

Building evidence for conservation globally

Journal of Threatened Taxa



10.11609/jott.2024.16.11.26063-26186

www.threatenedtaxa.org

26 November 2024 (Online & Print)

16 (11): 26063-26186

ISSN 0974-7907 (Online)

ISSN 0974-7893 (Print)

Open Access





Publisher

Wildlife Information Liaison Development Societywww.wild.zooreach.org

Host

Zoo Outreach Organizationwww.zooreach.org

Srivari Illam, No. 61, Karthik Nagar, 10th Street, Saravanampatty, 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 MolurWildlife 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

Editorial Board

Dr. Russel Mittermeier

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

Prof. Mewa Singh Ph.D., FASc, FNA, FNASC, FNAPsyRamanna 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, Mavinhalia PO, Nilgiris, Tamil Nadu 643223, India

Dr. John FellowesHonorary 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, Kuvenpura University, Shimoga, Karnataka, India

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

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

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

Dr. Aparna Watve, Pune, Maharashtra, India

Dr. Qiang Liu, Kishuangbanna 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. Mander Datar, Agharkar Research Institute, Pune, Maharashtra, India

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

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

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

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

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

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

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

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

Dr. Afroz Alam, Banasthali Vidyapith (accredited A grade by NAAC), Rajasthani, 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. Warrier, 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, Ilandudno, North Wales, LL30 1UP

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

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

Mr. Jatishwar 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_scopeFor Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>For Policies against Scientific Misconduct, visit https://threatenedtaxa.org/index.php/JoTT/policies_various

continued on the back inside cover

Cover: Mixed media with fine liners, colour pencils, and watercolour background of an Indian funnel web spider. © Elakshi Mahika Molur.



DNA barcoding and distribution of *Osteobrama peninsularis* (Teleostei: Cyprinidae) in India

Boni Amin Laskar¹ , Asha Kiran Tudu² , Shibananda Rath³  & Laishram Kosygin⁴ 

¹Zoological Survey of India, High Altitude Regional Centre, Saproon, Solan, Himachal Pradesh 173211, India.

^{2,3,4}Zoological Survey of India, Freshwater Fish Section, 27 JL Nehru Road, Kolkata, West Bengal 700016, India.

¹boniamin.laskar@gmail.com (corresponding author), ²kiran.asha31@gmail.com, ³rathshibananda@gmail.com, ⁴lkzsi5@yahoo.com

Abstract: *Osteobrama peninsularis* has been reported in southern Indian drainages, particularly in the Krishna River drainage. This study provides new findings of *O. peninsularis* in two distant locations: the Kangsabati River (Suvarnarekha River drainage) in West Bengal and Wyra Lake (Godavari River drainage) in Telangana. This marks the first record of *O. peninsularis* in eastern India, specifically in West Bengal. The species can be distinguished from other *Osteobrama* members by its 28–31 branched anal-fin rays and 55–60 lateral line scales, along with other unique morphological features. Mitochondrial cytochrome oxidase C subunit I gene sequences from specimens collected in Suvarnarekha and Godavari River drainages cluster together in the phylogenetic analysis, indicating that the clade of *O. peninsularis* is distinct and maintains significant genetic distance from its congeners.

Keywords: Carp, genetic analysis, minnow, new record, peninsular India, range extension, ray-finned fish, taxonomy, West Bengal.

Editor: Mandar Paingankar, Government Science College Gadchiroli, Maharashtra, India.

Date of publication: 26 November 2024 (online & print)

Citation: Laskar, B.A., A.K. Tudu, S. Rath & L. Kosygin (2024). DNA barcoding and distribution of *Osteobrama peninsularis* (Teleostei: Cyprinidae) in India. *Journal of Threatened Taxa* 16(11): 26116–26123. <https://doi.org/10.11609/jott.9368.16.11.26116-26123>

Copyright: © Laskar et al. 2024. 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.

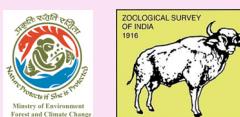
Funding: The research is funded by the Core Funding of Zoological Survey of India (ZSI), Kolkata, Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi.

Competing interests: The authors declare no competing interests.

Author details: DR. BONI AMIN LASKAR is currently working as scientist-E in Zoological Survey of India. His field of research is molecular studies & taxonomy of freshwater fishes. He has over 23 years of research experience including field surveys throughout various Biogeographic zones in India, and published in several reputed journals. ASHA KIRAN TUDU is working as assistant zoologist in Zoological Survey of India. With over 15 years of experience in the field of freshwater fish taxonomy, she has described several new fish species and published in reputed journals. SHIBANANDA RATH is currently working as scientist-C in Zoological Survey of India. With over 25 years of experience including field surveys and taxonomic studies, especially from the Himalayan and northeast Indian region, he has published in several reputed journals. He has described several new fish species and new records from India. DR. LAISHRAM KOSYGIN SINGH is currently working as scientist-E in Zoological Survey of India. His field of specialization is taxonomy of freshwater fish. With over 25 years of experience in taxonomic research, he has described over 40 new fish species from India and Myanmar, and documented systematic checklist of fishes of India.

Author contributions: BAL & AKT did field surveys and collected the specimens. BAL, AKT & SR studied the morphology and meristics of the specimens for taxonomic identification. BAL generated the DNA data, and did the molecular analysis. BAL, AKT, SR & LK wrote the article. BAL & LK reviewed the article.

Acknowledgements: We would like to express our heartfelt gratitude to Dr. Dhriti Banerjee, Director of the Zoological Survey of India, for graciously granting us permission to undertake this important work.



INTRODUCTION

The genus *Osteobrama* includes several key food fish species in India, thriving in both lentic and lotic systems. The species in the genus *Osteobrama* (type species *Cyprinus cotio* Hamilton, 1822) are characterized by their laterally compressed bodies, elevated dorsum, absence of procumbent predorsal spines, rounded abdomens in front of the pelvic fins, keeled abdominal edges from the pelvic-fin origin to the vent, and long anal fins with more than 10 branched rays (Talwar & Jhingran 1991). Hamilton (1822) described the type species as having a row of "5–6 black spots below the fore part of the lateral line, around which is a bluish shining depression" (plate 207).

Sykes described two species, *Rohee vigorsii* and *R. ogilbii*, from the Deccan region of India (Sykes 1838), categorizing them under the genus *Rohee*, which he characterized by long dorsal and anal fins, a posteriorly serrated last undivided dorsal-fin ray, and minute scales. Bleeker (1863) designated *R. ogilbii* as the type species of the genus, a classification upheld in later taxonomic work (Tilak & Husain 1989). The placement of species within the genera *Osteobrama* and *Rohee* has been addressed by Jordan (1919), Hora (1921), and Mukerji (1934). Hora (1937) distinguished *R. ogilbii* from species now classified as *Osteobrama* by its unique procumbent predorsal spine and the long anal fin with 13 to 14 branched rays. Consequently, *Rohee* is now recognized as valid with *R. ogilbii* as its sole species, while *Osteobrama* currently includes 10 valid species (Laskar et al. 2024).

Among the 10 valid species, the type species *O. cotio* is widespread in the Ganga basin of India and Bangladesh (Rahman et al. 2018). Three congeners, *O. feae*, *O. cunma*, and *O. belangeri* are distributed in Myanmar and the Irrawaddy drainage in India and China (Rahman et al. 2018). Doi (1997) reported *O. alfredianus*, *O. belangeri*, and *O. feae* from the Salween basin, but Laskar et al. (2024) questioned the validity of *O. alfredianus*. Silas (1952) described *O. peninsularis* from peninsular India. Two more species, *O. neilli* and *O. bakeri* are found in extreme southern peninsular India (Talwar & Jhingran 1991; Jadhav et al. 2011; Rahman et al. 2018). Shangningam et al. (2020) described *O. tikarpadaensis* from the Mahanadi River in Odisha and recognized *O. dayi* as a valid species. Laskar et al. (2024) states that *O. vigorsii* is limited to the Krishna River system in southern India, while the distribution of *O. tikarpadaensis* extends to the Godavari River drainages of South India. Morphologically, *O. peninsularis* closely resembles *O. cotio*, leading to frequent misidentifications

due to their narrow range of morphological variations. The species is currently listed as Data Deficient on the IUCN Red List, raising questions about its record from Kerala (Dahanukar 2011).

This study suggests the extension of the distribution of *O. peninsularis*, which was previously documented only in southern India, by identifying the species from a new location in eastern India: Kangsabati River in the state West Bengal. DNA barcoding of specimens from southern India and eastern India further confirms the identification of *O. peninsularis*. These findings align with the original description of the species, with minor variations, and is a first report of *O. peninsularis* in eastern Indian drainage.

MATERIALS AND METHODS

Morphometric and meristic data were recorded following Jayaram (1999). Measurements were taken on the left side of the specimens using digital calipers to the nearest 0.1 mm. Fin rays and scale counts were performed under transmitted light with a stereomicroscope. All pored scales were counted for reporting the lateral line scale. The count of transverse scale rows, between the lateral line and the origin of the dorsal-fin, include the lateral line scale. Body subunits are expressed as a percentage of standard length (SL), while head subunits are presented as a percentage of head length (HL). The specimens have been deposited at the Zoological Survey of India (ZSI), Kolkata, and at the Freshwater Biology Regional Centre of the Zoological Survey of India, Hyderabad.

Genetic analysis. Tissue samples were obtained from freshly collected specimens of *O. peninsularis* and preserved in 90% ethanol. The genomic DNA was extracted through QIAamp DNA Mini Kit (Qiagen, Valencia, CA) following the manufacturer's protocol. The published primer pair (Ward et al. 2005): FishF1-5' TCAACCAACCACAAAGACATTGGCAC3' and FishR1-5' TAGACTTCTGGGTGGCCAAGAAATCA3' was used to amplify the partial segment of mitochondrial cytochrome oxidase C subunit I gene (COI). The 30 μ l PCR mixture contains 10 pmol of each primer, 100 ng of DNA template, 1 \times PCR buffer, 1.0–1.5 mM of MgCl₂, 0.25 mM of each dNTPs, and 1 U of Taq polymerase (Takara BIO Inc., Japan). The thermal profile was set to initial 2 min at 95 °C followed by 35 cycles of 0.5 min at 94 °C, 0.5 min at 54 °C, and 1 min at 72 °C, followed in turn by 10 min at 72 °C and subsequent hold at 4 °C. The PCR products were further purified using QIAquickR Gel extraction Kit

(Qiagen, Valencia, CA).

The cycle sequencing and Sanger sequencing was executed commercially. Both forward and reverse chromatograms were checked through SeqScanner V1.0 (Applied Biosystems Inc., CA, USA), nucleotide BLAST (<https://blast.ncbi.nlm.nih.gov/>), and ORF finder (<https://www.ncbi.nlm.nih.gov/orffinder/>) to trim the low-quality reads and gaps. The DNA sequences generated as part of the current study have been deposited in GenBank with accession No. MT896379 & PQ33057 for *O. peninsularis*; MZ854239 & MZ854240 for *O. cotio*. We retrieved all the available COI sequences of *Osteobrama* species from GenBank (<https://www.ncbi.nlm.nih.gov/nucleotide/>, assessed on 28 August 2023) and ran a test of neighbor-joining phylogeny. Based on the cohesive clustering, a maximum of five representative database sequences from each conspecific clade were used in the refined analysis. Following Rahman et al. (2018), uncertain sequences of *O. cotio* from Narmada River basin as well as from Karnafuli and Sangu Rivers were not included in the dataset. Further, a maximum of five representative sequences of three congeners used in Rahman et al. (2018), *O. belangeri*, *O. cunma*, and *O. feae* were used in the dataset. The dataset was aligned using ClustalX (Thompson et al. 1997) and the Kimura 2 parameter (K2P) genetic distances were estimated by using MEGAX (Kumar et al. 2018).

RESULTS

Material examined

Osteobrama peninsularis Silas 1952 (Image 1, and Table 1 and 2): ZSI FF 9901, 1, 69.4 mm SL, Kangshabati (or Kansai) River, Paschim Medinipur District, West Bengal, India (22.406°N & 87.307°E), collected by S. Rath, 14 October 2022. Genbank accession for mtCOI sequence: PQ33057; FBRC/ZSI/F3549, 1, 68.0 mm SL, Wyra lake, Godavari River drainage, Khammam District, Telangana, India, collected by Sudipta Mandal, 20 July 2020. Genbank accession for mtCOI sequence: MT896379.

Description

Body deep, laterally compressed. Dorsal profile sloping upward linearly to nape, then in a broad curve to dorsal fin origin, forming a distinct hump, then sloping gradually downward towards caudal peduncle. Ventral profile strongly curved from tip of snout to origin of anal fin. Head compressed longer than deep. Eye large situated anteriorly on head, visible from dorsal and ventral side. Mouth terminal, obliquely directed upwards. Barbels

Table 1. Morphometric Measurements of *Osteobrama peninsularis* from West Bengal (ZSI FF 9901). The table presents various body dimensions, expressed in millimeters and as percentages of standard length (SL) and head length (HL), providing a detailed overview of the species' morphological characteristics.

	Parameters	value
1	Standard Length	69.4 mm
	% SL	
2	Body Depth	42.22
3	Head Length (Lateral)	23.92
4	Head depth (Occiput)	19.45
5	Snout Length	6.20
6	Eye Diameter	8.36
7	Inter orbital Width	8.79
8	Max. Head width	12.39
9	Gape Width	5.48
10	Internarial space	4.76
11	Body width at anal fin origin	9.51
12	Body width at dorsal fin origin	11.67
13	Caudal Peduncle Length	9.37
14	Caudal Peduncle Depth	12.54
15	Dorsal-fin base Length	13.40
16	Dorsal-fin Length	26.37
17	Pectoral-fin Length	17.00
18	Pelvic-fin Length	14.99
19	Anal-fin base Length	37.03
20	Anal-fin Length	40.35
21	Caudal fin length	24.93
22	Median caudal fin Length	11.53
23	Predorsal Length	51.30
24	Prepectoral Length	22.05
25	Prepelvic Length	39.48
26	Preanal Length	53.31
27	Pelvic anal distance	15.85
	% HL	
28	Snout Length	25.90
29	Eye Diameter	34.94
30	Inter Orbital Width	36.75
31	Max. Head Width	51.81
32	Gape Width	22.89
33	Internarial space	19.88

absent.

Dorsal fin with iii unbranched and eight branched rays, last unbranched ray stiff and serrated. Pectoral fin with i unbranched and 14 branched rays. Pelvic fin i unbranched and eight branched rays. Anal fin long with iii

unbranched rays and 29 branched rays. Caudal fin deeply forked with 9+8 branched rays. Scales small in size. Pre-dorsal scale 24. Lateral line complete with 58 scales.

Coloration

In preserved specimens, dorsal and dorsolateral surfaces of head and body faint brown, lateral surface of body greyish, become lighter ventrally. Dorsal, pectoral, pelvic, anal and caudal fin is pale white. An oblique black streak immediately posterior to opercle, parallel to upper opercular margin present.

Genetic analysis

The mtCOI sequences (*denovo*) of both the specimens of *Osteobrama peninsularis* in the study, cluster together. In the phylogram (Figure 1), the *denovo* sequences of *O. peninsularis* along with a few sequences borrowed from GenBank (with taxa name *O. cotio*) form a distinct clade. The sequences in the *O. peninsularis* clade show 0.0 to 0.62 % pairwise genetic distance (intraspecies

divergence) and maintain 5.28 to 5.68% genetic distance (interspecies divergence) with the sequences in the clade of *O. cotio*. The clade of *O. peninsularis* corresponds with one of the subclades of Clade A referred in Rahman et al. (2018). Notwithstanding to having a considerable range of genetic divergence among the three subclades in Clade A of *O. cotio*, Rahman et al. (2018) stated that “The haplotype group represented by the sequences from the Narmada, Karnafuli, Sangu, and Godavari drainages may represent a distinct species but not necessarily undescribed. Based on the very brief description (Silas 1952) and data on topotypes in Jadhav et al. (2011), the oldest alternative available name may be *O. peninsularis*, with type locality Pune (Maharashtra, India) in the upper Krishna River drainage”. Based on the COI sequences, we consider that the three sequences (KF550101 to KF550103) with no locality information but identified as *O. cotio* in NCBI are in fact *O. peninsularis*.



Image 1. *Osteobrama peninsularis*: i—ZSI FF 9901, 69.4 mm SL, Kangsabati River, West Bengal, India (© Shibananda Rath) | ii—FBRC/ZSI/F/3549, 68.0 mm SL; Wyra lake, Godavari River drainage, Khammam District, Telangana, India (© Boni Amin Laskar).

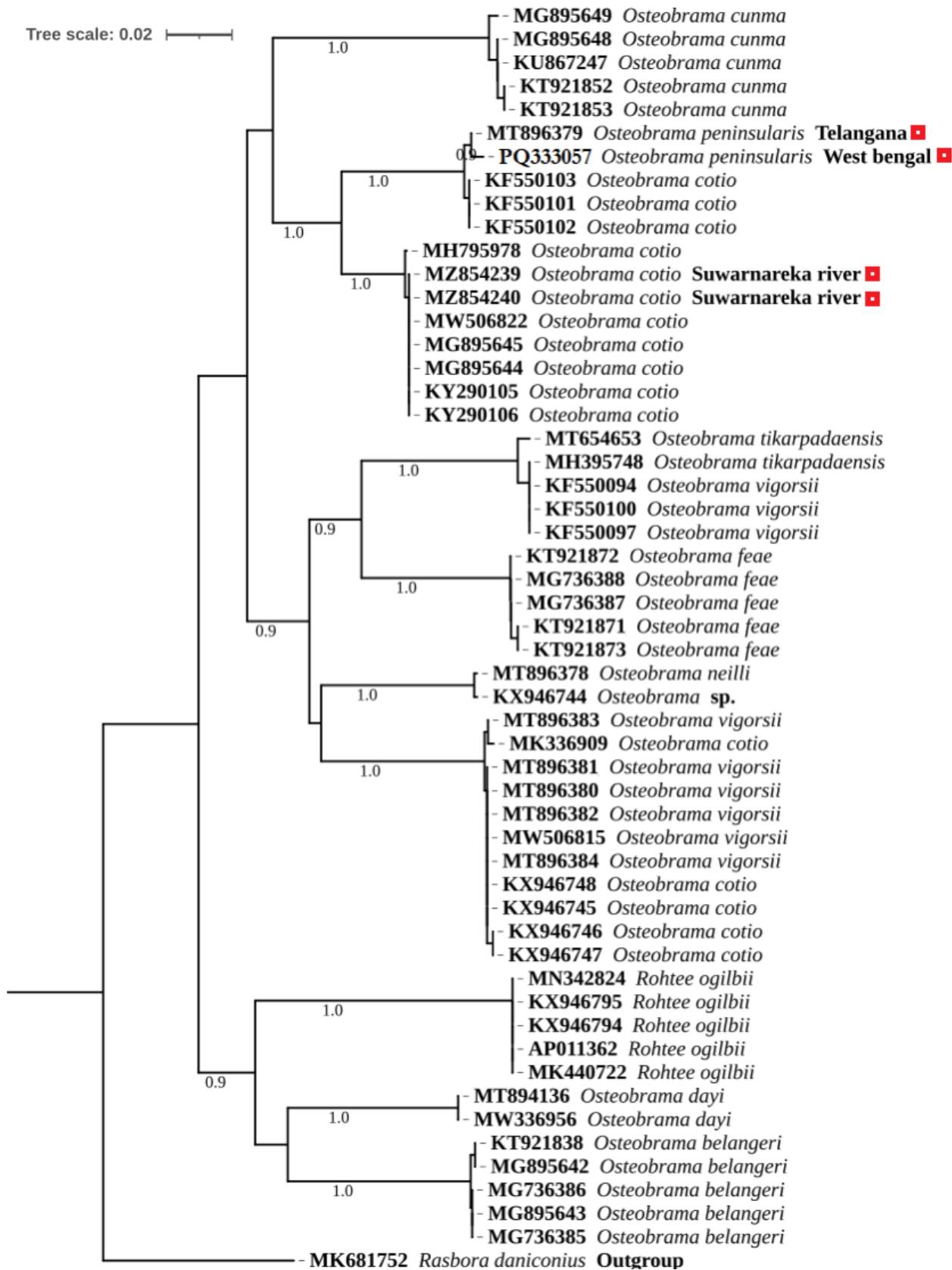


Figure 1. Neighbour-joining phylogram of the *Osteobrama* congeners based on mtCOI partial shows a distinct clade of the studied species, *O. peninsulae*. Numbers at branches show bootstrap. The NCBI accession numbers are given with the organism's name, the de novo sequences are marked with red square.

Table 2. Meristic counts of *Osteobrama peninsulae* from different locations. This table summarizes the meristic characteristics of *O. peninsulae* specimens from West Bengal (ZSI FF 9901) and Wyra Lake in Telangana (FBRC/ZSI/F3549), alongside counts from previous literature (Silas 1952).

Parameters	<i>O. peninsulae</i> from W.B.: ZSI FF 9901	<i>O. peninsulae</i> from, Wyra Lake, Godavari Drainage, Telangana: FBRC/ZSI/F3549	<i>O. peninsulae</i> original descriptions by Silas (1952)
Dorsal fin	iii 8	iii 8	iii 9
Pectoral fin	i 14	i 14	16
Pelvic fin	i 8	i 9	i 9
Anal fin	ii 29	ii 30	iii 28-31
Lateral line scales	58	58	55-60
Predorsal scales	24	24	21-24
Pre-anal scales	21	-	-

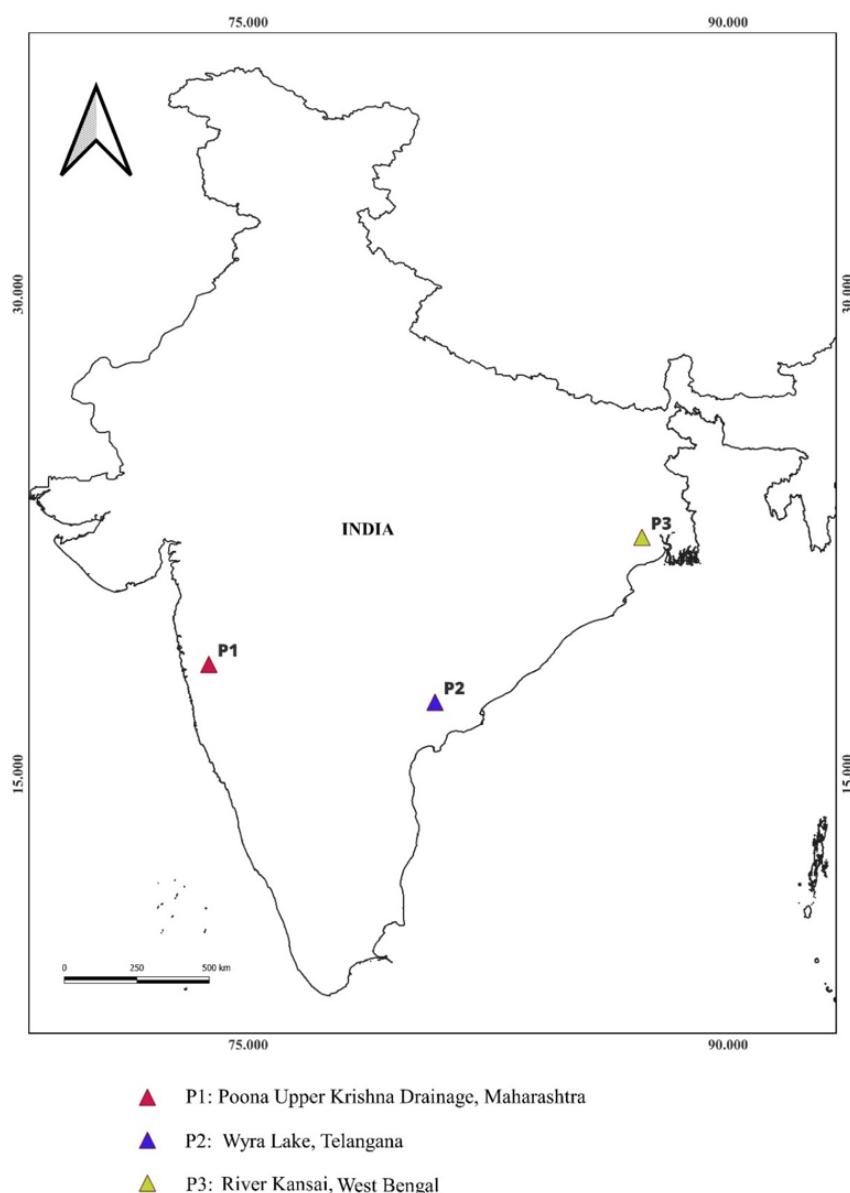


Figure 2. *Osteobrama peninsulae* known distribution across southern Indian drainages, highlighting its presence in the Krishna River drainage, as well as newly recorded locations in the Kangabati River (Suvarnarekha River drainage) in West Bengal and Wyra Lake (Godavari River drainage) in Telangana.

DISCUSSION

In this study, specimens were identified as *Osteobrama peninsularis* based on morphological characteristics, including 58 lateral line scales, the absence of barbels, and an anal fin with 29 branched rays. This species, originally described from Pune (Poona) in the upper Krishna River drainage of Maharashtra, has been frequently reported in Maharashtra (Silas 1952; Tonapi & Mulherkar 1963; Kharat et al. 2000, 2003; Arunachalam et al. 2002; Wagh & Ghate 2003; Chandanshive et al. 2007; Heda 2009; Jadhav & Yadav 2009).

Biju et al. (1999) reported *O. peninsularis* from the Periyar River in Central Kerala, indicating a range extension into Kerala. They, along with Talwar & Jhingran (1991) and Jayaram (1999), recognized the species as distributed solely in peninsular India, including Maharashtra, Odisha, Andhra Pradesh (erstwhile), and Kerala. The species has also been documented in the Tungabhadra River, Karnataka (Shahnawaz & Venkateshwarlu 2009; Shahnawaz et al. 2010). Although previous studies (Jayaram & Mazumdar 1976; Mohanty et al. 2015) noted its occurrences in Odisha, Dutta et al. (1993) did not include it in the state fauna series of Odisha.

Morphologically, *O. peninsularis* is superficially similar to *O. belangeri*, *O. cotio*, *O. cunma* because of lack of barbels. However, it is distinguished from all the three congeners in having pre-dorsal 21 to 24 scales and Lateral line scales 55 to 60. Furthermore, it is distinguished from *O. belangeri* in having more branched anal-fin rays (28–31 vs. 17–18), less pre-dorsal scales (21–24 vs. 31–34), less lateral line scales (55–60 vs. 70–78); from *O. cotio* in having less branched anal-fin rays (28–31 vs. 33–38), less lateral line scales (55–60 vs. 65); from *O. cunma* in having more branched anal-fin rays (28–31 vs. 25–29), less pre-dorsal scales (21–24 vs. 28–30) and more lateral line scales (55–60 vs. 42–53). This study largely aligns with the original description of *O. peninsularis*, noting only minor variations in body morphometry (see Table 1). Parameters of meristic counts, provide insights into the species' morphological consistency across different populations. The specimens examined were smaller than the type specimens, and minor variations may relate to their distribution. The findings indicate that the distribution of *O. peninsularis* extends through the river basins of the Godavari and Krishna in Maharashtra, Telangana, Andhra Pradesh, and into the Mahanadi basin in Odisha and the Subarnarekha river basin in West Bengal. In a recent

study, amendment of description of *O. vigorsii* and the expansion of distribution of *O. tikarpadaensis* have also been reported (Laskar et al. 2024). With the addition of *O. peninsularis*, the state fauna of West Bengal now includes two species of *Osteobrama*. A distribution map of *O. peninsularis* is given in Figure 2.

The presence or absence of barbels is a crucial taxonomic feature in *Osteobrama* (Hora & Misra 1940; Shangningam et al. 2020). When present, the barbels may be either one pair of maxillary barbels or both maxillary and rostral, sometimes being minute or rudimentary. The rostral barbels can be hidden or barely visible, while in some species, they extend to the base of the maxillary barbels. *Osteobrama* species are categorized into three groups based on their barbels: (i) with four well-defined barbels, (ii) with two rudimentary maxillary barbels, and (iii) without barbels (Hora & Misra 1940). Recently, *O. vigorsii* was revised and placed in Group (i), alongside *O. bakeri*, *O. feae*, *O. neilli*, and *O. tikarpadaensis* (Laskar et al. 2024).

REFERENCES

Arunachalam, M., A. Sankaranarayanan, A. Manimekalan, R. Soranam & J.A. Johnson (2002). Fish fauna of some streams and rivers in the Western Ghats of Maharashtra. *Journal of the Bombay Natural History Society* 99(2): 337–341.

Biju, C.R., K.R. Thomas & C.R. Ajithkumar (1999). Range extension of *Osteobrama cotio peninsularis* Silas to Kerala. Miscellaneous notes, *Journal of the Bombay Natural History Society* 96(3): 481–482.

Bleeker, P. (1863). *Systema Cyprinoideorum revisum. Nederlandsch Tijdschrift voor de Dierkunde* 1: 187–218.

Chandanshive, E.N., S.M. Kamble & B.E. Yadav (2007). Fish fauna of Pavana River of Pune, Maharashtra. *Zoos' Print Journal* 22(5): 2693–2694. <https://doi.org/10.11609/JoTT.ZPJ.1481.2693-4>

Dahanukar, N. (2011). *Osteobrama cotio* ssp. *peninsularis*. The IUCN Red List of Threatened Species 2011: e.T172512A6907036. <https://doi.org/10.2305/IUCN.UK.2011-1.RLTS.T172512A6907036.en>. Accessed on 05 December 2023.

Doi, A. (1997). A review of taxonomic studies of cypriniform fishes in Southeast Asia. *Japanese Journal of Ichthyology* 44(1): 1–33.

Dutta, A.K., D.K. Kunda & A.K. Karmakar (1993). Fresh water fishes, pp. 1–37. In: State Fauna Series 1: Fauna of Orissa. Part 4. Zoological Survey of India, Kolkata, India.

Hamilton, F. (1822). *An Account of the Fishes Found in the River Ganges and its Branches*. Edinburgh and London, vii + 405 pp, 39 pls.

Heda, N.K. (2009). Fish diversity studies of two rivers of the northeastern Godavari basin, India. *Journal of Threatened Taxa* 1(10): 514–518. <https://doi.org/10.11609/JoTT.o1764.514-8>

Hora, S.L. (1937). Notes on fishes in the Indian Museum. XXXII. On a small collection of fish from the Upper Chindwin drainage. *Records of the Indian Museum* 89(4): 331–338.

Hora, S.L. & K.S. Misra (1940). Notes on fishes in the Indian museum. XL. On fishes of the genus *Rohtee* Sykes. *Records of the Indian Museum* 42(1): 155–172.

Jadhav, S.S. & B.E. Yadav (2009). A note on the ichthyofauna of Solapur District with first report of cyprinid fish, *Rasbora caverii* (Jerdon) from Maharashtra state, India. *Journal of Threatened Taxa* 1(4): 243–244. <https://doi.org/10.11609/JoTT.o1660.243-4>

Jadhav, S., M. Paingankar & N. Dahanukar (2011). *Osteobrama bhimensis* (Cypriniformes: Cyprinidae): a junior synonym of *O. vigorsii*. *Journal of Threatened Taxa* 3(9): 2078–2084. <https://doi.org/10.11609/JoTT.o2841.2078-84>

Jayaram, K.C. (1999). *The Freshwater Fishes of Indian Region*. Narendra Publishing House, New Delhi, 551 pp.

Jayaram, K.C. & N. Majumdar (1976). On a collection of fish from the Mahanadi. *Records of the Zoological Survey of India* 69: 305–323.

Jordan, D.S. (1919). *The genera of fishes, part III, from Guenther to Gill, 1859–1880, twenty-two years, with the accepted type of each. A contribution to the stability of scientific nomenclature*. Leland Stanford Jr. University Publications, University Series 39: 285–410.

Kharat, S., N. Dahanukar & R. Raut (2000). Decline of fresh-water fish of Pune urban area. *Journal of Ecological Society* 13/14: 46–51.

Kharat, S., N. Dahanukar, R. Raut & M. Mahabaleshwarwarkar (2003). Long-term changes in freshwater fish species composition in Northern Western Ghats, Pune District. *Current Science* 84(6): 816–820.

Kumar, S., G. Stecher, M. Li, C. Knyaz & K. Tamura (2018). MEGA X: molecular evolutionary genetics analysis across computing platforms. *Molecular Biology and Evolution* 35: 1547–1549. <https://doi.org/10.1093/molbev/msy096>

Laskar, B.A., D. Banerjee, S. Chung, H.-W. Kim, A.R. Kim & S. Kundu (2024). Integrative taxonomy clarifies the historical flaws in the systematics and distributions of two *Osteobrama* fishes (Cypriniformes: Cyprinidae) in India. *Fishes* 9: 87. <https://doi.org/10.3390/fishes9030087>

Mohanty, S.K., S.S. Mishra, M. Khan, R.K. Mohanty, A. Mohapatra & A.K. Pattnaik (2015). Ichthyofaunal diversity of Chilika Lake, Odisha, India: an inventory, assessment of biodiversity status and comprehensive systematic checklist (1916–2014). *Check List* 11(6): 1–19. <https://doi.org/10.15560/11.6.1817>

Mukerji, D.D. (1934). Report on Burmese fishes collected by Lt. Xol. R.W. Burton from the tributary streams of the Mali Hka River of the Myitkyina District (Upper Burma). *Journal of the Bombay Natural History Society* 37 (1): 38–80.

Rahman, M.M., M. Noren, A.R. Mollah & S. Kullander (2018). The identity of *Osteobrama cotio*, and the status of "Osteobrama serrata" (Teleostei: Cyprinidae: Cyprininae). *Zootaxa* 4504(1): 105–118. <https://doi.org/10.11646/zootaxa.4504.1.5>

Shahnawaz, A. & M. Venkateshwarlu (2009). A checklist of fishes from the Tunga and Bhadra rivers, Karnataka, India with a special note on their biodiversity status. *Current Biotica* 3(2): 232–243.

Shahnawaz, A., M. Venkateshwarlu, D.S. Somashekhar & K. Santosh (2010). Fish diversity with relation to water quality of Bhadra River of Western Ghats, India. *Environmental Monitoring and Assessment* 161: 83–91.

Shangningam, B., S. Rath, A.K. Tudu & L. Kosygin (2020). A new species of *Osteobrama* (Teleostei: Cyprinidae) from the Mahanadi River, India with a note on the validity of *O. dayi*. *Zootaxa* 4722(1): 68–76. <https://doi.org/10.11646/zootaxa.4722.1.6>

Silas, E.G. (1952). Further studies regarding Hora's Satpura hypothesis. *Proceedings of the National Institute of Sciences of India* 18(5): 423–448.

Sykes, W.H. (1838). On the fishes of the Deccan. *Proceedings of the General Meetings for Scientific Business of the Zoological Society of London* 6: 157.

Talwar, P.K. & A.G. Jhingran (1991). *Inland fishes of India and adjacent countries*. Oxford and IBH publishing Co., New Delhi, Bombay and Calcutta, 541 pp.

Thompson, J.D., T.J. Gibson, F. Plewniak, F. Jeanmougin & D.G. Higgins (1997). The CLUSTAL_X windows interface: flexible strategies for multiple sequence alignment aided by quality analysis tools. *Nucleic Acids Research* 25: 4876–4882.

Tilak, R. & A. Husain (1989). Description of a new cyprinid, *Osteobrama brevipectoralis* sp. nov. from Manipur, India with remarks on the systematic position of the genus *Osteobrama* Heckel and allied genera. *Mitteilungen aus dem Zoologischen Museum in Berlin* 65(2): 327–333.

Tonapi, G.T. & L. Mulherkar (1963). Notes on the freshwater fauna of Poona, Part 1: Fishes. *Proceedings of the Indian Academy of Sciences* 58: 187–197.

Wagh, G.K. & H.V. Ghate (2003). Freshwater fish fauna of the rivers Mula and Mutha, Pune, Maharashtra. *Zoos Print Journal* 18(1): 977–981. <https://doi.org/10.11609/JoTT.ZPJ.18.1.997>

Ward, R.D., T.S. Zemlak, B.H. Innes, P.R. Last & P.D.N. Hebert (2005). DNA barcoding of Australia's fish species. *Philosophical Transactions of the Royal Society B* 360: 1847–1857.

Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. Karen Schnabel, NIWA, Wellington, New Zealand
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India
Dr. M. Nitithyanandan, Environmental Department, La 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. Kuri R. Arnold, North Dakota State University, Saxony, Germany
Dr. James M. Carpenter, American Museum of Natural History, New York, USA
Dr. David M. Claborn, Missouri State University, Springfield, USA
Dr. Karen Schnabel, Marine Biologist, Wellington, New Zealand
Dr. Amazonas Chagas Júnior, Universidade Federal de Mato Grosso, Cuiabá, Brasil
Mr. Monsoon Jyoti Gogoi, Assam University, Silchar, Assam, India
Dr. Heo Chong Chin, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
Dr. R.J. Shiel, University of Adelaide, SA 5005, Australia
Dr. Siddharth Kulkarni, The George Washington University, Washington, USA
Dr. Priyadarshan Dharma Rajan, ATREE, Bengaluru, India
Dr. Phil Alderslade, CSIRO Marine And Atmospheric Research, Hobart, Australia
Dr. John E.N. Veron, Coral Reef Research, Townsville, Australia
Dr. Daniel Whitmore, State Museum of Natural History Stuttgart, Rosenstein, Germany.
Dr. Yu-Feng Hsu, National Taiwan Normal University, Taipei City, Taiwan
Dr. Keith V. Wolfe, Antioch, California, USA
Dr. Siddharth Kulkarni, The Hormiga Lab, The George Washington University, Washington, D.C., USA
Dr. Tomas Ditrich, Faculty of Education, University of South Bohemia in Ceske Budejovice, Czech Republic
Dr. Mihaly Foldvari, Natural History Museum, University of Oslo, Norway
Dr. V.P. Uniyal, Wildlife Institute of India, Dehradun, Uttarakhand 248001, India
Dr. John T.D. Caleb, Zoological Survey of India, Kolkata, West Bengal, India
Dr. Priyadarshan Dharma Rajan, Ashoka Trust for Research in Ecology and the Environment (ATREE), Royal Enclave, Bangalore, Karnataka, India

Fishes

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

Amphibians

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

Reptiles

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

Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia
Mr. H. Biju, 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 Jayopal, SACON, Coimbatore, Tamil Nadu, India
Dr. Rajiv S. Kalsi, M.L.N. College, Yamuna Nagar, Haryana, India
Dr. V. Santharam, Rishi Valley Education Centre, Chittoor Dt., Andhra Pradesh, India
Dr. S. Balachandran, Bombay Natural History Society, Mumbai, India
Mr. J. Praveen, Bengaluru, India
Dr. C. Srinivasulu, Osmania University, Hyderabad, India
Dr. K.S. Gopi Sundar, International Crane Foundation, Baraboo, USA
Dr. Gombobaatar Sundev, Professor of Ornithology, Ulaanbaatar, Mongolia
Prof. Reuven Yosef, International Birding & Research Centre, Eilat, Israel
Dr. Taej Mundkur, Wetlands International, Wageningen, The Netherlands
Dr. Carol Inskip, Bishop Auckland Co., Durham, UK
Dr. Tim Inskip, Bishop Auckland Co., Durham, UK
Dr. V. Gokula, National College, Tiruchirappalli, Tamil Nadu, India
Dr. Arkady Lelej, Russian Academy of Sciences, Vladivostok, Russia
Dr. Simon Dowell, Science Director, Chester Zoo, UK
Dr. Mário Gabriel Santiago dos Santos, Universidade de Trás-os-Montes e Alto Douro, Quinta de Prados, Vila Real, Portugal
Dr. Grant Connette, Smithsonian Institution, Royal, VA, USA
Dr. 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, SACON, Coimbatore, Tamil Nadu, India
Dr. Angie Appel, Wild Cat Network, Germany
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India
Dr. Mewa Singh, Mysore University, Mysore, India
Dr. Paul Racey, University of Exeter, Devon, UK
Dr. Honnavalli N. Kumara, SACON, Anaikatty P.O., Coimbatore, Tamil Nadu, India
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India
Dr. Paul Bates, Harison Institute, Kent, UK
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA
Dr. Dan Challender, University of Kent, Canterbury, UK
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India
Prof. Karan Bahadur Shah, Budhanilkantha Municipality, Kathmandu, Nepal
Dr. Susan Cheyne, Borneo Nature Foundation International, Palangkaraya, Indonesia
Dr. Hemanta Kafley, Wildlife Sciences, Tarleton State University, Texas, USA

Other Disciplines

Dr. Aniruddha Belsare, Columbia MO 65203, USA (Veterinary)
Dr. 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 Helleni 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. Bharat Baviskar, Wild-CER, Nagpur, Maharashtra 440013, India

Reviewers 2021–2023

Due to paucity 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

Articles

Endemicity and diversity of birds of the Kuvempu University Campus, Shivamogga District, Karnataka: an updated checklist

– M.N. Harisha & B.B. Hosetti, Pp. 26063–26077

Unregulated wild orchid trade in Manipur: an analysis of the Imphal Valley markets from the Indo-Burma hotspot

– Kamei Kambuikhonlu Kabuini & Maibam Dhanaraj Meitei, Pp. 26078–26088

Watershed survey of streams in western Bhutan with macroinvertebrates, water chemistry, bacteria and DNA barcodes

– Juliann M. Battle, Bernard W. Sweeney, Bryan Currinder, Anthony Aufdenkampe, Beth A. Fisher & Naimul Islam, Pp. 26089–26103

Communications

Indian Leopard predation on the sub-adult Himalayan Griffon Vulture (Accipitridae: Accipitriformes)

– Soumya Sundar Chakraborty, Debal Ray, Apurba Sen, P.J. Harikrishnan, Nabi Kanta Jha & Rounaq Ghosh, Pp. 26104–26109

Diet composition and diet choice of Lesser Mouse-tailed Bat *Rhinopoma hardwickii* (Gray, 1831) (Rhinopomatidae: Chiroptera)

– Pawan Kumar Misra, Sayma Farheen, ShaktiVardhan Singh & Vadimalai Elangovan, Pp. 26110–26115

DNA barcoding and distribution of *Osteobrama peninsulae* (Teleostei: Cyprinidae) in India

– Boni Amin Laskar, Asha Kiran Tudu, Shibananda Rath & Laishram Kosygin, Pp. 26116–26123

Diving into diversity: aquatic beetles of Sukhna Wildlife Sanctuary, Chandigarh, India

– Karmannye Om Chaudhary, Pp. 26124–26130

Review

An updated checklist of snakes (Reptilia: Squamata) in northeastern India derived from a review of recent literature

– Bijay Basfore, Manab Jyoti Kalita, Narayan Sharma & Ananda Ram Boro, Pp. 26131–26149

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

November 2024 | Vol. 16 | No. 11 | Pages: 26063–26186

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

DOI: [10.11609/jott.2024.16.11.26063-26186](https://doi.org/10.11609/jott.2024.16.11.26063-26186)

Viewpoint

Decades of IUCN recommendations for biocontrol of invasive pest on the Guam cycad: you can lead policy-makers to conservation proposals but you cannot make them follow

– Thomas E. Marler, Anders J. Lindström, L. Irene Terry & Benjamin E. Deloso, Pp. 26150–26162

Short Communications

Photographic record of Kashmir Gliding Squirrel *Eoglaucomys fimbriatus* (J.E. Gray, 1837) from the Gurez Valley, Jammu & Kashmir, India

– G. Mustufa Lone, Bilal A. Bhat, Mir Shabir Hussain & Arif Nabi Lone, Pp. 26163–26166

Winter population of raptor species in the Vellore dump yard of Coimbatore City, India

– V. Balaji & R. Venkitachalam, Pp. 26167–26171

Notes

Phenotypic variations in Mindoro Warty Pig *Sus oliveri* (Cetartiodactyla: Suidae)

– John Carlo Redeña-Santos, Anna Pauline O. de Guia, Nikki Heherson A. Dagamac & Fernando García Gil, Pp. 26172–26175

First photographic evidence of the Chinese Pangolin *Manis pentadactyla* (Linnaeus, 1758) in Raimona National Park, Assam, India

– Dipankar Lahkar, M. Firoz Ahmed, Bhanu Sinha, Pranjal Talukdar, Biswajit Basumatary, Tunu Basumatary, Ramie H. Begum, Nibir Medhi, Nitul Kalita & Abishek Harihar, Pp. 26176–26179

Habenaria spencei (Orchidaceae): rediscovery other than its type locality and new distribution record to Karnataka, India

– Shreyas Betageri & Katrahalli Kotresha, Pp. 26180–26184

Book Review

Fairies of the day and angels of the night

– Chitra Narayanasami, Pp. 26185–26186

Publisher & Host



Threatened Taxa