

Building evidence for conservation globally

Journal of Threatened TAXA

10.11609/jott.2025.17.3.26571-26762

www.threatenedtaxa.org

26 March 2025 (Online & Print)

17(3): 26571-26762

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, Saravanampatti, Coimbatore, Tamil Nadu 641035, India
Registered Office: 3A2 Varadarajulu Nagar, FCI Road, Ganapathy, Coimbatore, Tamil Nadu 641006, India

Ph: +91 9385339863 | www.threatenedtaxa.org

Email: sanjay@threatenedtaxa.org

EDITORS

Founder & Chief Editor

Dr. Sanjay Molur

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

Assistant Editor

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

Managing Editor

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

Associate Editors

Dr. Mandar Paingankar, Government Science College Gadchiroli, Maharashtra 442605, India**Dr. Ulrike Streicher**, Wildlife Veterinarian, Eugene, Oregon, USA**Ms. Priyanka Iyer**, ZOO/WILD, Coimbatore, Tamil Nadu 641006, India

Board of Editors

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, Mavinhalla PO, Nilgiris, Tamil Nadu 643223, India

Dr. John Fellowes

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

Prof. Dr. Mirco Solé

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

Dr. Rajeev Raghavan

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

English Editors

Mrs. Mira Bhojwani, Pune, India**Dr. Fred Pluthero**, Toronto, Canada

Copy Editors

Ms. Usha Madgunki, Zooreach, Coimbatore, India**Ms. Trisa Bhattacharjee**, Zooreach. Coimbatore, India**Ms. Paloma Noronha**, Daman & Diu, India

Web Development

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

Typesetting

Mrs. Radhika, Zooreach, Coimbatore, India**Mrs. Geetha**, Zooreach, 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, Kuvenpu 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. Vijayasankar 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. Manda Datar, Agharkar Research Institute, Pune, Maharashtra, India

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

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

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

Dr. P. Lakshminarasiham, 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. Siru, Central University of Kerala, Kasaragod, Kerala, India

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

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

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

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

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

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

Dr. Kannan C.S. 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, Llandudno, North Wales, LL30 1UP

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

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

For Focus, Scope, Aims, and Policies, visit https://threatenedtaxa.org/index.php/JoTT/aims_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: A bag worm with its beautiful heap of junk. Acrylics on 300 GSM paper by Dupati Poojitha based on a picture by Sanjay Molur.



Nest predation by *Vespa tropica* (Linnaeus, 1758): observational insights into polistine wasp defense and hornet feeding behavior

Shantam Ojha¹  & Vartika Negi² 

¹ Wildlife Institute of India, Chandrabani, Dehradun, Uttarakhand 248001, India.

² Department of Himalayan Aquatic Biodiversity, Hemvati Nandan Bahuguna Garhwal University, Srinagar, Uttarakhand 246174, India.

¹shantamojha83192@gmail.com (corresponding author), ²vartikanegi001@gmail.com

Abstract: *Vespa tropica* (Linnaeus, 1758) is a known predator of polistine wasps, actively hunting them to provision its larvae. This study reports two separate instances of *Vespa tropica* Greater Banded Hornet predation on the nests of two polistine wasp species, the Arabian Paper Wasp *Polistes (Gyrostoma) wattii* Cameron, 1900 and *Ropalidia brevita* Das & Gupta, 1989, in Uttarakhand, India. While the predatory behavior of *Vespa tropica* on different species of *Polistes* and *Ropalidia* has been well-documented in previous studies, this is the first photographic record of nest predation attempts on *Polistes wattii* and *Ropalidia brevita*. Additionally, the study documents the first known successful defensive counterattack by a prey species *Polistes wattii*, providing novel insight into the defensive capabilities of prey species against hornet predation.

Keywords: Brood raiding, cocoon, exoskeleton, Greater Banded Hornet, *Polistes*, paper wasp, predator-prey dynamics, prepupae, *Ropalidia*.

Vespa tropica (Linnaeus, 1758) (Hymenoptera: Vespidae), known as the Greater Banded Hornet, is widespread across southeastern Asia (Archer 1991; Carpenter & Kojima 1997). Historically, this species was confused with *Vespa affinis* Linnaeus 1764, both of which were initially recorded under *Vespa cincta* Fabricius 1775. Bequaert (1936) clarified their distinction, recognizing eight different color forms. More recently, *Vespa tropica* has been categorized into three species, collectively forming the *Vespa tropica* superspecies

group (Archer 1991). The Indian subcontinent houses the subspecies *Vespa tropica haematodes*, which is the subject of this study.

Matsuura & Yamane (1984) conducted extensive research on vespine wasps, primarily focusing on temperate subspecies from Japan. Due to its broad geographic distribution, *Vespa tropica* exhibits notable morphological and behavioral differences between its tropical and temperate subspecies (Matsuura & Yamane 1984). While the ecology of *V. tropica* has been studied by many people, significant knowledge gaps persist regarding its populations in the Indian subcontinent.

Vespine wasps are highly predatory, consuming two primary food sources: carbohydrates (tree sap, nectar) and solid protein-based food (flesh pellets), which are exclusively fed to larvae (Matsuura & Yamane 1984). Among the vespine species, *Vespa tropica* is notably specialized, preying mainly on the larvae and pupae of polistine social wasps (Matsuura & Yamane 1984). Documented prey includes *Ropalidia* spp. Including *Ropalidia fasciata* (Fabricius, 1804); *Parischnogaster mellyi* (de Saussure, 1852); *Stenogaster* spp.; *Polistes stigma* (Fabricius, 1793); *Polistes snelleni* (de Saussure, 1862); *Polistes japonicus* de Saussure, 1858; *Polistes mandarinus* de Saussure, 1853; *Polistes jadwigae*

Editor: P. Girish Kumar, Zoological Survey of India, Kozhikode, India.

Date of publication: 26 March 2025 (online & print)

Citation: Ojha, S. & V. Negi (2025). Nest predation by *Vespa tropica* (Linnaeus, 1758): observational insights into polistine wasp defense and hornet feeding behavior. *Journal of Threatened Taxa* 17(3): 26731-26736. <https://doi.org/10.11609/jott.9457.17.3.26731-26736>

Copyright: © Ojha & Negi 2025. 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: Self-funded.

Competing interests: The authors declare no competing interests.

Acknowledgements: The authors are thankful to HNB Garhwal University, as the site of observation and appreciate the opportunity to study wasp nest in its natural setting without any disturbance.



Dalla Torre, 1904; *Polistes rothneyi* Cameron, 1900; *Polistes chinensis* (Fabricius, 1793); *Polistes hebraeus* Fabricius, 1787 (syn. *Polistes (Gyrostoma) olivaceus* De Geer, 1773); *Polistes jokohamae* Radoszkowski, 1887; *Parapolybia varia* (Fabricius, 1787); and *Parapolybia indica* de Saussure, 1854. There are also instances of *Vespa tropica* preying on the pupae of other *Vespa* species, such as *Vespa simillima* Smith, 1868 (van der Vecht 1957; Matsuura & Yamane 1984; Chakravorty et al. 2023). On one occasion, this species was observed attempting to break open the mud chambers of a mud dauber wasp *Sceliphron javanum* Lepeletier, 1845 (van der Vecht 1957). Though specialized in wasp predation, *V. tropica* also preys on other insects like Skipper Butterflies (Hesperiidae), pyralid and arctiid moths, and caterpillars of *Tarsolepis sommeri* (Hübner, 1821) (van der Vecht 1957; Matsuura & Yamane 1984). Given the predatory nature of *Vespa* species on bees (Singh 1962) *Vespa tropica* is likely to prey on various bee species in regions where their habitats overlap. While some reports suggest its predation on bees, well-documented scientific studies on this interaction remain limited. Additionally, *V. tropica* feeds on tree sap, fruits, sugary substances, and carrion (van der Vecht 1957). Little is known about the foraging behavior of the Indian subspecies *V. tropica haematodes*, though it has been recorded attacking skipper butterflies, as well as *Polistes hebraeus*, *P. stigma*, and *P. olivaceus* nests in India

(Bequaert 1936; van der Vecht 1957; Chakravorty et al. 2023).

RESULTS AND DISCUSSION

A combative interaction between a solitary *Vespa tropica* and a *Polistes wattii* was observed on 21 September 2024, around 1030 h. *Polistes wattii* species was identified based on its all yellow body with no black even on the medial part of dorsal sulcus of clypeus as described by Tan et al. (2014) (Supplementary image 1). The hornet, known for its predatory behavior on *Polistes* species, was seen engaging in an intense encounter with the wasp, eventually emerging victorious (Image 1, [Video 1](#)). This occurred under an active *P. wattii* nest on the Hemvati Nandan Bahuguna Garhwal Central University, Chauras campus in Uttarakhand (30.228°N, 78.804°E). Based on observations over the next two days, it was inferred that while the hornet managed to subdue multiple adult wasps and larvae, the paper wasps eventually succeeded in neutralizing the hornet by day two.

The interaction between *V. tropica* and *P. wattii* lasted around 10 min, after which the hornet started consuming the thoracic region of the wasp, chewing it into softer pellet (Image 3). Interestingly, unlike prior reports (van der Vecht 1957), the hornet did not sever the wings or transport the wasp, indicating that the hornet was not primarily targeting adults for consumption but



Image 1. Violent interaction of *Vespa tropica* and *Polistes wattii*: A—the *Vespa tropica* can be seen engaging in a physical confrontation with *Polistes wattii*, using its robust mandibles and forelegs to secure the wasp while simultaneously seeking a vulnerable area for stinging | B—despite being overpowered, the *Polistes wattii* maintains a firm grip on one of the hornet's front appendages and attempts to deliver a sting in defense | C—the hornet successfully subdues the wasp, delivering a sting between the sternites, and proceeds to consume the thoracic region by chewing through it. © Vartika Negi.

was rather involved only in the counterattack by the wasp. Additional evidence of resistance was supported by the discovery of four other dead *P. wattii* wasps near the nest. This suggests some level of defensive action on behalf of the wasps during the raid.

The observation revealed that the hornet revisited the nest multiple times over two days, twice on day one and thrice on the second day, seizing larvae every time with minimal resistance from the adult wasps. On the first day, after its initial successful attack, the hornet

returned at approximately 1240 h. The wasps displayed panic but did not resist; they vacated the nest (Image 2), allowing the hornet to feed without hindrance, which is consistent with the behavior described by Matsuura & Yamane (1984). The next day we saw the hornet return at 1110 h with the same intent and with the same results repeating its charge two more times taking home five pupae or larvae during the observation period (Image 2). On the third day, the hornet was found dead near the nest, with no visible bite marks. It is hypothesize that

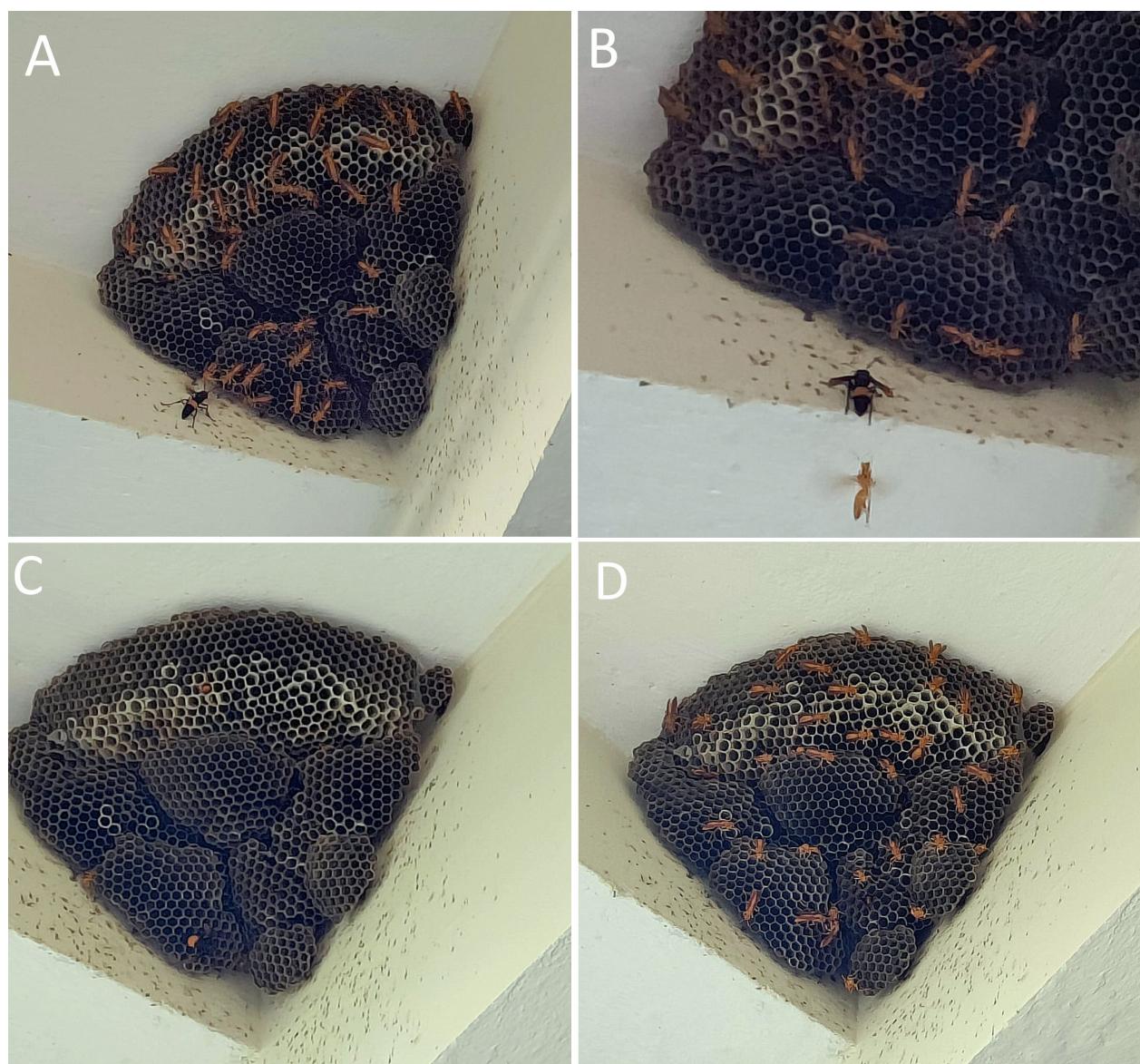


Image 2. Nest predation by *Vespa tropica* on a huge nest of *Polistes wattii*: A—the hornet approaches the large *Polistes wattii* nest cautiously, causing the adult wasps to become highly alert to the impending threat | B—during a subsequent visit, the hornet causes renewed agitation among the adult wasps, which exhibit defensive behavior but do not engage directly | C—the wasps vacate the nest as soon as the hornet starts ripping through the pupae, upon the hornet initiating its attack, tearing open pupal chambers, the adult wasps vacate the nest in an apparent escape response | D—once the hornet has consumed its prey and departs, the wasps gradually return to their nest, resuming normal activities. © Vartika Negi.



Image 3. The dead bodies of both species during the 3-day tussle: A—the deceased body of a *Polistes wattii* wasp that engaged in a fight with the *Vespa tropica* hornet. Note the damage to the thoracic region, which has been partially consumed by the hornet. Also, it was carried away by *Paratrechina longicornis* ants within minutes after its death. B—the remains of the *Vespa tropica* hornet, presumably killed by the *Polistes* wasps during a counterattack. No external bite marks were visible, suggesting death by stinging. © Vartika Negi.



Image 4. Nest predation by *Vespa tropica* on a huge nest of *Ropalidia brevita*: A—the *Ropalidia brevita* nest a week before the hornet attack, showing a healthy, undisturbed colony | B—the large *Vespa tropica* hornet positioned directly over the sealed brood chambers, displaying indifference to the presence of the smaller *Ropalidia* wasps. Notably, the paper wasps remain in close proximity to the hornet without showing any resistance or vacating the nest | C—the hornet using its mandibles and front legs to consume the soft pre-pupa, efficiently breaking down the tissue for ingestion | D—the nest after hornet's departure, note that nest exhibits multiple torn seals on several pupal chambers, clearly illustrating the extent of the damage caused by the predation event. © Vartika Negi.

the hornet may have been fatally stung by a paper wasp, capable of penetrating through its tough exoskeleton, thus successfully defending the colony. Following this event, the nest was repopulated by the paper wasp individuals, and no further hornet incursions were observed for the day.

In another event on 8 October 2023, a *Vespa tropica* was observed raiding the nest of a *Ropalidia*

brevita, identified by its proportionally wider first metasomal tergum as described by Kojima et al. (2007) in Chandrabani area of Dehradun, Uttarakhand India (30.278° N, 77.971° E) (Image 4, [Video 2](#)). The *Ropalidia* wasps offered no significant resistance, allowing the hornet to repeatedly raid their brood and successfully consume larvae over several visits. As described by Matsuura & Yamane (1984), the hornet appears to

assess the developmental stage of the pupae inside the cocoons using its antennae it was also observed that the hornets preferred the prepupae more than the already developed ones, it was tearing open the cocoon covers to extract the prepupae chewing it into a liquid form, and leaving behind a hollow husk, which fell beneath the nest. Throughout this process, the hornet remained suspended by its two pairs of hind legs, while using its forelegs and mandibles to extract the pupae. Similarly, the hornet made several raids to the nest uninterrupted and consumed the entire young lot until the whole nest was empty in a few days. This predation event ultimately led to the abandonment of the nest by the remaining paper wasps.

CONCLUSION

Vespa tropica predation on polistine species, particularly targeting pre-pupae, larvae, and pupae, is well-documented. While studies by Matsuura & Yamane (1984) suggests that *V. tropica* typically avoids adult wasps, the study observed the hornet engaging in combat with adult *Polistes wattii*, this inclines well with the observations mentioned by Van der Vecht (1957), in this case the hornet didn't fly away with the wasp and instead both fell from the nest during combat, which offered notable resistance and eventually killed the hornet—an unprecedented event. In contrast, *Ropalidia* wasps showed minimal defense.

These interactions add new prey records for *V. tropica* as predation on *P. wattii* and *R. brevita* is not mentioned in prior studies. Moreover, the observation of *V. tropica* feeding on an adult *P. wattii* is an unprecedented addition to the species' known predatory behavior. Although this behavior might have resulted as a response to the counterattack rather

than an intentional predation on adult wasps, it adds a new dimension to the understanding of this hornet's diet. Furthermore, the successful counterattack by *P. wattii* represents a significant and novel observation, indicating that prey species may possess more advanced defensive strategies than previously recognized. This underscores the need for a more detailed study of *Vespa tropica*-*Polistes* interactions, particularly in the Indian subcontinent, where ecological variations may influence predator-prey dynamics.

REFERENCES

Archer, M.E. (1991). Taxonomy and bionomics of the *Vespa tropica* group (Hym., Vespinae). *Entomologist's Monthly Magazine* 127: 225–232.

Bequaert, J. (1936). The common Oriental hornets, *Vespa tropica* and *Vespa affinis*, and their color forms. *Treubia* 15(4): 329–351. <https://doi.org/10.14203/treubia.v15i4.2481>

Carpenter, J.M. & J.I. Kojima (1997). Checklist of the species in the subfamily Vespinae (Insecta: Hymenoptera: Vespidae). *Natural History Bulletin of Ibaraki University* 1: 51–92.

Chakraborty, A., B. Bhattacharjee, A. Samadder & M. Biswas (2023). Predation of *Vespa tropica* (Linn.) on *Polistes (Gyrostoma) olivaceus* (De Geer): a short behavioural study and photo-documentation from West Bengal, India. National Conference on Recent Advances in Biological Research and Environmental Sustainability. University of Kalyani, 104–109 pp.

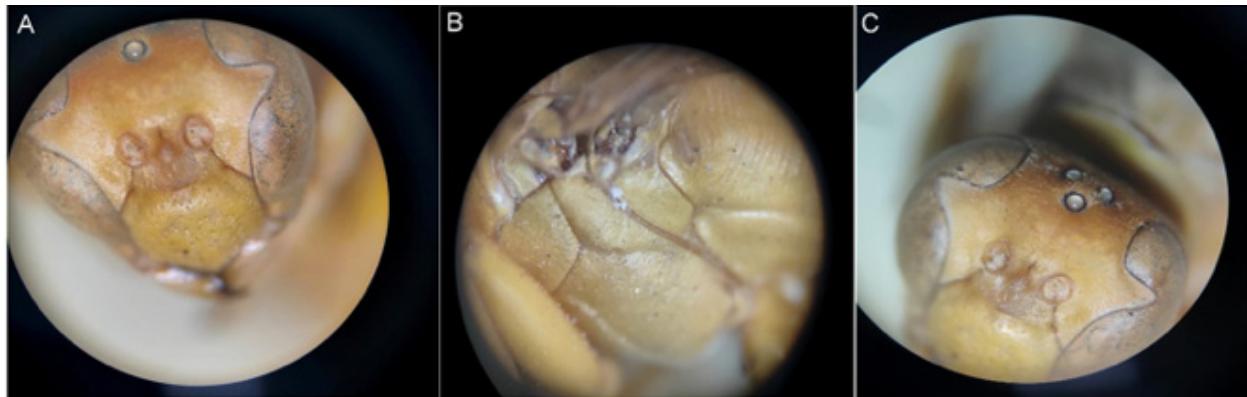
Kojima, J.I., K. Lambert, L.T. Nguyen & F. Saito (2007). Taxonomic notes on the paper wasps of the genus *Ropalidia* in the Indian subcontinent (Hymenoptera: Vespidae). *Entomological Science* 10(4): 373–393. <https://doi.org/10.1111/j.1479-8298.2007.00237.x>

Matsuura, M. & S. Yamane (1984). *Biology of the Vespine Wasps*. Springer, New York, 323 pp.

Singh, S. (1962). *Beekeeping in India*. ICAR, New Delhi, 164–166 pp.

Tan, J.L., K.V. Achterberg, M.J. Duan, & X.X. Chen (2014). An illustrated key to the species of subgenus *Gyrostoma* Kirby, 1828 (Hymenoptera, Vespidae, Polistinae) from China, with discovery of *Polistes (Gyrostoma) tenuispunctia* Kim, 2001. *Zootaxa* 3785(3): 377–399. <https://doi.org/10.11646/zootaxa.3785.3.3>

van der Vecht, J. (1957). The Vespinae of the Indo-Malayan and Papuan areas (Hymenoptera, Vespidae). *Zoologische Verhandelingen* 34(1): 1–82.



Supplementary Image S1. *Polistes wattii* Cameron, 1900: A–C—No black pattern in the dorsal sulcus of the clypeus | B—The mesopleuron weakly and sparsely punctate medially with no black pattern. © Vartika Negi.



Video 1. Violent interaction between *Vespa tropica* and *Polistes wattii*. © Vartika Negi.



Video 2. Nest predation by *Vespa tropica* on a huge nest of *Ropalidia brevita* © Vartika Negi.



Mr. Jatishwor Singh Irungbam, Biology Centre CAS, Branišovská, Czech Republic.
Dr. Ian J. Kitching, Natural History Museum, Cromwell Road, UK
Dr. George Mathew, Kerala Forest Research Institute, Peechi, India
Dr. John Noyes, Natural History Museum, London, UK
Dr. Albert G. Orr, Griffith University, Nathan, Australia
Dr. Sameer Padhye, Katholieke Universiteit Leuven, Belgium
Dr. Nancy van der Poorten, Toronto, Canada
Dr. 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 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. Lional 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. 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 KV, 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. Raja 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
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

Articles

***Dasymaschalon leilamericanum* (Annonaceae), a new species with evidence of non-monophyly from Mount Lantoy Key Biodiversity Area, Philippines**

– Raamah Rosales, Edgardo Lillo, Archiebald Baltazar Malaki, Steve Michael Alcazar, Bernardo Redoblado, John Lou Diaz, Inocencio Buot Jr., Richard Parilla & Jessica Rey, Pp. 26571–26586

Association analysis of *Castanopsis tungurut* and the neighboring vegetation community in Cibodas Biosphere Reserve, Indonesia

– Dian Ridwan Nurdiana & Inocencio E. Buot, Jr., Pp. 26587–26598

Riparian flora of Haveri District, Karnataka, India

– Ningaraj S. Makanur & K. Kotresha, Pp. 26599–26615

Conservation strategies for *Vatica lanceifolia* (Roxb.) Blume: habitat distribution modelling and reintroduction in northeastern India

– Puranjoy Mipun, Amritee Bora, Piyush Kumar Mishra, Baby Doley & Rinku Moni Kalita, Pp. 26616–26626

Patterns and economic impact of livestock predation by large carnivores in protected areas of southern Kashmir, India

– Lubna Rashid & Bilal A. Bhat, Pp. 26627–26635

People perception on use patterns and conservation of Chinese Pangolin

in and around Yangouopkpi Lokchao Wildlife Sanctuary, Manipur, India

– Yengkham Roamer Zest, Awadhesh Kumar, Om Prakash Tripathi, Rakesh Basnett & Dipika Parbo, Pp. 26636–26647

Communications

Population status, threats, and conservation of *Trachycarpus takil*: an endemic and threatened plant species in western Himalaya, India

– Himani Tiwari, Dhani Arya & K. Chandra Sekar, Pp. 26648–26654

A checklist of fishes of Haiderpur wetland, western Uttar Pradesh, India

– Rahul Rana, Jeyaraj Antony Johnson & Syed Ainul Hussain, Pp. 26655–26668

An avifaunal checklist of the Zanskar Region, Ladakh Himalaya, India

– Abid Hussain, Zakir Hussain & Mumtaz Ali, Pp. 26669–26679

Breeding tern colonies on the sandbars of Adam's Bridge, India: new records and significance

– H. Byju, H. Maitreyi, N. Raveendran, D.A. Marshal & S. Ravichandran, Pp. 26680–26689

Assessment of nest and nesting activities of White-bellied Heron *Ardea insignis* Hume, 1878 (Aves: Ardeidae) in the broad-leaved forests of northeastern India

– Himadri Sekhar Mondal & Gopinathan Maheswaran, Pp. 26690–26696

Preliminary checklist of avifauna from All India Institute of Medical Sciences, Guwahati, Assam, India

– Nitul Ali, Vivek Chetry, Prem Kishan Singha & Maina Boro, Pp. 26697–26703

Implementation strategy and performance analysis of a novel ground vibration-based elephant deterrent system

– Sanjoy Deb, Ramkumar Ravindran & Saravana Kumar Radhakrishnan, Pp. 26704–26714

Short Communications

***Blackwellomyces pseudomilitaris* (Hywel-Jones & Sivichai) Spatafora & Luangsa-ard, 2017 (Sordariomycetes: Hypocreales: Cordycipitaceae): first report from Western Ghats of India**

– Anjali Rajendra Patil, Snehal Sudhir Biranje, Mahesh Yashwant Borde & Yogesh Sadashiv Patil, Pp. 26715–26720

Calvatia craniiformis (Schwein.) Fr. ex De Toni (Agaricomycetes: Lycoperdaceae): a new puffball mushroom record from eastern India
– Asit Mahato, Pritish Mitra, Sabyasachi Chatterjee & Subrata Raha, Pp. 26721–26726

Rediscovery of the gypsy moth *Lymantria kanara* Collenette, 1951 (Insecta: Lepidoptera: Erebidae) from Kerala, India, after 73 years and its taxonomic redescription
– P.K. Adarsh & Abhilash Peter, Pp. 26727–26730

Nest predation by *Vespa tropica* (Linnaeus, 1758): observational insights into polistine wasp defense and hornet feeding behavior
– Shantan Ojha & Vartika Negi, Pp. 26731–26736

The discovery of a male Malay Crestless Fireback *Lophura erythrophthalma* (Raffles, 1822) (Aves: Galliformes: Phasianidae) at Ulu Sat Forest Reserve, Machang, Kelantan, Peninsular Malaysia
– Ainun Hidayah Wahad, Wan Hafizin Idzni Wan Mohammad Hizam, Muhammad Hamirul Shah Ab Razak, Aainaa Amir, Kamarul Hambali, Hazizi Husain, Mohd Saupi Abdullah, Ehwan Ngadi, Mohamad Arif Iskandar Abdul Wahab & Asrulsani Jambari, Pp. 26737–26740

Notes

New distribution record of *Korthalsia rogersii* Becc, a threatened endemic climbing palm of Andaman archipelago

– Paremmal Sarath, Azhar Ali Ashraf, V.B. Sreekumar, Modhumita Ghosh Dasgupta & Suma Arun Dev, Pp. 26741–26743

Clarifying the nomenclature of Roxburgh's pivotal name *Holigarna racemosa* Roxb. (Anacardiaceae)

– Shruti Kasana, Pp. 26744–26746

First confirmed breeding of Brown Noddy *Anous stolidus* in southeastern India: a new record from Adam's Bridge

– H. Byju, H. Maitreyi, N. Raveendran & D.A. Marshal, Pp. 26747–26749

First record of Painted Stork *Mycteria leucocephala* in Indonesia

– Hasri Abdillah, Iwan Febrianto, Cipto Dwi Handono, Fajar Shiddiq, Febryansah Abdillah Harahap & Muhammad Iqbal, Pp. 26750–26752

New sighting and conservation implications of the endemic Sulu Boobook *Ninox reyi* Oustalet, 1880 at Bolobok Rock Shelter, a key archaeological site in the Sulu Archipelago, southern Philippines

– Fauriza J. Saddari, Yennyrriza T. Abduraup, Adzmer A. Juaini, Roger A. Irlis, Khalid D. Adam, Mary Joyce Z. Guinto-Sali & Richard N. Muallil, Pp. 26753–26756

The occurrence of Glossy Ibis *Plegadis falcinellus* Linnaeus, 1766 (Pelecaniformes: Threskiornithidae) in southern Sumatra, Indonesia

– Muhammad Iqbal, Arum Setiawan, Putri Balqis, Exaudi Beatrice Simanullang, Pormansyah, Selamat Robinsa, Winda Indriati & Indra Yustian, Pp. 26757–26760

Book Review

A whisper of silken wings

– Aparna Sureshchandra Kalawate & Pooja Kumar Misal, Pp. 26761–26762

Publisher & Host



Threatened Taxa