024 (Online & Print)

16(3): 24819-25018

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

Building evidence
for conservation
globally for



years



Silver Jubilee Issue



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

43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641006, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, 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),
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore, Tamil Nadu 641006, India

Deputy Chief Editor

Dr. Neelesh Dahanukar

Noida, Uttar Pradesh, 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

Dr. B.A. Daniel, 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, 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

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 2020–2022

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 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. 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

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: The breathtakingly beautiful Silver Jubilee cover of JoTT is done in color pencils and ink by the 13-year old darling, Elakshi Mahika Molur.



INTRODUCTION

Dictyotales is a unique group characterized by their exclusive morphological characters such as erect or prostrate, flattened, dichotomously branched, or flabby thallus with numerous phaeoplasts, without pyrenoids and exhibit isomorphic diplohaplophase life cycle. Presently, this order embraces a single family Dictyotaceae with 349 taxa belonging to 27 genera (Guiry & Guiry 2022). *Dictyopteris*, *Dictyota*, *Lobophora*, *Stoechospermum*, *Stypopodium*, and *Zonaria* of this family are referred to be the dominant components of the phytobenthos. In view of the generic composition of the family Dictyotaceae, *Lobophora*, *Padina*, *Stoechospermum*, *Stypopodium* and *Zonaria* are the analogous genera that possess strong morphological similarity (De Clerck et al. 2006).

The genus *Stypopodium* is a pervasive group of algae spread over tropical and temperate regions. This genus is characterized by strongly lacerated or clefted flabellate thallus, bands of hyaline filaments (pneophytic hairs), cells on the margins of the thallus; parenchymal structure with abundant phaeoplasts in cortical cells with several epidermal cells; sporangia with four spores and lack of paraphyses on sporangia sori (Misra 1996; Abbas & Shameel 2014). This genus was established by Kützinger (1843) with 3 species viz., *Stypopodium fuliginosum*, *S. flavum* and *S. atomaria*. The species constitution of this genus had many controversies regarding their identity with other similar genera (Mayhoub & Billard 1991). The distinctness of this genus was initially not accepted by Borgesen (1914), Howe (1918), Taylor (1985), Allender and Kraft (1983), and this genus was placed under the genera *Padina* and *Zonaria*. Later, the exclusive characters of this genus were examined and taxonomically validated by Weber-van (1913), Papenfuss (1940, 1977); Nizamuddin & Aisha (1991).

A sum of 19 infraspecific binomials was proposed and 8 taxa were accepted taxonomically (Guiry & Guiry 2022). The occurrence of this genus in the Indian Ocean was reported from Kenya, Madagascar, Pakistan, Singapore, South Africa, Sri Lanka, and Tanzania, except for the coastline of India (Abbas & Shameel 2014). The existence of this genus was not reported from the shoreline of India. But, Misra (1996) has included *Stypopodium zonale* in his Phaeophyceae in India without referring to any specimen. Later, Silva et al. (1996); Oza & Zaidi (2001); Krishnamurthy & Ezhili (2013) included this species in the algae flora of India based on Misra's report. Thorough literature indicates that earlier workers specified this genus without proper

details on the type, occurrence, taxonomic treatments, specimen examinations, etc.

Stypopodium zonale was collected for the first time from the coastline of India, during the field explorations of the Appughar coastline, Andhra Pradesh (Image 1). The collected samples exhibit unique characteristics resembling known genera such as *Padina*, *Lobophora*, *Stoechospermum*, *Stypopodium*, and *Zonaria* within the family Dictyotaceae. Preservation followed standard methodologies of Wet Preservation (Liquid preservation) and Dry Preservation (Herbarium), as outlined by Srinivasan (1969). To ensure accurate species identification, both external and internal morphology of specimens were examined using optical microscopes (Nikon Eclipse 50i; Carl Zeiss. Axio Lab. A1) equipped with a computer-attached DSLR camera. Selected herborized specimens underwent Scanning Electron Microscope (SEM) analysis following standard protocols of Carl Zeiss (Model No: Evo 18). Reference sources consulted include contributions by Agardh (1824), Martius (1828), Kützinger (1843), Howe (1918), Mayhoub & Billard (1991), Lamouroux (1805, 1809), Papenfuss (1940, 1977), Nizamuddin and Aisha (1996). Additionally, herbarium specimens housed at CAL, BSIS, Kolkata; MH, Coimbatore; and NFMAH, Mandapam, Ramanathapuram were consulted, along with specimen images from Digital Herbaria of Paris Museum (P); British Museum (BM); Kew (K); Muséum National d'Histoire Naturelle (MNHN); The National Herbarium of Victoria (MEL); and New York Botanical Garden (NY). Further systematic details on *Stypopodium zonale* are enumerated as follows:

Taxonomic Treatment: *Stypopodium zonale* (J.V.Lamour.) Papenf.,

Bot. Not. 205. 1940. *Zonaria zonalis* (J.V.Lamour.) Howe, Fl. Bermuda. 507. *Fucus zonalis* J.V.Lamour., Diss. Fucus., 38. 1805.

Type: Haiti, Saint Domingue (in Sancti-Dominici insulae oris habitat), Lamouroux (1805: pl. 25, fig.1!) *Lectotype* is designated here.

Stypopodium lobatum (C.Agardh) Kütz. Tab. Phyc. 25. 1859.

Zonaria lobata C.Agardh, Syst. Alg. 265.1824.

Type: Mari Atlantico, Teneriffam, s.d., s.col., 48220, (NY [02136680, digital image!]); Residual syntype: Mari Atlantico, Teneriffam, s.d., s.col., 48222 (n.v.) *Lectotype* is designated here.

Stypopodium fuliginosum (C.Martius) Kütz. Phycol. General. 341. 1843.

Zonaria fuliginosa C.Martius, Icon. Pl. Crypt. 16. 1828.

Type: Brazil, In litore Brasiliae, Cabo Frio s.d.,

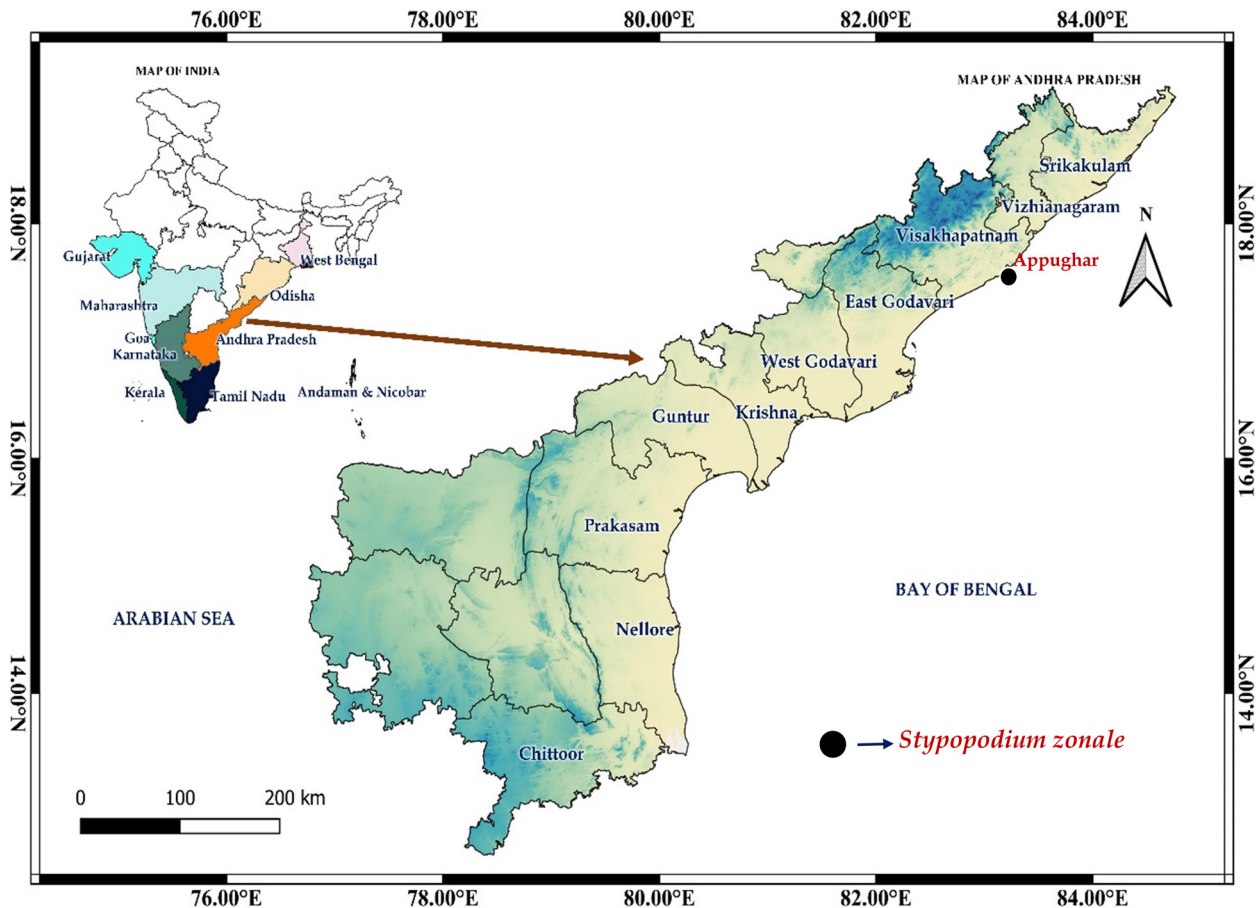


Image 1. Coastline of Andhra Pradesh with the collection locality of *Stypopodium zonale*

C.F.P. Martius, s.n. (MEL [MEL537302, digital image!]); Residual syntype: Brasilia, s.d., s.cl. s.n. (MEL [MEL537303, digital image!]) *Lectotype* is designated here

Habit: Thalli erect or prostrate, tawny to dark brown, fine to membranous or slightly coriaceous, flabellate with broad blades. Solitary or clustered patches forming groups of 3–10 individual blades, 4–11 cm in height, 8–5 cm in broad, lacerated or clefted with cuneate bases. Thallus differentiated into rhizoidal-shaped holdfast, compressed or flattened stipe (sometimes reduced), and flabellate blades (Image 2. a–d); The thallus is transversely zoned with concentric rows of hairs on both surfaces in regular intervals of 2.5–16 mm (Image 2. f & g). Holdfast rhizoidal or disc-shaped, firmly attached on the substratum, 5–8 mm in diameter. Stipe flattened or reduced, erect, 10–18 mm long. Blades flabellate, broadly obtuse at apex, attenuate at base, 3–9 x 3.5–4.3 cm, entire to undulate at the margin (Image 2. e). Generative assemblies are scattered throughout the dorsal surface of the thalli (Image 2. k).

Microscopic observation: The surface view of the

cells variously sized, slightly squarish or rectangular, elongated in vertical rows, dark brown, 15–28 x 5–12 μm (Image 2. l). Hair bands present on both surfaces, hairs filamentous, uniseriate, 2–4 celled, subcylindrical to cylindrical, 14–17 x 80–120 μm (Image 2. j & m). The upper apical zone consists of 3–6 layers of cells, outer and inner peripheral cells squarish, thin-walled with dense phaeoplasts (Image 2. o), 6–13 x 8–14 μm ; cortical cells 2–3 layers, thick-walled, quite larger, elongated with intercellular spaces arranged in regular tiers, 18–37 x 18–26 μm (Image 2. n). The middle portion contains 2–7 layers, cells in a peripheral region are small, thin-walled cubical to quadrate or squarish, 12–19 μm x 13–21 μm ; the cortical region consists of 2–4 layers, cells large, thick-walled with intercellular spaces (Image 2. i). The basal zone consists of 4–9 layers; cells in upper and lower peripheral regions, small, thin-walled, squarish, 13–23 x 12–26 μm ; the cortical cells thick-walled, slightly elongated, intercellular spaces, 31–35 x 25–29 μm (Image 2. h & o). Numerous groups of dark brown sporangia were observed on both surfaces of the thallus, sessile, lightly rounded or oval, 40–54 μm in

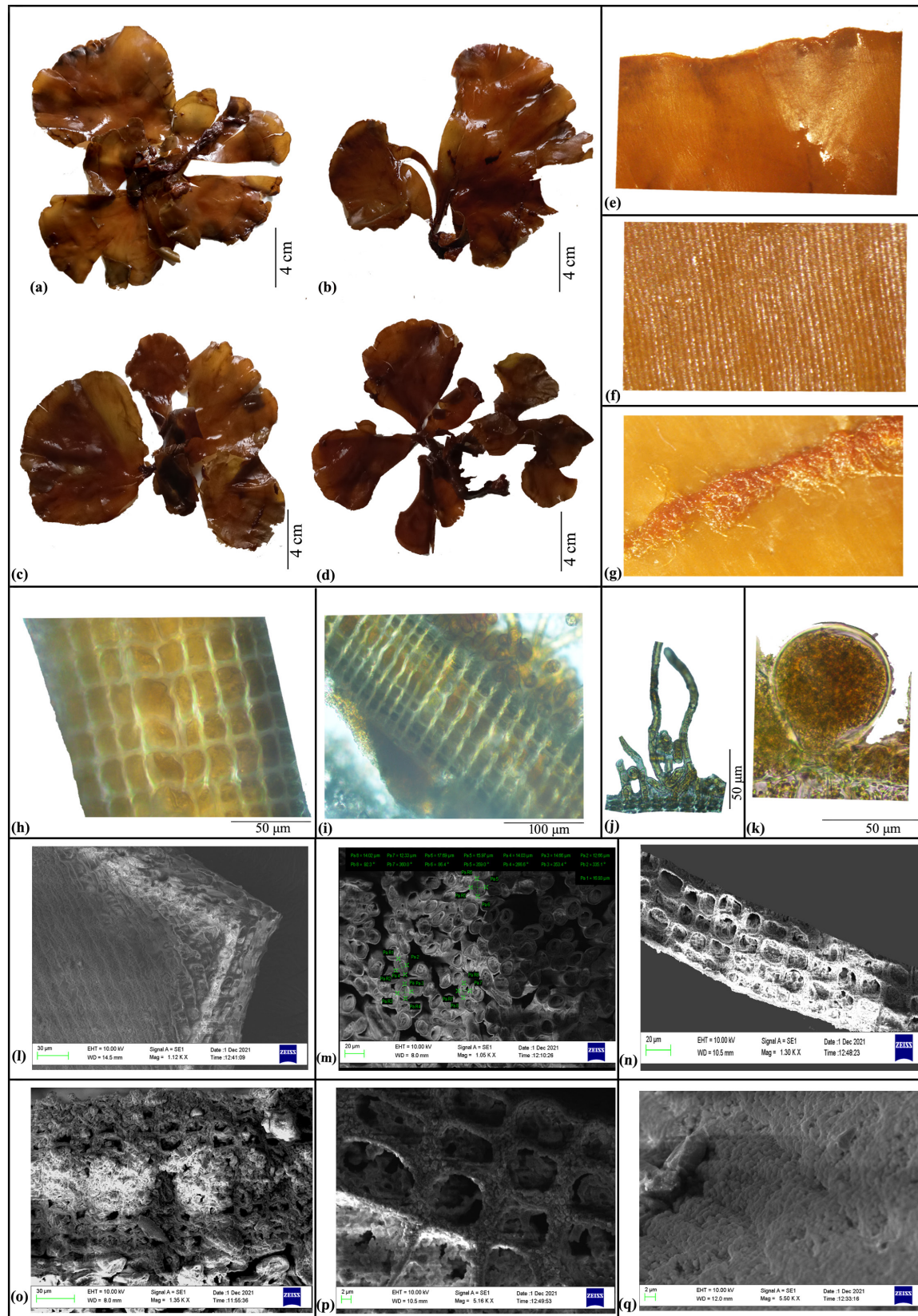


Image 2. a–d—Morphological variations on thallus of *S. zonale*; e, Entire to Undulate margin | f & g—Surface view of the thallus with phaeophytic hairs | h & i—C.S. of basal and middle portion *S. zonale* | j & k—Phaeophytic hairs and immature sporangium | l—Surface view of thallus | m & n—Cross section of phaeophytic hairs and middle portion | o & p—Abundance of phenoplasts and cubic to squarish shaped cortical cells | q—Granular to globular texture of thallus on surface view under SEM.

diameter; each sporangia has four spores.

Habitat: Moderately growing at intertidal and shallow water zones of Appughar on the rocky substrate at depths of 0.8–1 m during pre-monsoon seasons. This species has a communal association with *Amphiroa fragilissima* (L.) J.V.Lamour., and *Jania rubens* (L.) J.V.Lamour.

Distribution: Africa, Caribbean Islands, China, Ghana, Indonesia, Islands of Australia & and New Zealand, Islands of the Atlantic Ocean, Japan, Pacific Islands, Pakistan, Philippines, Sri Lanka, Spain, South America, Western Atlantic, and India (Andhra Pradesh).

Specimen Examined: INDIA: Andhra Pradesh, Visakhapatnam, Appughar, 17°44'26.8»N 83°20'42.1»E, 23 March 2017, Palanisamy M & Aron Santhosh Kumar Y 137233 (MH).

Note: The epithets *Fucus zonalis* J.V.Lamour., *Dictyota zonata* Lamour., *Zonaria zonalis* (J.V.Lamour.) Howe (1918), *Zonaria lobata* C.Agardh, *Stypopodium lobatum* (C.Agardh) Kütz., *Zonaria fuliginosa* C.Martius and *Stypopodium fuliginosum* (C.Martius) Kütz. are currently regarded as a synonym of *Stypopodium zonale* (J.V.Lamour.) Papenfuss (1977) due to the morphological orientation. In the protologue of *Fucus zonalis*, it is stated that the specimen was collected from the coastline of Saint Domingue and did not specify the type details of this species (Lamouroux, 1805). Later, this transferred as *Dityota zonata* and mentioned the collection locality from Antillis by Lamouroux (1809) which was the heterotypic locality of *F. zonalis*. The collections of the *D. zonata* from Caen (CN) herbarium were examined by Mayhoub and Billard (1991) and they denoted *D. zonata* as the type specimen of the epithet *F. zonalis*. But their proposal was ambiguous since both the specimens were collected from different localities as per the protologues of Lamouroux. Hence, the illustration (1805: pl. 25, fig.1!) mentioned in the protologue of *F. zonalis* is designated here as lectotype based on articles, 9.3 of the International Code of Nomenclature for algae, fungi, and plants (Turland et al. 2018).

Syntypes of *Zonaria lobata* (Nos. 48220 and 48222) from Teneriffam of Mari Atlantico were deposited in LD (Herbarium Agardh). Now, the photograph of *Z. lobata* (Nos. 48220) is maintained in NY (02136680, digital image!) detailed with habitat (Teneriffam). On the other hand, the specimen Nos. 4822.20 was not spotted or traceable in any of the herbaria anywhere. Therefore, No. 48220 (02136680, digital image!) could be the type specimen of *Z. lobata* as per the protologue furnished by Agardh (1824). Likewise, *Zonaria fuliginosa* was proposed by Martius (1828) typified from the coastline

of Brazil (In litore Brasiliae); later, it was placed under the genus *Stypopodium* and synonymised to *S. fuliginosum* by Kützting (1843). The type of the species epithet *Z. fuliginosa* was indistinct. The collection deposited in MEL contains two specimens (MEL537302 & MEL537303, digital image!) collected from Brazil. The specimen MEL537302 was annotated with the proper details of *Z. fuliginosa* with collector's name (Martius), Habitat (In litore Brasiliae), and without collection number pencilled by Sonder. But the specimen MEL537303 was not specified in detail except on habitat. Therefore, specimen MEL537302 could be the type specimen of *Z. fuliginosa* as per the prologue proposed by Martius (1828). Hence, the lectotype of *Z. fuliginosa* and *Z. lobata* is designated here based on articles, 9.1, 9.2, and 9.3 of the International Code of Nomenclature for algae, fungi, and plants (Turland et al. 2018).

Significance: The lipophilic extract of this species produces an atomaric acid with anti-Leishmania amazonensis activities (Soares et al. 2016). Also, the compound Stypoldione inhibits microtubule polymerization and sperm motility (Pal et al. 2014).

DISCUSSION

The species *Stypopodium zonale* of Dictyotaceae (Dictyotales) under the class Phaeophyceae has morphological affinities among the other species of this same genus and with other genera of this same family (Shameel 2012). The distribution of this species has been documented worldwide, covering the Indian Ocean from Pakistan to South Africa (Abbas & Shameel 2014). However, the occurrence of *S. zonale* from the Indian Ocean has a lacuna on the species' identity and needs to be inspected in view of Verlaque & Boudouresque (1991) and Silva et al (1996). In this present study, the gross morphological characters (Image 2. a–q), such as the surface view of the cells (squarish or rectangular), hair bands (filamentous and uniseriate), cortical cells (2–3 layers), with intercellular space (18–37 x 18–26 µm), cells in middle portion (cubical to quadrate or squarish) and sporangia (sessile with 4 spores) were observed to limelight the presence of this species from India.

The thallus of the species is erect or prostrate thalli with strong laceration and transversely zoned by bands of pheophytic hairs on both sides of the thallus. Also, concentric rows were found on both thallus surfaces in regular intervals. Blades flabellate, broadly obtuse at the apex, attenuate at the base with undulate. The layers of cells in the thallus show great variation in their position;

the upper apical zone with 3–6 layers of cells (squarish), the middle portion with 2–7 layers (cubical to quadrate or squarish), the basal zone with 4–9 layers (squarish) with intercellular spaces. Also, it contains groups of dark brown rounded or oval-shaped sessile sporangia (four spores) on both thallus surfaces. The observation from this study shows minor variations from the specimens of Nizamuddin & Perveen (1986) and Nizamuddin & Aisha (1996) from Pakistan. However, the morphological characteristics found in the specimens from India agree with those previously carried out in Atlantic localities (Taylor 1960; Verlaque & Boudouresque 1991; Dawes & Mathieson 2008) and Pakistan specimens (Abbas & Shameel 2014). Also, the observation of the present study is confined to the protologue of the type species (Lamouroux 1805).

CONCLUSION

In India, the occurrence of *Stypopodium zonale* was not validated with the collection of this specimen. Its occurrence on the Indian coastline has been considered for a long time due to the report of Misra (1996). But in the present study, the ascertaining features of this species were clarified and discussed in detail by obtaining the gross morphology and anatomy of the species. The present study deals with the taxonomically significant features to resolve the uncertainty regarding the identity of *S. zonale* distributed in India. The outcomes of the present attempt furnished the type details, habit, habitat, and specimens examined and significant notes on the erroneous reference cited by various authors. Also, the lectotypification of 3 binomials (*Zonaria zonalis*, *Z. lobate*, and *Z. fuliginosa*) was designated here in favor of articles 9.3 of the International Code of Nomenclature for algae, fungi, and plants (Turland et al. 2018). For many species of the genus *Stypopodium* no data are available on recent morphological studies towards the difficulties on the distinctive characteristics of each species. Hence, it is necessary to attempt morphological and molecular phases to establish the boundaries between species. Additionally, our present study highlights the morphological and microscopic features that provide more precise credentials and clarification to the taxonomic conflicts of *Stypopodium zonale* from India.

REFERENCES

- Abbas, A. & M. Shameel (2014). Morpho-anatomy of *Stypopodium zonale* (phaeophycota) from the coast of Karachi. *Pakistan Journal of Botany* 46 (4): 1495–1499. [https://www.pakbs.org/pjbot/PDFs/46\(4\)/45.pdf](https://www.pakbs.org/pjbot/PDFs/46(4)/45.pdf)
- Agardh, C.A. (1824). *Systema algarum*. Lundae [Lund]: Literis Berlingianis [Berling], 312 pp.
- Allender, B. M. & G.T. Kraft (1983). The marine algae of Lord Howe Island (New South Wales): Dictyotales and Cutleriales (Phaeophyta). *Brunonia* 6(1): 73–130. <https://doi.org/10.1071/BRU9830073>
- Borgesen, F. (1914). The Marine Algae of the Danish West Indies. II. Phaeophyceae. *Dansk Botanisk Arkiv* 2: 1– 66. <https://doi.org/10.5962/bhl.title.1314>
- Dawes, C.J. & A.C. Mathieson (2008). *The Seaweeds of Florida*. University Press of Florida, 591 pp.
- De Clerck, Leliaert, O.F., Verbruggen, H., Lane, C.E., Campos, D.P.J., Payo & E. Coppejans (2006). A revised classification of the Dictyotae (Dictyotales, Phaeophyceae) based on rbcL and 26S ribosomal DNA sequence analyses. *Journal of Phycology* 42(6): 1271–1288; <https://doi.org/10.1111/j.1529-8817.2006.00279>
- Guiry, M.D. & G.M. Guiry (2022). *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. (<https://www.algaebase.org>; Accessed: 19 February 2022).
- Howe, M.A. (1918). Class 3, Algae.pp 489-540. In: Britton, N. L.(ed.). *Flora of Bermuda*, New York.
- Krishnamurthy, V. & R. Ezhili (2013). *Phaeophyceae of India and Neighbourhood: Fucales*. Krishnamurthy Institute of Algology, Chennai, 156 pp.
- Kützting, F.T. (1843) *Phycologia generalis oder Anatomie, Physiologie und Systemkunde der Tange. Mit 80 farbig gedruckten Tafeln, gezeichnet und gravirt vom Verfasser*. F.A. Brockhaus, Leipzig, 458 pp.
- Kützting, F.T. (1859). *Tabulae phycologicae; oder, Abbildungen der Tange* Vol. 9. Gedruckt auf kosten des Verfassers (in commission bei W. Köhne), Nordhausen, 42 pp.
- Lamouroux, J.V.F. (1805). *Dissertations sur plusieurs espèces de Fucus, peu connues ou nouvelles; avec leur description en latin et en français*. Imprimerie de Raymond Nouvel & Chez Treuttel et Würtz, Agen, Paris, 83 pp.
- Lamouroux, J.V.F. (1809). Exposition des caracteres du genre *Dictyota*, et tableau des especes qu'il renferme. *Journal de Botanique [Desvaux]*, 2: 38–44.
- Martius, C.F.P. (1828). *Icones plantarum cryptogamicarum*, Monachii [Munich]: impensis auctoris, Germany, 138 pp.
- Mayhoub, H. & C. Billard (1991). Contribution à la connaissance d'un *Stypopodium* (Dictyotales, Phaeophyceae) installé récemment sur les côtes syriennes. *Cryptogamie, Algologie* 12(2): 125–136.
- Misra J.N. (1996). *Phaeophyceae in India*. I.C.A.R. Publication, New Delhi, 203 pp.
- Nizamuddin, M. & K. Aisha (1996). An Emendation to the genus *Stypopodium* Kütz., and its new species from the coast of Pakistan. *Pakistan Journal of Botany* 28(2):127–141.
- Nizamuddin, M. & S. Perveen (1986). Taxonomic studies on some members of Dictyotales (Phaeophyta) from the coast of Pakistan. *Pakistan Journal of Botany* 18(1): 123–135.
- Oza, R.M. & S.H. Zaidi (2001). *A Revised Checklist of Indian Marine Algae*. CSMCRI, Bhavnagar, 296 pp.
- Pal, A., M.C. Kamthania & A. Kumar (2014) Bioactive Compounds and Properties of Seaweeds— A Review. *Open Access Library Journal*, 1: e752. <https://doi.org/10.4236/oalib.1100752>
- Papenfuss, G.F. (1940). Notes on South African marine algae. I. *Botaniska notiser*. 1(1): 200–226.
- Papenfuss, G.F. (1977). Review of Genera of Dictyotales (Phaeophyta). *Japanese Society of Phycology* 25: 271– 287.
- Shameel, M. (2012). Nomenclatural changes in the Shameelian classification of algae. *International Journal of Phycology and Phycochemistry* 8(1): 7–22.

- Silva, P.C., P.W. Basson & R.L. Moe (1996). *Catalogue of the Benthic Marine Algae of the Indian Ocean*. University of California Press, London, 1259 pp.
- Soares, D.C., M.M. Szlachta, V.L. Teixeira, A.R. Soares & E.M. Saraiva (2016). The Brown Alga *Stypopodium zonale* (Dictyotaceae): A Potential Source of Anti-*Leishmania* Drugs. *Marine Drugs* 14: 163. <https://doi.org/10.3390/md14090163>
- Srinivasan K.S. (1969). *Phycologia Indica: Icons of Indian Marine Algae*. BSI Publication, Calcutta, 52 pp.
- Taylor, W.R. (1960). *Marine algae of the eastern tropical and subtropical coasts of the Americas, Michigan*. University of Michigan Press, 870 pp.
- Taylor, W.R. (1985). *Marine Algae of the Eastern Tropical and Sub-Tropical Coasts of the Americas*. The University of Michigan Press, Ann Arbor, Michigan, 509 pp.
- Turland, N.J., J.H. Wiersema, F.R. Barrie, W. Greuter, D.L. Hawksworth, P.S. Herendeen, S. Knap, W.-H. Kusber, D.-Z. Li, K. Marhold, T.W. May, J. McNeill, A.M. Monro J. Prado, M.J. Price & G.F. Smith (2018). International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017, Regnum Vegetabile, Koeltz Botanical Books, Glashütten.
- Verlaque, M. & C.F. Boudouresque (1991). *Stypopodium schimperi* (Buchinger ex Kützing) Verlaque et Boudouresque comb. nov. (Dictyotales, Fucophyceae), algue de mer Rouge récemment apparu en Méditerranée. *Cryptogamie, Algologie* 12(3): 195–211.
- Weber-van B.A. (1913). *Liste de algues du Siboga. I. Myxophyceae, Chlorophyceae, Phaeophyceae avec le concours de M. Th. Reinbold. Vol. 59a*, Leiden, 186 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 Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraja, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. Mandar S. Paingankar, University of Pune, Pune, Maharashtra, India (Molecular)
Dr. Jack Tordoff, Critical Ecosystem Partnership Fund, Arlington, USA (Communities)
Dr. Ulrike Streicher, University of Oregon, Eugene, USA (Veterinary)
Dr. Hari Balasubramanian, EcoAdvisors, Nova Scotia, Canada (Communities)
Dr. Rayanna Hellem Santos Bezerra, Universidade Federal de Sergipe, São Cristóvão, Brazil
Dr. Jamie R. Wood, Landcare Research, Canterbury, New Zealand
Dr. Wendy Collinson-Jonker, Endangered Wildlife Trust, Gauteng, South Africa
Dr. Rajeshkumar G. Jani, Anand Agricultural University, Anand, Gujarat, India
Dr. O.N. Tiwari, Senior Scientist, ICAR-Indian Agricultural Research Institute (IARI), New Delhi, India
Dr. L.D. Singla, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India
Dr. Rupika S. Rajakaruna, University of Peradeniya, Peradeniya, Sri Lanka
Dr. Bahar Baviskar, Wild-CER, Nagpur, Maharashtra 440013, India

Reviewers 2020–2022

Due to pausity of space, the list of reviewers for 2020–2022 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,
43/2 Varadarajulu Nagar, 5th Street West, Ganapathy, Coimbatore,
Tamil Nadu 641006, 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](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)

March 2024 | Vol. 16 | No. 3 | Pages: 24819–25018

Date of Publication: 26 March 2024 (Online & Print)

DOI: 10.11609/jott.2024.16.3.24819-25018

www.threatenedtaxa.org

Editorial

Celebrating 25 years of building evidence for conservation

– Sanjay Molur, Pp. 24819–24820

Articles

Identifying plants for priority conservation in Samar Island Natural Park forests (the Philippines) over limestone using a localized conservation priority index

– Inocencio Escoton Buot, Jr., Marne Ga Origenes, Ren Divien Del Rosario Obeña, Jonathan O. Hernandez, Noba F. Hilvano, Diana Shane A. Balindo & Edelyn O. Echapare, Pp. 24821–24837

Status of floristic diversity and impact of development on two sacred groves from Maval Tehsil (Maharashtra, India) after a century

– Kishor Himmat Saste & Rani Babanrao Bhagat, Pp. 24838–24853

Faunal inventory and illustrated taxonomic keys to aquatic Coleoptera (Arthropoda: Insecta) of the northern Western Ghats of Maharashtra, India

– Sayali D. Sheth, Anand D. Padhye & Hemant V. Ghate, Pp. 24854–24880

Communications

A checklist of wild mushroom diversity in Mizoram, India

– Rajesh Kumar & Girish Gogoi, Pp. 24881–24898

New plant records for the flora of Saudi Arabia

– Abdul Wali Al-Khulaidi, Ali M. Alzahrani, Ali A. Al-Namazi, Eisa Ali Al-Faify, Mohammed Musa Alfaifi, Nageeb A. Al-Sagheer & Abdul Nasser Al-Gifri, Pp. 24899–24909

Seagrass ecosystems of Ritche's Archipelago in the Andaman Sea harbor 'Endangered' *Holothuria scabra* Jaeger, 1833 and 'Vulnerable' *Actinopyga mauritiana* (Quoy & Gaimard, 1834) sea cucumber species (Echinodermata: Holothuroidea)

– Amrit Kumar Mishra, R. Raihana, Dilmani Kumari & Syed Hilal Farooq, Pp. 24910–24915

Stypopodium Kütz. - a new generic record for India from the Bay of Bengal

– Y. Aron Santhosh Kumar, M. Palanisamy & S. Vivek, Pp. 24916–24922

First report of *Macrochaetus sericus* Thorpe, 1893 and *Lecane tenuiseta* Haring, 1914 (Rotifera: Monogononta) from Jammu waters (J&K), India

– Deepanjali Slathia, Supreet Kour & Sarbjeet Kour, Pp. 24923–24929

Spider diversity (Arachnida: Araneae) at Saurashtra University Campus, Rajkot, Gujarat during the monsoon

– Jyotil K. Dave & Varsha M. Trivedi, Pp. 24930–24941

Records of three gobioid fishes (Actinopterygii: Gobiiformes: Gobiidae) from the Gujarat coast, India

– Piyush Vadher, Hitesh Kardani, Prakash Bambhaniya & Imtiyaz Beleem, Pp. 24942–24948

Species distribution modelling of Baya Weaver *Ploceus philippinus* in Nagaon District of Assam, India: a zoogeographical analysis

– Nilotpal Kalita, Neeraj Bora, Sandip Choudhury & Dhruvaji Saharia, Pp. 24949–24955

Diversity and species richness of avian fauna in varied habitats of Soraipung range and vicinity in Dehing Patkai National Park, India

– Anubhav Bhuyan, Shilpa Baidya, Nayan Jyoti Hazarika, Sweeta Sumant, Bijay Thakur, Amit Prakash, Nirmali Gogoi, Sumi Handique & Ashalata Devi, Pp. 24956–24966

D'Ering Memorial Wildlife Sanctuary, a significant flyway and a preferred stopover (refuelling) site during the return migration of the Amur Falcon *Falco amurensis* (Radde, 1863)

– Tapak Tamir, Abprez Thungwon Kimsing & Daniel Mize, Pp. 24967–24972

Breeding of the 'Critically Endangered' White-rumped Vulture *Gyps bengalensis* in the Shan Highlands, Myanmar

– Sai Sein Lin Oo, Nang Lao Kham, Marcela Suarez-Rubio & Swen C. Renner, Pp. 24973–24978

Nurturing orphaned Indian Grey Wolf at Machia Biological Park, Jodhpur, India

– Hemsingh Gehlot, Mahendra Gehlot, Tapan Adhikari, Gaurav & Prakash Suthar, Pp. 24979–24985

Short Communications

New records of forty-nine herbaceous plant species from lateritic plateaus for Ratnagiri District of Maharashtra, India

– D.B. Borude, P.P. Bhalekar, A.S. Pansare, K.V.C. Gosavi & A.N. Chandore, Pp. 24986–24991

First report of moth species of the family Tineidae (Lepidoptera) in regurgitated pellets of harriers in India

– S. Thalavaipandi, Arjun Kannan, M.B. Prashanth & T. Ganesh, Pp. 24992–24995

Notes

Capturing the enchanting glow: first-ever photographs of bioluminescent mushroom *Mycena chlorophos* in Tamil Nadu, India

– D. Jude, Vinod Sadhasivan, M. Ilayaraja & R. Amirtha Balan, Pp. 24996–24998

Extended distribution of *Clematis wightiana* Wall. (Ranunculaceae) in the Indian State of Arunachal Pradesh – a hitherto endemic species of the Western Ghats, India

– Debasmita Dutta Pramanick & Manas Bhaumik, Pp. 24999–25002

Smilax borneensis A.DC. (Smilacaceae): an addition to the flora of India

– Kishor Deka, Sagarika Das & Bhaben Tanti, Pp. 25003–25005

Recent record of True Giant Clam *Tridacna gigas* from the Sulu Archipelago and insight into the giant clam fisheries and conservation in the southernmost islands of the Philippines

– Richard N. Muallil, Akkil S. Injani, Yennyriza T. Abduraup, Fauriza J. Saddari, Ebrahim R. Ondo, Alimar J. Sakilan, Mohammad Gafor N. Hapid & Haidisheena A. Allama, Pp. 25006–25009

A record of the Hoary Palmer *Unkana ambasa* (Moore, [1858]) (Insecta: Lepidoptera: Hesperidae) from Assam, India

– Sanath Chandra Bohra, Manmath Bharali, Puja Kalita & Rita Roy, Pp. 25010–25012

Sighting of Large Branded Swift *Pelopidas sinensis* (Mabille, 1877)

(Hesperidae: Hesperinae) in Delhi, India
– Rajesh Chaudhary & Sohail Madan, Pp. 25013–25015

Rodent - a part of culture and revolution in India

– Hiranmoy Chetia & Murali Krishna Chatakonda, Pp. 25016–25018

Publisher & Host



Threatened Taxa