

Research Article

First record of *Polistes (Polistella) dawnae* Dover and Rao (Hymenoptera: Vespidae) from India

SANDESH M. GAWAS¹ and ANKITA GUPTA^{2*}

¹Jain University, CPGS, 18/3, 9th Cross, 3rd Block Jayanagar, Bengaluru, India

²ICAR-National Bureau of Agricultural Insect Resources (NBAIR), P. Bag No 2491, H. A. Farm Post, Bellary Road, Hebbal, Bengaluru, India

*Corresponding author E-mail: drankitagupta7@gmail.com

ABSTRACT: The species *Polistes (Polistella) dawnae* Dover & Rao (Hymenoptera: Vespidae: Polistinae) is recorded for the first time from Arunachal Pradesh, India. This discovery extends the distribution of the species to India, previously known from Dawna Hills (Myanmar), Northeastern Laos and Northern Vietnam.

KEY WORDS: First record, India, *Polistes dawnae*, Vespidae

(Article chronicle: Received: 22.04.2017; Revised: 04.06.2017; Accepted: 15.06.2017)

INTRODUCTION

Polistes is a cosmopolitan genus of social wasp with 3 subgenera (*Gyrostoma* Kirby & Spence, *Polistella* Ashmead and *Polistes* Latreille) endemic to the Old World. *Polistella* is the most speciose subgenus. Mostly, all the species of *Polistes* are predatory on caterpillars in which respect they are generally considered beneficial. *Polistes (Polistella) dawnae* Dover & Rao is restricted in its distribution to the eastern part of Himalayas. The type locality of the species is Dawna Hills in northern Myanmar. Also known from northeastern region of Laos (Gusenleitner 2013), northern Vietnam (provinces of Lai Chau, Dien Bien, Hoa Binh, Bac Kan and Son La) (Nguyen *et al.*, 2011, Nguyen and Kojima, 2014). The present study reports *P. dawnae* from Arunachal Pradesh, India.

Das and Gupta (1989) provided detailed description of the female and Nguyen *et al.*, (2011) provided detailed description of the male along with the nesting biology.

MATERIALS AND METHODS

The specimen examined for the present study was collected from Central Agricultural University Campus, Pasighat, Arunachal Pradesh (India) and deposited with the ICAR- National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru, India. Dover & Rao (1922), Nguyen *et al.* 2011 and Nguyen & Kojima (2014) was consulted for identification. Imaging was done using Leica M 205, a

stereozoom microscope attached with Leica DC 420 inbuilt camera and automontage software (version 3.8).

Polistes dawnae Dover & Rao, 1922

Polistes dawnae Dover & Rao, 1922: 248, ♀, holotype, Dawna Hills (16°50'N, 98°15'E), Burma (Myanmar), Zoological Survey of India, Kolkata.

Brief diagnosis

Female (Fig 1): 12.47 mm in size; general body colour black.

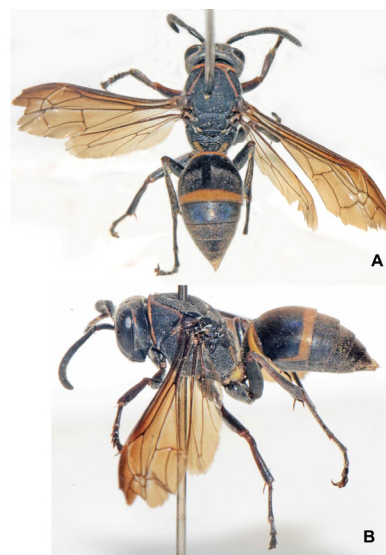


Fig. 1. *Polistes dawnae* A. Dorsal view; B. Lateral view.

Head (Fig. 2A): Antennae black, scape brownish beneath remaining black, flagellum with very fine cinereous pubescence. Head in frontal view as wide as high. Clypeus approximately as broad as long, large heart shaped yellow-orange patch covering most of the area of clypeus, weakly convex in lateral view and touching inner margin of eye, fine pubescence on upper half clypeus and sparse scattered punctures each with a golden bristle on basal half; mandibles with shallow punctures, prominent yellow stripe alongside inner eye margin and short stripe on gena along postero-dorsal margin of eye, interocular distance more on vertex than at clypeus (1.77: 1.56), ocellocular distance slightly more than ocello-occipital distance (0.55: 0.49).

Mesosoma (Fig. 2C): Pronotum reticulate dorsally, forming thin lamella in dorsal part, slightly sinuate on lateral region, reaching ventral corner of pronotum. Yellow stripe along pronotal carina and posterior margin present. Mesoscutum black with fine punctures, weakly convex. Scutellum with deep scattered punctures and a raised carina in the middle at base running half way towards the apex, metanotum with punctures and paired yellow spots on the antero-lateral region, propodeum with distinct striae and with paired longitudinal yellow spots.



Fig. 2. *Polistes dawnae* A. Head in frontal view; B. Head and pronotum in lateral view; C. Head and mesosoma in dorsal view; D. Wings; E. Metasoma in dorsal view; F. Body in lateral view.

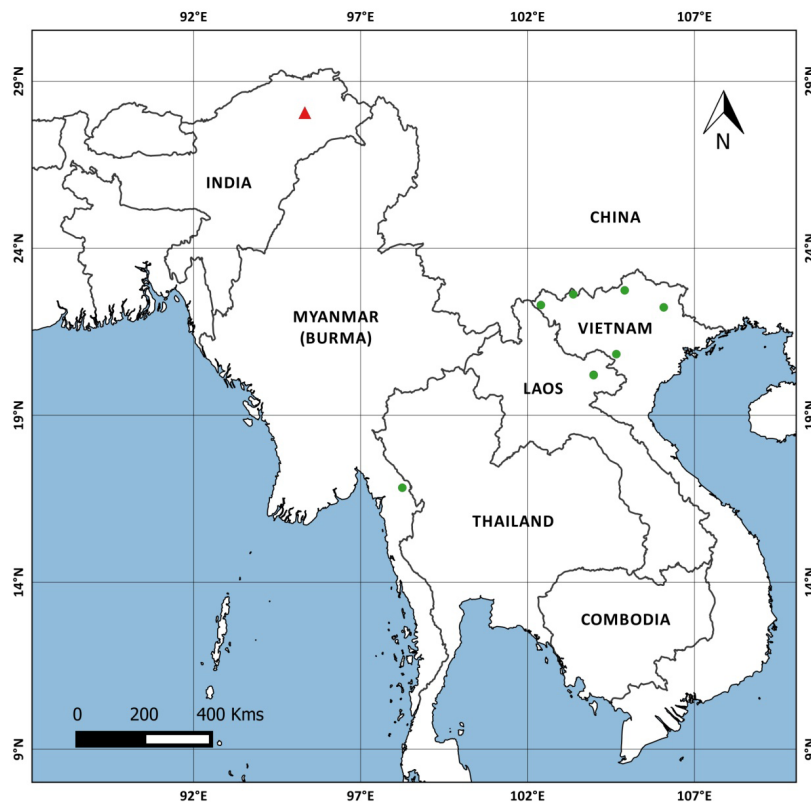


Fig. 3. Species distribution map (red triangle indicates the new distribution record and green circles indicate the distribution range of the species).

Propodeal vulvula yellow. Median groove wide and moderately deep and equal throughout. Wings hyaline, veins brown, brownish yellow along the costal margin, stigma brownish yellow, radial cell slightly fuscous, second cubital cell at the top about as long as the distance connecting first intercubitus and first recurrent vein. Legs black with brownish tinge.

Metasoma (Fig. 2E): First and second tergum with yellow apical band. Second abdominal segment wider than its length and second metasomal sternum strongly swollen.

Material examined: One female on card; India: Arunachal Pradesh: Pasighat: Central Agricultural University Campus; 12.xi.2014; ICAR-NBAIR.

Distribution: India: Arunachal Pradesh (**new record**), Northern Myanmar, northeastern Laos and northwestern Vietnam (Fig. 3).

REMARKS

This species was identified using key given by Nguyen and Kojima (2014) and matches with the original description by Dover and Rao (1922), except body 12.47 mm in size (10 mm in original description and 10.5–11 mm in Nguyen *et al.*, 2011); post-scutellum with few sparse shallow punctations (completely impunctate in original description).

ACKNOWLEDGEMENT

The authors are grateful to the Indian Council of Agricultural Research (ICAR) for providing financial support

and Dr. Chandish R. Ballal (Director, ICAR-NBAIR) for constant research encouragement and guidance.

REFERENCES

- Carpenter JM. 1996. Distributional checklist of species of the genus *Polistes* (Hymenoptera: Vespidae: Polistinae, Polistini). *Am Museum Novitates* **3188**: 10.
- Das BP, Gupta VK. 1989. *The Social Wasps of India and the Adjacent Countries (Hymenoptera: Vespidae)*. Oriental Insects Monograph 11. The Association for the Study of Oriental Insects, Gainesville, 292 pp.
- Dover C, Rao S. 1922. A note on the diplopterous wasps in the collection of the Indian Museum. *J Proc Soc Bengal* **18**: 248.
- Gusenleitner J. 2013. Bemerkenswerte Faltenwespen-Funde aus der orientalischen Region Teil 7 (Hymenoptera : Vespidae, Eumeninae, Polistinae). *Linzer Biologische Beitrage* **45**: 127.
- Nguyen LTP, Kojima J, Saito F. 2011. *Polistes* (Polistella) wasps (Hymenoptera: Vespidae: Polistinae) from mountainous areas of northern Vietnam, with description of five new species. *Zootaxa* **3060**: 1–30.
- Nguyen LTP, Kojima JI. 2014. Distribution and nests of paper wasps of *Polistes* (Polistella) in northeastern Vietnam, with description of a new species (Hymenoptera, Vespidae, Polistinae). *ZooKeys* **368**: 45. <https://doi.org/10.3897/zookeys.368.6426> PMID:24478582 PMCID:PMC3904069