

OPEN ACCESS



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

## Journal of Threatened Taxa

Building evidence for conservation globally

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

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

### NOTE

### RECORD OF INDIAN ROOFED TURTLE *PANGSHURA TECTA* (REPTILIA: TESTUDINES: GEOEMYDIDAE) FROM KOSHI TAPPU WILDLIFE RESERVE, NEPAL

Ashmita Shrestha, Ramesh Prasad Sapkota & Kumar Paudel

26 May 2021 | Vol. 13 | No. 6 | Pages: 18663–18666

DOI: 10.11609/jott.7065.13.6.18663-18666



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)

For reprints, contact [<ravi@threatenedtaxa.org>](mailto:ravi@threatenedtaxa.org)

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.

Member



Publisher & Host







## Record of Indian Roofed Turtle *Pangshura tecta* (Reptilia: Testudines: Geoemydidae) from Koshi Tappu Wildlife Reserve, Nepal

Ashmita Shrestha<sup>1</sup> , Ramesh Prasad Sapkota<sup>2</sup> & Kumar Paudel<sup>3</sup>

<sup>1,2</sup> Central Department of Environmental Science, Tribhuvan University, Kathmandu, Nepal.

<sup>1,3</sup> Greenhood Nepal, Kathmandu, Nepal.

<sup>1</sup> ashmitashrestha543@gmail.com (corresponding author), <sup>2</sup> rsapkota@cdes.edu.np, <sup>3</sup> kmrpaudel@gmail.com

Testudines are the least documented wildlife species, hardly prioritized for the research and conservation actions in Nepal and across the world. The Indian Roofed Turtle *Pangshura tecta* (Gray, 1831) is one of the 16 species of freshwater turtles found in Nepal (Shah & Tiwari 2004; Aryal et al. 2010; Kästle et al. 2013). Nepal hosts three species of the *Pangshura* genus out of a total of four species endemic to southern Asia.

The turtles in Nepal are classified into three families: Trionychidae, Geoemydidae, and Testudinidae (Kästle et al. 2013). Eleven species of turtles belonging to the family Geoemydidae are known to occur in Nepal, viz., *Batagur dhongoka*, *B. kachuga*, *Cyclemys gemeli*, *Geoclemys hamiltonii*, *Hardella thurjii*, *Melanochelys tricarinata*, *M. trijuga*, *Morenia petersi*, *Pangshura tecta*, *P. tentoria* (with two subspecies—*flaviventer* and *circumdata*), and *P. smithii* (with two subspecies—*smithii* and *pallidipes*) (Günther 1861, 1864; Moll 1987; Schleich & Kästle 2002; Kiesel & Schleich 2016).

The Indian Roofed Turtle is recorded from India, Bangladesh, Pakistan, and Nepal (Ahmed et al. 2021). With the help of the available information on its distribution and the documented threats, *P. tecta* is listed as 'Vulnerable' in the IUCN Red List (Ahmed et al.

2021) and under Appendix I in CITES (CITES 2020). *P. tecta* has different vernacular names in Nepal: 'Bharatiya Dhuri Kachhuwa' (Indian Roofed Turtle), 'Dhond' (Kästle et al. 2013), and 'Dharke Kachhuwa' (Striped Turtle).

In Nepal, various surveys and research have reported *P. tecta* from different districts of central and western Nepal including from eastern district Sunsari (Schleich & Kästle 2002; Shah & Tiwari 2004; Aryal et al. 2010; Bista & Shah 2010; KTWR 2018; Bhattarai et al. 2020; Rawat et al. 2020). However, there is no report of the evidence of a live specimen record of *P. tecta* from eastern Nepal till the date. In this note, we report the live specimen record of *P. tecta* for the first time from Koshi Tappu Wildlife Reserve (KTWR) in eastern Nepal (Figure 1).

With the permission from Department of National Parks and Wildlife Conservation (DNPWC), a survey team led by the first author sighted a juvenile *P. tecta* in KTWR for the first time in March 2020. The turtle was encountered at around 12.00h in a lake (26.531°N, 86.921°E; 64m) nearby the Koshi Barrage in Saptari during the chelonian diversity survey in KTWR (Image 1). The individual was found basking on the grassland beside the lake. The lake's dominant aquatic plants were water hyacinth *Eichhornia crassipes* and water lily *Nymphaea*

**Editor:** Raju Vyas, Vododara, Gujarat, India.

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

**Citation:** Shrestha, A., R.P. Sapkota & K. Paudel (2021). Record of Indian Roofed Turtle *Pangshura tecta* (Reptilia: Testudines: Geoemydidae) from Koshi Tappu Wildlife Reserve, Nepal. *Journal of Threatened Taxa* 13(6): 18663–18666. https://doi.org/10.11609/jott.7065.13.6.18663-18666

**Copyright:** © Shrestha 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:** MSc dissertation grant to Ashmita Shrestha from Greenhood Nepal.

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

**Acknowledgements:** We thank Tapil Prakash Rai for helping in the species identification, DNPWC and KTWR for the research permission. This work was supported by Greenhood Nepal and Central Department of Environmental Science, Tribhuvan University, Nepal.



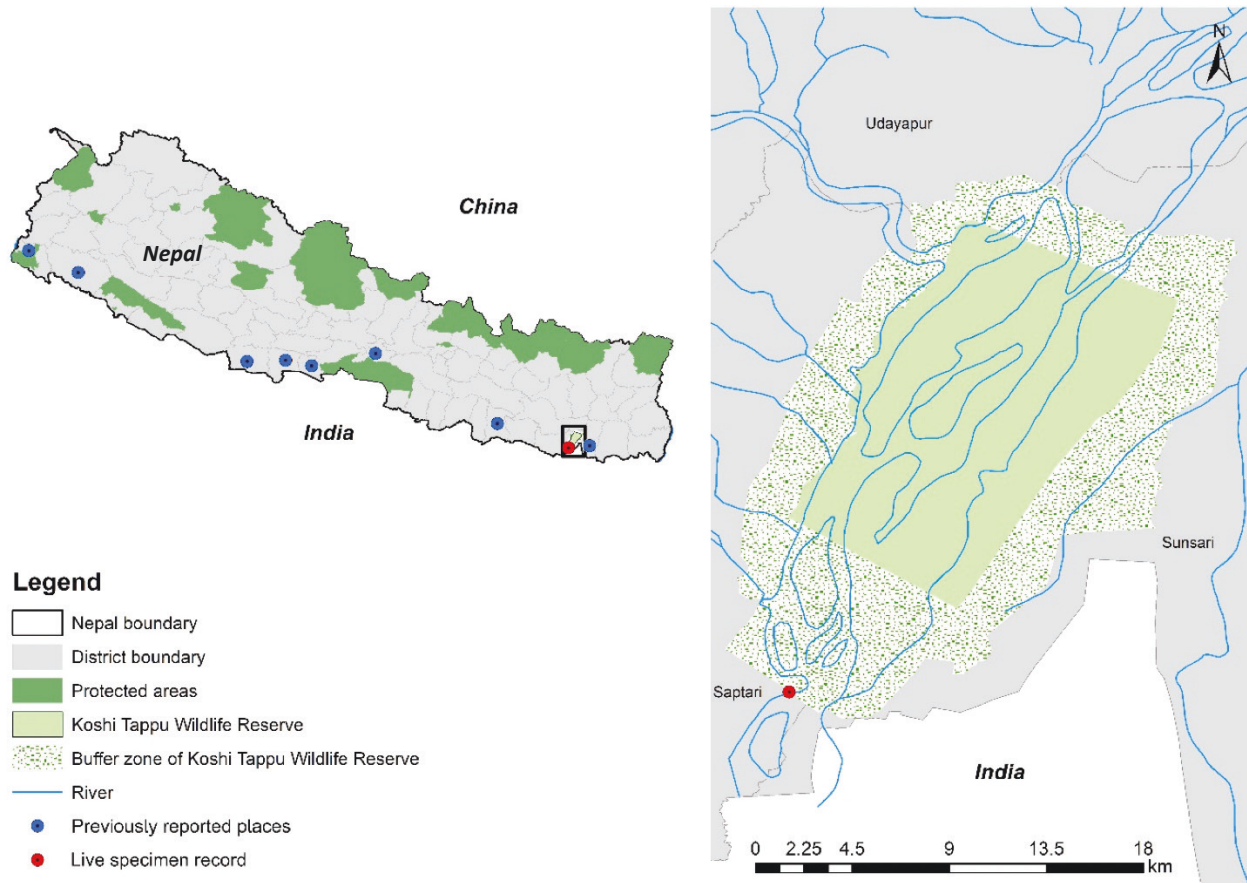


Figure 1. Reported distribution of *Pangshura tecta* across Nepal and new live specimen record from Koshi Tappu Wildlife Reserve, Nepal.



Image 1. *Pangshura tecta* habitat in Koshi Tappu Wildlife Reserve, Nepal. © Ashmita Shrestha

sp. The species was identified as *P. tecta* based on the identification key provided by Kästle et al. (2013). The turtle's body measurements were taken with a vernier caliper (15cm ±1.0mm) and a measuring tape (1m ±1.0mm). Details of the individual are given in Table 1. The turtle was released in the lake after morphometric

measurements.

The species was identified as a female because it had a yellow longitudinal band on the dorsal side of the tail (Image 2). The individual has a dark brown head with dull orange, black-bordered stripe and crescent-shaped post-ocular markings curving up from below the eyes to



Image 2. *Pangshura tecta* found on 12 March 2020 in Koshi Tappu Wildlife Reserve, Nepal. © Ashmita Shrestha

**Table 1. Morphometric measurements (cm) of *Pangshura tecta* recorded in Koshi Tappu Wildlife Reserve, Nepal.**

SCL—Straight carapace length | SCW—Straight carapace width | CCL—Curved carapace length | CCW—Curved carapace width | PL—Plastron length | PW—Plastron width | SH—Shell height

SCL	SCW	CCL	CCW	PL	PW	SH
7.3	4.9	10	9	6.3	2.5	3

meet on the forehead. Iris is greenish, and behind each eye, there is a kidney-shaped purple color spot. The neck is dark, with 32 reddish-yellow longitudinal lines. The plastral formula is  $abd > fem > an > < hum > an > gul$ . The carapace is elevated, oval with a distinct vertebral keel spiked, especially on vertebral III. The carapace is brownish with a light brown, orange stripe along the first three vertebral, the marginals with a narrow yellow border plastron is truncated anteriorly, notched posteriorly, and the snout is pointed. The plastron is pinkish-orange with two to four black markings of irregular shape in each plastral scute (Kästle et al. 2013).

*Pangshura tecta* inhabits deep water of large rivers or oxbow lakes with plenty of aquatic vegetation while

basking intensely on land (Kästle et al. 2013). It is less active, herbivorous, and lives for over 17 years (Kästle et al. 2013).

The population size of the *P. tecta* and other testudines is yet to be documented in Nepal; however, the field observation indicates that they are being overexploited for local consumption and trade. Also, giant structures like roads, dams, and new agricultural lands are eroding the turtle habitats. The species is also being used for traditional medicine against hemorrhoids, inflamed eyes, sores, burns, stomach problems, and tuberculosis (Kästle et al. 2013). All these demand detailed species surveys and science-based conservation actions in Koshi and eastern Terai areas of Nepal to save *P. tecta* and other threatened turtle species.

## References

- Ahmed, M.F., P. Praschag & S. Singh (2021). *Pangshura tecta*. The IUCN Red List of Threatened Species 2021: e.T46370A3005714. Downloaded on 20 April 2021. <https://doi.org/10.2305/IUCN.UK.2021-1.RLTS.T46370A3005714.en>
- Aryal, P.C., M.K. Dhamala, B.P. Bhurtel, M.K. Suwal & B. Rijal (2010). *Turtles of Nepal: A Field Guide for Species Accounts and Distribution*. Environmental Graduates in Himalaya (EGH), Resources Himalaya

- Foundation (RHF), Companions for Amphibians and Reptiles of Nepal (CARON). Kathmandu, Nepal, 33pp.
- Bhattarai, S., A. Gurung, B.R. Lamichhane, R. Regmi, M. Dhungana, B. Kumpakha & N. Subedi (2020).** *Amphibians and Reptiles of Chure Range, Nepal*. President Chure Terai-Madhesh Conservation Development Board and National Trust for Nature Conservation, Khumaltar, Lalitpur, Nepal.
- Bista, D. & K. Shah (2010).** Diversity and status of the turtles in the Ghodaghodi Lake area, Kailali District, far west Nepal. *Journal of Natural History Museum* 25: 366–373.
- CITES (2020).** Official website of the CITES. Available at: <https://cites.org/eng/app/appendices.php>
- Günther, A. (1861).** List of the cold-blooded vertebrates collected by B.H. Hodgson Esq. in Nepal. *Proceedings of the Zoological Society of London* 1861: 213–227.
- Günther, A. (1864).** *The Reptiles of British India*. Ray Society, London, 27pp+25 pl. Note: Reprinted around 1982. Oxford and IBH Publishing Cooperative, New Delhi, Bombay and Calcutta, 452pp.
- Kästle, W., K. Rai & H.H. Schleich (2013).** *Field Guide to Amphibians and Reptiles of Nepal*. ARCO-Nepal, Jhapa, Nepal, 609pp.
- Kiesel, L. & H.H. Schleich (2016).** *Amphibians and Reptiles of Nepal-Turtles. A children's Book*. ARCO-Nepal, 53pp.
- KTWR (2018).** *Koshi Tappu Wildlife Reserve and its Buffer Zone Management Plan (2074/75-20278/79)*. Paschim Kushaha, Sunsari, Nepal.
- Moll, E.O. (1987).** Survey of the freshwater turtles of India. Part II: The genus *Kachuga*. *Journal of the Bombay Natural History Society* 84: 7–25.
- Rawat, Y.B., S. Bhattarai, L.P. Poudyal & N. Subedi (2020).** Herpetofauna of Shuklaphanta National Park, Nepal. *Journal of Threatened Taxa* 12(5): 15587–15611. <https://doi.org/10.11609/jott.5611.12.5.15587-15611>
- Schleich, H.H. & W. Kästle (Eds.) (2002).** *Amphibians and Reptiles of Nepal*. Koenigstein: Koeltz Scientific Books, Germany, 1,200pp.
- Shah, K.B. & S. Tiwari (2004).** *Herpetofauna of Nepal: A Conservation Companion*. IUCN- The world Conservation Union, Nepal, viii+237pp.







www.threatenedtaxa.org

OPEN ACCESS



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

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

May 2021 | Vol. 13 | No. 6 | Pages: 18411–18678

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

DOI: 10.11609/jott.2021.13.6.18411-18678

#### Conservation Application

##### First attempt at rehabilitation of Asiatic Black Bear cubs to the wild in Thailand

– Robert Steinmetz, Worrapan Phumane, Rungnapa Phoonjampa & Suthon Weingdow, Pp. 18411–18418

#### Communications

##### Status of Sumatran Tiger in the Berbak-Sembilang landscape (2020)

– Tomi Ariyanto, Yon Dinata, Dwiyanto, Erwan Turyanto, Waluyo Sugito, Sophie Kirkin & Rajan Amin, Pp. 18419–18426

##### The diversity of small mammals in Pulau Perhentian Kecil, Terengganu, Malaysia

– Aminuddin Baqi, Isham Azhar, Ean Wee Chen, Faisal Ali Anwarali Khan, Chong Ju Lian, Bryan Raveen Nelson & Jayaraj Vijaya Kumaran, Pp. 18427–18440

##### Patterns, perceptions, and spatial distribution of human-elephant (*Elephas maximus*) incidents in Nepal

– Raj Kumar Koirala, Weihong Ji, Yajna Prasad Timilsina & David Raubenheimer, Pp. 18441–18452

##### Assessing spatio-temporal patterns of human-leopard interactions based on media reports in northwestern India

– Kaushal Chauhan, Arjun Srivathsa & Vidya Athreya, Pp. 18453–18478

##### Bat diversity in the Banpale forest, Pokhara, Nepal during spring season

– Prabhat Kiran Bhattarai, Basant Sharma, Anisha Neupane, Sunita Kunwar & Pratyush Dhungana, Pp. 18479–18489

##### A patho-microbiological study of tissue samples of the Greater Adjutant *Leptoptilos dubius* (Aves: Ciconiiformes: Ciconiidae) that died in Deeporbeel Wildlife Sanctuary, Assam, India

– Derhasar Brahma, Parikshit Kakati, Sophia M. Gogoi, Sharmita Doley, Arpita Bharali, Biswajit Dutta, Taibur Rahman, Saidul Islam, Arfan Ali, Siraj A. Khan, Sailendra Kumar Das & Nagendra Nath Barman, Pp. 18490–18496

##### Vaduvur and Sitheri lakes, Tamil Nadu, India: conservation and management perspective

– V. Gokula & P. Ananth Raj, Pp. 18497–18507

##### A new species of shieldtail snake (Squamata: Uropeltidae: Uropeltis) from the Bengaluru uplands, India

– S.R. Ganesh, K.G. Punith, Omkar D. Adhikari & N.S. Achyuthan, Pp. 18508–18517

##### A looming exotic reptile pet trade in India: patterns and knowledge gaps

– A. Pragatheesh, V. Deepak, H.V. Girisha & Monesh Singh Tomar, Pp. 18518–18531

##### Legal or unenforceable? Violations of trade regulations and the case of the Philippine Sailfin Lizard *Hydrosaurus pustulatus* (Reptilia: Squamata: Agamidae)

– Sarah Heinrich, Adam Toomes & Jordi Janssen, Pp. 18532–18543

##### Conservation breeding of Northern River Terrapin *Batagur baska* (Gray, 1830) in Sundarban Tiger Reserve, India

– Nilanjan Mallick, Shailendra Singh, Dibyadeep Chatterjee & Souritra Sharma, Pp. 18544–18550

##### Discovery of two new populations of the rare endemic freshwater crab *Louisea yabassi* Mvogo Ndongo, von Rintelen & Cumberlidge, 2019 (Brachyura: Potamonautidae) from the Ebo Forest near Yabassi in Cameroon, Central Africa, with recommendations for conservation action

– Pierre A. Mvogo Ndongo, Thomas von Rintelen, Christoph D. Schubart, Paul F. Clark, Kristina von Rintelen, Alain Didier Missoup, Christian Albrecht, Muriel Rabone, Efole Ewoukem, Joseph L. Tamesse, Minette Tomedi-Tabi Eyango & Neil Cumberlidge, Pp. 18551–18558

##### Checklists of subfamilies Dryptinae and Panagaeinae (Insecta: Coleoptera: Carabidae) from the Indian subcontinent

– V.A. Jithmon & Thomas K. Sabu, Pp. 18559–18577

##### Mantids (Insecta: Mantodea) of Uttar Pradesh, India

– Ramesh Singh Yadav & G.P. Painkra, Pp. 18578–18587

##### An assessment of genetic variation in vulnerable Borneo Ironwood *Eusideroxylon zwageri* Teijsm. & Binn. in Sarawak using SSR markers

– Siti Fatimah Md.-Isa, Christina Seok Yien Yong, Mohd Nazre Saleh & Rusea Go, Pp. 18588–18597

#### Review

##### Termites (Blattodea: Isoptera) of southern India: current knowledge on distribution and systematic checklist

– M. Ranjith & C.M. Kalleshwaraswamy, Pp. 18598–18613

#### Short Communications

##### Population status and distribution of Ibisbill *Ibidorhyncha struthersii* (Vigors, 1832) (Aves: Charadriiformes: Ibidorhynchidae) in Kashmir Valley, India

– Iqram Ul Haq, Bilal A. Bhat, Khurshed Ahmad & Asad R. Rahmani, Pp. 18614–18617

##### A new fish species of genus *Garra* (Teleostei: Cyprinidae) from Nagaland, India

– Sophiya Ezung, Bungdon Shangningam & Pranay Punj Pankaj, Pp. 18618–18623

##### Occurrence of Tamdil Leaf-litter Frog *Leptobrachella tamdil* (Sengupta et al., 2010) (Amphibia: Megophryidae) from Manipur, India and its phylogenetic position

– Ht. Decemson, Vanlalsiammawii, Lal Biakzuala, Mathipi Vabeiryureilai, Fanai Malsawmdawngliana & H.T. Lalremsanga, Pp. 18624–18630

##### Further additions to the Odonata (Insecta) fauna of Asansol-Durgapur Industrial Area, Paschim Bardhaman, India

– Amar Kumar Nayak & Subhajit Roy, Pp. 18631–18641

##### A note on the ecology and distribution of Little Bloodtail *Lyriothemis acigastra* Brauer, 1868 (Insecta: Odonata: Libellulidae) in Kerala, India

– Jeevan Jose, Muhamed Sherif & A. Vivek Chandran, Pp. 18642–18646

#### Viewpoint

##### A unique archetype of conservation in Himachal Pradesh, western Himalaya, India

– Rupali Sharma, Monika Sharma, Manisha Mathela, Himanshu Bargali & Amit Kumar, Pp. 18647–18650

#### Notes

##### A camera trap record of Asiatic Golden Cat *Catopuma temminckii* (Vigors & Horsfield, 1827) (Mammalia: Carnivora: Felidae) in State Land Forest, Merapoh, Pahang, Malaysia

– Muhamad Hamirul Shah Ab Razak, Kamarul Hambali, Aainaa Amir, Norashikin Fauzi, Nor Hizami Hassin, Muhamad Azahar Abas, Muhammad Firdaus Abdul Karim, Ai Yin Sow, Lukman Ismail, Nur Azmin Huda Mahamad Shubli, Nurul Izzati Adanan, Ainur Izzati Bakar, Nabihah Mohamad, Nur Izyan Fathiah Saimhe, Muhammad Syafiq Mohamad Nor, Muhammad Izzat Hakimi Mat Nafi & Syafiq Sulaiman, Pp. 18651–18654

##### Reappearance of Dhole *Cuon alpinus* (Mammalia: Carnivora: Canidae) in Gujarat after 70 years

– A.A. Kazi, D.N. Rabari, M.I. Dahya & S. Lyngdoh, Pp. 18655–18659

##### Mating behavior of Eastern Spotted Skunk *Spilogale putorius* Linnaeus, 1758 (Mammalia: Carnivora: Mephitidae) revealed by camera trap in Texas, USA

– Alexandra C. Avrin, Charles E. Pekins & Maximillian L. Allen, Pp. 18660–18662

##### Record of Indian Roofed Turtle *Pangshura tecta* (Reptilia: Testudines: Geoemydidae) from Koshi Tappu Wildlife Reserve, Nepal

– Ashmita Shrestha, Ramesh Prasad Sapkota & Kumar Paudel, Pp. 18663–18666

##### Additional distribution records of *Zimiris doriae* Simon, 1882 (Araneae: Gnaphosidae) from India

– Dhruv A. Prajapati, Pp. 18667–18670

##### Notes on new distribution records of *Euspa motokii* Koivaya, 2002 (Lepidoptera: Lycaenidae: Theclinae) from Bhutan

– Jigme Wangchuk, Dhan Bahadur Subba & Karma Wangdi, Pp. 18671–18674

##### New distribution records of two little known plant species, *Hedychium longipedunculatum* A.R.K. Sastry & D.M. Verma (Zingiberaceae) and *Mazus dentatus* Wall. ex Benth. (Scrophulariaceae), from Meghalaya, India

– M. Murugesan, Pp. 18675–18678

Member



Publisher & Host

