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Genitalic Attributes of two Fruit Piercing Moths of Genus *Plusiodonta* Guenee

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ABSTRACT

Plusiodonta auripicta Guenee and *Plusiodonta coelonota* (Kollar) are economically important species belonging to genus *Plusiodonta* Guenee. Adults of these species feed on fruits by puncturing the skin of fruits with their stout proboscis and feed on their juices. Authentic identification of these moths play very important role in biological control of these economically important species. Keeping in view, external genitalic attributes of these two species have been studied in detail and incorporated to their diagnostic characters.

Key words: Noctuidae, *Plusiodonta auripicta*, *Plusiodonta coelonota*, Economically important, Genitalic attributes.

INTRODUCTION

Guenee⁶ erected genus *Plusiodonta* and included two new species *thomae* Guenee from Antilles and *compressipalpis* Guenee from USA. Desmarest³ designated *Plusiodonta chalystyoides* Guenee as its type species. Walker¹⁵ added two new species *natalensis* Walker and *commoda* Walker in this genus. Moore¹¹ studied species *auripicta* Moore and Butler² described new species *arctipennis* Butler. Hampson⁷ studied one species *nictites* Hampson from South Africa. Barnes¹ added species *amado* and Dognin⁴ described species *aborta* Dognin in the same genus. Hampson⁸ described seven species in this taxon. Viette¹⁴ discovered new species *cobatina* Viette from Madagascar. Holloway⁹ gave an account of genitalia of species *theresae* Holloway and added a new species *calaurea* Holloway. Poole¹² catalogued 35 species in the genus under reference from the Globe. Lafontaine & Schmidt¹⁰ listed two species i.e. *compressipalpis* Guenee and *amado* Barnes in their checklist of Noctuoidea of North America, north of Mexico. Sivasankarn *et al.*¹³ listed species *coelonota* (Kollar) in checklist of Noctuidae of India.

There are many species of noctuid moths which normally feed on mature or ripening fruits by piercing the rind by means of specially adapted proboscis and sucking the juice of the fruit. Among the fruit piercers, species of genus *Plusiodonta* Guenee are most harmful in some regions of world, causing widespread damage in tropical and subtropical countries. Even though these moths cause serious damage to tropical and subtropical fruits, very little research has been done in India especially on this species complex. Genitalic attributes provide species specific character for the identification of moths. In the present work, two species of genus *Plusiodonta* Guenee have been studied in detail by incorporating genitalic attributes to their diagnostic characters which will be helpful in authentic identification and biological control of these moths.

MATERIAL AND METHODES

The representatives of both these species were collected with the help of both vertical sheets and light traps fitted from plains and hilly areas of different localities of Arunachal Pradesh and Nagaland during night time⁵. The collected specimens were killed with the help of Ethyl Acetate vapours. An effort was made for the complete pinning and stretching of the collected specimens in the field.

Dried specimens were shifted to fumigated insect boxes with the labels carrying pertinent information about locality, date of collection, altitude, etc and identified with the help of relevant literature.

RESULTS AND DISCUSSION

GENUS *PLUSIODONTA* GUENEE

Guenee, 1852, in Boisduval & Guenee. *Hist. Nat. Ins.* 6: 359.

Type species: *Plusiodonta chalytyoides* Guenee.

Diagnostic characters: Palpi upturned, the second joint roughly scaled and reaching the vertex of head or above it. Thorax and abdomen slender, without tufts. Fore wing with the apex somewhat acute; the outer margin more or less angled at vein M₃; the inner margin with tufts of scales at centre and outer angle, the margin being excised between them. Legs smoothly scaled.

1. *Plusiodonta auripicta* Moore

Plusiodonta auripicta Moore, 1882, *Lep. Atk.*: 150.

Identification features: Head rufous, with brown streak; palpi upturned, pale, brown sides; antennae smooth, white speck at base; collar pale at base, grey at tips. Thorax brown, tinged with silvery grey. Forewing deep chestnut red, with a purplish grey line enclosing a broad angular space at base of the costa, the hindward angle of the line extending to the submedian vein, beyond which are two or three waved similar coloured lines across the middle and followed by an oblique discal double acutely zigzag line which is slightly blackish interiorly; discal area with a metallic golden lunular black lined bordered waved streak from the apex and a broader irregular constituted streak from posterior angle, the lower inter space between which and the discal purplish lined; the lobe of hind margin and a quadrate spot near base of costa is also of metallic golden color; a marginal lunular line purplish- grey. Hindwing and abdomen aenescent brown. Underside fuscous white.

Male genitalia: Uncus long, simple, curved, tip pointed, setosed; tegumen small, weakly sclerotized; transtilla membranous; juxta inverted V- shaped; vinculum V- shaped; saccus well developed; valve broad, small, curved; cucullus with small projections; aedeagus small, curved near base; vesica large, scobinated; ductus ejaculatorius enters into the aedeagus sub apically.

Female genitalia: Papilla analis semicircular, setosed; posterior apophysis longer than anterior apophysis; ductus bursae small, membranous; corpus bursae long, narrow, gourd- shaped, upper half narrow, sclerotized, with two lobes, lower half membranous; signum absent.

Material examined:

Arunachal Pradesh: Dirang 18.ix.2011- 3♀♀, 07.x.2010- 1♂.

Nagaland: Makokchong 10.ix.2011- 3♀♀.

Distribution: Darjiling, Cherra, Nagaland, Arunachal Pradesh.

2. *Plusiodonta coelonota* (Kollar)

Plusia coelonota Kollar [1844] In Hugel, *Kashmir and das Reich Siek* 4: 482

Identification features: Head brownish, palpi upturned, brownish; antennae smooth; collar pale brownish; Thorax dark brown with yellowish suffusion. Forewing dark brown, subbasal fuscous bar, subcostal area beyond it suffused with golden yellow; dark waved antemedial line; an oblique fuscous narrow band from apex to mid inner margin, followed by double waved line filled with grey, area beyond it paler; a broad irregular waved golden yellow subterminal band; A series of terminal grey lunules; cilia pale. Hindwing fuscous. Abdomen fuscous, long. Underside fuscous.

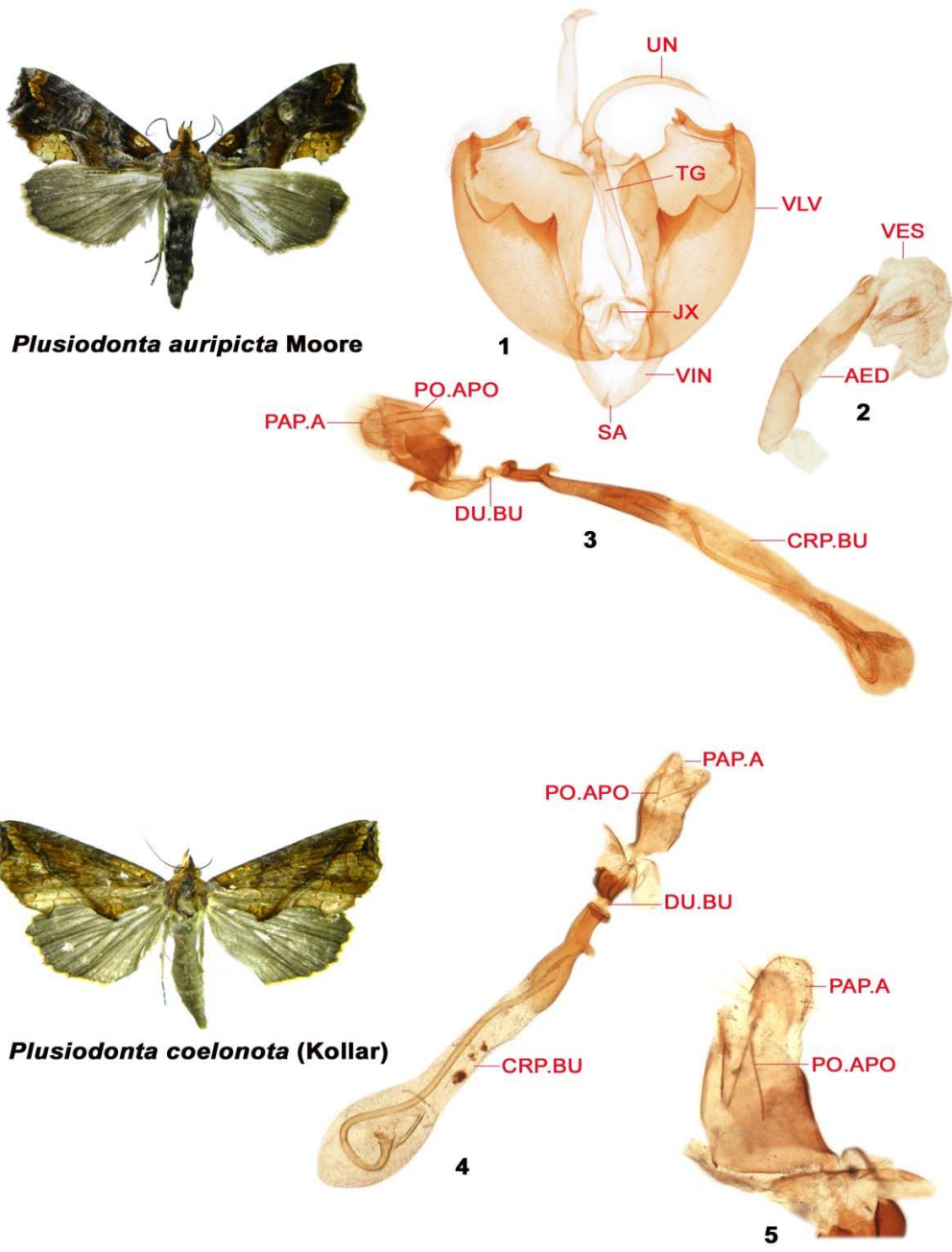
Female genitalia: Papilla analis long, round setosed; posterior apophysis longer; ductus bursae small, membranous; corpus bursae long, narrow, upper half narrow, sclerotized, lower half membranous, swollen toward distal end; signum absent.

Material examined:

Arunachal Pradesh: Dirang 07.x.2010- 2♀♀.

Distribution: Thailand, Malaysia, Vietnam, Nepal, India, Sri Lanka Indonesia (Java, Sumatra, Timor, Flores), China, Taiwan, Japan, Korea.

Fig.1:



CONCLUSION

Genitalic attributes of both the species under reference will be helpful for authentic identification and biological control of these moths.

Abbreviations

AED: Aedeagus; CRP.BU: Corpus bursae; DU.BU: Ductus bursae; JX: Juxta; PAP.A: Papilla analis; PO.APO: Posterior apophyses; SA: Saccus; TG: Tegumen; UN: Uncus; VES: Vesica; VIN: Vinculum; VLV: Valva.

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