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Research Note

Record of three larval parasitoids (Hymenoptera: Ichneumonoidea) of *Maruca vitrata* (Fabricius) (Lepidoptera: Crambidae) from southern India

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ABSTRACT: *Maruca vitrata* (Fabricius) (Lepidoptera: Crambidae) commonly known as legume pod borer is known to infest many leguminous crops. In the recent rearing records of larval parasitoids from *M. vitrata* three species of wasps have been bred, *Bassus relativus* (Bhat and Gupta, 1977) (Hymenoptera: Braconidae: Agathidinae), *Phanerotoma hendecasisella* Cameron, 1905 (Braconidae: Cheloninae) and *Trathala flavoorbitalis* (Cameron, 1907) (Ichneumonidae: Cremastinae). Amongst these three Indian species of wasps, *B. relativus* is recorded for the first time as a larval parasitoid of *M. vitrata*. In the present study main diagnostic characters of all the three species of parasitic wasps along with their hosts and distribution details are provided.

KEY WORDS: Braconidae, Ichneumonidae, larval parasitoids, *Maruca vitrata*

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Maruca vitrata (Fabricius) (Lepidoptera: Crambidae) commonly known as legume pod borer is a pantropical insect pest of many legumes like pigeon pea, field bean, cowpea, greengram, blackgram, soybean and others. The larvae feed on flower buds, flowers, pods, tender parts of stem and peduncles, causing significant yield losses. So far thirty seven species of parasitic wasps have been recorded in association with *M. vitrata* across the world (Yu, 2012). In the recent rearing records of larval parasitoids from *M. vitrata*, three species of wasps have been bred, *Bassus relativus* (Bhat and Gupta, 1977) (Hymenoptera: Braconidae: Agathidinae), *Phanerotoma hendecasisella* Cameron, 1905 (Braconidae: Cheloninae) and *Trathala flavoorbitalis* (Cameron, 1907) (Ichneumonidae: Cremastinae) from Karnataka, India. Amongst these three Indian species of wasps, *B. relativus* is recorded for the first time from larvae of *M. vitrata*. In the present study we highlight main diagnostic characters of all the three species of parasitic wasps along with their hosts and distribution details. All the species of wasps are illustrated along with the host.

Bassus relativus (Bhat and Gupta) (Fig. 1)

Baeognatha relativa Bhat and Gupta 1977: 91, F, Tamil Nadu, Nilgiri Hills, India.

Bassus relativus (Bhat and Gupta): Yu, 2012.

Fig. 1. ***Bassus relativus***

Diagnosis. Pronotum, mesoscutum, scutellum, mesopleuron and ovipositor red brown; apical half of fore femur, fore tibia, fore tarsus, mid tibia, mid tarsus and mid tibial spurs yellowish. Labial and maxillary palps testaceous. Head, antennae, propodeum, basal half of fore femur, mid femur almost entirely, hind legs and metasoma black. Wing veins dark brown; pterostigma dark brown with edges darker.

Frons and clypeus shiny, closely distinctly punctate; clypeus and malar space distinctly pilose. Pronotum shiny and smooth; mesosoma and second metasomal tergite shiny and smooth. Mesoscutum sparsely and shallowly punctuate; notauli distinct, weakly transversely carinate. Scuto scutellar junction with four costulae; scutellum shiny, sparsely distinctly punctuate with apical transverse carinae. Mesopleuron smooth and shiny; mesopleural furrow narrow, moderately transversely carinate. Hind coxae stout, sparsely punctate; longer hind tibial spur 0.5× as long as hind basitarsus. Metasoma smooth and shiny; first tergite with dorso-lateral and a median longitudinal carina, its apical half finely longitudinally striated, basal half smooth; second tergite smooth and shiny, strongly transverse; ovipositor moderately long.

Host. First report from larvae of *Maruca vitrata* (Fabricius) (Lepidoptera: Crambidae).

Distribution. India (Karnataka (new record) and Tamil Nadu).

Comments. This species can be easily confused with *Therophilus javanus* (=*Baeognatha javana*) (Bhat and Gupta, 1977), which is prevalent in Vietnam, Indonesia and Malaysia. Both the species, *B. relativus* and *T. javanus*, were earlier included under the Genus *Baeognatha.* In the original description of *B. relativus* by Cameron (1905) the species was compared with the close allied species *T. javanus*. *Therophillus javanus* is recorded as a larval parasitoid of *M. vitrata*. *Bassus relativus* differs with the following characters of *T. javanus*: densely punctuate mesoscutum, second metasomal tergite with weak sculpture and face and mesosoma dull in appearance (vs. shallowly punctuate mesoscutum, smooth and shiny second metasomal tergite and face in *B. relativus*).

Specimens examined. 12 femals and males. Karnataka, Hessaraghatta, ex. larva of *M. vitrata* on pigeon pea, November 2012, coll. G. K. Sujayanand.

II. Phanerotoma hendecasisella Cameron (Fig. 2)

Phanerotoma hendecasisella Cameron 1905: 80, F, Tamil Nadu, Nilgiri Hills, India.

Diagnosis. Predominantly pale testaceous in general appearance.

Antennae yellowish brown, infuscated at apex; vertex yellowish brown with distinct dark brown ocellar region; tegulae yellow with dark brown colouration at apex; wings hyaline; pterostigma fuscous, paler at the base and apex. Mesosoma fuscous, coarsely shagreened, apex obscurely striated; notauli faintly indicated basally. The suture at the base of scutellum crenulated, scutellar lunules with robust oblique striations, apex with a broad shining black transverse strip. Metanotum with black infuscation medially at posterior margin. Propodeum shiny, yellow brown, with coarse sculpture. Hind femur with apical half yellow brown and basal half testaceous; hind tibia medially with a white-pallid band, apical half brown. Basal two segments of metasoma shagreened, medially pale testaceous; rest metasoma brown. Basal depression of first tergite of metasoma bordered by keel.

Fig. 2. ***Phanerotoma hendecasisella*** **Cameron**

Hosts. Recorded from many hosts. The most common ones are *Maruca vitrata*, *Chilo suppressalis* Walker, *Dichocrocis punctiferalis* (Swinhoe), *Diaphania indica* (Saunders) and *Earias insulana* (Boisduval) (Yu, 2012).

Distribution. India; Bangladesh; Egypt; Myanmar and Sri Lanka.

Specimens examined. 8 females, Karnataka, Hessaraghatta, ex. larva of *M. vitrata* on pigeon pea, November 2012, coll. G. K. Sujayanand.

III. Trathala flavoorbitalis (Cameron) (Fig. 3)

Tarytia flavo-orbitalis Cameron 1907: F, 589.

Trathala flavoorbitalis (Cameron): Yu, 2012.

Diagnosis. Yellow orange species in general appearance; distinct yellow scutellum and metasomal colouration with first and second tergites black brown while the remainder of the metasoma yellow orange laterally.

Head yellow, median part of frons, vertex and occiput dark brown, antenna brown, scape and pedicellus yellowish ventrally. Mesonotum yellow orange, dorsal brown marking on mesoscutal lobes, around scutellum. Notauli yellow. Tegulae and scutellum yellow. Metasoma yellow orange, first and second tergites and basal triangle on third tergite dark brown, rest tergites brown dorsally

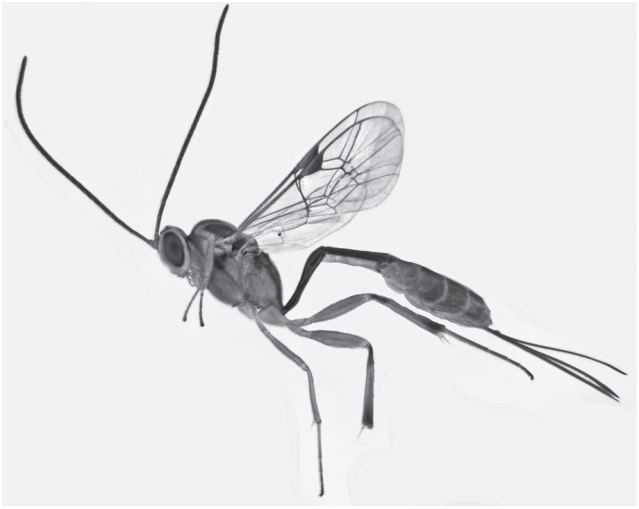

Fig. 3. *Trathala flavoorbitalis* (Cameron)

and yellow orange laterally. Legs yellow, hind tibia slightly infuscate basally and apically; wings hyaline, pterostigma brown, its anterior half yellow. Ovipositor sheath and ovipositor brown. Mesopleuron anteriorly and propodeum dark brown; third to sixth metasomal tergites basally infuscate. Face shagreened, clypeus smoother; vertex and frons granulate, center of frons smoother. Antenna longer than head and mesosoma with 30–33 flagellomeres. Mesonotum and mesopleuron densely punctuate, scutellum and post scutellum more sparsely punctate, mesopleuron smoother medially. Scutellum rounded without dorsal lateral carinae. Propodeum more densely punctate-shagreened dorsally than laterally. First tergite a little longer than second and twice longer than third. First tergite almost smooth, slightly longitudinally strigose at apex. Second tergite 3× longer than apically wide, longitudinally striated. Ovipositor shorter than metasoma, not decurved.

Hosts. The most common host species reported are *Maruca vitrata*, *Chilo partellus* (Swinhoe), *Chilo suppressalis* Walker, *Dichocrocis punctiferalis* (Swinhoe), *Diaphania indica* (Saunders), *Etiella zinckenella* (Treitschke), *Scirpophaga incertulas* Walker, *Spodoptera exigua* (Huebner) and *Sesamia inferens* (Walker) (Yu, 2012).

Distribution. Widespread throughout Indo-Pacific and Eastern Oriental region (Rousse, 2011).

Specimens examined. 2 females, Karnataka, Bangalore, ex. larva of *M. vitrata* on pigeon pea, November 2012, coll. G. K. Sujayanand.

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