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The genus *Ufens* Girault (Hymenoptera: Trichogrammatidae) with some additional records from India

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Abstract

Ufens latipennis Yousuf & shafee (1988) ^[18] was described earlier based on single female only, I have recorded 3 females and 3 males from bred materials of Bengaluru, Karnataka (August, 2012), and also recorded 12 females and 1 male from Uttarakhand and Uttar Pradesh (January, 2013–November, 2015). In this paper a male of *U. latipennis* is recorded for the first time, along with additional distribution records of both *U. latipennis* and *U. gurgaensis* from different Indian states are also provided.

Keywords: *Ufens*, India, Hymenoptera, *Trichogrammatidae*

Introduction

Genus *Ufens* Girault, is represented by 54 species worldwide including seven species (six species in the database, Noyes ^[15] 2017 and 1 species recorded by Khan & Anis ^[11] 2015) from India. Four species based on females described by Yousuf & Shafee, viz. *U. gurgaensis* Yousuf & Shafee ^[19] (1988), *U. latipennis* Yousuf & Shafee ^[19] (1988), *U. jaipurensis* Yousuf & Shafee ^[19] (1988) and *U. breviclavata* Yousuf & Shafee ^[20] (1992). Other three species based on males, viz. *U. similis* (Kryger ^[12] 1932), *U. khamai* Owen ^[16] (2011) were recorded by Owen ^[16] in 2011 and *U. acuminatus* Lin ^[13] (1993) were recorded by Khan & Anis ^[11] in 2015 from India. In this paper a male of *Ufens latipennis* is recorded along with some additional distribution records of *U. latipennis* and *U. gurgaensis* from different states of India viz. Andhra Pradesh, Himachal Pradesh, Uttarakhand and Uttar Pradesh are also provided.

Materials and Methods

The materials were mainly collected by using sweep-net from different Indian states viz. Andhra Pradesh, Himachal Pradesh, Uttarakhand and Uttar Pradesh during 2013–2015, except 3 females and 3 males from bred materials (*Viennotaleyrodes megapapillae* on *Dalbergia latifolia*) of Bengaluru, Karnataka in August 2012. Body colour was noted from the card-mounted specimens prior to mounting these on slides. Only body lengths is given in millimeters; all other measurements are relative, taken from the divisions of a linear scale of a micrometer placed in the eye piece of a stereo zoom binocular microscope (Olympus SZX16) at 10× Zoom 8 for card-mounted specimens and placed in eye piece of the compound microscope (Nikon Eclipse 80i) at 400× magnification. The photographs of the slide-mounted specimens were taken by digital camera (Leica, DFC295) fitted over the compound microscope (Leica, DM2500). The specimens, unless noted otherwise, are on cards.

The following abbreviations are used:

F1, F2= Funicle segments 1, 2.

C1, C2, etc. = Calval segments 1, 2, etc.

PLS= Placoid sensilla

The following acronym is used for depository:

ZDAMU – Department of Zoology, Aligarh Muslim University, Aligarh.

Results

Ufens latipennis Yousuf & Shafee

Ufens latipennis Yousuf & Shafee, 1988: 73, 78, 80, female. Holotype, female, (on slide). India, Uttar Pradesh, Aligarh (ZDAMU, examined).

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Ufens alami Yousuf & Shafee, 1988; 72, 74. female. India, Uttar Pradesh, Aligarh (ZDAMU). Hayat, 2008: 21, synonymy.

Ufens singularis Yousuf & Shafee, 1988: 72, 74–75. female. India, Uttar Pradesh, Aligarh (ZDAMU). Hayat, 2008: 21, synonymy.

Ufens latipennis Yousuf & Shafee: Hayat, 2008: 19, 21, figures, key, taxonomy.

Ufens mezentius Owen: Khan & Anis, 2015: 67–73, male, record, Misidentification.

Redescription

(Fig. 1–8)

Female. Length. 0.49 mm. Head with frontovertex, face, gena and occiput dark brown; eyes and ocelli red. Mandible brown. Antenna brown. Mesosoma with pronotum, mesoscutum and scutellum, metanotum and propodeum dark brown. Fore and hind wing hyaline. Legs uniformly dark brown. Gaster dark brown.

Head with frontovertex pubescent. Mandible (Fig. 1) tridentate. Antenna (Fig. 2) with scape cylindrical slightly wider at base, 3× as long as broad; pedicel short, broad medially, 1.07× as long as broad; 2 anellus present; funicle two-segmented (F1 & F2), segments asymmetrical, as long as broad; F2 slightly longer than F1 (F1:F2 1:5 PLS); clava three-segmented (C1, C2 and C3), 2.2× as long as broad; C2 longer than C1, each with 2 PLS; C3 shorter than the combined lengths of C1 and C2, with 3 PLS. *Relative measurements*: antennal segments; Length (width): scape, 30 (10); pedicel, 14 (13); funicle, 20 (20); clava, 47 (21).

Mesosoma (Fig. 4). Pronotal collar with 3 pair of setae; mid lobe of mesoscutum, 1.2× as broad as long; scutellum, 2.92× as broad as long; both mesoscutum and scutellum with longitudinally cellulate sculpture; propodeum as long as metanotum medially. Fore wing (Fig. 3), 1.57× as long as broad; disc moderately densely setose, setae arranged in rows; stigmal vein long; submarginal vein longer than the combined lengths of marginal and premarginal vein; premarginal vein

longer than marginal vein, marginal fringe short, 11.7× of wing width; hind wing disc with three rows of setae; marginal fringe about as long as wing width. *Relative measurements*: length of mesosoma, 94; Length (width): mid lobe of mesoscutum, 50 (60); scutellum, 27 (79); metanotum, 5; propodeum median length, 4; fore wing, 184 (117); fringe length of fore wing, 7; submarginal vein length, 41; marginal vein length, 16; premarginal vein length, 20; stigmal vein length, 12; hind wing, 164 (19), fringe length of hind wing, 19; lengths of fore, mid and hind tibia, 32:62:58.

Metasoma. Gaster longer than mesosoma, (112:94); ovipositor moderately long, extending from tergite TIII of gaster, and slightly exerted; ovipositor (Fig. 5), 1.31× of hind tibia length. *Relative measurements*: length of gaster, 112; length of ovipositor, 76; exerted ovipositor length, 8.

Male. Length 0.44 mm. Head with frontovertex, face, gena, and occiput dark brown. Antenna (Fig. 6) brown; scape 2.9× as long as broad; pedicel short, 1.15× as long as broad; funicle two segmented (F1 and F2), F1 as long as F2 and with long flagelliform setae, 1.2× as long as broad; clava four segmented (C1, C2, C3 and C4) with long flagelliform setae, segments asymmetrical, C4 shortest, 3.11× as long as broad. Thorax dark brown; propodeum medially slightly longer than metanotum. Fore wing (Fig. 7) hyaline, 1.56× as long as broad, marginal fringe short. Gaster longer than mesosoma (100:95); phallus (Fig. 8) with anterodorsal aperture broad; parameres without terminal spines, wide at base, diverge from midline at apex; phallus, 2.06× of hind tibia length. *Relative measurements*: Antennal segments; Length (width): scape, 29 (10); pedicel, 15 (13); funicle, 24 (20); clava, 53 (17); length of mesosoma, 95; Length (width): mid lobe of mesoscutum, 47 (63); scutellum, 30 (62); metanotum, 5; propodeum median length, 4; fore wing, 188 (120); fringe length of fore wing, 15; submarginal vein length, 44; marginal vein length, 16; premarginal vein length, 22; stigmal vein length, 12; hind wing, 176 (21), fringe length of hind wing, 20; lengths of fore, mid and hind tibia, 31:62:58; length of gaster, 100; length (width) of phallus, 120 (26).

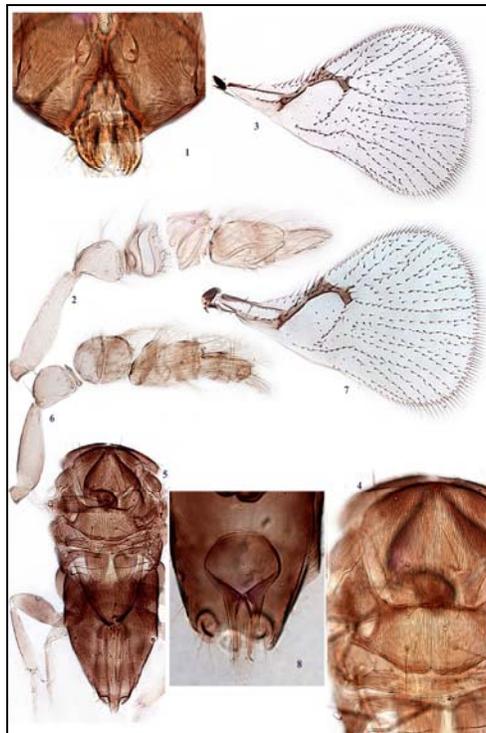


Fig (1–8): *Ufenslatipennis* female: 1, mandible; 2, antenna; 3, fore wing; 4, mesosoma; 5, body. male: 6, antenna; 7, fore wing; 8, male genitalia.

Type material examined. Holotype, female (on 2 slides), labelled, “413 *Ufens latipennis* sp.n. M.Yousuf Aligarh 6.viii.1985” and a ticket with ‘Holotype’ written in red ink (ZDAMU, HYM/CH 387).

Additional material examined. INDIA: KARNATAKA: Bengaluru, 1 female and 1 male; 2 females and 2 males (on slides), 20.vi.2012, coll. R. Sundararaj. UTTAR PRADESH: Aligarh, Department of Zoology, 1female, (on slide); 19.viii.2013; coll. MT Khan; Aligarh, Department of Zoology, 1female, (on slide); 12.viii.2014, coll. MT Khan; Aligarh, Department of Zoology, 1female, (on slide); 26.x.2014, coll. SK Ahmad; Aligarh, AMU Campus, 1female, (on slide), 31.x.2014, coll. SK Ahmad; Aligarh, Dhorra, 2 females (on slides), 29.i.2013, coll. MT Khan; Aligarh, Dhorra, 1 female (on slide), 7.ii.2013, coll. MT Khan; Aligarh, medical colony, 1 male (on slide), 1.xi.2013, coll. SK Ahmad; Aligarh, Jawan, 1 female (on slide), 25.xi.2015, coll. MT Khan; Hathras, 2 females (on slides), 6.iii.2013, coll. SK Ahmad; Hathras, 1 female (on slide), 6.iii.2013, coll. MT Khan. UTTARAKHAND: Mussoorie, Kempty fall, 1 female (on slide), 17.ix.2013, coll. PT Anwar.

Host. *Viennotaleyrodes megapapillae* on *Dalbergia latifolia*.

Distribution. India: Karnataka (present record), Uttarakhand (present record), Uttar Pradesh.

Comments. The holotype is on two slides, with one antenna and a fore wing on one slide under a large cover slip and rest of the body placed in a drop of balsam on another slide with head removed from the body.

The male of *Ufens latipennis* is apparently similar to *U. khamai* Owen in antenna, fore wing and genital structure but differs in having parameres gradually curving at apex, instead of abrupt as in *U. khamai*; perforation on parameres not seen; phallus 2.06× of hind tibia length.

Ufens gurgaonensis Yousuf & Shafee

Ufens gurgaonensis Yousuf & Shafee, 1988: 73, 75–77, female. Holotype, female, India, Haryana, Gurgaon (ZDAMU, examined).

Ufens gurgaonensis Yousuf & Shafee: Hayat, 2008: 19–20, figures, key, taxonomy.

Diagnosis

Female. Length. 0.50 mm. Head with frontovertex brown; eyes and ocelli red. Mandible golden yellow with tip brown. Antenna with radical, scape and pedicel yellow; funicle and clava dark brown. Mesosoma with pronotum, mesoscutum and scutellum dark brown; metanotum and propodeum pale brown; axillae, mesopleuron and tegulae dark brown. Fore and hind wing hyaline. Legs with coxae, hind trochanter, hind femur, blackish brown; fore and mid femur, tibiae and tarsi yellow. Gaster with T1 yellow, rest blackish brown. Antenna with scape broad at the base, 3.62× as long as broad; pedicel, somewhat conical, 1.36× as long as broad with 2 prominent setae; 2 anellus present; funicle two segmented (F1 and F2), 1.25× as long as broad; clava three-segmented (C1, C2 and C3), 2.66× as long as broad; both mesoscutum and scutellum with longitudinally cellulate sculpture. Fore wing, 1.88× as long as broad; disc densely setose, setae not arranged in rows; stigmal vein long; marginal fringe short. Gaster longer than mesosoma, (132:77); ovipositor moderately long, extending from tergite TIV of gaster and hardly exerted; ovipositor,

1.39× hind tibia length.

Male. Unknown.

Type material examined. Holotype, female (on 2 slides), labelled, “117 *Ufens gurgaonensis* sp.n. A.K. Chisti Punhana Dist–Gurgaon, 1.x.1984” and a ticket with ‘Holotype’ written in red ink (ZDAMU, HYM/CH 385).

Additional material examined. INDIA: ANDHRA PRADESH: East Godawari, Sarpavaram, 1 female (on slide), 5.ii.2014, coll. SK Ahmad. HIMACHAL PRADESH: Mandi, Sartar, 1 female (on slide), 30.vi.2006, coll. FR Khan. UTTAR PRADESH: Aligarh, Jamalpur, 4 females, (on slides); 17.ix.2013; coll. MT Khan; Aligarh, Jawan, 1female (on slide), 25.xi.2015, coll. MT Khan; Aligarh, Qila, 1female (on slide), 26.ii.2013, coll. MT Khan; Aligarh, Department of Zoology, 1female (on slide), 23.viii.2013, coll. MT Khan; Hathras, 1 female (on slide), 6.iii.2013, coll. MT Khan (ZDAMU).

Distribution. India: Andhra Pradesh (present record); Haryana; Himachal Pradesh (present record); Uttar Pradesh.

Discussion. The genus *Ufens* was first erected by A.A Girault in the year 1911^[5]. A most recent work on the revision of *Ufens* based on “male genitalia” was done by Owen (2011)^[14], where he described 31 new species (2011)^[14], and 2 species described previously (2005)^[1], all based on male genitalia. Four species was described earlier, all based on females from India, however the allotype was described only for *U. breviclavata*. In this paper, a male of *U. latipennis* is recorded for the first time from a bred material of Karnataka; previously the species was only recorded from Uttar Pradesh, I have recorded it from Karnataka and Uttarakhand also. The other species *U. gurgaonensis* previously recorded from Haryana and Uttar Pradesh only, I have recorded it from Andhra Pradesh and Himachal Pradesh also.

Conclusion. The aim of the present study is to enhance the knowledge of *Ufens* and to add the additional records of both male and female of *Ufens* from India and also provide the additional distribution records of known species viz. *U. latipennis* and *U. gurgaonensis* from different Indian states.

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