

# Journal of Threatened Taxa

*Building evidence for conservation globally*



*Open Access*

[10.11609/jott.2021.13.12.19675-19886](https://doi.org/10.11609/jott.2021.13.12.19675-19886)  
[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

26 October 2021 (Online & Print)  
Vol. 13 | No. 12 | Pages: 19675–19886

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



Publisher

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

Host

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

No. 12, Thiruvannamalai Nagar, Saravanampatti - Kalapatti Road, Saravanampatti,

Coimbatore, Tamil Nadu 641035, India

Ph: +91 9385339863 | [www.threatenedtaxa.org](http://www.threatenedtaxa.org)

Email: sanjay@threatenedtaxa.org

**EDITORS****Founder & Chief Editor****Dr. Sanjay Molur**Wildlife Information Liaison Development (WILD) Society & Zoo Outreach Organization (ZOO),  
12 Thiruvannamalai Nagar, Saravanampatti, Coimbatore, Tamil Nadu 641035, India**Deputy Chief Editor****Dr. Neelesh Dahanukar**

Noida, Uttar Pradesh, India

**Managing Editor****Mr. B. Ravichandran**, WILD/ZOO, Coimbatore, India**Associate Editors****Dr. Mandar Paingankar**, Government Science College Gadchiroli, Maharashtra 442605, India**Dr. Ulrike Streicher**, Wildlife Veterinarian, Eugene, Oregon, USA**Ms. Priyanka Iyer**, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India**Dr. B.A. Daniel**, ZOO/WILD, Coimbatore, Tamil Nadu 641035, India**Editorial Board****Dr. Russel Mittermeier**

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

**Prof. Mewa Singh Ph.D., FASc, FNA, FNAsc, FNAPsy**

Ramanna Fellow and Life-Long Distinguished Professor, Biopsychology Laboratory, and Institute of Excellence, University of Mysore, Mysuru, Karnataka 570006, India; Honorary Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore; and Adjunct Professor, National Institute of Advanced Studies, Bangalore

**Stephen D. Nash**

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

**Dr. Fred Pluthero**

Toronto, Canada

**Dr. Priya Davidar**

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

**Dr. Martin Fisher**

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

**Dr. John Fellowes**

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

**Prof. Dr. Mirco Solé**

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

**Dr. Rajeev Raghavan**

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

**English Editors****Mrs. Mira Bhojwani**, Pune, India**Dr. Fred Pluthero**, Toronto, Canada**Mr. P. Ilangovan**, Chennai, India**Web Maintenance****Mrs. Latha G. Ravikumar**, ZOO/WILD, Coimbatore, India**Typesetting****Mr. Arul Jagadish**, ZOO, Coimbatore, India**Mrs. Radhika**, ZOO, Coimbatore, India**Mrs. Geetha**, ZOO, Coimbatore India**Fundraising/Communications****Mrs. Payal B. Molur**, Coimbatore, India**Subject Editors 2018–2020****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

**Plants**

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

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

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

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

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

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

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

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

Dr. Merlin Franco, Curtin University, Malaysia

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

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

Dr. Pankaj Kumar, Kadoorie Farm and Botanic Garden Corporation, Hong Kong S.A.R., China

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

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

Dr. Vijaysankar Raman, University of Mississippi, USA

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

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

Dr. Aparna Watve, Pune, Maharashtra, India

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

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

Dr. M.K. Vasudeva Rao, Shiv Ranjan 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. 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 Banos, Laguna, Philippines

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

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

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

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

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

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

**Invertebrates**

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

Dr. D.B. Bastawade, Maharashtra, India

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

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

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

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

Dr. Brian Fisher, California Academy of Sciences, USA

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

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

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

Dr. Jatishwor Singh Irungbam, Biology Centre CAS, Brno, 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

For Focus, Scope, Aims, and Policies, visit [https://threatenedtaxa.org/index.php/JoTT/aims\\_scope](https://threatenedtaxa.org/index.php/JoTT/aims_scope)For Article Submission Guidelines, visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions>For Policies against Scientific Misconduct, visit [https://threatenedtaxa.org/index.php/JoTT/policies\\_various](https://threatenedtaxa.org/index.php/JoTT/policies_various)

continued on the back inside cover

Caption: Stripe-backed Weasel *Mustela strigidorsa*. Medium—digital, Software—procreate, Device—iPad + Apple pencil © Dhanush Shetty.



## New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India

Yumnam Rameshori<sup>1</sup> , Yengkhom Chinglemba<sup>2</sup> & Waikhom Vishwanath<sup>3</sup>

<sup>1–3</sup> Department of Life Sciences, Manipur University, Canchipur, Manipur 795003, India.

<sup>1</sup>rameshori.yumnam@gmail.com, <sup>2</sup>chinglemba.yengkhom@gmail.com (corresponding author), <sup>3</sup>wvnath@gmail.com

**Abstract:** *Paracanthocobitis linypha* Singer & Page, a freshwater nemacheiline zipper loach, is reported for the first time from the Lokchao River of Manipur (headwaters of Chindwin drainage), in northeastern India. The species is diagnosed in having an incomplete lateral line, flank with 10–14 thin dark bars, long bars occasionally alternating with short bars extending up to about lateral mid-line, interspaces broader than bar width. Morphometric and meristic data of the examined specimens were compared with the original description to validate the species identity.

**Keywords:** Freshwater nemacheiline, Lokchao River, new report, northeastern India.

Fishes of the genus *Paracanthocobitis* Grant, 2007 are widely distributed in southern and southeastern Asia, ranging from the Indus drainage in eastern Pakistan to the Mekong drainage in Cambodia and Laos (Rainboth et al. 2012). The genus is diagnosed in having a thickened lower lip, swollen medially, densely covered by papillae, the two halves are in contact anteriorly and globulous medially, followed laterally up to the rictus by a thin, narrow, and smooth part; upper lip with several rows of papillae; 9½–15½ branched dorsal-fin rays; anus closer to anal-fin origin; male suborbital flap is located more posteriorly with its extremity under the middle of the

eye, the lower edge of the lateral ethmoid is marked by a groove extending forwards beyond the nostrils (Kottelat & Vishwanath 2021).

Hora (1921) reported the presence of *Paracanthocobitis zonalternans* (Blyth, 1860) from the Chindwin drainage and *P. botia* (Hamilton, 1822) from the Brahmaputra drainage of Manipur, northeastern India. Recently, Kottelat & Vishwanath (2021) clarified that *P. zonalternans*, which Hora recorded from the Chindwin drainage is actually *P. marmorata* Singer et al., 2017. Additionally, Vishwanath & Laisram (2001) also clarified that Hora's report of *P. botia* from Manipur was erroneous as the collection was made from a place named Ghaspani in the present state of Nagaland, India, and extended the distribution of *P. botia* to the Barak drainage in Manipur.

A recent ichthyological survey in the Lokchao River of Manipur, Chindwin drainage, resulted in the collection of 10 specimens of *Paracanthocobitis*. After detailed examination, the specimens were identified as *Paracanthocobitis linypha* Singer & Page, 2015 and the species is hereby reported for the first time from the Chindwin drainage in Manipur, northeastern India.

**Editor:** Rajeev Raghavan, Kerala University of Fisheries and Ocean Studies, Kochi, India.

**Date of publication:** 26 October 2021 (online & print)

**Citation:** Rameshori, Y., Y. Chinglemba & W. Vishwanath (2021). New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India. *Journal of Threatened Taxa* 13(12): 19813–19817. <https://doi.org/10.11609/jott.7005.13.12.19813-19817>

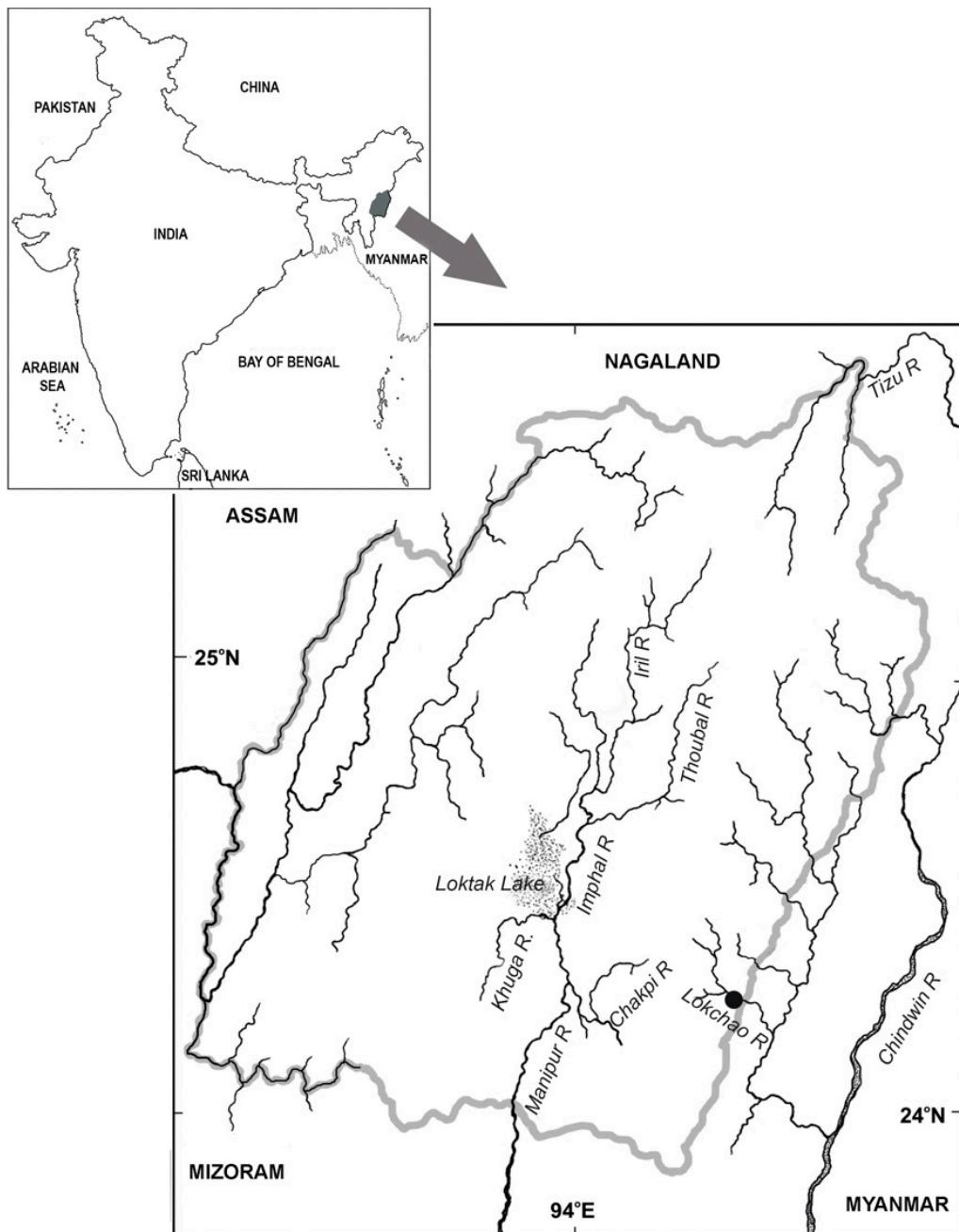
**Copyright:** © Rameshori et al. 2021. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use, reproduction, and distribution of this article in any medium by providing adequate credit to the author(s) and the source of publication.

**Funding:** DBT, Government of India, (BCIL/NER-BPMC/2017/164).

**Competing interests:** The authors declare no competing interests.

**Acknowledgements:** We are very grateful to the Department of Biotechnology (DBT), Government of India, New Delhi (Project No. BCIL/NER-BPMC/2017/164) for research grant.





**Figure 1.** Map of Manipur showing the sampling site of *Paracanthocobitis linypha* in the Lokchao River, Chindwin drainage, northeast India.

## MATERIALS AND METHODS

Measurements and counts follow Singer & Page (2015). Measurements were made with digital callipers on the left side of the specimens to the nearest 0.1 mm. Measurements of body parts and head length are presented as proportions of standard length (SL) and subunits of head, as that of head length (HL). Fin rays, pores on lateral line and cephalic lateralis system were counted under a stereo-zoom microscope using transmitted and reflected light. The values in parenthesis

following a count indicate the frequency of that count. Specimens are preserved in 10% formalin and deposited in the Manipur University Museum of Fishes (MUMF), Imphal.

## RESULTS

*Paracanthocobitis linypha* Singer & Page, 2015  
(Image 1)

Common name: Sewing Needle Zipper Loach

**Materials examined:** MUMF 18051–18055, 5 ex.,



Image 1. Lateral view of *Paracanthocobitis linypha*, MUMF 18056, male, 41.7 mm SL. © Yumnam Rameshori.

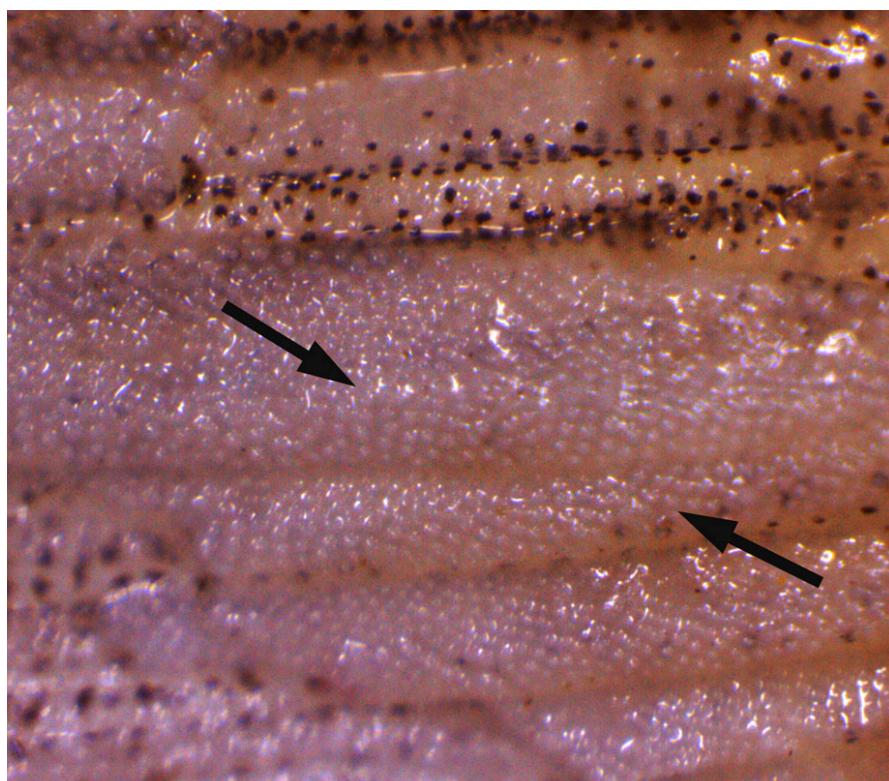


Image 2. Pectoral fin of male of *Paracanthocobitis linypha*, MUMF 18056, 41.7 mm SL, showing tubercles. © Yumnam Rameshori.

females, 09.v.2019, Lokchao River, Tengnoupal District, Manipur, India, 24.239°N 94.271°E, 261 m, 37.4–43.1 mm SL, coll. Yumnam Rameshori & Achom Darshan; MUMF 18056–18060, 5 ex., males, same data as above.

**Diagnosis:** *Paracanthocobitis linypha* is distinguished from all other species of *Paracanthocobitis* by the following combination of characters: 10–14 thin dark bars on flank, long bars occasionally alternating with short bars extending up to about lateral mid-line; interspaces wider than bars; an incomplete lateral line; absence of axillary pelvic lobe; males with suborbital flap.

**Description:** Morphometric and meristic data are presented in Table 1 and 2 respectively. Body moderately elongate, anterior sub-cylindrical, posterior compressed; body depth greatest at dorsal-fin origin. Dorsal profile of body arched, rising gently from tip of snout to dorsal-fin origin, then sloping evenly to caudal-fin base; ventral profile almost straight up to anal-fin origin, then inclined gently towards end of caudal peduncle. Head depressed, snout slightly rounded, maximum head width 1.6–1.9 times interorbital width. Eyes almost spherical, situated close to dorsal profile of head, nearer to tip of snout than to end of opercle, not visible in ventral view. Caudal

**Table 1. Morphometric data of *Paracanthocobitis linypha* (n= 10).**

	MUMF 18051–18060	Singer & Page (2015)	
	Range	Mean ± SD	Range
Standard length (mm)	37.4–44.8		26.1–42.9
% SL			
Body depth	18.7–20.6	19.5±0.7	13.7–18.5
Head length	22.9–25.2	24.2±0.6	18.8–22.9
Caudal-peduncle depth	12.1–14.9	13.3±0.9	7.9–12.4
Pre-dorsal length	48.0–52.8	50.3±1.6	40.4–50.7
Pre-pelvic length	54.4–59.4	57.2±1.4	47.6–54.1
Pre-anal length	76.6–83.3	79.9±2.4	72.7–79.7
Snout length	8.4–10.0	9.5±0.5	6.0–9.0
Pectoral-fin length	20.2–25.9	23.2±2.3	17.5–21.8
Pelvic-fin length	16.9–20.1	18.7±1.0	15.5–18.0
% HL			
Eye diameter	21.0–25.0	23.0±1.0	24.0–30.9
Interorbital width	31.0–34.0	32.0±1.0	24.1–35.3

**Table 2. Meristic counts of *Paracanthocobitis linypha* (n= 10).**

	MUMF 18051–18060	Singer & Page (2015)
Branched dorsal-fin rays	8½ (2), 9½ (2), 10½ (6)	9½–11½
Branched anal-fin rays	5½ (10)	5½
Pectoral-fin rays	11 (8), 12 (2)	11–13
Pelvic-fin rays	7 (2), 8 (8)	8
Caudal fin ray count	8 + 8 (10)	8 + 8

peduncle 0.9–1.2 times longer than deep.

Body and belly completely covered by embedded scales. Lateral line incomplete, ending before end of adpressed pelvic fin, in some specimens reaches up to at least anal-fin origin. Cephalic lateral line system with 5–7 supraorbital, 3–4+10 infraorbital, 6 preoperculo-mandibular and 3 supratemporal pores. Anterior and posterior nostrils adjacent. Mouth moderately arched, about 1.7–2.1 times wider than long. Lips thin, fleshy and papillated. Processus dentiformis present. Lower lip with a deep medial interruption. Barbels 3 pairs; inner rostral barbel slightly extend beyond base of maxillary barbel, outer rostral and maxillary barbel reaching slightly beyond vertical to posterior rim of eye.

Dorsal fin with 8½ (2) or 9½ (2) or 10½ (6) branched rays, its origin slightly in advance to vertical of pelvic-fin origin. Anal fin with 5½ (10) branched rays; pectoral fin with 11 (8) or 12 (2) rays; pelvic fin with 7 (2) or 8 (8) rays.

Axillary pelvic lobe absent. Caudal fin slightly emarginate to truncate, lobes equal, with 8+8 (10) branched rays.

**Sexual dimorphism:** Males with prominent suborbital flap; dorsal surface of pectoral fin of males with thick unculiferous pad covered by small conical tubercles (Image 2).

**Coloration:** In 10% formalin, body background pale yellowish with 10–14 thin dark bars on flank, most of them continuous with saddles on dorsum, long bars occasionally alternating with short bars extending up to about lateral mid-line; interspaces wider than bars. Dorsum of head with many dark spots. Dorsal fin with 5–6 rows of black spots. Pectoral, pelvic, and anal fin hyaline with little pigments on proximal end. An ocellus with more or less round black spot near dorsal margin of caudal-fin base. Caudal fin with 6–7 rows of V-shaped dark bands with vertices pointed towards distal end of caudal-fin.

**Distribution:** Presently known from the Irrawaddy and Sittang drainages in Myanmar. The occurrence of *Paracanthocobitis linypha* in the Lokchao River extends the natural occurrence range of the species into the Chindwin drainage of Manipur, northeastern India.

## DISCUSSION

Grant (2007) proposed *Paracanthocobitis* as a subgenus of *Acanthocobitis* Peters, 1861 with *Cobitis zonalternans* Blyth, 1860 as the type species. However, Kottelat (2012) did not recognize the subgenus *Paracanthocobitis* stating that the differentiating characters of *Paracanthocobitis* from *Acanthocobitis* are not clear, and the designation of the subgenus was not on the basis of actual examination of specimens, except one live individual and few photographs. Subsequently, Singer & Page (2015) recognized *Paracanthocobitis* as a distinct genus and listed 14 species including *P. linypha* which they described from the Irrawaddy and Sittang drainages in Myanmar.

At present, 18 species of *Paracanthocobitis* are considered valid (Fricke et al. 2021). The morphometric and meristic data of the examined *Paracanthocobitis* specimens collected from Manipur are in sync with the original morphometric and meristic data as well as characters in the description, except for few deviations such as body depth and pre-pelvic length (Table 1). Also, the examined specimens have 8½–10½ (vs. 9½–11½) branched dorsal-fin rays (Table 2). In the original description of *P. linypha*, the lateral line was suggested to end before distal end of adpressed pelvic fin; however, in some of the specimens examined from Manipur, lateral line reaches up to at least anal-fin

origin. These minor differences may be due to limited coverage of populations in the original description, and habitat variations. Detailed analysis is required to assess location-specific threats, and to understand the status and trends in population of the species.

## REFERENCES

- Blyth, E. (1860).** Report on some fishes received chiefly from the Sittang River and its tributary streams, Tenasserim Provinces. *Journal of the Asiatic Society of Bengal* 29: 138–174.
- Chaudhuri, B.L. (1912).** Description of some new species of freshwater fishes from north India. *Records of Indian Museum* 7: 437–444.
- Fricke, R., W.N. Eschmeyer & R. van der Laan (2021).** Eschmeyer's catalog of fishes: Genera, species, references. Accessed on 26 June 2021. Available from: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>
- Grant, S. (2007).** A new subgenus of *Acanthocobitis* Peters, 1861 (Teleostei: Nemacheilidae). *Ichthyofile* 2: 1–9.
- Hamilton, F. (1822).** An Account of the Fishes found in the River Ganges and its Branches. Archibald Constable & Company, Edinburgh, 405pp. <https://doi.org/10.5962/bhl.title.6897>
- Hora, S.L. (1921).** Fish and fisheries of Manipur with some observations of those of the Naga Hills. *Records of the Indian Museum* 22: 166–214.
- Kottelat, M. (2012).** *Conspectus cobitidum: an inventory of the loaches of the world* (Teleostei: Cypriniformes: Cobitoidei). *Raffles Bulletin of Zoology Supplements* 26: 1–199.
- Kottelat, M. & W. Vishwanath (2021).** Type locality and synonymy of *Paracanthocobitis marmorata* and notes on *Acanthocobitis* (Teleostei: Nemacheilidae). *Raffles Bulletin of Zoology* 69: 13–18.
- Peters, W. (1861).** Über zwei neue Gattungen von Fischen aus dem Ganges. Monatsberichte der Königlichen Preuss[ischen] Akademie der Wissenschaften zu Berlin 1861: 712–713.
- Rainboth, W.J., C. Vidthayanon & M.D. Yen (2012).** *Fishes of the greater Mekong ecosystem with species list and photographic atlas*. Miscellaneous Publications, Museum of Zoology, University of Michigan, No. 201.
- Singer, R.A. & L.M. Page (2015).** Revision of the zipper loaches, *Acanthocobitis* and *Paracanthocobitis* (Teleostei: Nemacheilidae), with descriptions of five new species. *Copeia* 103(2): 378–401. <https://doi.org/10.1643/ci-13-128>
- Vishwanath W. & J. Laisram (2001).** Fishes of the subfamily Nemacheilinae Regan (Cypriniformes: Balitoridae) from Manipur. *Journal of the Bombay Natural History Society* 98(2): 197–216.





Dr. Albert G. Orr, Griffith University, Nathan, Australia  
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium  
Dr. Nancy van der Poorten, Toronto, Canada  
Dr. Karen Schnabel, NIWA, Wellington, New Zealand  
Dr. R.M. Sharma, (Retd.) Scientist, Zoological Survey of India, Pune, India  
Dr. Manju Siliwal, WILD, Coimbatore, Tamil Nadu, India  
Dr. G.P. Sinha, Botanical Survey of India, Allahabad, India  
Dr. K.A. Subramanian, Zoological Survey of India, New Alipore, Kolkata, India  
Dr. P.M. Sureshan, Zoological Survey of India, Kozhikode, Kerala, India  
Dr. R. Varatharajan, Manipur University, Imphal, Manipur, India  
Dr. Eduard Vives, Museu de Ciències Naturals de Barcelona, Terrassa, Spain  
Dr. James Young, Hong Kong Lepidopterists' Society, Hong Kong  
Dr. R. Sundararaj, Institute of Wood Science & Technology, Bengaluru, India  
Dr. M. Nithyanandan, Environmental Department, La Al Al Kuwait Real Estate. Co. K.S.C., Kuwait  
Dr. Himender Bharti, Panjab 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. 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. Neelash Dahanukar, IISER, Pune, Maharashtra, India  
Dr. Topiltzin Contreras MacBeath, Universidad Autónoma del estado de Morelos, México  
Dr. Heok Hee Ng, National University of Singapore, Science Drive, Singapore  
Dr. Rajeev Raghavan, St. Albert's College, Kochi, Kerala, India  
Dr. Robert D. Sluka, Chiltern Gateway Project, A Rocha UK, Southall, Middlesex, UK  
Dr. E. Vivekanandan, Central Marine Fisheries Research Institute, Chennai, India  
Dr. Davor Zanella, University of Zagreb, Zagreb, Croatia  
Dr. A. Biju Kumar, University of Kerala, Thiruvananthapuram, Kerala, India  
Dr. Akhilesh K.V., ICAR-Central Marine Fisheries Research Institute, Mumbai Research Centre, Mumbai, Maharashtra, India  
Dr. J.A. Johnson, Wildlife Institute of India, Dehradun, Uttarakhand, India

#### Amphibians

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

#### Reptiles

Dr. Gernot Vogel, Heidelberg, Germany  
Dr. Raju Vyas, Vadodara, Gujarat, India  
Dr. Pritpal S. Soorae, Environment Agency, Abu Dhabi, UAE.  
Prof. Dr. Wayne J. Fuller, Near East University, Mersin, Turkey  
Prof. 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

**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

#### Birds

Dr. Hem Sagar Baral, Charles Sturt University, NSW Australia  
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. Gombobaataa 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. M. Zafar-ul Islam, Prince Saud Al Faisal Wildlife Research Center, Taif, Saudi Arabia

#### Mammals

Dr. Giovanni Amori, CNR - Institute of Ecosystem Studies, Rome, Italy  
Dr. Anwaruddin Chowdhury, Guwahati, India  
Dr. David Mallon, Zoological Society of London, UK  
Dr. Shomita Mukherjee, SACON, Coimbatore, Tamil Nadu, India  
Dr. Angie Appel, Wild Cat Network, Germany  
Dr. P.O. Nameer, Kerala Agricultural University, Thrissur, Kerala, India  
Dr. Ian Redmond, UNEP Convention on Migratory Species, Lansdown, UK  
Dr. Heidi S. Riddle, Riddle's Elephant and Wildlife Sanctuary, Arkansas, USA  
Dr. Karin Schwartz, George Mason University, Fairfax, Virginia.  
Dr. Lala A.K. Singh, Bhubaneswar, Orissa, India  
Dr. Mewa Singh, Mysore University, Mysore, India  
Dr. Paul Racey, University of Exeter, Devon, UK  
Dr. Honnallini N. Kumara, SACON, Anaikatty P.O., Coimbatore, Tamil Nadu, India  
Dr. Nishith Dharaiya, HNG University, Patan, Gujarat, India  
Dr. Spartaco Gippoliti, Socio Onorario Società Italiana per la Storia della Fauna "Giuseppe Altobello", Rome, Italy  
Dr. Justus Joshua, Green Future Foundation, Tiruchirappalli, Tamil Nadu, India  
Dr. H. Raghuram, The American College, Madurai, Tamil Nadu, India  
Dr. Paul Bates, Harison Institute, Kent, UK  
Dr. Jim Sanderson, Small Wild Cat Conservation Foundation, Hartford, USA  
Dr. Dan Challender, University of Kent, Canterbury, UK  
Dr. David Mallon, Manchester Metropolitan University, Derbyshire, UK  
Dr. Brian L. Cypher, California State University-Stanislaus, Bakersfield, CA  
Dr. S.S. Talmale, Zoological Survey of India, Pune, Maharashtra, India  
Prof. Karan Bahadur Shah, Budhanilakantha Municipality, Kathmandu, Nepal  
Dr. Susan Cheyne, Borneo Nature Foundation International, 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 2018–2020

Due to paucity of space, the list of reviewers for 2018–2020 is available online.

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

Print copies of the Journal are available at cost. Write to:  
The Managing Editor, JoTT,  
c/o Wildlife Information Liaison Development Society,  
No. 12, Thiruvannamalai Nagar, Saravanampatti - Kalapatti Road,  
Saravanampatti, Coimbatore, Tamil Nadu 641035, India  
ravi@threatenedtaxa.org



OPEN ACCESS



The Journal of Threatened Taxa (JoTT) is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at [www.threatenedtaxa.org](http://www.threatenedtaxa.org). All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](#) unless otherwise mentioned. JoTT allows unrestricted use, reproduction, and distribution of articles in any medium by providing adequate credit to the author(s) and the source of publication.

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

October 2021 | Vol. 13 | No. 12 | Pages: 19675–19886

Date of Publication: 26 October 2021 (Online & Print)

DOI: [10.11609/jott.2021.13.12.19675-19886](https://doi.org/10.11609/jott.2021.13.12.19675-19886)

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

#### Articles

**Roosting habits and habitats of the Indian Flying Fox *Pteropus medius* Temminck, 1825 in the northern districts of Tamil Nadu, India**  
– M. Pandian & S. Suresh, Pp. 19675–19688

**Diversity and distribution of avifauna at Warathenna-Hakkinda Environmental Protection Area in Kandy, Sri Lanka**  
– Dinelka Thilakarathne, Tithira Lakkana, Gayan Hirimuthugoda, Chaminda Wijesundara & Shalika Kumburegama, Pp. 19689–19701

**Grass species composition in tropical forest of southern India**  
– M. Ashokkumar, S. Swaminathan & R. Nagarajan, Pp. 19702–19713

#### Communications

**Habitat use and conservation threats to Wild Water Buffalo *Bubalus arnee* (Mammalia: Artiodactyla: Bovidae) in Koshi Tappu Wildlife Reserve, Nepal**  
– Reeta Khulal, Bijaya Neupane, Bijaya Dhami, Siddhartha Regmi, Ganesh Prasad Tiwari & Manita Parajuli, Pp. 19714–19724

**Get my head around owls: people perception and knowledge about owls of Andaman Islands**  
– Shamugavel Sureshmarimuthu, Santhanakrishnan Babu, Nagaraj Rajeshkumar & Honnavalli Nagaraj Kumara, Pp. 19725–19732

**Abundance and diversity of threatened birds in Nangal Wetland, Punjab, India**  
– Rajwinder Kaur & Onkar Singh Brach, Pp. 19733–19742

**Evaluation of fish diversity and abundance in the Kabul River with comparisons between reaches above and below Kabul City, Afghanistan**  
– Ugen Kelzang, Ahmad Farid Habibi & Ryan J. Thoni, Pp. 19743–19752

**New record of *Myrmarachne melanocephala* MacLeay, 1839 (Araneae: Salticidae) from Jharkhand, India and biogeographical implications of the co-occurrence of its ant model *Tetraponera rufonigra* Jerdon, 1851**  
– Rahul Kumar, Mirtunjay Sharma & Ajay Kumar Sharma, Pp. 19753–19761

**Diversity of spiders (Arachnida: Araneae) and the impact of pruning in Indian sandalwood plantations from Karnataka, India**  
– S. Padma & R. Sundararaj, Pp. 19762–19772

**New records of cheilostome Bryozoa from the eastern coast of India encrusting on the exoskeleton of live horseshoe crabs of Indian Sundarbans**  
– Swati Das, Maria Susan Sanjay, Basudev Tripathy, C. Venkatraman & K.A. Subramanian, Pp. 19773–19780

**On the pteridophytes of Bherjan-Borajan-Padumoni Wildlife Sanctuary, Assam, India**  
– Pranjal Borah & Jayanta Barukial, Pp. 19781–19790

**Population status of *Heritiera fomes* Buch.-Ham., a threatened species from Mahanadi Mangrove Wetland, India**  
– Sudam Charan Sahu, Manas Ranjan Mohanta & N.H. Ravindranath, Pp. 19791–19798

**Additions to the lichenized and lichenicolous fungi of Jammu & Kashmir from Kishtwar High Altitude National Park**  
– Vishal Kumar, Yash Pal Sharma, Siljo Joseph, Roshnikumar Ngangom & Sanjeeva Nayaka, Pp. 19799–19807

#### Short Communications

**Is release of rehabilitated wildlife with embedded lead ammunition advisable? Plumbism in a Jaguar *Panthera Onca* (Mammalia: Carnivora: Felidae), survivor of gunshot wounds**  
– Eduardo A. Díaz, Carolina Sáenz, E. Santiago Jiménez, David A. Egas & Kelly Swing, Pp. 19808–19812

**New record of the Sewing Needle Zipper Loach *Paracanthocobitis linypha* Singer & Page, 2015 (Teleostei: Cypriniformes: Nemacheilidae) from the Chindwin drainage of Manipur, India**  
– Yumnam Rameshori, Yengkhom Chinglemba & Waikhom Vishwanath, Pp. 19813–19817

**Field identification characters to diagnose *Microhyla mukhlesuri* from closely related *M. mymensinghensis* (Amphibia: Microhylidae) and range extension of *M. mukhlesuri* up to West Bengal State, India**  
– Suman Pratihar & Kaushik Deuti, Pp. 19818–19823

**First report of *Scipinia horrida* (Stål) (Heteroptera: Reduviidae) from Assam, with comments on related genus *Irantha* Stål**

– Anjana Singha Naorem, Santana Saikia, Anandita Buragohain, Rubina Azmeera Begum, Swapnil S. Boyane & Hemant V. Ghate, Pp. 19824–19830

**Flesh fly (Diptera: Sarcophagidae): male terminalia, diversity and expanded geographical distribution from India**

– Kanholi Sreejith, Shuvra Kanti Sinha, Santanu Mahato & Edamana Pushpalatha, Pp. 19831–19836

**Checklist of moths (Heterocera) of Tadong, Sikkim, India**

– Prayash Chettri, Yuki Matsui, Hideshi Naka & Archana Tiwari, Pp. 19837–19848

**New distribution records of *Begonia* L., *B. murina* Craib and *B. poilanei* Kiew (Begoniaceae: Cucurbitales) for Laos**

– Phongphayboun Phonepaseuth, Phetsaly Souladeth, Soulinvan Lanorsavanh, Shuichiro Tagane, Thyraphon Vongthavone & Keooudone Souvannakhoummane Pp. 19849–19854

#### Notes

**A recent sighting of the Stripe-backed Weasel *Mustela strigidorsa* (Mammalia: Carnivora: Mustelidae) in Hkkabro Razi Landscape, Myanmar**

– Sai Sein Lin Oo, Tun Tun, Kyaw Myo Naing & Paul Jeremy James Bates, Pp. 19855–19859

**Are the uplifted reef beds in North Andaman letting nesting Olive Ridley Sea Turtle *Lepidochelys olivacea* stranded?**

– Nehru Prabakaran, Anoop Raj Singh & Vedagiri Thirumurugan, Pp. 19860–19863

**First record of the orb-weaving spider *Araneus tubabdominus* Zhu & Zhang, 1993 (Araneae: Araneidae) from India**

– Souvik Sen, John T.D. Caleb & Shelley Acharya, Pp. 19864–19866

**The genus *Catapiestus* Perty, 1831 (Coleoptera: Tenebrionidae: Cnadaloniini) from Arunachal Pradesh with one new record to India**

– V.D. Hegde & Sarita Yadav, Pp. 19867–19869

**Rediscovery and extended distribution of *Indigofera santapaui* Sanjappa (Leguminosae: Papilionoideae) from the states of Maharashtra and Gujarat, India**

– Kumar Vinod Chhotupuri Gosavi, Sanjay Gajanan Auti, Sharad Suresh Kambale & Munivenkatappa Sanjappa, Pp. 19870–19873

**Additional distribution records of *Ceropegia anjanerica*, an endemic and 'Endangered' lantern flower of the northern Western Ghats, India**

– Samir Shrikant Maiti, Ajay Natha Gangurde, Sharad Suresh Kambale, Avinash Ramchandra Gholave, Avinash Asraji Adsul, Ganesh Babaso Pawar & Kumar Vinod Chhotupuri Gosavi, Pp. 19874–19877

**Notes on the extended distribution of *Impatiens megamalayana*, a recently described balsam in Western Ghats, India**

– Anoop P. Balan & A.J. Robi, Pp. 19878–19883

#### Book Review

**A look over on the scented tree of India (*Santalum album*)**

– S. Suresh Ramanan & A. Arunachalam, Pp. 19884–19886

#### Publisher & Host

