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NOTE

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A new record of the hoverfly genus *Dasysyrphus* Enderlein, 1938 (Insecta: Diptera: Syrphidae) from India

Jayita Sengupta¹ , Atanu Naskar² , Aniruddha Maity³ , Panchanan Parui⁴ ,
Sumit Homchaudhuri⁵ & Dhriti Banerjee⁶

^{1,2,3,4,6} Diptera Section, Zoological Survey of India, M Block, New Alipore, Kolkata, West Bengal 700053, India.

⁵ Department of Zoology, University of Calcutta, 35, Ballygunge Circular Road, Kolkata, West Bengal 700019, India.

¹ jayitasengupta9@gmail.com (corresponding author), ² atanu.diptera@gmail.com, ³ armzool2007@gmail.com,

⁴ panchananparui042@gmail.com, ⁵ Homchaudhuri@gmail.com, ⁶ dhritibanerjee@gmail.com

The distribution of *Dasysyrphus* Enderlein, 1938 is rare with only four species known out of 355 syrphid species in India (Mitra et al. 2008; Ghorpade 2014; Shah et al. 2014). *Dasysyrphus* is characterized by the presence of distinct abdominal tergites, characteristic longitudinal marginal grooves present along the abdominal tergites (McAlpine et al. 1981). Here we report *Dasysyrphus albostrigatus* (Fallen, 1817) for the first time from India (Pape & Evenhuis 2018).

The species was collected from Recong Peo of Kinnaur District, Himachal Pradesh, during a survey in the state of Himachal Pradesh in the year 2018. Kinnaur is in the northeast corner of Himachal Pradesh, about 235km from Shimla, having the three high mountains ranges, i.e., Zaskar, Greater Himalaya, and Dhauladhar, and enclosing valleys of Sutlej, Spiti, Baspa and their tributaries (31°05'–32°05'N & 77°45'–79°00'E). Survey was conducted in the month of April 2018.

Syrphid flies were collected from the field during daytime by using insect sweep nets, malaise trap, and

pan traps. The collected samples were narcotized by using ethyl-acetate and stored for further study in insect envelopes in the field. The specimens were later carried back to the laboratory, mounted with insect pins and stored in insect cabinets.

Identification of the fly specimens was done using the keys of Brunetti (1923), Vockeroth (1992) and Thomson (2013) keeping in mind the recent nomenclatural changes (Pape & Evenhuis 2018). After identification, the specimens were deposited in the designated repository of national zoological collection, Diptera section, Zoological Survey of India, Kolkata.

The 3D maps used here were generated using ARC GIS software Version 10.1. The photograph of habitus and insect body and parts were taken by using Leica Microscope M205A, where 0.32x Acrolense was used for habitus photography and PLANAPO 1.0X lense was used for the photography of body parts.

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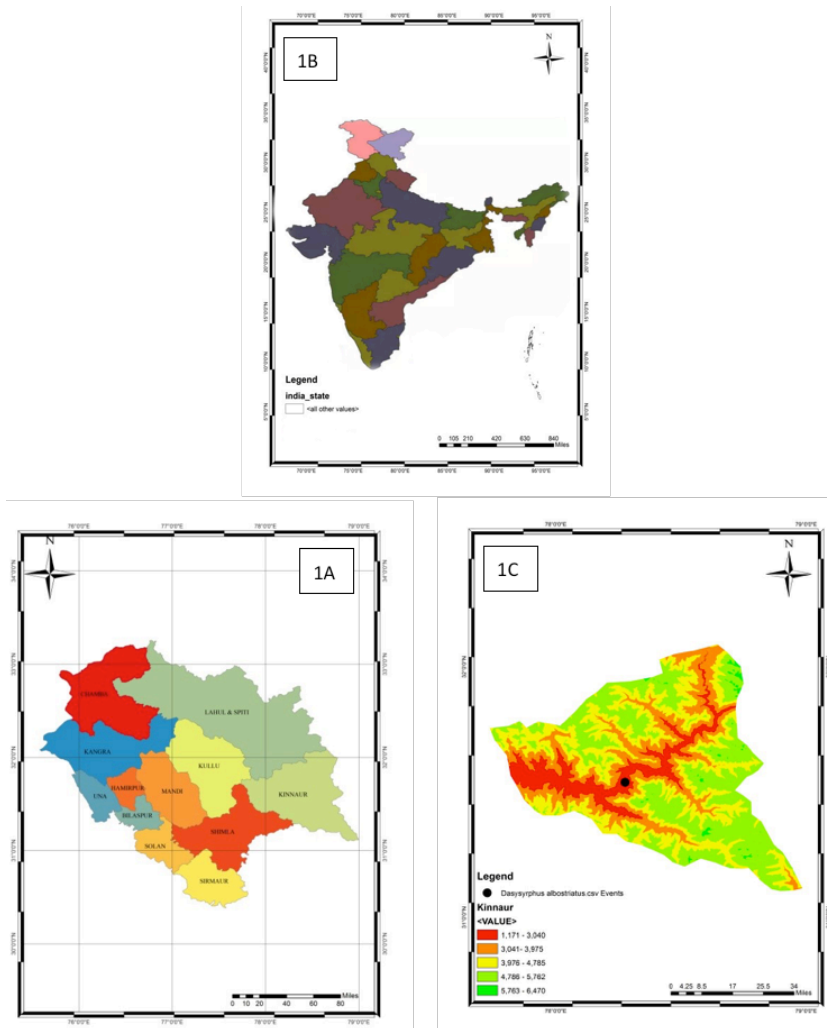


Figure 1. 3D GIS Map: a—India | b—Himachal Pradesh | c—Collection locality of species in Kinnaur District.

Systematic Account
Subfamily Syrphinae
Tribe Syrphini

Genus *Dasysyrphus* Enderlein, 1938

1938. *Dasysyrphus* Enderlein, *Sber. Ges. Naturf. Freunde Berl.* 1937: 208

The genera *Dasysyrphus* is described by Enderlein in the year 1938. He has described the genera based on the taxonomic characters of the species *Scaeva albostrigata*.

Diagnosis: Frons black with purinose areas, face slightly broadened with distinct median stripe. Scutellum dull yellow to brown in colour. Ventral scutellar fringe well developed. Upper and lower katepisternal patches narrowly to broadly join posteriorly. Abdomen narrowly to broadly oval and convex. Sternites yellow with distinct black bands. Wing membrane entirely trichose (McAlpine et al. 1981)

Key to species of the genus *Dasysyrphus* Enderlein, 1938.

***Dasysyrphus albostrigatus* (Fallen, 1817)
(Image 1A–F)**

1817. *Dasysyrphus albostrigatus*, Fallen, *Syrphici Sveciae*: 42

Taxonomic history: *Dasysyrphus albostrigatus* is a species with distributional affinity towards Palearctic region. This species has been described in the year 1817 by Fallen. The type locality was Scania of Sweden. Three species namely *Syrphus carinthiacus* Latzel, 1876, *Syrphus confusus* Egger, 1860 and *Syrphus nigrum* Brown, 1971 has been synonymised with this *Dasysyrphus albostrigatus* later on.

Type location: Sweden, Scania. This species is thus the first record from India as well as from the oriental region.

Material examined: 18870/H6, 18871/H6, 18872/H6, 18873/H6 and 18874/H6, five males, 12.iv.2018, Recong Peo, Kinnaur District, 2,220m, 31.539 N, 78.276 E, coll: J Sengupta. Syrphid flies were collected by

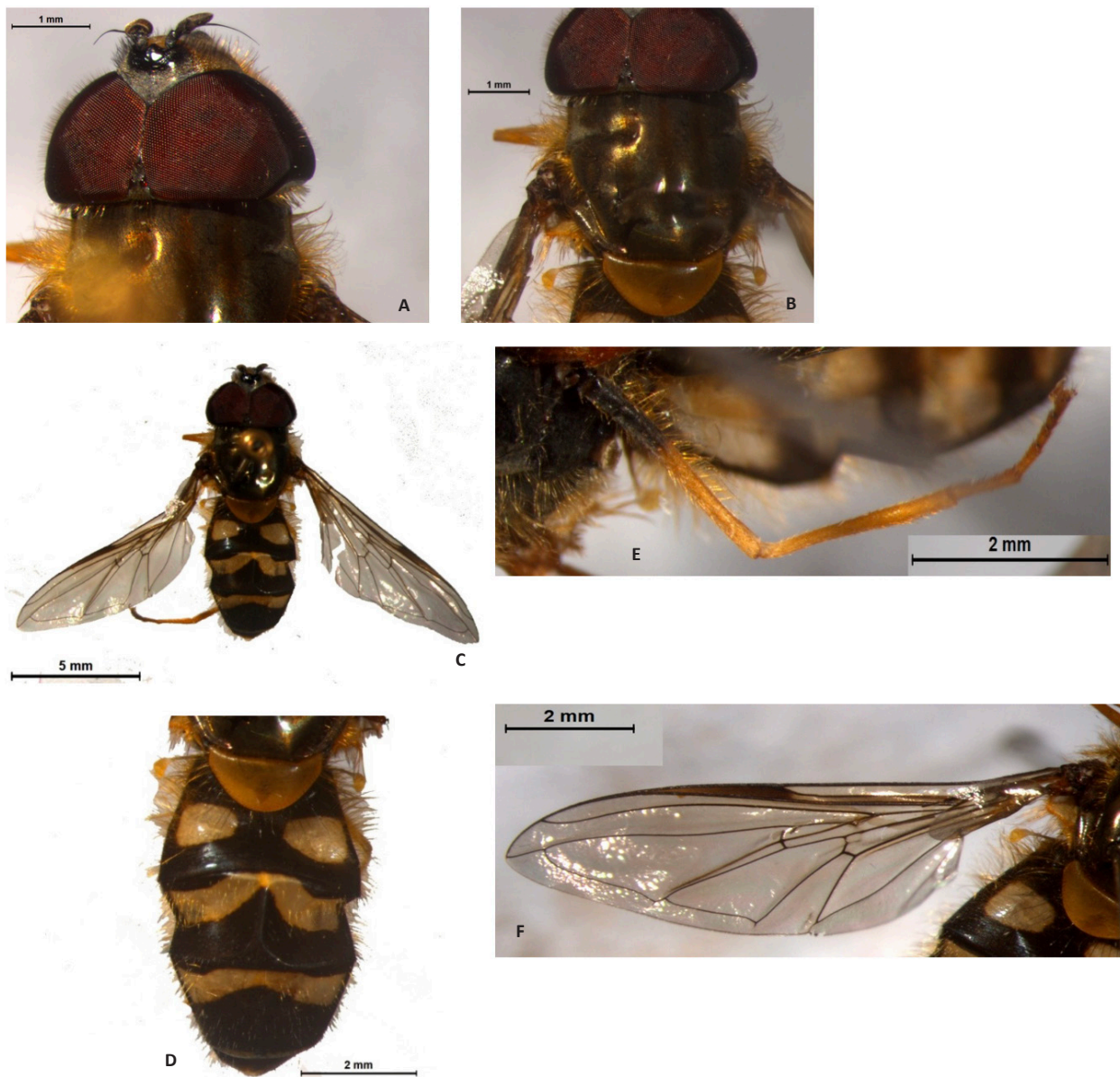


Image 1. A—Dorsal view of head | B—Dorsal view of thorax | C—Habitus | D—Dorsal view of abdomen | E—Dorsal view of hind leg | F—Lateral view of wing of *Dasysyrphus albostriatus*. © Jayita Sengupta.

sweeping insect nets in agricultural field by the collector (Figure 1a–c).

Diagnosis: Presence of large shining black antennal prominence; distinct black median stripe enclosing the central bump. Occiput grey with yellowish-white uninterrupted fringe. Dorsum of thorax consists of black conspicuous stripes. Pleurae shining dark grey, scutellum brownish-yellow in color with wholly long black pubescence. Abdominal tergites distinct. Moderate sized yellow oval spot on 2nd segment while sinuate narrow yellow band of uniform length on 3rd and 4th segment. Basal half of anterior and hind femora and

whole hind tibiae more or less blackish. Wing grayish with orange colored halteres.

Distribution: India: Himachal Pradesh: Kinnaur: Recong Peo (new record); Sweden (Pape & Evenhuis 2018).

Remarks: *Dasysyrphus albostriatus* has been reported feeding on larvae of Lepidoptera (Krpáč et al. 2009). Adults are also known as beneficial pollinator (Laska et al. 2013). Therefore, both the larvae as well as adults are economically important from agricultural viewpoint.

Discussion: Hoverfly research in India is quite

Key to species of the genus *Dasysyrphus* Enderlein, 1938

1. Frons with white hairs, femoral 1 & 2 entirely yellow
..... *pandu* Ghorpade, 1994
- Frons with black hairs, femora 1 & 2 yellow with basal part
half blackish 2
2. Hind tibia black on basal one half or more
..... *darada* Ghorpade, 1994
- Hind tibia yellow on basal one half 3
3. Tergum 5 yellow only on posterior margin 4
- Tergum 5 yellow on posterior and lateral margins
..... *rossi* Ghorpade, 1994
4. No obvious stripes at thoracic region
..... *orsua* (Walker, 1852)
- Two definite greyish stripes on anterior part of thorax
..... *albostriatus* (Fallen, 1817)

enriched with a research history over the past 110 years. The research on Indian hoverflies has always preferred the taxonomic aspect during pre-independence era (Fabricius 1805; Brunetti 1923; Bhatia & Shaffi 1933) whereas in post-independence period, the research interest has been shifted more towards economic and agricultural aspects (Coe 1964; Nayar 1968; Hippa 1974; Biswas et al. 1975; Kohli et al. 1988). During the last decade research has focused on both taxonomy as well as the field of agricultural, ecological and economical studies (Mitra & Parui 2002, 2012; Mukherjee et al. 2006, 2007; Parui et al. 2006; Ghorpade 2007, 2009, 2012, 2014; Mitra 2010; Shah et al. 2014; Sengupta et al. 2017, 2019, Wachkoo et al. 2019). Recently one genus and one species have been reported newly from India (Wachkoo et al. 2019) thereby updating the hoverflies taxon list with 70 genera and 356 species currently from India.

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