

## A NEW SPECIES OF *SCENOCHAROPS* UCHIDA (HYMENOPTERA: ICHNEUMONIDAE) PARASITIC ON *CNAPHALOCROCIS MEDINALIS* (GUENEE) (LEPIDOPTERA: PYRALIDAE) FROM PENINSULAR INDIA

K. Sudheer <sup>1</sup> and T.C. Narendran <sup>2</sup>

Systematic Entomology Laboratory, Department of Zoology, University of Calicut, Kerala 673635, India  
Email: <sup>1</sup> sudheer\_kt03@yahoo.co.in; <sup>2</sup> drtcnarendran@yahoo.com

### ABSTRACT

A new species of *Scenocharops Uchida*, *S. sinui* sp. nov. is described from Karnataka, India. The new species is parasitic on Rice leaf folder, *Cnaphalocrocis medinalis* (Guenee). *Scenocharops sinui* sp. nov. is similar to *S. namkumensis* Gupta and Maheshwary but differs in the sculptures on frons, vertex, and mesoscutum, in having a median longitudinal carina on frons and larger malar space. The species *Campoplex artonae* Narendran is transferred to the genus *Dusona* and a new combination, *Dusona artonae* (Narendran) comb. nov. is proposed.

### KEYWORDS

*Hymenoptera*, *Ichneumonidae*, *Scenocharops sinui*, new species, *Cnaphalocrocis medinalis*, Karnataka, India, *Dusona artonae*, new combination

### ABBREVIATIONS

ASL - Above Sea level; DZCU - Department of Zoology, University of Calicut; F - Female; FWL - Forewing length; FWW - Forewing width; HW - Head width; HL - Head length; HWL - Hindwing length; HWW - Hindwing width; M - Male; ZSIK - Zoological Survey of India, Kozhikode.

Rice is the staple food crop for more than half the World's population. Rice is grown mainly in the humid and subhumid tropics of Asia, and is particularly important in south, southeast and east Asia. Among the rice growing countries, India is the largest rice grower. *Cnaphalocrocis medinalis* (Guenee) is a pest of rice, widely distributed in India occurring in almost all the rice growing tracts. The pest is commonly known as Rice leaf roller or Rice leaf folder, feeding on Rice (*Oryza sativa* L., Family Poaceae).

The caterpillars feed on the mesophyll of the leaves of young plants. The damage includes folded leaves and the removal of leaf tissue leaving whitish streaks. The folded leaves have a tubular design where the larvae hide to feed. Feeding reduces the productive leaf area that affects plant growth (Shepard *et al.*, 1995; Heong & Escalada, 1997). Expanded rice areas with irrigation systems, multiple rice cropping and insecticide induced resurgences are important factors in the insect's abundance. Leaf folder damage at the reproductive stage may be important. Feeding damage, if it is very high, on the flag leaves may cause yield loss.

Uchida (1932) erected the genus *Scenocharops* with the type species, *S. flavipetiolatus* (Sonan) (= *S. longipetiolaris* Uchida) from Taiwan. The genus belongs to Subfamily Campopleginae and is distributed in the Oriental and Palaearctic Regions (Wahl, 1999). The genus is represented in the Oriental Region by

eight species (Gupta, 1987). Uchida and Momoi (1960) described *S. koreanus* from Korea. Gupta and Maheshwary (1971, 1977) revised the world species of this genus with the inclusion of four new species and one new subspecies from India and Philippines. Jun-hua He (1980) reported two new species from China. In this paper, a new species, viz., *Scenocharops sinui* sp. nov., parasitic on Rice leaf folder, *Cnaphalocrocis medinalis* (Guenee) is illustrated and described from Karnataka, India. This is the first record of this genus from peninsular India. The affinities of this species with closely resembling *S. namkumensis* Gupta and Maheshwary are also discussed. The species *Campoplex artonae*, described by Narendran (2000) from Sikkim, India is transferred to the genus *Dusona* and a new combination, *Dusona artonae* (Narendran) comb. nov. is proposed. The type specimens are deposited in the TCN collections maintained in the Systematic Entomology Laboratory, Department of Zoology, University of Calicut (DZCU) for the time being, but eventually will be transferred to the Western Ghats Regional Station, Zoological Survey of India, Kozhikode (ZSIK).

### *Scenocharops sinui* sp. nov.

(Figs. 1-5)

### Material examined

**Holotype:** Female, 20.ix.2003, Sringeri (13°25'N & 75°15'E, ~750m ASL), Karnataka, coll. P.A. Sinu (Reg. No. SK 403).

**Paratypes:** 4 females (Reg. Nos. SK 404 - SK 407) and 3 males (Reg. Nos. SK 408 - SK 409), 24.ix.2003 - 29.x.2003, with same collection data of Holotype.

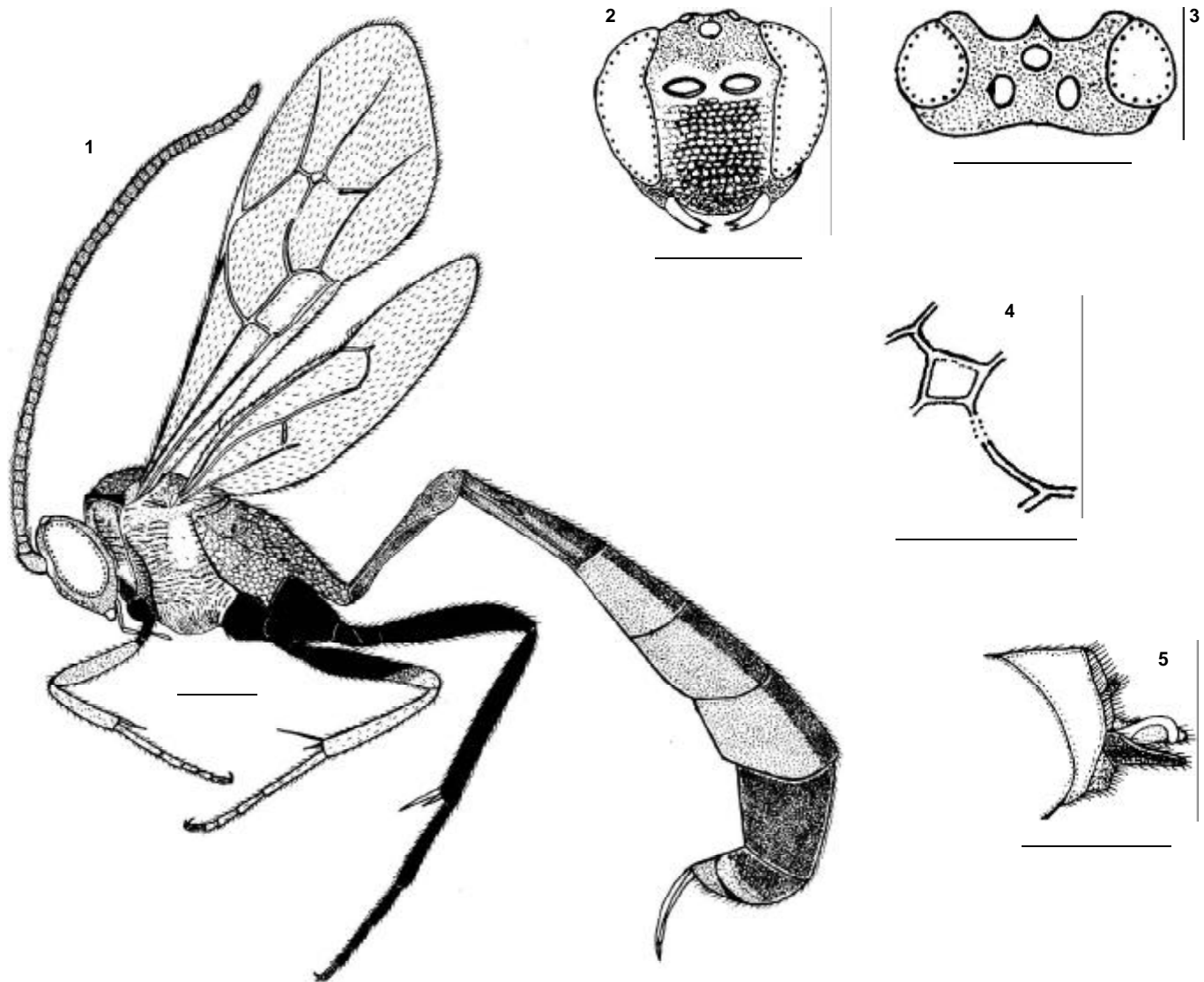
### Etymology

The species is named after the collector of the specimens, P.A. Sinu.

### Holotype

**Female:** Length excluding ovipositor - 7.2mm. Body covered with fine, silvery white, closely arranged hairs; hairs longer on face, scutellum and propodeum; hairs shorter on abdominal tergites except basal half of first tergite without hairs.

**Head:** HW - 1.56mm and HL - 0.58mm in dorsal view (Fig. 3); HW - 1.57mm and HL - 1.33mm in front view (Fig.2); face rugoso-punctate, rugosities weaker towards sides; malar space granulate, 0.6x basal width of mandible; mandibles punctate at base, smooth at apex, upper tooth slightly longer than lower tooth; frons, vertex and temple granulate; frons with a strong



**Figures 1-5. *Scenocharops sinui* sp. nov. (1-4 Female) Scale = 1mm.**  
 1 - Body profile; 2 - Head Front view; 3 - Head Dorsal view; 4 - Areolet; 5 - Male claspers

median longitudinal carina; interocellar area rugose; interocellar distance 1.5x ocellular distance, 2x distance between median and lateral ocelli; antenna with 48 segments; scape 2.33x as long as pedicel, 1.4x its maximum width; pedicel 0.43x as long as first flagellar segment; first flagellar segment 2.33x as long as second flagellar segment and 2x as long as last (45<sup>th</sup>) flagellar segment.

**Thorax:** 2.18x as long as width between tegulae; pronotum with strong striae in middle; epomia long and strong; mesoscutum closely punctate, interstices granulose; scutellum and metascutellum reticulate; mesopleurum strongly rugose, mesosternum rugoso-punctate, speculum smooth and shiny, prepectal carina extending 0.63x height of mesopleurum; metapleurum reticulate; propodeum largely reticulate, extending beyond apex of hind coxa, spiracle oval; FWL - 7.18mm; FWW - 2.42mm; HWL - 5.2mm; HWW - 1.26mm; areolet (Fig. 4) with a

stalk, length of stalk 0.5x height of areolet; nervulus apical of basal vein; hindwing with one basal and five apical hamuli; nervellus not intercepted; brachiella represented in form of stump; coxae with coarse, close punctures; longer hind tibial spur 0.48x length of first tarsal segment, 2.38x as long as width of tibia at apex.

**Abdomen:** First tergite long, straight, smooth and shiny except postpetiole bulbous and mat, with a lateral flange at base, 1.1x as long as second abdominal tergite; rest of abdominal tergites mat; second tergite 1.54x as long as third tergite; ovipositor 0.625x as long as length of hind femur.

**Colour:** Black except following markings: antennae blackish-brown; palpi, fore and mid tibiae, first three tarsal segments of fore and mid legs and apex of mid femur yellow with pale brownish tinge; fourth hind tarsal segments of fore and mid

legs and hind tibial spurs yellowish-brown; hind tibia brown; hind tarsal segments blackish-brown; thyridium, narrow ventrolateral line on second tergite, third to fifth tergites except median dorsal black line, seventh tergite apically and eighth tergite completely reddish brown; ovipositor red; wings clear hyaline except fuscous towards apex; veins brown.

**Male:** Similar to female except sculptures weaker and fifth tergite apically, sixth and seventh tergites completely black; male genitalia as in Fig. 5.

**Host:** Rice leaf folder or Rice leaf roller, *Cnaphalocrocis medinalis* (Guenee) (Lepidoptera: Pyralidae).

**Habitat:** Cropland mainly paddy fields.

#### Discussion

*Scenocharops sinui* sp. nov. closely resembles *S. namkumensis* Gupta and Maheshwary in having mesopleurum largely rugose and face closely rugose. However, this new species differs from *S. namkumensis* Gupta and Maheshwary in the following features: (i) Mesoscutum distinctly punctate, interstices granulose in *S. sinui* sp. nov. (In *S. namkumensis* mesoscutum rugulose, rugose in region of notauli); (ii) Frons and vertex granulose in *S. sinui* sp. nov. (Frons rugulose and vertex with minute scattered punctures in *S. namkumensis*); (iii) Frons with a median longitudinal carina in *S. sinui* sp. nov. (In *S. namkumensis* frons without a median carina); (iv) In *S. sinui* sp. nov. malar space 0.6x basal width of mandible (In *S. namkumensis* malar space 0.35-0.45x basal width of mandible); (v) Hind leg with coxa, trochanters and femur black; tibia brown; tarsal segments blackish-brown and tibial spurs yellowish-brown in *S. sinui* sp. nov. (In *S. namkumensis* hind coxa black, trochanters and femur blackish-brown, tibia yellow, apex of tibia and tarsus brownish) and (vi) Wings fuscous towards apex in *S. sinui* sp. nov. (In *S. namkumensis* wings clear hyaline).

#### *Dusona artonae* (Narendran) comb. nov.

*Campoplex artonae* Narendran, 2000. *Oriental Ins.*, 34: 289. M, F. des., fig. Type: F, India: Sikkim (DZCU).

The species *Campoplex artonae* was described by Narendran (2000) from Sikkim as a parasite of *Artona chorista* Jordon, a major pest of large cardamom. While studying the Indian Campopleginae, we found out this new combination. The species is transferred to *Dusona artonae* (Narendran) comb. nov., based on the position of the suture separating the first abdominal tergite from its sternite tending to be subventral in basal region, presence of a deep glymma and structure of the propodeum.

#### REFERENCES

- Gupta, V.K. (1987).** A catalogue and reclassification of Indo-Australian Ichneumonidae. *Memoirs of American Entomological Institute* 41(1&2): 1-1210.
- Gupta, V.K. and S. Maheshwary (1971).** Taxonomic studies on *Scenocharops* Uchida (Hymenoptera: Ichneumonidae). *Oriental Insects* 5: 305-316.
- Gupta, V.K. and S. Maheshwary (1977).** Ichneumonologia Orientalis, Part IV. The Tribe Porizontini (=Campoplegini) (Hymenoptera: Ichneumonidae). *Oriental Insects Monograph* 5: 1-267.
- Heong, K. and M. Escalada (Eds.) (1997).** *Pest Management Practices of Rice Farmers in Asia*. International Rice Research Institute, Los Banos, Philippines, 245pp.
- Junhua, He (1980).** Two new species and a new record of the genus *Scenocharops* Uchida from China (Hymenoptera: Ichneumonidae). *Journal of Zhejiang Agricultural University* 6(2): 79-83.
- Narendran, T.C. and J. Singh (2000).** A new species of *Campoplex* Gravenhorst (Hymenoptera: Ichneumonidae) from Sikkim, India. *Oriental Insects* 34: 289-292.
- Shepard, B., A. Barrion and J. Litsinger (1995).** *Rice-feeding Insects of Tropical Asia*. International Rice Research Institute, Manila, Philippines, 228pp.
- Uchida, T. (1932).** H. Sauter's Formosa-Ausbeute. Ichneumonidae (Hymenoptera). *Journal of the Faculty of Agriculture, Hokkaido Imperial University* 33: 133-222.
- Uchida, T. and S. Momoi (1960).** Description of a new species of the genus *Scenocharops* Uchida from Korea (Hymenoptera: Ichneumonidae). *Insecta Matsumurana* 23(1): 11-13.
- Wahl, D.B. (1999).** Classification and Systematics of the Ichneumonidae (Hymenoptera). <http://iris.biosci.ohiostate.edu/catalogs/ichneumonids>.

#### ACKNOWLEDGEMENTS

The first author is grateful to the University Grants Commission, New Delhi for the award of Research Fellowship. Thanks are also due to the authorities of the University of Calicut for the facilities provided.

