

## Research Article



# First Record of the Genus *Chablisea* (Ichneumonidae: Pimplinae) from Pakistan

Muhammad Usman\* and Sajjad Ahmad

Department of Entomology, The University of Agriculture Peshawar, Khyber Pakhtunkhwa, 25130, Pakistan.

**Abstract** | *Chablisea* Gauld and Dubois, 2006 is a small genus of subfamily Pimplinae (Hymenoptera: Ichneumonidae). Pakistan has a very rich entomo fauna but only a few attempts were made to study this subfamily. Specimens were collected from different ecological zones of Khyber Pakhtunkhwa province of Pakistan in 2018. In this paper, *Chablisea imbiba* and *Chablisea condimenta* are described for the first time from Pakistan. Morphological description is provided and elucidated with digital images.

**Received** | August 03, 2019; **Accepted** | January 13, 2020; **Published** | February 20, 2020

**\*Correspondence** | Muhammad Usman, Department of Entomology, The University of Agriculture Peshawar Khyber Pakhtunkhwa, Khyber Pakhtunkhwa, 25100, Pakistan; **Email:** usman\_syn@yahoo.com

**Citation** | Usman, M. and S. Ahmad. 2020. First record of the genus *chablisea* (Ichneumonidae: Pimplinae) from Pakistan. *Sarhad Journal of Agriculture*, 36(1): 245-248.

**DOI** | <http://dx.doi.org/10.17582/journal.sja/2020/36.1.245.248>

**Keywords** | Taxonomy, Hymenoptera, *Chablisea*, New record, Pakistan

## Introduction

In monophyletic lineage Polysphincta genus-group belong to the tribe Ephialtini of subfamily Pimplinae (Gauld et al., 2002; Gauld and Dubois, 2006); in earlier work it was treated as separate tribe Polysphinctini (Hellén, 1915; Townes, 1969). This genus group comprised of twenty two genera with about 190 described species throughout the world (Yu et al., 2012). Interestingly all the species within this group are ectoparasitoids of spiders (Fitton et al., 1987).

The Genus *Chablisea* was established by Gauld and Dubois in 2006 based on the type species *Chablisea imbiba* from Papua New Guinea. Two new species *C. concave* and *C. varicolor* were added by Liu et al. (2009) from China. Recently, Pham et al. (2011) described *Chablisea condimenta* and *Chablisea khatdanglongi* as two new species and *Chablisea albifacialis* (Kusigemati, 1984) was formed as new combination and increased the number of known species in the world to six (Pham et al., 2011). This genus is an Asian group and

previously recorded from different countries of Asia but from Pakistan (Khyber Pakhtunkhwa province) this genus is recorded for the first time.

## Materials and Methods

Specimens were collected from different ecological zones of Khyber Pakhtunkhwa province of Pakistan in 2018 and were deposited at the Insects Museum of The University of Agriculture Peshawar, Pakistan. Specimens were observed under a Nikon SMZ 745T Stereomicroscope (Nikon Corporation, Japan) and photographed with a Nikon DS-Fi2 digital camera (Nikon Corporation, Japan). Morphological terminology follows Fitton et al. (1988), Gauld (1991) and Gauld and Dubois (2006).

## Results

### Taxonomy

*Chablisea* Gauld and Dubois, 2006

**Type species:** *Chablisea imbiba*, Gauld and Dubois, 2006 by original designation.

**Distribution:** China, Pakistan (Present study), Papua New Guinea, Vietnam.

**Ecological Note:** These specimens were collected from coniferous evergreen forest at the elevation of 2300 to 2804m. Nothing is known about the biology of these species but all the species within this group are ectoparasitoids of spiders (Fitton et al., 1987).

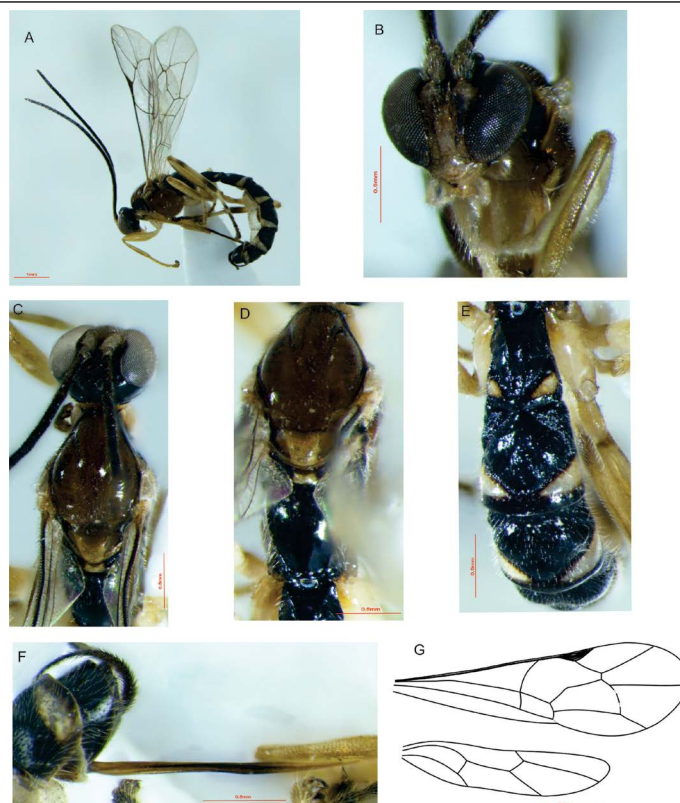
**Remarks:** This genus has been adequately described by Gauld and Dubois (2006). It can be distinguished by clypeus separated from face by distinct suture, strongly tapered and twisted mandibles; head with occipital carina complete mediodorsally; in profile mesoscutum trilobed with deeply impressed notauli; metasomal foramen joining with hind coxal cavity; Legs with subquadrate 4<sup>th</sup> tarsomeres, 5<sup>th</sup> tarsomere broadened; female tarsal claw short with a high and deep basal lobe; ovipositor proximal end of lower valve not enlarged, slightly membranous, laterally close to base; front wing, 3rs-m vein absent, abscissa of M between 2rs-m and 2m-cu more than ½ of 2rs-m; hind wing, with evenly curved M+Cu basal abscissa.

*Chablisea imbiba* Gauld and Dubois, 2006: new record to Pakistan.

#### Description (Figure 1A-G)

**Body:** Female body length, 7.2mm (excluding ovipositor), forewing 4.8mm. Mostly black, blackish antenna with whitish scape and pedicel; face blackish, with whitish triangular mark below antennal socket, clypeus, mandible and palpi; pronotum, mesoscutum, mesopleurum and metapleurum reddish brown, scutellum, metascutellum medially whitish; legs yellow, tibia of hind leg with subbasal and apical bands, hind basitarsus with apical band, onward brown; wings hyaline, with brownish veins and pterostigma; metasomal tergites black, tergites 1–6 with yellow subapicolateral spots; ovipositor brown with black and hairy ovipositor sheath.

**Head:** Strongly tapered mandibles, twisted slightly, broader and with upper tooth slightly longer than lower; clypeus separated from face by distinct suture, weakly convex; head rounded posteriorly, with mediodorsally complete occipital carina; Small ocelli and away from inner orbit of eye.



**Figure 1:** *Chablisea imbiba*. **A:** habitus, lateral view; **B:** front view of head; **C:** mesoscutum, dorsal view; **D:** scutellum, metascutellum, and propodeum, dorsal view; **E:** tergites 1–3, dorsal view; **F:** ovipositor; **G:** wings; Scales 1 mm (A, G), 0.5 mm (B–F).

**Mesoama:** Pronotum moderately long, moderately short and convex mesoscutum, notauli deeply impressed, hairy, finely punctate; mesoscutum strongly broadened; mesopleuron with well-developed epicnemial carina; mesopleural suture near center with distinct angulation; submetapleural with complete carina; moderately long propodeum, equally declining posteriorly and metasomal foramen joining with hind coxal cavity.

**Legs:** Legs with subquadrate 4<sup>th</sup> tarsomeres, 5<sup>th</sup> tarsomere is broadened; female with very short tarsal claws, with a high and deep basal lobe.

**Wings:** Front wing, 3rs-m vein absent, abscissa of M between 2rs-m and 2m-cu is more than half of length of 2rs-m; hind wing, with evenly curved M+Cu basal abscissa.

**Metasoma:** Tergite I as long as apical width, with median dorsolateral carina strong, extending to apex, apical oblique groove deep; tergite II with deep basal and apical oblique groove, median rhombic area with deep longitudinal wrinkles; tergites 3–6 with rhombic area moderately convex bounded by deep apical and basal oblique grooves, closely punctate; ovipositor straight.

**Material examined:** Pakistan 2♀, Malam Jabba, Swat, Khyber Pakhtunkhwa province, N 34°47'35.39", E 72°34'10.79" 2804 m; 20.vi.2018 collected by Muhammad Usman.

**Male:** Unknown.

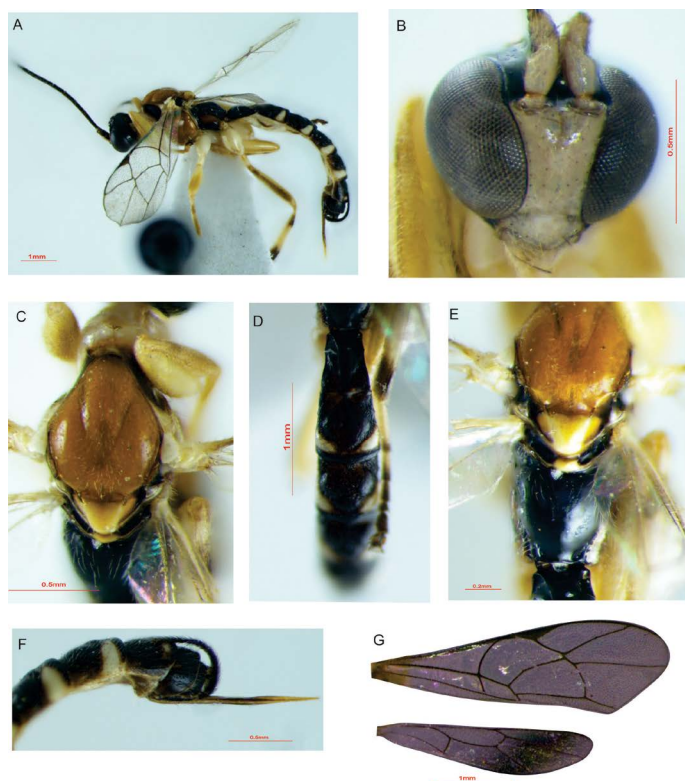
**Hosts:** Unknown.

**Distribution:** Papua New Guinea, Pakistan

**Remarks:** This species can be separated from other species of the genus by the blackish brown color, face with triangular mark below antennal socket, scape, pedicel and scutellum apically whitish. Lateral margin of metasomal tergites 1-6 with yellow spots subapically.

*Chablisea condimenta* Pham et al. (2011): new record to Pakistan.

Description (Figure 2A-G)



**Figure 2:** *Chablisea condimenta*. **A:** habitus, lateral view; **B:** front view of head; **C:** mesoscutum, dorsal view; **D:** tergites 1-3, dorsal view; **E:** scutellum, metascutellum, and propodeum, dorsal view; **F:** ovipositor; **G:** wings; Scales 1 mm (A, D, G), 0.5 mm (B, C, F), 0.2 mm (E).

**Body:** Female body length 5.6mm (excluding ovipositor), forewing 3.6mm. Mostly black. blackish antenna with yellowish scape and pedicel; face, clypeus, and mandible yellow; pronotum with

posterior corner and collar region yellowish, remaining black; mesoscutum, mesopleurum and metapleurum reddish brown; scutellum and metascutellum yellow; tegula yellow and subtegular ridge radish brown; legs yellow, except hind femur outer side which are brown, tibia of hind leg with subbasal and apical bands, hind basitarsus with apical band, onward brown; wings hyaline, with brownish veins and pterostigma; metasomal tergites black, tergites 2-5 with yellow subapicolateral spots; ovipositor brown with black and hairy ovipositor sheath.

**Head:** Antenna with 21 flagellomeres; face strongly convex, with sparse pubescent and punctures, with slightly concave upper margin between antennal sockets; eyes inner orbits moderately convergent at about middle of face, near clypeus become slightly divergent; frons impunctate and polished; clypeus with sparse and long hairs, convex, with rounded apical margin; Strongly tapered mandibles, twisted slightly, broader and slightly longer upper tooth than lower; occipital carina complete.

**Mesosoma:** Pronotum polished, impunctate, pubescent dorsally; notauli deeply impressed, convergent in shallow hollow at posterior 0.4 of mesoscutum, mesoscutum polished, with sparse hairs, scutellum in profile strongly convex, lateral carina present only at base; mesopleurum impunctate, pubescent ventrally, polished dorsally, epicnemial carina present, metapleurum impunctate and polished, submetapleural carina complete; propodeum evenly convex, polished, with spare and long hairs laterally and basally, without carinae.

**Legs:** Basitarsus in length slightly longer than combined length of 2<sup>nd</sup> and 3<sup>rd</sup> tarsomeres, 3<sup>rd</sup> tarsomere slightly longer than fifth.

**Wings:** Front wing, 3rs-m vein absent, Rs+M vein slightly based on cu-a, slightly inclivous cu-a vein; hind wing, with evenly curved M+Cu basal abscissa, Cu1 vein without distal abscissa.

**Metasoma:** Tergites subpolished, sparsely punctuate medially; first tergite convex medially, with dorsolateral and median longitudinal carina; tergites 2-6 rhombic area moderately convex bounded by deep apical and basal oblique grooves; ovipositor straight.

**Material Examined:** Pakistan 1♀, Maidan, Dir Lower, Khyber Pakhtunkhwa province, N 34°57'38.9",



E 71°48'50.8" 2300 m, 07.VI.2018, collected by Muhammad Usman.

**Male:** Unknown.

**Hosts:** Unknown.

**Distribution:** Vietnam, Pakistan

**Remarks:** *Chablisea condimenta* can be differentiated from *C. imbiba* by yellow colour of face, clypeus, scape and mandibles; reddish brown mesoscutum and yellow scutellum. Lateral margin of metasomal tergites 2-5 with yellow spots subapically.

## Acknowledgements

The authors are thankful to Mr. Haseen Ullah and Riaz Hussain (Department of Entomology, The University of Agriculture, Peshawar, Pakistan) for helping in insect collection. We also express our thanks to Dr. Oleksandr Varga, Chmalhausen (Institute of Zoology, NAS, Ukraine) for providing literature and other information.

## Novelty Statement

This study reflects the fauna of Pakistan and the species presented in the present study are recorded for the first time from Pakistan.

## Author's Contribution

MU described the species and wrote the paper. SA provides technical support and revision of manuscript. The authors declared no conflict of interest.

## References

- Fitton, M.G., M.F. Shaw and I.D. Gauld. 1988. Pimpline Ichneumon-flies. Hymenoptera, Ichneumonidae (Pimplinae). Handb. Ident. Br. Insects. 7: 1-110.
- Fitton, M.G., M.R. Shaw and A.D. Austin. 1987. The Hymenoptera associated with spiders in Europe. Zool. J. Linn. Soc. 90: 65-93. <https://doi.org/10.1111/j.1096-3642.1987.tb01348.x>

- Gauld, I.D. and J. Dubois. 2006. Phylogeny of the Polysphincta group of genera (Hymenoptera: Ichneumonidae; Pimplinae): a taxonomic revision of spider ectoparasitoids. Syst. Entomol. 31: 529-564. <https://doi.org/10.1111/j.1365-3113.2006.00334.x>
- Gauld, I.D. 1991. The Ichneumonidae of Costa Rica, 1: Introduction, keys to subfamilies, and keys to the species of the lower pimpliform subfamilies Rhyssinae, Pimplinae, Poemeniinae, Acaenitinae and Cyloceriinae. Mem. Am. Entomol. Inst. 47: 589.
- Gauld, I.D., D. Wahl and G.R. Broad. 2002. The suprageneric groups of the Pimplinae (Hymenoptera: Ichneumonidae): a cladistic re-evaluation and evolutionary biological study. Zool. J. Linn. Soc. 136: 421-485. <https://doi.org/10.1046/j.1096-3642.2002.00031.x>
- Hellén, W. 1915. Beiträge zur Kenntnis der Ichneumoniden Finlands I, Subfamily Pimplinae. Acta Societatis pro Fauna et Flora Fennica. 40 (6): 1-89.
- Kusigemati, K. 1984. Some Ephialtinae of South East Asia, with descriptions of eleven new species (Hymenoptera: Ichneumonidae). Mem. Kagoshima Univ. Res. Cent. S. Pac. 5(2): 126-150.
- Liu, J.X., J.H. He and X.X. Chen. 2009. The two new species of genus *Chablisea* Gauld and Dubois, 2006 (Hymenoptera: Ichneumonidae: Pimplinae) from China. Biol. 64 (6): 1165-1169. <https://doi.org/10.2478/s11756-009-0192-6>
- Pham, N.T., G.R. Broad, R. Matsumoto and W.J. Wagele. 2011. Two new species of the genus *Chablisea* Gauld and Dubois (Hymenoptera: Ichneumonidae: Pimplinae) from Vietnam. Biologia. 66(6): 1134-1139.
- Townes, H., 1969. The genera of Ichneumonidae. Part 1. Mem. Am. Entomol. Inst. 11: 300. <https://doi.org/10.1007/BF02027741>
- Yu, D.S., C. van Achterberg and K. Horstmann. 2012. World Ichneumonidae 2011: Taxonomy, Biology, Morphology and Distribution. Taxapad 2012 Vancouver, Accessed at <http://www.taxapad.com>, 25 July 2016.