

## TAXONOMIC STUDIES ON A SPECIES OF THE GENUS *CIMITRA* WALKER (HAPSIFERINAE: TINEIDAE: LEPIDOPTERA) FROM INDIA

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### ABSTRACT

A taxonomic study based on the structural details of wing venation and external genitalia of *Cimitra seclusella* Walker has been conducted.

### KEYWORDS

*Cimitra*, external genitalia, India, Lepidoptera, Tineidae

The genus *Cimitra* Walker of the family Tineidae, is represented by only one species, *Cimitra seclusella* Walker distributed in South-east Asia, while seven species are reported from tropical Africa (Robinson *et al.*, 1994) and does not find a mention in catalogues available in any of the national institutes of India (Anon., 1910; Roonwal *et al.*, 1964). During the course of present studies, the authors collected 58 individuals comprising of 44 males and 14 females, from eight localities, viz., Forest Research Institute campus, Dehra Dun, Vikas Nagar (Uttaranchal), Dhar, Dasua (Punjab), Nauni, Dharampur, Palampur and Andhretta (Himachal Pradesh) representing northwestern India. Investigation was made on the adult morphology including wing venation, morphology of the male and the female genitalia in order to facilitate the segregation of this taxon.

### METHODOLOGY

Collection of moths was done using portable light traps fitted with 125w mercury vapour lamp. Besides this, a mercury vapor lamp was also hung along a white sheet secured to a wall or directly over a plain white wall. Specimens were then collected singly in the small glass tubes. The spread adults were preserved in well-fumigated wooden boxes and labelled. For studying morphological details, permanent slides of the wings, and male and female genitalia were made (Robinson, 1976; Zimmerman, 1978).

### *Cimitra* Walker

*Cimitra* Walker, 1864, *List Specimens lepid. Insects Colln. Br. Mus.*, 29: 779.

### Type-species

*Cimitra seclusella* Walker, 1864, *ibidem*, 29: 780, by monotypy.

### Diagnosis

Sexual dimorphism conspicuous, male smaller than female; frenulum single in either sex, short, stumpy bristle; head convex with erect piliform scales; antenna long, filiform, longer than 4/5<sup>th</sup> length of valva; labial palpus small, porrect, second segment with scales (bristles); metathoracic leg with erect scales on hind tibia; forewing with veins R<sub>3</sub>+R<sub>4</sub> stalked, R<sub>3</sub> to costa, R<sub>4</sub> to apex, R<sub>5</sub> absent, chorda forms an accessory cell, veins M<sub>3</sub> and

CuA<sub>1</sub> connate; hindwing with vein Rs to costa, chorda faint, veins CuA<sub>1</sub> and CuA<sub>2</sub> free, chorda forms an accessory cell; male genitalia with uncus bilobed, concave distally; socii absent; tegumen large, broader basally; aedeagus small, bulbous basally, acute apically; cornutus lacking; female genitalia with anterior apophyses thick, apically knobbed; eighth sternite medium emargination broad, V-shaped, ostium bursae centrally placed; signum absent; extrude a quantity of fine hair from an invaginated corethrogyne, when killed.

### *Cimitra seclusella* Walker

*Cimitra seclusella* Walker, 1864, *List specimens lepid. Insects Colln Br. Mus.*, pt. 28, p 479.

### Material examined

Five males, 10.ix.1998; four males, 12.ix.1999; two males, 14.ix.1999; two males, 4.iv.2000; UHF Nauni, Dist. Solan, Himachal Pradesh, 1360m; eight males, three females, 16.vi.1999; nine males, 16.vii.1999; six males, 16.ix.1999, Dharampur, Dist. Solan, Himachal Pradesh, 1200m; three females, 25.vi.1999; KV Palampur, Dist. Kangra, Himachal Pradesh, 700m; one female, 26.vi.1999, NRHH Andhretta, Dist. Kangra, Himachal Pradesh, 900m; two males, 26.iv.1999; two males, 23.ix.1999; one male, 18.iv.2000; two males, 19.iv.2000; FRI Dehradun, Dist. Dehradun, Uttaranchal, 700m; two females, 30.xi.1999 Vikas Nagar, Dist. Dehradun, Uttaranchal, 650m; five females, 23.x.2001, FRH Dhar, Dist. Gurdaspur, Punjab, 700m; one male, 14.x.1999, Dasua, Dist. Hoshiarpur, Punjab, 560m (coll. P.C. Pathania and Rachita Sood)

### Distribution

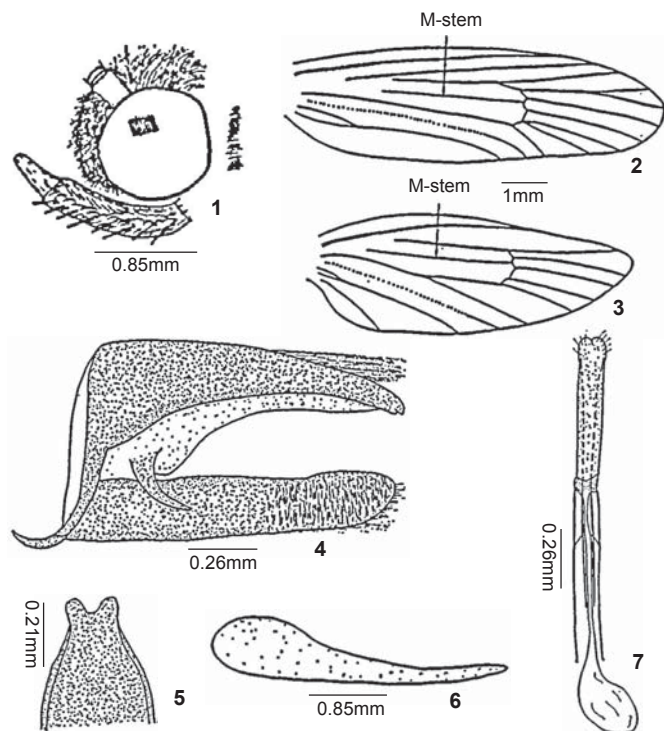
India, Nepal, Sri Lanka, Taiwan, Myanmar, Vietnam, West Malaysia, Java and Lowland (Robinson *et al.*, 1994).

### Male and female

Alar expanse: Male 15-18mm; Female 23-25mm. Vertex ochreous black, covered with erect piliform scales; frons decorated with erect, ochreous scales; labial palpus porrect, small, second segment long, with blackish-ochreous lateral bristles, third segment small, ochreous (Figure 1); antenna long, filiform, black at base, creamish and black alternatively, reaching beyond 4/5<sup>th</sup> length of the forewing; thorax fuscous; forewing ochreous scaled, with reddish-brown irregular patch at base, middle and termen margin, the latter with numerous small black spots, costa convex, apex almost rounded, termen convex, tornus convex, anal margin convex; termen with cilia creamish, apex with creamish-black in colour; hindwing light grey scaled, costal margin arched, apex subacute, termen convex, tornus ill defined, anal margin convex, anal and termen margin with cilia greyish;

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**Figures 1-7. *Cimitra seclusella* Walker**  
 1 - Labial palpus; 2 - Forewing venation;  
 3 - Hindwing venation; 4 - Male genitalia: lateral view;  
 5 - Uncus and tegumen: distal portion; 6 - Aedeagus;  
 7 - Female genitalia: ventral view

prothoracic and mesothoracic legs black, black with creamish band on tarsus, metathoracic leg light grey in colour, hind tibia with dark grey, elongate, erect scales.

#### Wing venation (Figures 2 & 3)

Forewing with Sc ending at 2/3<sup>rd</sup> of costa, R<sub>1</sub> free, R<sub>2</sub> arising at 3/4<sup>th</sup> of discal cell, R<sub>3</sub>+R<sub>4</sub> short stalked, R<sub>3</sub> to costa, R<sub>4</sub> to apex, arising at angle of cell, R<sub>5</sub> absent, M<sub>1</sub> and M<sub>2</sub> free, near at base, chorda join between M<sub>1</sub> and M<sub>2</sub> formed an accessory cell, M<sub>3</sub> and CuA<sub>1</sub> connate, CuA<sub>2</sub> free, discal cell closed, CuP vestigial, visible at anal margin, 1A+2A forked at base; hindwing with Sc+R<sub>1</sub> ending at 3/4<sup>th</sup> of costa, Rs to costa, straight, M<sub>2</sub> nearer to M<sub>1</sub> at base than M<sub>3</sub>, chorda faint, join discocellular between M<sub>1</sub> and M<sub>2</sub>, formed an accessory cell, CuA<sub>1</sub> arising at angle of discal cell, CuA<sub>2</sub> arising at middle of discal cell, CuP vestigial, visible at 1/4<sup>th</sup> distally, 1A+2A short forked at base, 3A present.

#### Male genitalia (Figures 4, 5 & 6)

Uncus bilobed, small in size, distally concave; socii absent; gnathos arm-like, somewhat long, apex pointed, fused basally with tegumen; tegumen hood-like, long, broader basally, narrowed distally, with long hair dorsally near uncus; vinculum V-shaped, slightly broad; saccus small, slightly curved, apex pointed; juxta U-shaped, weak; valvae symmetrical, elongate, broad, simple, densely setosed, equal to the length of tegumen+uncus, costal margin slightly convex, saccular margin almost straight, cucullus convex dorso-distally with long hair,

rounded at apex, ventro-distally convex; aedeagus moderately long, shorter than the length of valvae, bulbous basally, narrowed apically, apex subacute, cornutus absent in vesica.

#### Female genitalia (Figure 7)

Papillae anales rounded, small, sparsely setose; anterior apophyses small and thick, apex somewhat knobbed, posterior apophyses long and thin, longer than anterior apophyses; eighth sternite medium emargination broader, concave; ostium bursae narrow, placed at middle; ductus bursae long and thin, almost straight; corpus bursae small, somewhat ovate in shape; signum lacking.

#### Larval host plant: Unknown

#### Remarks

*Cimitra seclusella* Walker is collected and reported for the first time from the Siwaliks in northwestern India. The occurrence of a single frenulum, which is short, stumpy and bristle-like in either sex of the species, is quite rare and unique. Usually, the frenulum is single in the male and multiple in the female (Robinson, 1986). Pajni and Rose (1972) have reported an unusual frenulum in *Pycnarmon cribrata* Fabricius in the subfamily Pyraustinae of the family Pyralidae. The subfamily Phycitinae of the latter family is an exceptional group in having a single frenulum in either sex (Hampson, 1896).

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