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Studies on female genitalia of *Tambana albitessellata* (Hampson)

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Abstract

Female representatives of *Tambana albitessellata* (Hampson) have been collected from Arunachal Pradesh and Mizoram. The collected specimens were killed with the help of ethyl acetate vapours and processed as per standard techniques in Lepidopterology. External female genitalia of *Tambana albitessellata* (Hampson) has been studied in detail for the first time to update the diagnosis of this species.

Keywords: Lepidoptera, Noctuidae, *Tambana albitessellata*, female genitalia.

1. Introduction

Moore (1882) [4] erected genus *Tambana* and designated *Tambana variegata* Moore as its type species. Leech (1900) [4, 3] added new species *calbum* Leech under it. Berio (1973) [3, 1] described *succinct* Berio in detail. Poole (1989) [1, 5] synonymized the present genus under *Trisuloides* Butler. Kononenko and Pinratana (2005) [7] revived the status of genus and studied five species under it and reported for the first time from Thailand. In the present work, *albitessellata* (Hampson) along with its female genitalia has been studied and described for the first time.

2. Materials and Methods

Intensive and extensive collection-cum-survey tours have been conducted in Northeast India between September, 2009 to May, 2012. The collection of adult Noctuid moths have been made with the help of mercury bulb light traps fitted at different places during night time. Both vertical sheet and portable light trap methods have been used for this purpose. Petromax lamp/ battery operated lamp was also used for collection purpose in some areas where electricity supply was not available. Collection was done in pre-monsoon and post-monsoon seasons.

Only two female representatives of *Tambana albitessellata* (Hampson) have been collected from Arunachal Pradesh and Mizoram. The identification of captured specimens was done with the help of relevant literature. For study of genitalic attributes, the abdomen detached from the body of preserved moth with needle and forceps, as cutting of last few segments often damages the constituent parts of male and female genitalia (Robinson, 1976) [6]. The detached abdomen dropped in test tube containing 10% KOH overnight to soften the chitin and for removal of muscles and other unwanted parts. The potashed material washed in distilled water and residual traces of KOH removed later by dipping these structures in 1% glacial acetic acid. The abdomen dissected in 50% alcohol for taking out the male and female genitalic structures. Aedeagus separated from the main genitalia by carefully keeping juxta and transtilla intact. Vesica everted carefully with help of fine forceps. 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 terminology given by Klots (1970) [2] has been followed in the present studies for naming different structures of genitalia.

3. Observations

Genus *Tambana* Moore [4]

Moore, 1882 [4], *New Ind. Lep. Coll. Atkinson* 2: 155

Type species: *Tambana variegata* Moore [4]

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3.1 Diagnostic characters: Palpi reaching vertex of head and clothed with hair; eyes hairy; antennae fasciculated in male abdomen with dorsal tufts. Thorax hairy; tibiae moderately hairy. Fore wing with the apex somewhat rounded. Hind wing with vein M_2 from below centre of discocellulars (Fig. A & B).

3.2. *Tambana albitessellata* (Hampson)

Trisuliodes albitessellata (Hampson), 1913, *Cat. Lep. Phal.*, 13: 348

3.3. Description: Head white, with brown bars on frons and vertex; palpi upturned, white, with second joint brown behind and with a dark mark in front at extremity, third joint black with tips white; antennae ciliated, with white base and red brown shaft; collar white, with brown bar through them. Thorax white mixed with brown. Forewing fulvous, brown, thickly irrorated with white bar from base of costa; subbasal line white, angled outward below costa then oblique; antennae waved line,

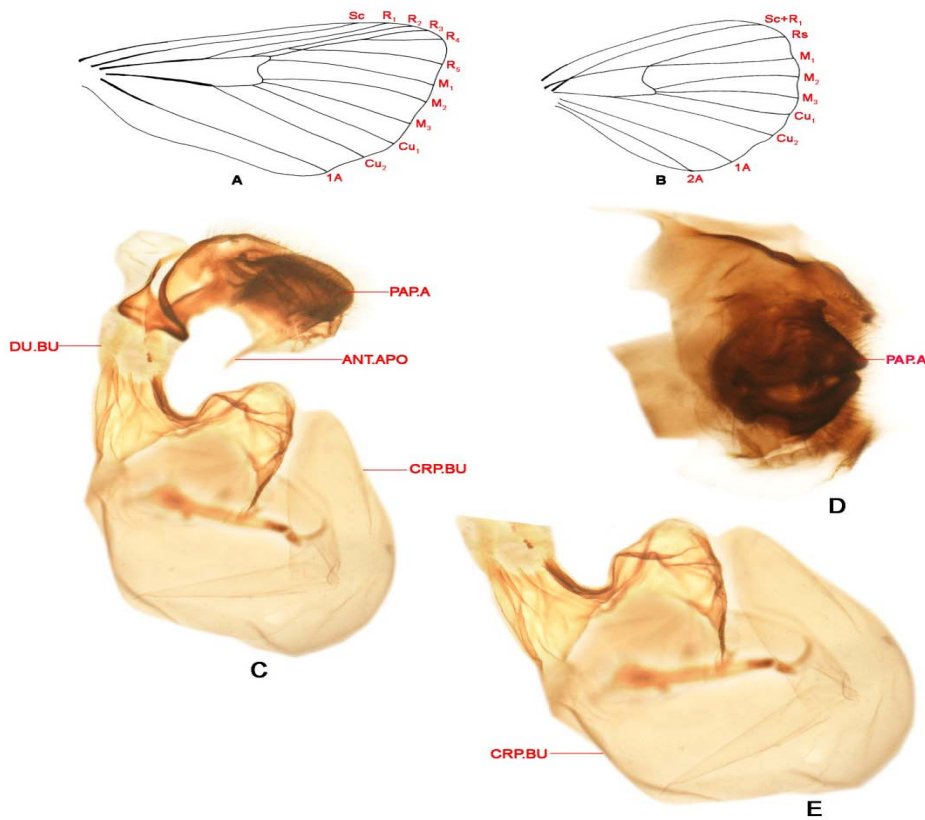
black brown, slightly defined on each side by white; orbicular and reniform defined by blackish, the former small, round, the latter narrow; postmedial line dark brown faintly defined on outer side by white, strongly defined on each side by white at costa; subterminal waved, dark brown line slightly defined on outer side by white. Hindwing orange, yellow a fine red brown terminal line; cilia chequered red brown and white. Abdomen orange, a dorsal brown streak intersected by white segmental lines, the extremity brown. Underside of forewing orange yellow, apical area with slight brownish suffusion. Hindwing with the area beyond the cell suffused with white.

3.4. Female genitalia: Papilla analis rectangular, setosed, strongly sclerotized; anterior and posterior apophysis almost of same length; osteum bursae sclerotized; ductus bursae very small, membranous; corpus bursae large, balloon like, upper half weakly sclerotized, lower half membranous (Fig. C-E).

PLATE



***Tambana albitessellata* (Hampson)**



A. Forewing, B. Hindwing, C. Female genitalia, D. Papilla analis with Apophy E. Corpus bursae (Enlarged)

3.5. Material Examined:

Arunachal Pradesh: Hunli 16.ix.2011- 1♀.
Mizoram: Hmuifang 24.ix.2012- 1♀.

3.6. Distribution: India (Assam, Khasi hills, Mizoram, Arunachal Pradesh), Nepal.

4. Conclusion

Genitalic attributes are species specific and help in authentic identification of moths. External female genitalia of *Tambana albitesellata* (Hampson) has been studied in detail for the first time to update the diagnosis of this species.

5. Abbreviations

PAP.A: Papilla analis; ANT.APO: Anterior apophysis; CRP.BU: Corpus bursae; DU.BU: Ductus bursae; Cu1: First cubital vein; Cu2: Second cubital vein; 1A: First anal vein; 2A: Second anal vein; M1: First medial vein; M2: Second medial vein; M3: Third medial vein; R₁: First radial vein; R₂: Second radial vein; R₃: Third radial vein; R₄: Fourth radial vein; R₅: Fifth radial vein; Rs: Radial sector; Sc+R₁: Stalk of Sc and R₁.

6. Acknowledgements

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