NEW LOCALITY RECORDS OF VESPULA FLAVICEPS (VESPIDAE: HYMENOPTERA) IN MURREE (PUNJAB)

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ABSTRACT

Vespula flaviceps is reported for the first time from different localities of Murree hills Punjab Province of Pakistan during 2014-15. The main identification characters, measurements of various body parts, distribution range supported by GPS positions and micrographs have been given for future field and research identification.

Keywords: Hymenoptera, Vespidae, Vespula flaviceps, Murree

INTRODUCTION

Wasps (Vespidae: Hymenoptera) play a significant role in terrestrial ecosystems viz., as bio-control agents, scavengers, invasive pests and pollinators (Fateryga 2009; Rasnitsyn and Quicke, 2002). Vespidae is a cosmopolitan family of wasps with approximately 5000 species worldwide (Aguiar et al., 2013). These vespid wasps are solitary, social and eusocial. There are six subfamilies under Vespidae namely Masarinae, Eumeninae, Polistinae, Stenogastrinae, Euparagiinae and Vespinae (Carpenter 1982; Pickett and Carpenter, 2010). The Vespinae consists of the most fearsome wasps, the yellow jackets and true hornets. These yellow jackets scavenge dead insects, earthworms and other carrion including garbage. This sub-family comprises of four genera: Dolichovespula, Provespa, Vespa (Hornets) and Vespula (Yellow-jackets), makes total of 71 species worldwide (Barthélémy, 2008; Kimsey& Carpenter 2012). The genus Vespula comprises of 22 species worldwide, mostly present in temperate regions of Northern hemisphere. They are expert flyers with small size and yellow/black markings (Greene, 1991).

In Pakistan, various workers have done work on these wasps like Chaudhary et al. (1966); Das and Gupta (1989); Gusenlenitner (2006); Gusenleitner (2007); Aziz, 2008; Bodlah et al., 2011 and 2012 and Siddiqui et al., 2015. Dvorak (2007) described Vespula flaviceps for the first time from northern Pakistan. Mehmoed et al. (2012) reported 3 species of genus Vespula from various localities of Khyber Pakhtunkhwa, Pakistan. Ali et al. (2013) described 1 species of Vespula as pollinator from Haripur (KPK) Pakistan. During current studies, Vespula flaviceps is reported for the first time from different localities of Murree.

MATERIALS AND METHODS

Wasps were collected from various localities of Murree region during 2014-15. Collection, setting, tagging and preservation of specimens was done using methodology of Siddiqui et al. (2015). The photographs of specimens were taken by a Nikon D3200 DSLR and the Labomed stereoscope (CZM6) with mounted digital camera (CE 990, eCAM 3000) used for identification. Digi-Pro 4.0 software was used to capture and record the images. Measurements were taken with the help of common scale. The specimens were identified up to species level by using taxonomic literature by Mahmood et al. (2012). After identification, the specimens were deposited in Biosystematics Laboratory, Department of Entomology, PMAS Arid Agriculture University, Rawalpindi (Pakistan).

RESULTS AND DISCUSSION

Genus Vespula Thomson, 1869

This primarily Holarctic and Oriental genus is comprised of 26 species (Carpenter and Kojima, 1997; Eck, 1998; Dong et al., 2002, 2004; Dong et al., 2005), 13 of which occur in North America (11in the northeast) (Buck et al., 2008).
Vespula flaviceps (Smith in Horne & Smith, 1870)

Vespa japonica de Saussure, 1858
Vespa flaviceps Smith, 1870
"Vespa Lewisii, Sauss. Guêpes Soc. (MS.)" Smith, 1873
Vespa "lewisii, Saus. MS." Cameron, 1903
Vespa Saussurei Schulz, 1906.
Vespa karenkona Sonan, 1929
Vespa 4-maculata Sonan, 1929
Vespa vulgaris var. flavor Stolfa, 1934
Vespa japonica pionganensis Giordani Soika, 1976
Vespa vulgaris var. flavitor; Das and Gupta, 1984 (1983)
Vespula gracilis Lee, 1986

Diagnostic Characters: Female (Fig.1a):
Third mandibular tooth straight or nearly so along the mesal margin. Occipital carina different in upper 3/4 of gena in worker female is less developed. Space between lateral ocelli more than half width of lateral ocellus. Cubital vein Ia is equal or little longer than Ib. Weak punctuation on thorax. Propodeum smooth and devoid of medio-basal carina. Body black with yellowish orange markings. The marking of ocular sinus almost straight or archedon medial margin. Black mark on clypeus is not developed, not reaching the lower margin of the clypeus. Mid and hind tarsi is pale brown. Female have six abdominal segments.

Male (Fig.1b): Occipital carina different only in upper 3/5. Antennae devoid of tyloides; terminal segment not curved, slender. A flat apical lobe at last gastral tergite. White area of ocular sinus not concave on the medial margin. Triangular black spot at base, absent in mandibles. Abdomen divided in to seven segments.

Figure 1. Vespula flaviceps, Dorsal view, (a) Female, (b) Male

Female: Body length 12–17 mm, fore wing length 10–12 mm. Head width 3.5–4 mm, Thorax width 3–4 mm, Abdomen width 4–5 mm, Antennal length 6–7 mm.

Male: Body length 13 mm, fore wing length 11 mm, Head width 3.3 mm, Thorax width 3 mm, Abdomen width 3 mm, Antennal length 7 mm.


Distribution. Pakistan, China, Korea, India, Japan, Myanmar, Thailand, Nepal, Russia and Taiwan (Carpenter and Kojima, 1997; Dvorák, 2007; Mehmood et al., 2012).
**Original Article**

**Comments.** Specimens collected from Pakistan were compared with the published description of *Vespa flaviceps* by Mehmood et al. (2012). This species is recognized on the basis of Pronotal carina incomplete. Vertex is small, posterior ocelli about as far from each other as from the back of the head. On the fore wings, Rs vein meeting R+ Sc vein near the stigma. It is reported for the first time from different altitude and latitude of Murree, Punjab. Mehmood et al. (2012) reported this species Khyber Pakhtunkhwa, Pakistan. Wasps of this species were observed on various flowers and standing water reservoirs. Maximum population was observed on water reservoirs

**REFERENCES**


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