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Research Article

TAXONOMIC STUDIES ON THE GENITALIC FEATURES OF TWO SPECIES OF GENUS *CTENOPLUSIA* DUFAY FROM WESTERN GHATS OF INDIA

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ABSTRACT

Male and female genitalic attributes of the type species of genus *Ctenoplusia* Dufay i.e., *limbirena* (Gunee) have been studied and illustrated in detail for the first time. These characters can be incorporated in the diagnostic features of the genus.

Keywords: Lepidoptera, Noctuidae, *Ctenoplusia*, Western Ghats, Moths.

INTRODUCTION

The noctuid subfamily Plusiinae is distributed throughout the tropical, temperate, and arctic regions of the world. Plusiinae is a smallish (for noctuid standards) subfamily of the moth family Noctuidae. The larval forms (loopers) are leaf feeders, which damage economically important crops, garden vegetables, greenhouse plants, and ornamental herbs. Dufay (1970) has erected a genus *Ctenoplusia* on the type species *limbirena* Guenée. In the present work, external male genitalic attributes have been incorporated to update the diagnosis of the species. Because the present species is the type of the genus and its diagnostic features can be incorporated in the revised characterization of genus.

MATERIALS AND METHODS

The adult representatives of two Noctuid moth species were collected from the florescent lights fitted at different places in Western Ghats of India. The collected moths were killed and preserved in air tight wooden boxes. For the preparation of slides of external male and female genitalia, abdomen of preserved specimens were detached and potashed in 10% solution (Robinson 1976), washed in 1% glacial acetic acid and dissected in 30% alcohol for taking out male and female genitalia. After proper dehydration in different grades of alcohol, the genitalic structures were cleared in clove oil and then mounted in Canada balsam on cavity slides. The photography of external male and female genitalic structures was done with the help of image processing unit in the department of Zoology, Punjabi University, Patiala. The terminology given by Klots (1970) has been followed in the present studies for nomenclature purpose. The adult Noctuid moths along with dissected specimens were preserved in insect cabinets.

OBSERVATIONS

1. Genus *Ctenoplusia* Dufay

Dufay, 1970, *Faune Madagascar*, 31: 91.

Type species: *Plusia limbirena* Guenée.

Distribution: Africa; N.E. Asia; Kenya; Uganda; Mauritius; Palaearetic region.

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Key to the studied species of genus *Ctenoplusia* Dufay

1.	Male	3
2.	Female	4
3.	Male genitalia with uncus long curved with pointed apex; scaphium present; saccus present; vesica without cornuti	*limbirena* (Guenee)
4.	Female genitalia with corpus bursae oblong; signum absent; post. apophyses as long as ant. apophyses	*placida* (Moore)

2. *Ctenoplusia limbirena* (Guenée)

Guenée, 1852, *Noct*., **2**: 350.

(Plate - 1)

Male genitalia: Uncus long, strong, curved, sclerotized, with pointed apex beset with setae; tegumen almost of equal length as uncus, both the arms broad, inverted v-shaped; vinculum sclerotized, almost of equal length as tegumen, u-shaped; saccus well marked, spatulate; valvae well developed, membranous, broad at base, constricted beyond 2/3rd with tip rounded; saccular margin setosed with fine hairs and strong spines; costa rounded, setosed with macro setae; paired clavus present, membranous; harpe long sacculus slightly sclerotized without any projection; juxta sclerotized shield –shaped; transtilla present; aedeagus long, sclerotized , slightly dentate apically; vesica membranous with sclerotized patches; ductus ejaculatorious entering subapically.

Wing Span: 32mm.

Old Distribution: Sikkim; Sri Lanka; St. Helena; S. Africa; Madagascar; Aden; N. W. Himalayas; Nilgiris.

Material Examined

Karnataka: B.R. Hills: 9.xii.06, 2 ♂ ♂, Medikeri: 13.xi.05, 2 ♂ ♂.

Tamil Nadu: Kotagiri: 22.xi.03, 1 ♂.

Remarks : This species has been reported for the first time from Western Ghats states *i.e*., Karnataka from India.

***Ctenoplusia placida* (Moore)**

Moore, 1884, *Lap. Ceyl.*, **3**: 73

(Plate - 2)

Female genitalia: Corpus bursae oblong, membranous; signum absent; ductus bursae long, narrow, sclerotized tube; ostium bursae simple; posterior apophyses longer than anterior apophyses, sclerotized; papilla analis sclerotized with macro & micro setae.

Wing Span: 40 mm.

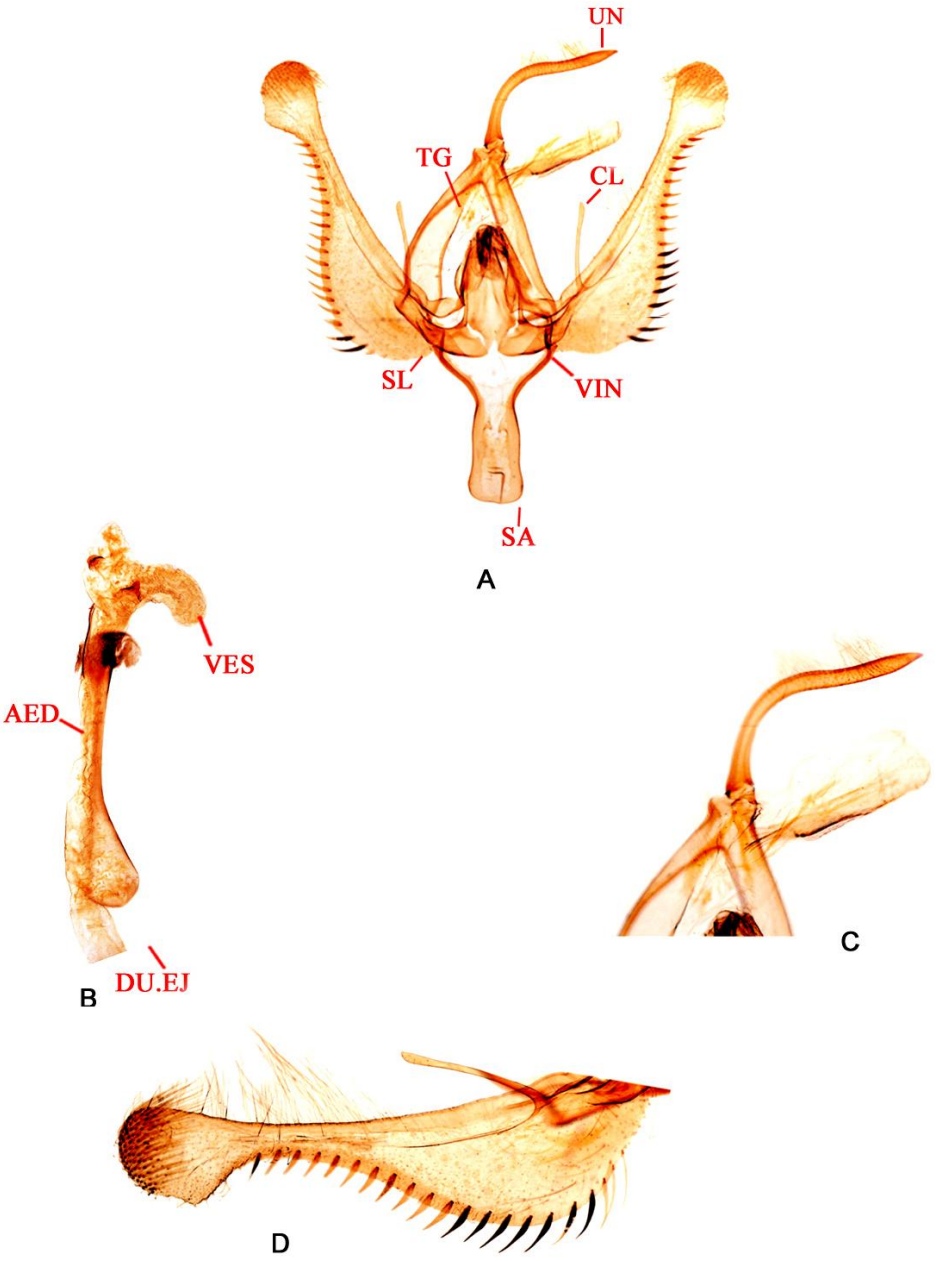
Old Distribution: Abyssinia; Congo; N. India; Nilgiris; Sri Lanka.

Material Examined:

Karnataka: Medikeri: 11.ix.07, 2♀♀.

Plate - 1

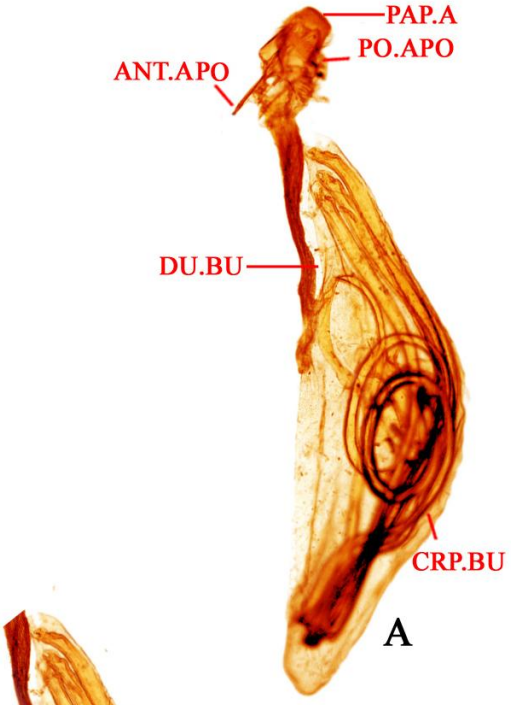
Ctenoplusia limbirena (Guenee)

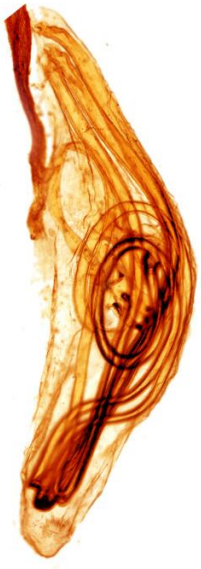


A. Male genitalia, B. Aedeagus, C. Uncus with Tegumen (Lateral view), D. Valva (Left)

Plate – 2

Ctenoplusia placida (Moore)





A. Female genitalia, B. Corpus bursae (Enlarged),
C. Papilla analis with Apophyses (Enlarged)

DISCUSSIONS

External genitalia of both the species of genus *Ctenoplusia* namely *limbirena* (Guenee) and *placida* (Moore) for the first time. Apart from this, *limbirena* (Guenee) has been reported for the first time from Western Ghats of India.

CONCLUSIONS

Genitalia has been studied to update the diagnosis of species, various parts of male and female genitalia like uncus, tegumen, juxta, vinculum, saccus, vesica and ductus ejaculatorious, apophyses, corpus bursae, ductus bursae and signum described in detail. These features will be helpful in identification of this species authentically in future.

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