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THYSANOPTERA FAUNA OF CHHATTISGARH INDIA

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INTRODUCTION

Order Thysanoptera include approximately 6000 species across the globe in which nearly 700 species are reported from India (Thrips Wiki 2013), accounting for about 10% of the total world fauna. In spite of excellent efforts on taxonomy to reveal the biodiversity of these tiny (1-2 mm), and economically important insect (as crop pest and vectors for tospoviruses) in India, we still have geographical regions which are practically unsurveyed for thrips biodiversity; Chhattisgarh is one of them along with Gujarat, Odisha and Sikkim etc. It is to mention that till date no thrips species have been reported from Chhattisgarh state of India and even the localities from where recent collection have been made were never been surveyed as per literature (Ananthakrishnan 1980 & Bhatti 1990). During the recent survey of Chhattisgarh, 7 species of thrips have been identified and are being reported here for the first time. All these new records are in two families of Suborder Terebrantia. The members of the family Aeolothripidae of suborder Terebrantia are predators on thrips and mites and presently represented by one species namely *Franklinothrips vespiformis* (Crawford). The members of the family Thripidae of suborder Terebrantia are very injurious to crop plants and represented by six species, namely, *Frankliniella schultzei* (Trybom), *Megalurothrips usitatus* (Bagnall), *Thrips florum* Schmutz, *Thrips hawaiiensis* (Morgan), *Thrips palmi* Karny, *Thrips subnudula* (Karny).

The objective of this paper is to report seven species of thrips from Chhattisgarh for the first time. Diagnostic features, distribution details, material studied, and registration number as recorded on each slide mounted specimen housed at Zoological Survey of India in National Zoological Collections (NZC), Kolkata are provided for new records.

Specimens collected by beating method were preserved in collecting fluid (9 parts 10% alcohol + 1 part glacial acetic acid + 1 ml Triton X-100 in 1000ml of the mixture) and mounted on to the glass slides in Canada balsam (Bhatti 1999). The photographs were taken through a Leica Trinocular Microscope (Leica DM-1000) and using Leica software application suite (LAS EZ 2.1.0).

All the species are listed with their valid names, authority and the year of description. Species are listed systematically and alphabetically. The classification adopted in the article is that of Mound, Heming and Palmer (1980).

Family AEOLOTHRIPIDAE

Franklinothrips vespiformis (Crawford DL)

1909, *Aeolothrips vespiformis* Crawford DL. *Pomona, Coll. J. Ent.*, 109.

Diagnostic characters: Body bicoloured. Antennal segments yellow except IV dark. Fore wing with subapical pale area. Head rounded, basal abdominal segments narrow, appearing ant-like in females, not constricted in males. Maxillary palps 3-segmented. Antenna 9-segmented, long and thin, sense cones on segments III and IV extending along the whole length of segments. This species is widespread predator of thrips and mites.

Material studied : 3♀ , Chhattisgarh, Dantewada, 2.ii.2013, from general vegetation, Girish Kumar.

Distribution : India: Chhattisgarh (new record), Karnataka, Maharashtra.

Family THRIPIDAE

Frankliniella schultzei (Trybom)

1910, *Physothrips schultzei* Trybom. *Denksch. Med.-natur. Gesel.*, 151.

Diagnostic characters : Body brown. Ocellar setae III close together to anterior margin of hind ocelli. Abdominal tergite VIII with posteromarginal comb represented by not more than 1 to 3 hairs. This species is a widespread pest, and is a vector of Tospovirus, Tomato spotted Wilt.

Material studied : 1♀ , Chhattisgarh, Kobra, 3.vi.2012, general vegetation, No. CHCAM 3115, coll. Angshuman Raha and Party.

Distribution : India: Andaman Island, Chhattisgarh (new record), Delhi, Karnataka, Meghalaya, Tamil Nadu, Uttar Pradesh.

Megalurothrips usitatus (Bagnall)

1913, *Physothrips usitatus* Bagnall *Ann. Mag. Nat. Hist.*, (8) **12** (69): 293-294.

Diagnostic characters: Female body brown but male bicoloured with pale pronotum. Antennal segment III pale, VI brown. Fore wing banded. This species is very difficult to identify based on females as according to Palmer 1987.

Material studied: 1♀ , Chhattisgarh, Surguja, Ambikapur, 4.vi.2012, from *Lantana camara*, No. CHCAM 3458, coll. Angshuman Raha and Party.

Distribution: India: Chandigarh, Chhattisgarh (new record), Delhi, Karnataka, Tamil Nadu, Uttar Pradesh.

Thrips florum Schmutz

1913, *Thrips florum* Schmutz *Sitz.-ber. Akad. Wiss. Wein, math.-naturw.* KI., Abt. I, **122**(7): 1003-1005.

Diagnostic characters: Female body brown, male with body pale yellow. Fore wing clavus with 5 setae on anal vein, apical veinal seta shorter than subapical veinal seta and basal discal seta longer than apical veinal seta or subequal to it. Postocular setae No. 2 and 4 distinctly shorter than No. 1 and 3, which are subequal. Metanotum completely unsculptured near to anteromedian pair of companiform sensilla. Tergite IX of male with S2 seta very slender, much thinner and shorter than S1, and inserted very close to it; sternites III-VII each with transversely elongate pore area.

Material studied: 4♀ , Chhattisgarh, Durg, 6.vi.2012, from *Lantana camara*, No. CHCAM 3625; 5♀ , Surguja, Ambikapur, 4.vi.2012, *Lantana camara*, No. CHCAM 3458; 1♀ , Kawardha, Saroda dam, 22.ix.2012, No. CHCAM 3600; 1♂ , Kobra, general vegetation, No. CHCAM 3115, coll. Angshuman Raha and Party.

Distribution: India: Andaman Island, Chhattisgarh (new record), Delhi, Karnataka, Punjab.

Thrips hawaiiensis (Morgan)

1913, *Euthrips hawaiiensis* Morgan. *Proc. U. S. Nat. Mus.*, 46: 3-5.

Diagnostic characters: Female body bicoloured, male with body pale yellow. Fore wing clavus with 5 setae on anal vein, apical veinal seta longer than subapical veinal seta and basal discal seta shorter than apical veinal seta or subequal to it. Postocular setae No.2 usually as long as 3, No. 4 shorter than No. 3. Metanotum with transeverse line of sculpture near to anteromedian pair of companiform sensilla. Tergite IX of male with S2 seta not thinner than S1, subequal and slightly shorter than S1, and inserted far away from S1; sternites III-VII each with transversely oblong and medially narrowed pore area.

Material studied: 4♀ , Chhattisgarh, Durg, 6.vi.2012, from *Lantana camara*, No. CHCAM 3625; 5♀ , Surguja, Ambikapur, 4.vi.2012, *Lantana camara*, No. CHCAM 3458; 1♀ , Kawardha, Saroda dam, 22.ix.2012, No. CHCAM 3600; 1♂ ,

Kobra, general vegetation, No. CHCAM 3115, coll. Angshuman Raha and Party.

Distribution: India: Andaman Island, Assam, Chhattisgarh (new record), Delhi, Karnataka, Meghalaya, Sikkim, West Bengal.

Thrips palmi Karny

1925, *Thrips palmi* Karny *Bull. Deli Proefst. Medan*, **23**: 10-15.

Diagnostic characters: Body bright golden yellow including wings and legs. Antenna 7-segmented. Ocellar setae III outside ocellar triangle. Metanotum with longitudinal lines of sculpture and these lines converging mesad posteriorly and middle; median pair of setae inserted far back of anterior margin; companiform sensilla present. Comb of posterior margin of tergite VIII complete. Abdominal sternites III-VII of male each with a transversely elongate pore area.

Material studied: 1♀ , Chhattisgarh, Durg, 6.vi.2012, from *Lantana camara*, No. CHCAM 3625, coll. Angshuman Raha and Party.

Distribution: India: Chhattisgarh (new record), Delhi, Karnataka, Punjab.

Thrips subnudula (Karny)

1927, *Ramaswamiahiella subnudula* Karny *Mem. Dept. Agric. India, Ent. Ser.*, **9**(6): 208-210.

Diagnostic characters: Body pale yellow. Antenna 7-segmented. Ocellar setae III inserted behind fore ocellus, with in ocellar triangle. Metanotal median pair of setae inserted far back of anterior margin. Abdominal sternites and laterotergites with accessory setae. Abdominal sternites with numerous posteromarginal setae.

Material studied: 1♀ , Chhattisgarh, Kobra, 2.vi.2012, from *Lantana camara*, No. CHCAM 3173, coll. Angshuman Raha and Party.

Distribution: India: Chhattisgarh (new record), Delhi, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, West Bengal.

Family PHLAEOTHRIPIDAE

Haplothrips ganglbaueri Schmutz

1913, *Haplothrips ganglbaueri* Schmutz *Sitz. Ber. Akad. Wiss. Wein, Math.-naturw.* KI. Abt. I, **122**(7): 1034-1036.

Diagnostic characters: Brown species. Antenna 8-segmented; III asymmetrical. Segment III with one sense cone and IV with 2+2(+1) sense cones. Notopleural sutures complete. All dorsal prothoracic setae well developed and expanded apically. Fore wing with 4-7 duplicated cilia. Tergites III to VII each with 2 pairs of wing retaining setae. S1 setae on tergite IX bluntly pointed. Tube shorter than head. Anal setae slightly shorter than tube.

Material studied: 1♀ , Chhattisgarh, Kobra, 2.vi.2012, from *Lantana camara*, No. CHCAM 3173; 1♀ , 3.vi.2012, general vegetation, No. CHCAM 3115; 1♀ , Kawardha, Saroda Dam, 22.ix.2012, *Lantana camara*, No. CHCAM 3600; 2♀ , Bilaspur, Achanakmar WLS, 11.vi.2012, *Lantana camara*, No. CHCAM 3313, coll. Angshuman Raha and Party.

Distribution: India: Andaman Island, Andhra Pradesh, Chhattisgarh (new record), Delhi, Haryana, Karnataka, Madhya Pradesh, Meghalaya, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

SUMMARY

This is the first report of thrips species from Chhattisgarh so far. More extensive surveys need to be undertaken in Chhattisgarh, which may yield more species from this practically untouched area for thrips and well as other insect taxa.

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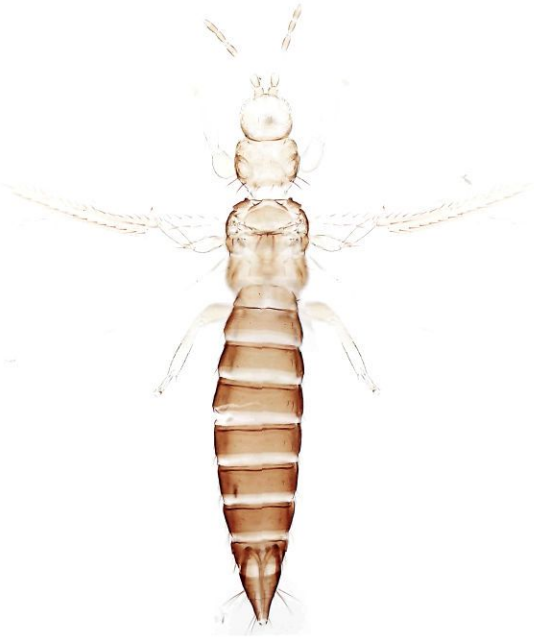
1. ***Franklinothrips vespiformis*** (Crawford)

2. ***Frankliniella schultzei*** (Trybom)

3. ***Megalurothrips usitatus*** (Bagnall)

4. ***Thrips florum*** (Schmutz)



5. ***Thrips hawaiiensis*** (Morgan)

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