Checklist of vespid wasps (Hymenoptera: Vespidae) of Arunachal Pradesh, India, with a new distribution record of *Vespula flaviceps* (Smith)

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ABSTRACT: The species *Vespula flaviceps* (Smith) belonging to subfamily Vespinae is a new record for the state Arunachal Pradesh. A total of 26 genera and 62 species of vespid wasps have been reported from the state. A distributional checklist along with brief diagnosis of *V. flaviceps* is provided.

KEY WORDS: Arunachal Pradesh, checklist, new record, Vespidae, *Vespula flaviceps*

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INTRODUCTION

The subfamily Vespinae is composed of four genera: *Dolichovespula* Rohwer, 1916, *Provespa* Ashmead, 1903, *Vespa* Linnaeus, 1758 and *Vespula* Thomson, 1869. Genus *Vespula* can be distinguished from the other Vespinae genera by the absence of pronotal carina and malar space shorter than the last antennal article. Members of genus *Vespula* are commonly called yellow jackets. They are eusocial in nature and build underground nests. A total of 25 species of the genus *Vespula* are recorded worldwide, of which 8 species are reported from India. In Arunachal Pradesh, two species of the genus *Vespula* (*V. orbata* and *V. structor*) are reported till date (Girish Kumar and Carpenter, 2018). A new record of *Vespula flaviceps* (Smith) for the state along with a distributional checklist is presented in this paper.

MATERIALS AND METHODS


The specimen examined for the study has been deposited in the ICAR-National Bureau of Agricultural Insect Resources (NBAIR) Bengaluru, India. The abbreviations for the type repositories are as follows:

ASIZB: Academia Sinica Institute of Zoology, Beijing, China.

NHM: Natural History Museum, London, United Kingdom.
RESULTS AND DISCUSSION

_Vespula flaviceps_ (Smith, 1870)


_Vespula “lewissii”, Sauss. MS.”_ Cameron, 1903, Entomologist 36: 280, as a synonym of _Vespula japonica_ de Saussure, 1858.

_Vespula Saussurei_ Schulz, 1906, Spolia Hym.: 231. Replacement name for _Vespula japonica_ de Saussure.


_Vespula quadrimaculata_ Sonan, 1929, Trans Nat Hist Soc Formosa 19 (101): 137(key), 148, female “Arisan, Taiwan” (TARI).

_Vespula vulgaris var. flavior_ Stolfa, 1934, Bull Soc Vénèz Stor Nat. 1: 49, female - “India” (type depository unknown).


_Vespula vulgaris var. flavior_, Das and Gupta, 1984, Orient Ins. 17: 449. Incorrect spelling of _Vespula vulgaris var. flavior_ Stolfa.


**Brief diagnosis:** Female: Head wider than high (Fig. 2A), with long black hairs. Antennae with 12 articles, closer to eyes than to each other. Clypeus wider than high, apically truncate. Mandibles with 3 teeth. Posterior ocelli closer to each other than to eyes. Occipital carina not extending to the base of mandible. Clypeus and frons with fine shallow punctures, distance between punctures wider than diameter of punctures. Mesosoma with long black hairs dorsally and pale hairs laterally. Mesoscutum, scutellum and metanotum with shallow fine punctures. Metasoma without punctures. T1 with long pale hairs. Rest of the metasoma with short pale hairs.

**Colour:** Body black with yellow markings (Figs 2B, C).


Distribution: INDIA: Arunachal Pradesh (new record), Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Punjab, Sikkim, Uttarakhnad, and West Bengal. Elsewhere: Bhutan, China, Japan, Laos, Myanmar, Nepal, North Korea, Pakistan, Russia, South Korea, Taiwan, Thailand, Vietnam (Das and Gupta, 1984, 1989; Archer, 1989; Carpenter and Kojima, 1997; Jonathan and Kundu, 2003; Kundu et al., 2010; Barthélémy et al., 2014; Choi and Kwon, 2015; Dorji et al., 2017; Rafi et al., 2017; Girish Kumar and Carpenter, 2018).

Checklist of vespid wasps of Arunachal Pradesh

Subfamily: Eumeninae

Tribe: Eumenini

1. *Delta campaniforme campaniforme* (Fabricius, 1775)
2. *Delta conoideum* (Gmelin, 1790)
3. *Delta dimidiatipenne* (de Saussure, 1852)
4. *Delta esuriens* (Fabricius, 1787)
5. *Delta pyriforme pyriforme* (Fabricius, 1775)
6. *Eumenes architectus* Smith, 1859
7. *Eumenes assamensis* Meade-Waldo, 1910
8. *Eumenes atrophicus* (Fabricius, 1798)
9. *Eumenes punctatus* de Saussure, 1852
10. *Phimenes flavopictus* (Blanchard, 1845)

Tribe: Odynerini

11. *Allorhynchium argentatum* (Fabricius, 1804)
12. *Antepipona biguttata* (Fabricius, 1787)
13. *Antepipona bipustulata* (de Saussure, 1855)
14. *Anterhynchium (Dirhynchium) flavolineatum* (Smith, 1857)
15. *Antodynerus limbatus* (de Saussure, 1852)

Fig 2. *Vespula flaviceps*: A. Head in frontal view; B. Female in habitus, dorsal view; C. Female in habitus, lateral view

17. *Apodynerus troglodytes troglodytes* (de Saussure, 1856)
18. *Labus humbertianus* de Saussure, 1867
19. *Orancistrocerus aterrimus khasianus* (Cameron, 1900)
20. *Paraleptomenes darugiriensis* Girish Kumar et al.,
22. Parancistrocerus holzschuhi Gutsenleitner, 1987
23. Pararrhynchium venkataramani Girish Kumar and Carpenter, 2017
24. Pareumenes quadrispinosus acutus Liu, 1941
25. Pareumenes quadrispinosus quadrispinosus (de Saussure, 1855)
26. Rhynchium brunneum brunneum (Fabricius, 1793)
27. Subancistrocerus sichelii (de Saussure, 1856)
28. Tropidodynerus (Tropidepipona) fraternus (Bingham, 1897)

Subfamily: Polistinae
Tribe: Polistini
29. Polistes (Gyrostoma) olivaceus (De Geer, 1773)
30. Polistes (Gyrostoma) tenebricosus Lpeletier, 1836
31. Polistes (Polistella) dawnae Dover and Rao, 1922
32. Polistes (Polistella) nigratris Cameron, 1900
33. Polistes (Polistella) sagittarius de Saussure, 1854

Tribe: Polybiini
34. Parapolybia indica (de Saussure, 1854)
35. Parapolybia varia (Fabricius, 1787)
36. Parapolybia tinctipennis (Cameron, 1900)

Tribe: Ropalidiini
37. Ropalidia cyathiformis (Fabricius, 1804)
38. Ropalidia fasciata (Fabricius, 1804)
39. Ropalidia jacobsoni (du Buysson, 1908)
40. Ropalidia ornatica (Cameron, 1900)
41. Ropalidia rufocollaris (Cameron, 1900)
42. Ropalidia santoshae (das and Gupta, 1989)
43. Ropalidia scitula (Bingham, 1897)
44. Ropalidia stigma (Smith, 1858)

Subfamily: Stenogastrinae
45. Cochlischnogaster dasugangensis Dong and Otsuka, 1997
46. Eustenogaster scitula (Bingham, 1897)
47. Parischnogaster mellyi (de Saussure, 1852)

Subfamily: Vespinae
48. Provespa barthelemyi (du Buysson, 1905)
49. Vespa affinis (Linnaeus, 1764)
50. Vespa analis Fabricius, 1775
51. Vespa auraria Smith, 1852
52. Vespa basalisa Smith, 1852
53. Vespa bicolor Fabricius, 1787
54. Vespa binghami du Buysson, 1905
55. Vespa fumida van der Vecht, 1905
56. Vespa mandarinia Smith, 1852
57. Vespa soror du Buysson, 1905
58. Vespa tropica (Linneaus, 1758)
59. Vespa velutina Lpeletier, 1836
60. Vespula flavicops (Smith, 1870)
61. Vespula orbata (du Buysson, 1902)
62. Vespula structor (Smith, 1870)

This study resulted in a new record of Vespula flavicops (Smith) from the state of Arunachal Pradesh. This species has already been reported from the neighboring northeastern states viz., Assam, Manipur, Meghalaya and Sikkim. Currently the vespid fauna of Arunachal Pradesh is represented with 62 species belonging to 26 genera. Among the four subfamilies of Vespidae present in Arunachal Pradesh, the subfamily Eumeninae shows highest diversity with 28 species belonging to 16 genera, followed by the subfamily Polistinae with 3 genera and 16 species, subfamily Vespinae with 3 genera and 15 species and Stenogastrinae with 3 genera and 3 species, respectively.

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REFERENCES


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