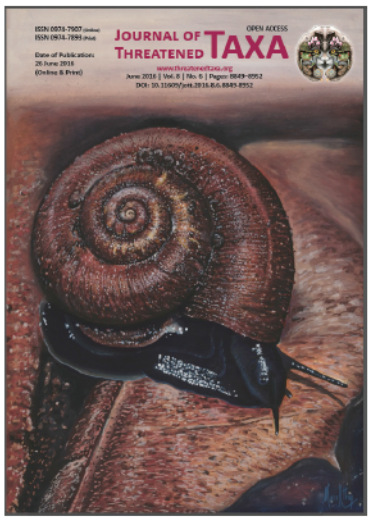

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COMMUNICATION

DESCRIPTION OF A NEW SPECIES OF *UMAIRIA* HAYAT (HYMENOPTERA: APHELINIDAE) WITH ADDITIONAL DISTRIBUTION RECORDS OF APHELINIDS FROM INDIA

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Mani Ayyamperumal

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Description of a new species of *Umairia* Hayat (Hymenoptera: Aphelinidae) with additional distribution records of aphelinids from India

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OPEN ACCESS

Abstract: A new species, *Umairia chidambaramensis* Manickavasagam & Ayyamperumal, is described from Tamil Nadu, India. A key to the known species of *Umairia* Hayat is given, and additional distribution records of 10 species of aphelinids from India are also reported.

Keywords: Andhra Pradesh, Bihar, Chalcidoidea, Key, Manipur, Nagaland, India, new records, Tamil Nadu.

Abbreviations: F1, F2, F3 = Funicle segments 1, 2 and 3. TI, TII, etc. = Tergites 1, 2, etc. of gaster. BAU - Bihar Agricultural University, Bhagalpur, Bihar, India; EDAU - Entomology Department, Annamalai University, Chidambaram, Tamil Nadu, India; NBAIR - National Bureau of Agricultural Insect Resources, Bengaluru, Karnataka, India (Formerly NBAII).

The family Aphelinidae (Hymenoptera: Chalcidoidea), as defined by Heraty et al. (2013), is presently represented in the Indian fauna by 248 species in 23 genera up to December 2015. The genus *Umairia* was described by Hayat (2014) with *U. laiba* as the type species. He also described another species *U. zeera* Hayat in the same paper. Here we describe another new species, *U. chidambaramensis* from Tamil Nadu. A further five species of aphelinids are reported as new distribution records for Tamil Nadu, three species for Manipur, two for Nagaland and one each for Andhra Pradesh and Bihar.

Material and Methods

Collections were made using malaise traps in the coastal mangrove forest of Pichavaram, Cuddalore, Tamil Nadu and also from Andhra Pradesh, Manipur, Nagaland, Himachal Pradesh and Bihar. Specimens initially preserved in alcohol were dried using hexamethyldisilazane (HMDS) as described by Brown (1993) and then card mounted. They were slide mounted as described by Noyes (1982), if necessary, for species identification. All the measurements are given in millimeters.

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Conflict of Interest: The authors declare no competing interests.

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Results

Umairia chidambaramensis
Manickavasagam & Ayyamperumal, sp. nov.
(Images 1–8)

urn:lsid:zoobank.org:act:A0E9032A-2BBC-4E8C-A2D3-9EE25FF46684

Material examined

Holotype: EDAU/Aph/003/2015, 20.xi.2012 female (on card), labeled "*Umairia chidambaramensis* sp. nov. Pichavaram mangrove forest, Chidambaram, Malaise trap, Tamil Nadu, India, coll. C. Menakadevi"

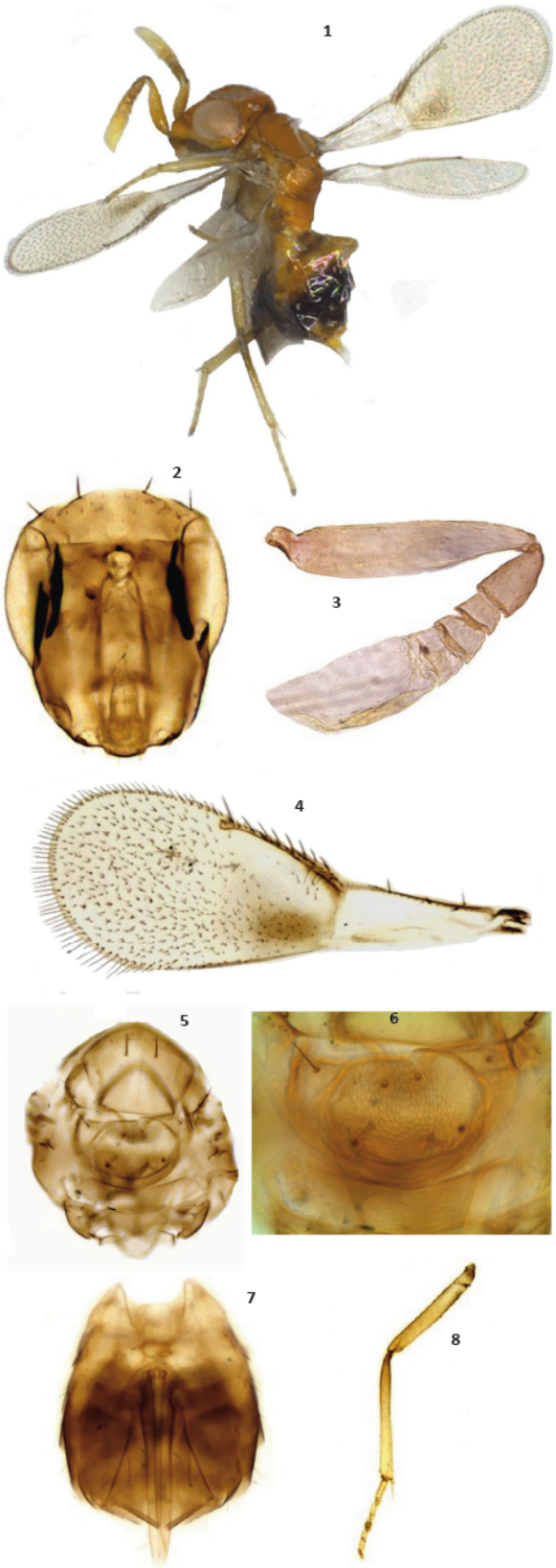
Paratypes: 4 females (EDAU/Aph/003/2015): 3 females (one on card, 2 on slides), 20.xi.2012, with same data as on holotype; 1 female, Annamalai University premises, Chidambaram, 18.x.2013, coll. C. Menakadevi. Reared from cockroach ootheca collected from curry leaves plant.

Female: (Image 1)

Holotype. Length, 1.0mm. Head largely orange to yellowish; frons and malar space orange. Antenna with scape orange yellow; pedicel orange brown; F1–F3 orange; clava yellow. Pronotum, mid lobe of mesoscutum, axilla and scutellum orange; side lobes of mesoscutum orange yellow; sides of propodeum and mesopleuron orange brown. Fore wing with a vertical streak below parastigma to posterior wing margin, with an oval infuscate patch apical to vertical streak, above the posterior wing margin, and the apical half of wing in front of the above two smoky or lightly infuscate, wing base to vertical streak hyaline. Hind wing lightly infuscate. Legs with coxae, trochanters and tarsi white and remaining parts of legs yellowish-brown. Gaster black with TI and TII orange (Image 1).

Head, in frontal view, slightly higher than broad; minimum width of frontovertex 0.54× head width; frons with a fine longitudinal groove in front of anterior ocellus; malar space 0.45× eye height; frontovertex and face smooth; head with very fine short numerous hyaline setae, in addition to four long brown setae just behind posterior ocelli (Image 2). Antennal scape 4.25× as long as broad; pedicel longer than F1 and F2 combined; funicle segments transverse; clava 2.4× as long as broad, and as long as pedicel and funicle combined; longitudinal sensillae absent in funicle, but 4 in clava (Image 3). Measurements in mm: head width: height 0.29: 0.33. Lengh:width, scape 0.17:0.04, pedicel 0.05: 0.03, F1 0.02:0.03, F2 0.02:0.03, F3 0.02:0.04, clava 0.12 :0.05.

Mesosoma (Image 5). Pronotum with very fine, polygonal, transversely elongate reticulate sculpture;



Images 1–8. *Umairia chidambaramensis* sp. nov.
1 - Habitus image; 2 - Head frontal view; 3 - Antenna; 4 - Fore wing; 5 - Mesosoma; 6 - Scutellum magnified; 7 - Metasoma with ovipositor; 8 - Mid leg

mid lobe of mesoscutum with a median longitudinal ridge running to the entire length of scutum; side lobe of mesoscutum smooth; axilla without polygonal reticulate sculpture; scutellum with raised polygonal reticulate sculpture, cells slightly elongate (Image 6); metanotum medially and propodeum medially in a triangular area with fine polygonal reticulation; propodeum on each side distal to spiracle with four setae; setae on mesosomal tergites as follows: each half of pronotal collar with three setae and a long seta at posterolateral corner, mid lobe of mesoscutum with a pair of long, dark setae in about anterior third, and a curved line of 6 small setae; each side lobe of mesoscutum with three small and one long setae; distance between posterior pair of scutellar setae 3.6× the distance between anterior pair. Fore wing 2.53× as long as broad; costal cell 1.25× as long as marginal vein; stigmal vein small with four sensilla (Image 4). Hind wing 5.45× as long as broad; marginal fringe 0.16× wing width. Measurements in mm: mesosoma length, 0.38; mesoscutum length, 0.20; width of axilla, 0.04; width at anterior margin of scutellum, 0.25; wing, length: width; fore wing, 0.76: 0.30; hind wing, 0.60: 0.11; mid tibia length, 0.30; mid basitarsus length 0.07; mid tibial spur length, 0.06 (Image 8).

Metasoma 1.05× longer than mesosoma (0.40:0.38); ovipositor extends from posterior end of TII of gaster, and exserted to 0.12× gaster length; setae on TI–TVII as follows, TI 0 + 0, TII 2 + 2, TIII 3 + 3, TIV 3 + 3, TV 2 + 2, TVI 2 + 2, TVII 7 + 7; ovipositor length 0.32 mm, third valvula length 0.10 mm (Image 7).

Host

Cockroach (Blattodea) ootheca collected from curry leaves, *Murraya koenigii*.

Distribution: India (Tamil Nadu).

Etymology

The species epithet is an adjective, derived from the type locality, Chidambaram.

Comments

The holotype of *Umairia laiba* has been examined (NBAIR). It shows the presence of longitudinal sensillae on F2, F3 and clava, whereas in *U. chidambaramensis* only clava bears longitudinal sensilla.

1. *Aphelinus abdominalis* (Dalman)

Specimen examined: 20.i.2015, India, Manipur, Tamenglong, one female through yellow pan trap from forest ecosystem, coll. Sophis Singh.

Distribution in India: Jammu & Kashmir (Hayat, 1998), Mizoram (Hayat et al. 2014), Manipur (new record).

Host: Aphids on *Phaseolus radiatus* (Hayat, 1998).

2. *Aphelinus asychis* Walker

Specimen examined: 9.i.2015, India, Nagaland, Zeluma, one female through yellow pan trap from forest ecosystem, coll. Sophis Singh.

Distribution in India: Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Meghalaya, Tamil Nadu, Uttarakhand and West Bengal (Hayat 1998), Nagaland (new record).

Hosts: *Brevicoryne brassicae* on cabbage; *Lipaphis erysimi* on Brassicas; *Myzus persicae* on brassicas, *Brassica oleracea*, *Solanum tuberosum* (Hayat, 1998).

3. *Aphelinus basilicus* Hayat

Specimens examined: 7.i.2015, India, Manipur, Senapati, one female through yellow pan trap from forest ecosystem, coll. Sophis Singh. 09.i.2015, India, Nagaland, Zeluma, one female through yellow pan trap from forest ecosystem, coll. Sophis Singh.

Distribution in India: Andhra Pradesh, Assam, Bihar, Goa, West Bengal (Hayat 1998); and Tamil Nadu (Menakadevi & Manickavasagam 2011), Manipur and Nagaland (new record).

Hosts: Aphids on *Ocimum basilium*, *Lantana camara* & okra.

4. *Aphelinus sharpae* Hayat

Specimen examined: 07.i.2015, India, Manipur, Senapati, one female through yellow pan trap from forest ecosystem, coll. Sophis Singh.

Distribution in India: Assam and Meghalaya (Hayat 1998), Manipur (new record).

Host: Unknown.

5. *Botryoideclava bharatiya* Subba Rao

Specimen examined: 10.ix.2013, India, Tamil Nadu, Trichirapalli, Pacha Malai, one female through yellow pan trap from forest ecosystem, coll. Krishna Chaitanya & S. Palanivel.

Distribution in India: Maharashtra (Jadhav & Verma 2001); Uttar Pradesh (Subba Rao 1980) and Andhra Pradesh, Easwaramurty et al. (1996) cited Easwaramurty et al. (1986) as having recorded this species from Andhra Pradesh, Gujarat and Madhya Pradesh. Hayat (1998) overlooked these papers. Tamil Nadu (new record).

Hosts: *Aclerda takahashi* on sugarcane, *Saccharum officinarum*; *Melanaspis glomerata* on sugarcane, indet.

scales on *S. munja* (Hayat, 1998).

6. *Botryoideclava thailandica* Hayat

Specimen examined: 10.ix.2013, India, Tamil Nadu, Trichirapalli, Pacha Malai, one female through yellow pan trap from forest ecosystem, coll. Krishna Chaitanya & S. Palanivel.

Distribution in india: Karnataka (Hayat et al. 2015) Tamil Nadu (new record).

Host: Unknown (Hayat et al. 2015).

7. *Coccobius comperei* (Hayat)

Specimens examined: 12.ix.2014, India, Tamil Nadu, Kanyakumari, Nagercoil, one female through yellow pan trap from forest ecosystem, coll. J. Gowri Prakash. India, Bihar, BAU, Bahalpur. Forest, one female through yellow pan trap from forest ecosystem, 8.i.2015, Coll. Abhinav Kumar.

Distribution in India: Karnataka and Kerala (Hayat 1998), Orissa (Hayat & Khan 2010), Bihar and Tamil Nadu (new record).

Host: Indet. Diaspidids (Hayat 1998).

8. *Coccophagus fumadus* Hayat

Specimen examined: 22 ix.2014, India, Tamil Nadu, Salem, Yercaud, one female through yellow pan trap from forest ecosystem, coll. M. Ayyamperumal & N. Gowthaman,

Distribution in India: Orissa (Hayat & Khan 2010), Kerala, Puducherry (Hayat 2012), Andaman & Nicobar Islands (Hayat & Veenakumari 2015), Karnataka (Hayat et al. 2015), Tamil Nadu (new record).

Host: Unknown (Hayat & Khan 2010).

9. *Coccophagus pseudococci* Compere

Specimen examined: 13.ii.2015, India, Andhra Pradesh, Nellore, one female through yellow pan trap from forest ecosystem, coll. Krishna Chaitanya.

Distribution in India: Andaman & Nicobar Islands, Bihar, Delhi, Goa, Himachal Pradesh, Karnataka, Maharastra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh (Hayat 1998), Arunachal Pradesh (Hayat et al. 2015), Andhra Pradesh (new record).

Host: *Centrococcus* sp. on *Achyranthes aspera*, *Pupalia lappacea; Coccidohystrix insolita* on *Datura* sp, *Solanum melongena*; *Ferrisia virgata* on *Acacia* sp; *Nipaecoccus* spp. On *Acacia* sp, *Morus indica; N. viridis* on *Ziziphus* sp, *Tephrosia purpurea; Peliococcus indicus* on *Prosopis spicegera; Planococcus* sp. on coffee; *P. citri* on *Citrus medica*; *Rastrococcus ineryoides* on *Citrus* sp, *Ziziphus* sp. (Hayat 1998).

10. *Paraphytis transversa* (Huang)

Specimen examined: 12.ix.2014, India, Tamil Nadu, Namakkal, Kolli hills, one female through yellow pan trap from forest ecosystem, coll. K. Saravanan.

Distribution in India: Kerala (Hayat 2012), Tamil Nadu (new record).

Host: Unknown (Hayat 2012).

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Key to species of *Umairia* Hayat (females)

1.	Head broader than high; eyes bulged; scrobe deep with sharp margin; scape 3.45 × as long as broad; TI of gaster with two setae	*U. zeera* Hayat
-	Head higher than broad; eyes not bulged; scrobe shallow with rounded margin; scape more than 4.0 × as long as broad; TI of gaster without setae	2
2.	Longitudinal sensillae present on F2, F3 and clava; scutellum slightly convex and not hexagonal; exserted part of ovipositor 0.17× gaster length	*U. laiba* Hayat
-	Longitudinal sensillae present only on clava; scutellum highly convex and hexagonal; exserted part of ovipositor 0.12× gaster length	***U. chidambaramensis* Manickavasagam & Ayyamperumal sp. nov.**

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