FIRST RECORD OF THE GENUS *COMPSOCTENA* ZELLER (LEPIDOPTERA: ERIOCOTTIDAE) FROM INDIA WITH THREE NEW SPECIES

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ABSTRACT

Three new species of Compsoctena *Zeller have been described in detail. These species are clearly congeneric on the basis of various genitalic characters as well as wing venation. The genus is being reported for the first time from India.*

KEYWORDS

Compsoctena*, Eriocottidae, India, Lepidoptera, new species*

ABBREVIATIONS

1A+2A - Vein representing fused first and second anal vein; 3A - Third anal vein; AED - Aedeagus; CL - Cucullus; CO - Costa; CuA_1 - First anterior cubital vein; CuA_2 - Second anterior cubital vein; CuP - Posterior cubital vein; FRH - Forest Rest House; FRI - Forest Research Institution, Dehradun; GN - Gnathos; M_1 - First median vein; M_2 - Second median vein; M_3 - Third median vein; R_1 - First radial vein; R_2 - Second radial vein; R_3 - Third radial vein; R_4 - Fourth radial vein; R_5 - Fifth radial vein ; Rs - Radial sector; Sc - Subcostal vein; $Sc+R_1$ - Stalk of subcostal and first radial vein; SL - Sacculus; sp. nov. - New species; TEG - Tegumen; UN - Uncus

While dealing with the smaller moths, Robinson *et al.* (1994) have mentioned that there are more than 25 species referable to the family Eriocottidae from southeast Asia. The family is represented by two genera i.e., *Compsoctena* Zeller and *Eriocottis* Zeller on world basis. During the course of present studies, 20 specimens of the former genus representing three species i.e. *Compsoctena dehradunensis, C. robinsoni* and *C. himachalensis* were collected from northwestern India. Besides the key, an illustrated account of all the three new species is dealt with in the present communication.

Compsoctena Zeller

Compsoctena Zeller, 1852, *Lepid. Microptera, quae JA. Wahlberg in Caffrorun terra collegi:* 86.

Type species*:* *Compsoctena primelia* Zeller, 1852, *ibidem,* 87, by monotypy.

Compsoctena dehradunensis sp. nov.

(Figs 1-6)

Material examined

Holotype: One male, 23.ix. 1999, Forest Research Institute Campus, Dehradun, Uttranchal, 700m, coll. P.C. Pathania, AICOPTAX colls.

Paratypes: Two males, 23.ix.1999, Forest Research Institute Campus, Dehradun, Uttranchal, 700m, coll. P.C. Pathania, AICOPTAX colls.

Etymology

The species name is proposed after the name of the type locality i.e., Dehradun (Uttaranchal).

Male

Alar expanse

32mm. Vertex and frons decorated with light brownish-grey, erect scales; labial palpus porrect, small, brownish-black thick scaled, second segment long, third segment small (Fig. 1); antenna bipectinate, long, longer than half of the forewing, greyish-black in colour; thorax blackish-grey; forewing elongate and broad, grey scaled, costa convex at 2/3rd from base then almost straight, apex somewhat rounded, termen oblique, tornus convex, anal margin convex, termen with cilia small, creamish black in colour; hindwing greyish-black scaled, costa convex at base and distally, apex rounded, termen oblique, tornus convex, anal margin convex, termen and anal margin with cilia greyish-white; prothoracic and mesothoracic legs with brown and fuscous band, metathoracic leg light grey, on the dorsal surface of hind tibia with semi erect scales, greyish in colour.

Wing venation (Figs. 2 & 3)

Forewing with all veins free, Sc ending at costa near 2/3rd; R_1 arising at 1/4th of disal cell, R_2, R_3, R_4 parallel, R_3 arising at upper angle of the cell, R_4 to costa, R_5 to termen, chorda arising between R_1 and R_2 and ending near R_4 and R_5 of discocellular, formed an accessory cell, M_1, M_2, M_3 parallel, M_2 near to M_3 at base than M_1, M-stem arising at base, branched at 2/3rd, upper branch ending at discocellular between M_1 and M_2, lower branch at M_3 formed an intercallary cell, CuA_1 arising at lower angle, CuA_2 arising at 4/5th of discal cell, CuP vestigial, visible at 1/3rd basally, 1A+2A forked at base; hindwing with all veins free, $Sc+R_1$ ending near apex, Rs ending to apex, arising at upper angle of the cell, M_1, M_2, M_3 parallel, M-stem arising from base, branched at middle, one ending between M_1 and M_2, second ending at M_3 formed an intercallary cell, CuA_1, from lower angle of the cell, CuA_2 arising at 2/3rd of discal cell, CuP vestigial, visible near anal margin, 1 A+2A small forked at base, 3A

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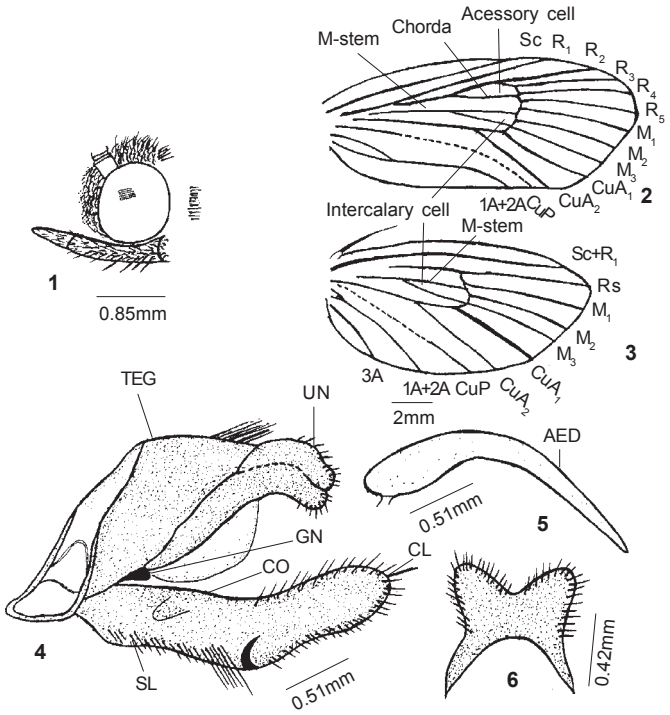


Figures 1-6. **Compsoctena dehradunensis** ***sp. nov.*** ***1 - Labial palpus; 2 - Forewing venation; 3 - Hindwing venation; 4 - Male genitalia: lateral view; 5 - Aedeagus; 6 - Uncus: ventral view***

straight.

Male genitalia (Figs. 4-6)
Uncus moderately large, broad, bilobed, sparsely setose, distally concave, fused with tegumen; tuba analis present; socii absent; gnathos reduced, very small; tegumen hood-like, broad, long and moderately sclerotized; vinculum V-shaped, narrowed, thin; saccus absent; juxta weak, small; transtilla somewhat rounded; valvae symmetrical, broad, inner surface setose, elongate and moderately sclerotized, costal margin slightly convex, basally straight, with a small sclerotized lobe near base, weakly setose, sacculus margin somewhat wavy, cucullus densely setose, dorsally convex, apex rounded, ventrally slightly convex, with a spine directed dorsally at ventro-basally; aedeagus long, smaller than valvae, broader basally, gradually narrowed upto apex, slightly bent at middle, swollen basally; vesica without cornutus.

Remarks
In respect of wing maculation, it is closer to *Compsoctena himachalensis* sp. nov. However, the alar expanses of *C. himachalensis* sp. nov. and *dehradunensis* sp. nov. are 23mm and 32mm respectively. Also, in the male genitalia, the saccular margin is excurved (even) or wavy in *C. dehradunensis* sp. nov. and incurved (uneven) in *C. himachalensis* sp. nov.

Compsoctena robinsoni **sp. nov.**
(Figs. 7-12)

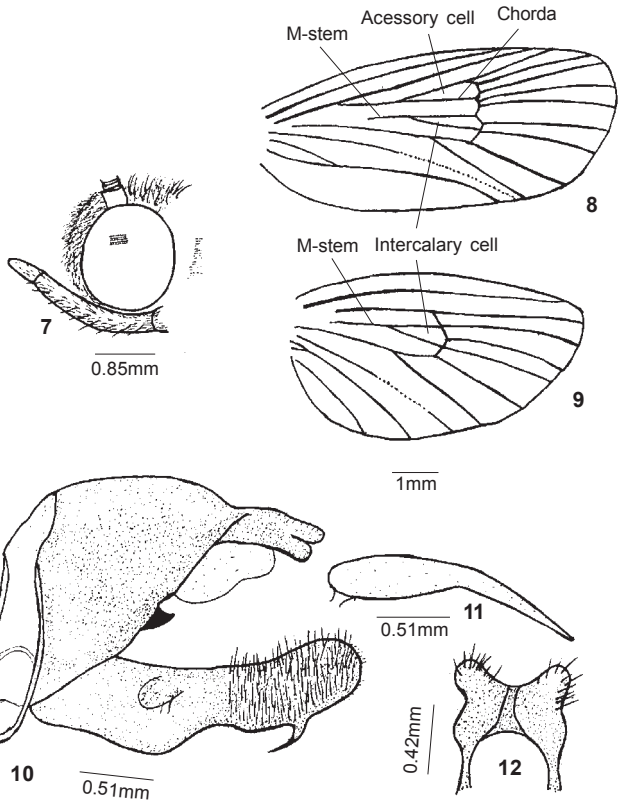
Material examined
Holotype: One male, 21.vi.1999, Dharamshala, Dist. Kangra, Himachal Pradesh, 1200m, AICOPTAX colls.
Paratypes: Two males, 22.vi. 1999, Dharamshala, Dist. Kangra, Himachal Pradesh, 1200m; three males, 23.x.2001, FRH Dhar, Dist. Gurdaspur, Punjab, 700m, AICOPTAX colls.

Etymology
Dr. G.S. Robinson of UK has made a significant contribution in the families Eriocottidae and Tineidae. Accordingly, a species of the former family is proposed as *Compsoctena robinsoni* sp. nov.

Male
Alar expanse
20 mm. Vertex and frons beset with ochreous, erect scales; labial palpus porrect, thickly scaled ochreous black in colour, second segment long, third segment small (Fig. 7); antenna long, bipectinate, light fuscous, longer than half the length of forewing; thorax fuscous; forewing elongate, ochreous scaled, costa slightly arched, apex rounded, termen convex, tornus convex, anal marign convex at base then almost straight, termen with cilia small, ochreous in colour; hindwing ochreous scaled, costa convex, apex rounded, termen convex, tornus convex, anal margin convex, anal and termen margin with cilia ochreous in colour; prothoracic and mesothoracic legs light fuscous, metathoracic leg ochreous, hind tibia with ochreous, semierect scales on the dorsal surface.

Wing venation (Figs. 8 & 9)
Forewing with all veins free, Sc ending near 2/3rd of costa, R_1 ending near 3/4th of costa, arising at 1/3rd of discal cell, R_2, R_3, R_4 parallel, R_2 arising near upper angle of cell, R_3 from angle of cell, R_4 to costa, R_5 to termen, corda arising between half of the cell and ending between R_4 and R_5, formed an accessory cell, M_2 nearer to M_3 than M_1, M_1 arising from middle of the discocellular, M-stem branched at middle, one ending between M_1 and M_2, other near M_3 formed an intercalary cell, CuA_1 arising at lower angle, CuA_2 arising at 4/5 of discal cell, CuP vestigial, visible at basal half, 1A+2A forked at base; hindwing with all veins free, $Sc+R_1$, ending near apex, Rs to apex, arising at upper angle, M_2 from middle, M_2 nearer to M_3 than M_1, M-stem branched at middle of discal cell, upper branch join M_1 and lower to M_3 formed an intercalary cell, CuA_1 from lower angle of the cell, CuP visible at basal half, 1A+2A forked at base, 3A straight.

Male genitalia (Figs. 10-12)
Uncus moderately large, broad, bilobed, sparsely setose, distally concave; fused with tegumen; tuba analis present; socii absent; gnathos very small; tegumen broad, hood-like, long and moderately sclerotized; vinculum V-shaped, narrowed, thin; saccus absent; juxta weak, small; transilla slighly rounded, weakly sclerotized; valvae symmetrical, long, broad, moderately sclerotized, inner-surface with long setae, costa with small moderately sclerotized setose, rounded apex lobe at the middle,



Figures 7-12. **Compsoctena robinsoni** ***sp. nov.***
7 - Labial palpus; 8 - Forewing venation; 9 - Hindwing venation; 10 - Male genitalia: lateral view; 11 - Aedeagus; 12 - Uncus: ventral view

costal margin slightly concave, long, sacculus margin long, somewhat uneven, cucullus densely setose, slightly convex dorso-distally, rounded at apex, ventro-distally convex, with a prominent long spine directed directed dorsally; aedeagus small, smaller than valvae, basally bulbous like, gradually narrowed upto apex, slightly bent near middle; vesica lacking cornutus.

Remarks

Compsoctena robinsoni sp. nov. is closely allied to *C. himachalensis* sp. nov. in having similar wing maculation. However, the M -stem in the hindwing arises beyond base in *C. robinsoni* sp. nov. and at base in *C. himachalensis* sp. nov. Moreover, the vein CuP is fully developed in the latter species and only towards basal half in the former species. These can also be separated on the basis of uncus which is deeply notched and concave in *robinsoni sp.* nov. and less so in *himachalensis* sp. nov. in the male genitalia. Also, the aedeagus is straight in latter and arched in the former species.

***Compsoctena himachalensis* sp. nov.**
(Figs. 13-18)

Material examined

Holotype: One male, 6.vi.1999, Tanyhar, Dist. Mandi, Himachal Pradesh, 1120m, AICOPTAX colls.

Paratypes: Three males, 6.vi.1999, three males, 7.vi.1999, Tanyhar, Dist. Mandi, Himachal Pradesh, 1120m; one male, 20.vi.1999, three males, 21.vi.1999, Dharamshala, Dist. Kangra, Himachal Pradesh, 1200m, AICOPTAX colls.

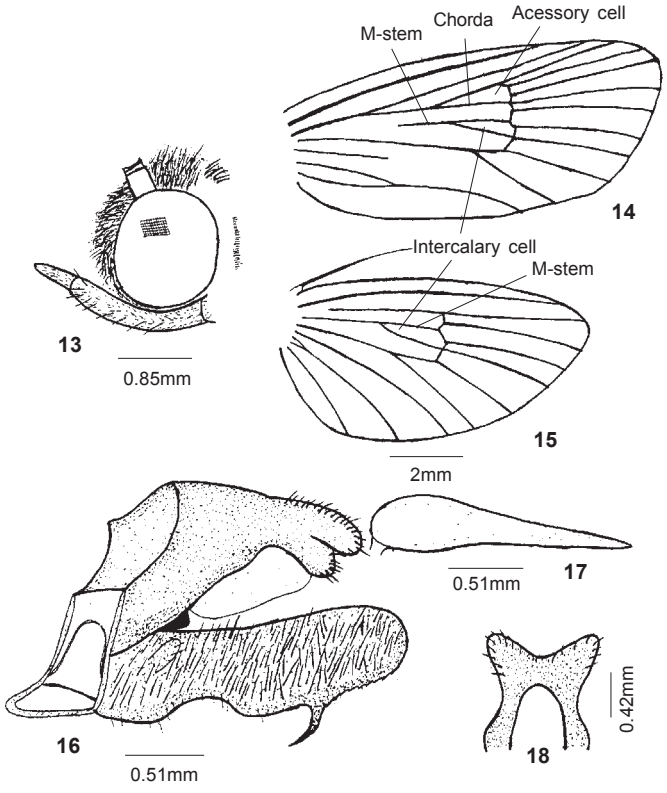
Etymology

The species has been collected from certain localities of the State, Himachal Pradesh. Accordingly, named as *Compsoctena himachalensis* sp. nov.

Male

Alar expanse

23 mm. Vertex and frons covered with brownish-grey erect scales; labial palpus small, porrect, thickly scaled, brownish-black in colour, second segment long, third segment small (Fig. 13); antenna, long, bipectinate, greyish-black, longer than half the length of forewing; thorax blackish-brown; forewing blackish-brown scaled, elongate and broad, costa arched, apex subacute, termen convex, tornus convex, anal margin convex, termen with cilia light grey; hindwing grey scaled, costa slightly



Figures 13-18. **Compsoctena himachalensis** ***sp. nov.***
13 - Labial palpus; 14 - Forewing venation; 15 - Hindwing venation; 16 - Male genitalia: lateral view; 17 - Aedeagus; 18 - Uncus: ventral view

arched, apex rounded, termen convex, tornus convex, anal margin convex, anal and termen margin with cilia grey in colour; prothoracic and mesothoracic legs with black and brown band alternately, metathoracic leg grey, hind tibia with semi erect scales on the dorsal surface, grey in colour.

Wing venation (Figs. 14 & 15)
Forewing with all vein free, Sc ending at 2/3 of costa, R_1 arising at 1/3 of discal cell, R_2 arising near upper angle of cell, R_3 arising at angle of cell, R_3 and R_4 parallel, R_4 to costa, R_5 to termen, chorda arising between R_1 and R_2, ending between R_4 and R_5, formed an accessory cell, M_1 and M_2 parallel, M_1 from middle of discocellular, M_2 near to M_3 than M_1, M- stem branched at middle, one branch ending between M_1 and M_2 second branch ending near M_3, formed an intercalary cell, CuA_1 arising at lower angle, CuA_2 from 4/5 of discal cell, CuP visible 1/3 basally, 1A+2A forked at base; hindwing with all vein free, $Sc+R_1$ ending near apex, Rs to apex, arising at angle of cell, M_1, M_2 parallel, M_2 nearer to M_3 than M_1, M-stem branched at middle, one branch ending near M_1, second at M_3 of the discocellular, formed an intercalary cell, CuA_1, from lower angle, CuA_2 from 2/3 of discal cell, CuP present, slightly curved, 1A+2A briefly forked at base, 3A almost straight.

Male genitalia (Figs. 16-18)
Uncus large, long, broad, bilobed, sparsely setose, distally concave, fused with tegumen; tuba analis present; socii absent; gnathos very small; tegumen somewhat large, broad, hood-like, moderately sclerotized, narrowed near uncus; vinculum V-shaped, thin, narrowed; saccus absent; transilla rounded, weakly sclerotized; juxta weak, small; valvae symmetrical, long, broad, elongate distally, moderately sclerotized inner surface setose; costa with small moderately sclerotized, rounded apex, setose lobe near base, margin uneven, sacculus margin long, with a long spine directed ventrally, cucullus inner surface densely setose, dorso-distally convex, apex rounded; aedeagus small, smaller than valva, bulbous basally, gradually narrowed upto apex, almost straight, apex somewhat pointed; vesica lacking cornutus.

Remarks
Compsoctena himachalensis sp. nov. is closely allied to *C. robinsoni* sp. nov. as far as the shape of the wings and their maculation are concerned. However, both can be distinguished as per key characters given below.

References

Robinson, G.S., K.R. Tuck and M. Shaffer (1994). *A field guide to the smaller moths of South-East Asia.* Malaysian Nature Society, Malaysia, 1-308 pp.+pl.1-32.

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Key to the Indian species of the genus *Compsoctena* Zeller

1. Alar expanse 32mm; valva with saccular margin even, cucullus moderately long with a spine present at base, the latter directed dorsally, aedeagus long, bent at middle; hindwing with CuP visible near anal margin only . . . . . ***dehradunensis* sp. nov.**

1A. Alar expanse 20-25mm; valva with saccular uneven, cucullus with a long spine present at base, the latter directed ventrally, aedeagus less arched or straight, hindwing with CuP well developed 2

2. Hindwing with M-stem arising beyond base of wing, CuP visible in basal half; male genitalia with uncus not deeply notched, aedeagus slightly bent near middle . . . . . ***robinsoni* sp. nov.**

2A. Hindwing with M-stem arising at base of wing, CuP visible throughout; male genitalia with uncus rather deeply notched, aedeagus almost straight. . . . . ***himachalensis* sp. nov.**