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## NOTE

FIRST RECORD OF THE AFGHAN POPLAR HAWKMOTH LAOTHOE WITTI EITSCHBERGER ET AL., 1998 (SPHINGIDAE: SMERINTHINAE) FROM INDIA: A NOTABLE RANGE EXTENSION FOR THE GENUS

Muzafar Riyaz, Pratheesh Mathew, Taslima Shiekh, S. Ignacimuthu & K. Sivasankaran

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# First record of the Afghan Poplar Hawkmoth *Laothoe witti*Eitschberger et al., 1998 (Sphingidae: Smerinthinae) from India: a notable range extension for the genus

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Sphingidae moths can recognizably be identified with their robust streamlined body, rapid flight movement and narrow but powerful wings that are reminder of hawks, giving them the name 'hawk moths' (Messenger 1997). Family Sphingidae Latreille, 1802 comprises 1,602 species under 205 genera (Kitching et al. 2018). About 204 species are reported from India (Hampson 1892; Bell & Scott 1937; Roonwal et al. 1963; D' Abrera, 1986; van Nieukerken 2011; Avtar 2017; Geetha 2019; Pratheesh 2019). The genus Laothoe Fabricius, 1807 comprises five species distributed across the Palearctic region belonging to the tribe Smerinthini Grote & Robinson, 1865, under the subfamily Smerinthinae Grote & Robinson, 1865 (Zolotuhin 2018). The genus is characterized by its broad hindwing with strongly round anal angle; absence of frenulum and retinaculum in male and reduced in female; atrophied proboscis and spiny abdominal tergites (Fabricius 1807). The species Laothoe philerema witti Eitschberger, Danner & Surholt,

1998 was first described as a sub-species to *L. philerema* (Djakonov, 1923) with a single male holotype from Paghman, 30km north-west of Kabul, Afghanistan at an altitude of 2,100m. The species was recently re-instated based on DNA barcode divergence from *L. philerema* (Djakonov, 1923) confirming their species status as *Laothoe witti* Eitschberger, Danner & Surholt, 1998 raising it from the status of subspecies (Zolotuhin 2018). The wing span of this species ranges 120–140mm and is morphologically much similar to the smaller species *Laothoe philerema* (Djakonov, 1923), and paler species *Laothoe populi populi* (Linnaeus, 1758), the latter with distinctive prominent rust-red hindwing patch (Danner 1998).

The single adult specimen *Laothoe wiiti* (Image 2) was photographed and collected on 6 July 2020 in Tehsil Herman, district Shopian of Kashmir Division (Jammu & Kashmir), India, at an altitude of 1,596m (coordinates were 33.705°N, 74.940°E) (Image 2). The specimen was

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 $\label{lem:competing} \textbf{Competing interests:} \ \ \textbf{The authors declare no competing interests.}$ 



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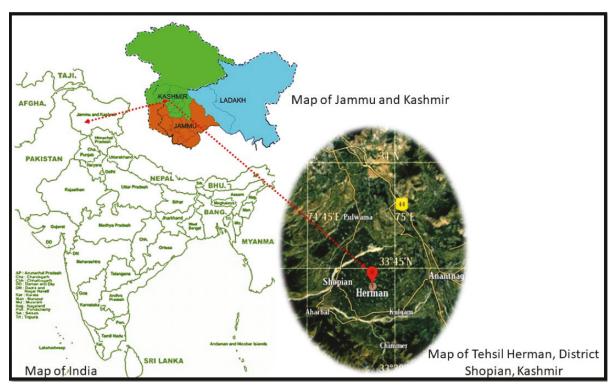


Image 1. Map of Shopian District showing location of collection site. (Source: Google maps).



© Muzafar Riyaz Image 2. Specimen collected from Tehsil Herman, District Shopian of Kashmir.

collected by the first author while studying the diversity of insect fauna of Kashmir Valley, India and further taxonomic studies were conducted along with the other authors. Major tree species around the site were Populus deltoides, Juglans regia, Robinia pseudoacacia, Ulmus sp., Salix sp., and Malus sp. Temperature was recorded as 25°C. The habitat mostly consists of agricultural lands with an annual precipitation of





Image 3. Stretched specimen showing wingspan. Mounted and stretched by Muzafar Riyaz

660mm and 13ºC average temperature (Wachkoo et al. 2018). The collected specimen is deposited in the museum of Division of Taxonomy and Biodiversity at the Entomology Research Institute, Loyola College Chennai, India with specimen voucher number ERIB-KMR-267. The wingspan of the individual was 12cm (Image 3). The identification of the specimen was done from the http://tpittaway.tripod.com/sphinx/list.htm website and http://sphingidae.myspecies.info/ by consultation with Dr. Ian Kitching. Notable range extension of the species within India was confirmed after checking the appropriate literature: Cotes & Swinhoe (1887), Bell & Scott (1937), Kitching & Cadiou (2000), Pittaway & Kitching (2000, 2018), Pittaway (2020), and Dar et al. (2020). This species was described and so far known only from eastern Afghanistan (Elberet 1969; Daniel 1971; http://tpittaway.tripod.com/sphinx/list.htm.)

The species shares similar morphology with *Laothoe philerema* (Djakonov, 1923) and can be distinguished by the following diagnostic features: forewing basal area paler; dark distinct antemedial band; pale medial band; waved post medial line with a dark spot at the middle; outer margin waved with prominent dark area between middle of outer margin towards apex; and paler hindwing with indistinct medial line darker towards costa; submarginal region greyish with dark patch near anal angle; outer margin with cilia whitish.

The genus *Laothoe* was recently reported with two species with two subspecies each namely *L. amurensis amurensis* (Staudinger, 1892), *L. amurensis sinica* (Rothschild & Jordan, 1903), *L. populi populeti* (Bienert, 1870), and *L. populi populi* (Linnaeus, 1758) were reported and described from China, North, and South Korea (Pittaway & Kitching 2000). The genus was reported in Europe recently with two species *L.* 

amurensis (Staudinger, 1892) and *L. populi* (Linnaeus, 1758) from Lithuania (Dapkus 2010). The presence of the genus was again reported with the species *L. populeti* Bienert, 1870 from Georgia (Didmanidze 2013). Two species of this genus, namely, *L. populi populeti* (Bienert, 1870) and *L. philerema* (Djakonov, 1923) were enlisted among the list of possible future addition to the Sphingidae fauna of Pakistan based on its presence in neighboring countries (Rafi et al. 2014). *Laothoe populi populeti* (Bienert, 1870) was again later reported from Iran and Turkey (Gahari & Naveen 2017; Seven & Cakir 2019).

Based on the previous observations with similar habitats the authors propose a tentative area of occurrence for this species to the entire area of Kashmir and northern parts of Jammu division of the state of Jammu & Kashmir in India. The authors expect the possibility of the species to occur in northern parts of Pakistan, the areas that connects the present location with the type locality - Kabul, Afghanistan. The IUCN Red List assessment of this species at the GeoCAT website based on the present identification, type locality and two other possible locations showed the species to be Vulnerable (VU) with extent of occurrence of 16,264.596km<sup>2</sup>. This record is significant and important as it constitutes the first proven evidence of the occurrence of Laothoe witti Eitschberger, Danner & Surholt, 1998 in the Indian subcontinent making it a notable range extension for the genus Laothoe into the political boundary of India.

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#### Communications

Persistence of *Trachypithecus geei* (Mammalia: Primates: Cercopithecidae) in a rubber plantation in Assam, India

– Joydeep Shil, Jihosuo Biswas, Sudipta Nag & Honnavalli N. Kumara, Pp. 18679–18686

Population assessment of the endangered Western Hoolock Gibbon Hoolock hoolock Harlan, 1834 at Sheikh Jamal Inani National Park, Bangladesh, and conservation significance of this site for threatened wildlife species

– M. Tarik Kabir, M. Farid Ahsan, Susan M. Cheyne, Shahrul Anuar Mohd Sah, Susan Lappan, Thad Q. Bartlett & Nadine Ruppert, Pp. 18687–18694

Assessment of changes over a decade in the patterns of livestock depredation by the Himalayan Brown Bear in Ladakh, India

- Aishwarva Maheshwari, A. Arun Kumar & Sambandam Sathyakumar, Pp. 18695-18702

Habitat selection of Himalayan Musk Deer *Moschus leucogaster* (Mammalia: Artiodactyla: Moschidae) with respect to biophysical attributes in Annapurna Conservation Area of Nepal – Bijaya Neupane, Nar Bahadur Chhetri & Bijaya Dhami, Pp. 18703–18712

Sero-diagnosis of tuberculosis in elephants in Maharashtra, India

– Utkarsh Rajhans, Gayatri Wankhede, Balaji Ambore , Sandeep Chaudhari, Navnath Nighot, Vitthal Dhaygude & Chhaya Sonekar, Pp. 18713–18718

Avian species richness in traditional rice ecosystems: a case study from upper Myanmar – Steven G. Platt, Myo Min Win, Naing Lin, Swann Htet Naing Aung, Ashish John & Thomas R. Rainwater, Pp. 18719–18737

Conservation status, feeding guilds, and diversity of birds in Daroji Sloth Bear Sanctuary, Karnataka. India

– M.N. Harisha, K.S. Abdul Samad & B.B. Hosetti, Pp. 18738–18751

Birds of Surat-Dangs: a consolidated checklist of 75 years (1944–2020) with special emphasis on noteworthy bird records and bird hotspots from northern Western Ghats of Gujarat, India

– Nikunj Jambu & Kaushal G. Patel, Pp. 18752–18780

Identification of a unique barb from the dorsal body contour feathers of the Indian Pitta *Pitta brachyura* (Aves: Passeriformes: Pittidae)

 Prateek Dey, Swapna Devi Ray, Sanjeev Kumar Sharma , Padmanabhan Pramod & Ram Pratap Singh, Pp. 18781–18791

Underestimated diversity of *Cnemaspis* Strauch, 1887 (Sauria: Gekkonidae) on karst landscapes in Sarawak, East Malaysia, Borneo

– Izneil Nashriq & Indraneil Das, Pp. 18792–18799

Aborichthys barapensis, a new species of river loach (Cypriniformes: Nemacheilidae) from Arunachal Pradesh, the eastern Himalaya, India

– P. Nanda & L. Tamang, Pp. 18800–18808

A study on the community structure of damselflies (Insecta: Odonata: Zygoptera) in Paschim Medinipur, West Bengal, India

– Pathik Kumar Jana, Priyanka Halder Mallick & Tanmay Bhattacharya, Pp. 18809–18816

New distribution and range extension records of geometrid moths (Lepidoptera: Geometridae) from two western Himalayan protected areas  $\frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{2} \left( \frac{1}{2} \right) \left($ 

– Pritha Dey & Axel Hausmann, Pp. 18817–18826

Butterfly diversity of Putalibazar Municipality, Syangja District, Gandaki Province, Nepal

– Kismat Neupane & Mahamad Sayab Miya, Pp. 18827–18845

New records and distribution extension of *Nassarius persicus* (Martens, 1874) and *N. tadjallii* Moolenbeek, 2007 (Mollusca: Gastropoda: Nassariidae) to India

– Sayali Nerurkar & Deepak Apte, Pp. 18846–18852

Flowering plants of Agumbe region, central Western Ghats, Karnataka, India

– G.S. Adithya Rao & Y.L. Krishnamurthy, Pp. 18853–18867

Population assessment and habitat distribution modelling of the threatened medicinal plant *Picrorhiza kurroa* Royle ex Benth. in the Kumaun Himalaya, India

– Naveen Chandra, Gajendra Singh, Shashank Lingwal, M.P.S. Bisht & Lalit Mohan Tewari, Pp. 18868–18877

Occurrence of gilled fungi in Puducherry, India

- Vadivelu Kumaresan, Chakravarthy Sariha, Thokur Sreepathy Murali & Gunasekaran Senthilarasu, Pp. 18878–18887

#### **Short Communications**

First photographic evidence and distribution of the Indian Pangolin *Manis crassicaudata* (Mammalia: Pholidota: Manidae) in Sariska Tiger Reserve, Rajasthan, India

– Hemant Singh, Gobind Sagar Bhardwaj, N. Gokulakannan, Saket Agasti & K. Aditya, Pp. 18888–18893

Population and conservation threats to the Greater Flamingos *Phoenicopterus roseus* (Aves: Phoenicopteriformes: Phoenicopteridae) at Basai Wetland and Najafgarh Jheel Bird Sanctuary, Haryana, India

- Amit Kumar & Sarita Rana, Pp. 18894-18898

First report on the occurrence of Sargassum Weed Fish *Histrio histrio* (Lophiliformes: Antennariidae) in Nigeria deep water, Gulf of Guinea

- Abdul-Rahman Dirisu, Hanson S. Uyi & Meshack Uyi, Pp. 18899-18902

A new distribution record of stomatopods *Odontodactylus japonicus* (De Haan, 1844) and *Lysiosquilla tredecimdentata* (Holthuis, 1941) from the Puducherry coastal waters, east coast of India

– S. Nithya Mary, V. Ravitchandirane & B. Gunalan, Pp. 18903–18907

New records of *Agriocnemis keralensis* Peters, 1981 and *Gynacantha khasiaca* MacLachlan, 1896 (Insecta: Odonata) from Maharashtra, India

– Yogesh Koli, Akshay Dalvi & Dattaprasad Sawant, Pp. 18908–18919

A new distribution record of the Horn Coral *Caryophyllia grandis* Gardiner & Waugh, 1938 (Anthozoa: Scleractinia) from the Karnataka Coast, India

– J.S. Yogesh Kumar & C. Raghunathan, Pp. 18920–18924

Re-collection, extended distribution, and amplified description of *Vaccinium paucicrenatum* Sleumer (Ericaceae) from the Arunachal Himalaya in India

- Subhasis Panda, Pp. 18925-18932

## Notes

Photographic record of the Rusty-spotted Cat *Prionailurus rubiginosus* (I. Geoffroy Saint-Hilaire, 1831) (Mammalia: Carnivora: Felidae) in southern Western Ghats, India

– Devika Sanghamithra & P.O. Nameer, Pp. 18933–18935

Natural history notes on the highly threatened Pinto's Chachalaca *Ortalis remota* (Aves: Cracidae) – Carlos Otávio Araujo Gussoni & Marco Aurélio Galvão da Silva, Pp. 18936–18938

Black-bellied Coral Snake Sinomicrurus nigriventer (Wall, 1908) (Elapidae): an extended distribution in the western Himalaya, India

– Sipu Kumar, Jignasu Dolia, Vartika Chaudhary, Amit Kumar & Abhijit Das, Pp. 18939–18942

First record of the Afghan Poplar Hawkmoth *Laothoe witti* Eitschberger et al., 1998 (Sphingidae: Smerinthinae) from India: a notable range extension for the genus

– Muzafar Riyaz, Pratheesh Mathew, Taslima Shiekh, S. Ignacimuthu & K. Sivasankaran, Pp. 18943–18946

The tribe Cnodalonini (Coleoptera: Tenebrionidae: Stenochiinae) from Maharashtra with two new records

– V.D. Hegde & D. Vasanthakumar, Pp. 18947–18948

Do predatory adult odonates estimate their adult prey odonates' body size and dispersal ability to proceed with a successful attack?

– Tharaka Sudesh Priyadarshana, Pp. 18949–18952

Rediscovery of *Ophiorrhiza incarnata* C.E.C. Fisch. (Rubiaceae) from the Western Ghats of India after a lapse of 83 years

– Perumal Murugan, Vellingiri Ravichandran & Chidambaram Murugan, Pp. 18953–18955

## Response

Comments on the "A checklist of mammals with historical records from Darjeeling-Sikkim Himalaya landscape, India"

- P.O. Nameer, Pp. 18956-18958

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