

## RECHARACTERIZATION OF GENUS *TRISULA* MOORE

\*Harkanwal Singh and Shipali

Department of Zoology and Environmental Sciences, Punjabi University, Patiala-147 002, Punjab

\*Author for Correspondence

### ABSTRACT

Genus *Trisula* Moore is recharacterized by incorporating external male genitalic attributes in its diagnosis. In the present communication, type species of genus *Trisula* Moore i.e. *variegata* (Moore) has been studied in detail for updating the taxonomic account of this genus.

**Keywords:** *Lepidoptera, Noctuidae, Trisula Moore, Recharacterization, Genitalia*

### INTRODUCTION

Moore (1860) erected genus *Trisula* and designated *Trisula variegata* Moore as its type species. Grunberg (1907) discovered a new species *clathrata* Grunberg and Bryk (1915) added another new species *pacifica* Bryk in this genus. Seydel (1937) included two new species i.e. *subalba* Seydel and *superb* Seydel under this taxon. Roepke (1941) described one new species *celebensis* Roepke. Poole (1989) catalogued only two species in the genus *Trisula* from the Globe.

In the present work, type species of genus *Trisula* Moore i.e. *variegata* (Moore) has been studied and described in detail along with its male genitalic attributes. It's worth to mention here that according to the law of speciation, genitalic attributes play key role in the authentic identification. *Trisula variegata* is a major pest of plant *Ficus religiosa* of family Moraceae and authentic identification of this pest species is necessary for its biological control.

### MATERIALS AND METHODS

Only one representative of *Trisula variegata* was captured with the help of light traps from Mizoram. The collected specimen was killed with the help of ethyl acetate vapours and processed as per standard techniques in Lepidopterology. The identification of collected specimen was done with the help of relevant literature (Hampson, 1894).

### RESULTS AND DISCUSSION

#### Observations

#### Genus *Trisula* Moore

Moore, 1860, in Horsfield & Moore. *Cat. Lep. Ins. Mus. East India Coy*, **2**: 420.

**Type Species:** *Trisula variegata* Moore.

**Diagnosis:** Palpi reaching vertex of head, the 2<sup>nd</sup> joint clothed with long hair; antennae fasciculated in male. Metathorax with a slight tuft. Abdomen with thick woolly hair on dorsum of proximal segments; tibiae hairy and without spines. Fore wing with the cost a somewhat arched towards apex.

**Male Genitalia:** Uncus long, curved, cylinder, pointed; tegumen strongly sclerotized, inverted, U-shaped; transtilla weakly sclerotized; juxta heart-shaped; vinculum small, robust; saccus pointed, triangular; valve long, broad, curved, base strongly sclerotized; cucullus round, setosed; harpe very long, curved, pointed at tip, swollen at base; aedeagus small, rod-shaped; vesica weakly sclerotized; ductus ejaculatorius enters into the aedeagus apically.

#### *Trisula Variegata* (Moore)

*Trisulioides variegata* Moore, 1858, *Lep. Atk.* : 155.

**Description:** Head golden fulvous, irrorated with brown; palpi upturned, golden, third joint fuscous; antennae ciliated, collar pale. Thorax brown, irrorated with fuscous. Forewing pale, variegated with suffuse and fuscous; indistinct double waved subbasal and antemedial lines, the reniform indistinct; a double dentate postmedial line, highly excurved beyond cell, then incurved below it and with some

### **Research Article**

suffuse patches beyond it; an oblique black band across apical area; a marginal series of dark specks. Hindwing yellow white, with large black spot at and of cell; a curved postmedial fuscous band, area beyond it suffused with fuscous. Abdomen pale, with long hair on proximal segments suffuse. Underside white, with cell spots in both wings.

**Male Genitalia:** Same as discussed in genus characteristics.

### **Material Examined**

Mizoram: Sangau 21.ix.2012- 1♂.

**Distribution:** Throughout India and Sri Lanka.

**Abbreviations:** AED: Aedeagus; 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; R<sub>1</sub> : First radial vein; R<sub>2</sub> : Second radial vein; R<sub>3</sub> :Third radial vein; R<sub>4</sub> : Fourth radial vein; R<sub>5</sub> : Fifth radial vein; Rs : Radial sector; Sc+R<sub>1</sub> : Stalk of Sc and R<sub>1</sub>; JX : Juxta; TG : Tegumen; UN : Uncus; VES: Vesica; VIN :Vinculum; VLV : Valva.

### **ACKNOWLEDGEMENT**

The authors are thankful to the Head, Department of Zoology and Environmental Sciences, Punjabi University, Patiala; Director, Zoological Survey of India and PCCF and other forest staff of Mizoram for providing necessary facilities during this research work.

### **REFERENCES**

- Bryk F (1915).** Neue exotische, insbesondere aethiopische Schmetterlinge. *Archives of Nature of Things* **81**(4) 1-16.
- Grunberg R (1907).** Neue arfikanische Heteroceren nebst einigen synonymischen Bemerkungen. *Berl. Ent. Zs.* **52** 63-75.
- Hampson GF (1894).** *The Fauna of British India, including Ceylon and Burma, Moths 2* (Taylor and Francis Ltd.) London 1-609.
- Horsefield T and Moore F (1860).** *A Catalogue of the Lepidopterous Insects in the Museum of Natural History at the East-India House* (W.H. Allen and Co.) London **2** 1-440.
- Poole RW (1989).** *Lepidopterorum Catalogus* (N. Ser.), Fasc. 118 Noctuidae (E. J. Brill, Leiden) 1-1314.
- Roepke W (1941).** On some new or little-known Indo-malayan Noctuids. *Zoologische Mededelingen* **23** 16.
- Seydel C (1937).** Le genre *Trisula* (Noctuidae). *Revue de Zoologie et de Botanique Africaines*, **29** 353-358.