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## First record of *Hermolaus typicus* Distant (Heteroptera: Pentatomidae) from Maharashtra

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### Abstract

The paper deals with a new record of *Hermolaus typicus* Distant, of family Pentatomidae for the first time from Maharashtra on turmeric plant. Measurements of different body parts and ratios were calculated as additional diagnostic characters. Male and female genitalia were studied in detail.

**Keywords:** Heteroptera, Pentatomidae, *Hermolaus typicus*, new record, Maharashtra

### Introduction

Distant [3] erected the genus *Hermolaus* and recorded *Hermolaus typicus* Distant from Nilgiri hills (Tamil Nadu), later on Azim [2] recorded *H. typicus* from Aligarh (Uttar Pradesh) and Kaur *et al.* [6] recorded from Nainital (Uttarakhand) and Shimla (Himachal Pradesh). The genus *Hermolaus* belongs to family Pentatomidae, commonly known as “stink bugs” as they emit an unpleasant odour, which is offensive in nature. Family Pentatomidae is represented by 896 genera and 4722 species from the world and about 590 species of the Pentatomidae are known to occur in India (Distant [3, 4, 5], Ahmad and Afzal [1]).

Medicinal history of Turmeric is at least 2500 years old. Traditionally turmeric powder is being used in Indian medicine against biliary disorders, anorexia, cough, diabetic wounds, hepatic disorders, rheumatic disorders, sprains and swellings caused by injury, and sinusitis. Externally, the dried rhizome has been applied to fresh wounds and to insect stings and to help the healing process in chickenpox and smallpox. It is also applied topically for ulcers, wounds, eczema, and inflammations. In both the Ayurvedic and Siddha systems of medicine, turmeric paste is used topically to treat ulcers and scabies.

Association of Pentatomid bugs with the turmeric (*Curcuma longa* Linn.) has been reported by several workers in India. Kotikal and Kulkarni [7] reported two Pentatomid bugs (*Nezara viridula* and *Megacopta cribraria*) as sap sucker on the leaves of turmeric plant from Northern Karnataka.

Present study has recorded *H. typicus* for the first time on the Turmeric plant from Latur and Solapur districts of Maharashtra. Morphometric studies has been made as additional diagnostic characters with the supplement of male and female genitalia.

### 2. Materials and Methods

This study is based on the materials collected during field surveys from Latur and Solapur Districts of Maharashtra. The specimens were collected in 70% alcohol and then set pinned. The specimens are deposited in the National Zoological Collection of Zoological Survey of India, Hemiptera Section, Kolkata. Measurements and photographs of the specimens and the different parts of the body were taken with the aid of Leica M 205A. All measurements are in millimeters.

### 3. Results and Discussion

**Genus *Hermolaus*** Distant, 1902

1902. *Hermolaus* Distant, *Fauna Brit. India, Rhynchota*, 1: 169.

Type species: *Hermolaus typicus* Distant.

### Diagnosis

Head relatively longer than wide, tapering anteriorly, juga as long as tylus; central margins of head sinuate before eyes; antennae five-segmented, basal segment not reaching apex of head;

rostrum long, reaching the fourth abdominal segment, second segment shorter than third and fourth together; pronotum anteriorly deflected, anterior margin concave, centrally truncate, lateral angles subprominent; scutellum broad, a little more than half the length of abdomen, its apex broadly rounded; corium somewhat short, its apical angle extending but little beyond apex of scutellum; membrane a little longer than abdomen.

### **Hermolaus typicus Distant, 1902**

1902. *Hermolaus typicus* Distant, *Fauna Brit. India, Rhynchota*, 1:170.

**Description:** Colour: Body brownish yellow in colour, thickly punctate (Fig. 1); head brownish yellow with dark brown punctures (Fig. 4); eyes brownish with yellow margin; ocelli dark red; antennae brownish yellow with apical segment little darker (Fig. 3); rostrum yellowish brown with apical segment light brown (Fig. 7); pronotum brownish yellow, anterior area paler in hue with brownish punctuation and with two brown transverse spots, middle of posterior area with black fascia and coarsely punctate, anterolateral margins yellow with fine punctuation (Fig. 4); scutellum yellow, brownly punctate, paler anteriorly, two minute levigate yellow spots at each basal scutellar angle (Fig. 5); corium yellowish with brown punctations; hemelytral membrane hyaline (Fig. 5); connexivum light brown, spotted with dark brown dorsally whereas ventrally with dark brown punctations; legs yellowish, with dark brown punctures, tips of tarsi brown (Fig. 6,7); central region of sternum between legs dark brown, lateral areas yellowish with brown punctations (Fig. 6,7); metathoracic scent gland yellowish, impunctate (Fig. 6,7); in

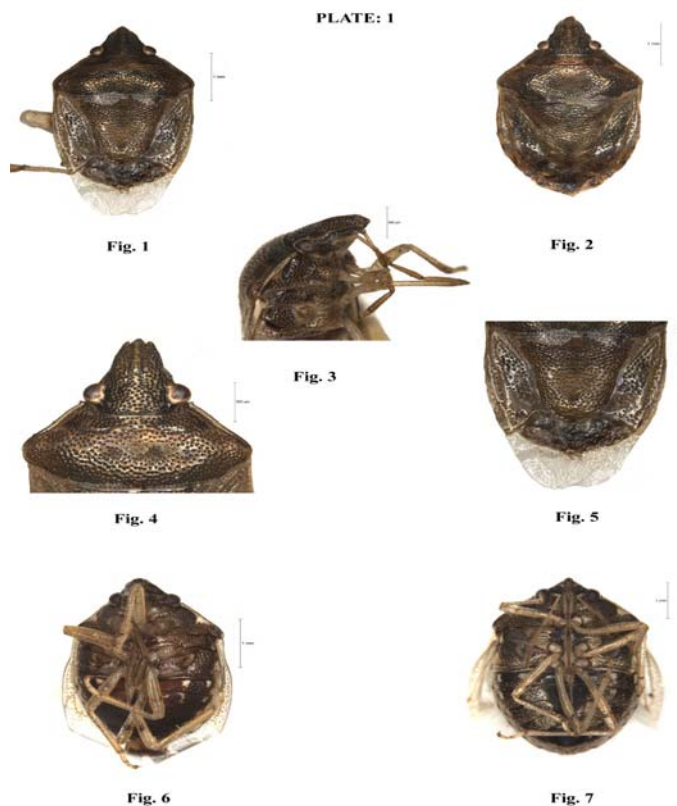
male entire abdominal disc reddish brown, thickly punctate on lateral areas, impunctate centrally (Fig 8); in female, abdomen beneath yellow, thickly punctured with reddish brown, more on lateral areas and with a central maculate dark brown fascia (Fig. 12).

**Structure:** Head about as long as broad, narrow, deflected laterally, tapering anteriorly, central lobe prominent and its apex slightly raised to the lateral lobes (Fig. 4); antennae five-segmented, basal segment not reaching apex of head (Fig. 3); rostrum long, reaching fourth abdominal segment, second segment about as long as fourth and shorter than third and fourth segments together (Fig. 7); pronotum broader than long, anterior margin concave, centrally truncate, humeral angles subrounded (Fig. 4); scutellum about as long as broad, a little more than half the length of abdomen, its apex broadly rounded (Fig. 5); corium short; membrane extending beyond abdomen (Fig. 5); legs pubescent with spines, tibia longer than femora; abdomen pilosed with golden pubescence, more longer at tip of last abdominal sternite.

Male genitalia: Pygophore cup-shaped, broader than long (Fig. 10); U-shaped inverted dorsal opening; posterior margin concavely sinuate; parameres somewhat comma-shaped, anteriorly tapering into a knob like structure, posteriorly rounded (Fig. 11); aedeagus as in Fig. 9.

Female genitalia: First gonocoxae distally wide apart, apex rounded, posterior margins sinuate; second gonocoxae small; 8<sup>th</sup> paratergites triangular; 9<sup>th</sup> paratergites broad at apex, not passing beyond posterior margins of 8<sup>th</sup> paratergites (Fig. 13).

### **Measurements**



**Fig 1-7:** *Hermolaus typicus* Distant- 1. Dorsal view of male; 2. dorsal view of female; 3. lateral view of head with antennae; 4. dorsal view of head and pronotum; 5. dorsal view of scutellum and hemelytra; 6. ventral view of male; 7. ventral view of female

PLATE : 2



Fig. 8



Fig. 9



Fig. 10

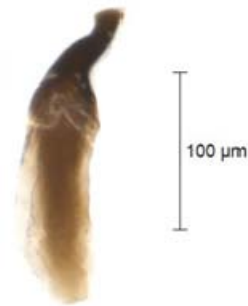


Fig. 11



Fig. 12



Fig. 13

Fig 8-13: *Hermolaus typicus* Distant- 8. abdominal tip of male, ventral view; 9. aedeagus, lateral view; 10. pygophore, ventral view; 11. paramere, lateral view; 12. abdominal tip of female, ventral view; 13. genital plate of female

Body parts	Male (♂) (in mm)	Female (♀) (in mm)
Body length (BL)	4.00	4.21
Head length (HL)	0.98	1.08
Maximum width of head across eyes (HW)	1.05	1.15
Inter-ocular distance (IOD)	0.59	0.70
Length of 1 <sup>st</sup> antennomeres (A1)	0.30	0.39
Length of 2 <sup>nd</sup> antennomeres (A2)	0.34	0.42
Length of 3 <sup>rd</sup> antennomeres (A3)	0.36	0.48
Length of 4 <sup>th</sup> antennomeres (A4)	0.63	0.64
Length of 5 <sup>th</sup> antennomeres (A5)	0.58	0.58
Pronotum Length (PL)	0.96	1.09
Pronotum Width (PW)	2.25	2.63
Scutellum Length (SL)	1.41	1.73

Scutellum Width (SW)	1.53	1.74
Length of abdomen (ABL)	1.22	1.55
Width of abdomen (ABW)	2.03	2.42
Length of 1 <sup>st</sup> rostral segment (R1)	0.39	0.42
Length of 2 <sup>nd</sup> rostral segment (R2)	0.53	0.58
Length of 3 <sup>rd</sup> rostral segment (R3)	1.28	1.89
Length of 4 <sup>th</sup> rostral segment (R4)	0.56	0.59
Length of fore coxa (LFC)	0.13	0.28
Length of fore-trochanter (LFTr)	0.16	0.30
Length of fore femora (LFF)	0.87	1.18
Length of fore tibia (LFT)	0.83	0.93
Length of fore tarsus (LFTa)	0.47	0.55
Length of mid coxa (LMC)	0.24	0.29
Length of mid-trochanter (LMTr)	0.23	0.29
Length of mid femora (LMF)	0.99	1.34
Length of mid tibia (LMT)	1.00	1.35
Length of mid tarsus (LMTa)	0.46	0.52
Length of hind coxa (LHC)	0.26	0.36
Length of hind-trochanter (LHTr)	0.25	0.34
Length of hind femora (LHF)	1.48	1.68
Length of hind tibia (LHT)	1.62	1.90
Length of hind tarsus (LHTa)	0.60	0.61

### Ratios

Indices	Male (♂)	Female (♀)
Length of head/width of head across eyes (HL/HW)	0.92	0.93
Length of pronotum/width of pronotum (PL/PW)	0.42	0.41
Width of head/ width of pronotum (HW/PW)	0.46	0.44
Length of scutellum/width of scutellum (SL/SW)	0.92	0.99
Length of scutellum/width of pronotum (SL/PW)	0.62	0.65
Length of 1 <sup>st</sup> antennal segment/ length of 2 <sup>nd</sup> antennal segment (A1/A2)	0.86	0.93
Length of 1 <sup>st</sup> antennal segment/ length of 3 <sup>rd</sup> antennal segment (A1/A3)	0.82	0.82
Length of 1 <sup>st</sup> antennal segment/ length of 4 <sup>th</sup> antennal segment (A1/A4)	0.47	0.61
Length of 1 <sup>st</sup> antennal segment/ length of 5 <sup>th</sup> antennal segment (A1/A5)	0.51	0.67
Length of fore femora/ length of fore tibia (LFF/LFT)	1.04	1.25
Length of mid femora/ length of mid tibia (LMF/LMT)	0.99	0.99
Length of hind femora/ length of hind tibia (LHF/LHT)	0.91	0.89
Length of 1 <sup>st</sup> rostral segment/ length of 2 <sup>nd</sup> rostral segment (R1/R2)	0.57	0.71
Length of 1 <sup>st</sup> rostral segment/ length of 3 <sup>rd</sup> rostral segment (R1/R3)	0.22	0.28
Length of 1 <sup>st</sup> rostral segment/ length of 4 <sup>th</sup> rostral segment (R1/R4)	0.51	0.70

**Material examined:** 1♂, 1♀, India: Maharashtra, Dist. Latur, Mahapur, 27.ii.2015, coll. M. E. Hassan and party (Lat.: 18.46946°, Long.: 76.65366°); 7♂, 6♀, Dist. Solapur, Kutrewadi, 18.vi.2014, coll. M. E. Hassan and party (Lat.: 17.35925°, Long.: 75.57839°).

**Distribution:** India: Maharashtra (Latur, Solapur), Tamil Nadu, Uttar Pradesh, Uttarakhand, Himachal Pradesh.

**Host:** Turmeric plant.

### Summary

This study deals with *Hermolaus typicus* Distant, which is reported first time from the Latur and Solapur districts of Maharashtra from the turmeric plant. Distant<sup>[3]</sup> described the species as new to the science from Nilgiri hills (Uttar Pradesh). Measurements of different body parts were taken and ratios between stable body parts were calculated, which can be utilised as an additional diagnostic characters to separate allied species. Male and female genital components were studied in detail, which may serve as tool for the revisionary work.

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