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Research Notes

## Taxonomic Studies on Type Species of Genus *Tarika* Moore (Lepidoptera: Erebidæ: Arctiinae) from India

Jagbir Singh Kirti and Rahul Joshi \*

<sup>1</sup> Department of Zoology and Environmental Sciences, Punjabi University, Patiala, (Punjab) India

<sup>2\*</sup> College of Agriculture, Baba Farid group of Institutions (BFGI), Deon, Bathinda (Punjab) India

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**Abstract:** A taxonomic feature of type species, *Tarika varana* (Moore), has been described. Genus *Tarika* Moore has been recharacterised by incorporating female genitalic features of the type species. The female genitalia of the type species have been illustrated for the first time.

**Key words:** Recharacterization, *Lithosiini*, taxonomy, external genitalia.

### INTRODUCTION

Genus *Tarika* Moore<sup>1</sup> was established for placement of two species i.e. *Lithosia varana* Moore and *Lithosia nivea* Walker from Darjeeling. Later on, Kirby<sup>2</sup> designated *varana* Moore as type species of genus *Tarika* Moore. Hampson<sup>3</sup> synonymised this genus under *Lithosia* Fabricius and later on, he shifted it under *Ilema* Hübner and also synonymised *nivea* (Walker) under *varana* (Moore)<sup>4</sup>. The genus *Tarika* was revalidated by Daniel<sup>5</sup> and the same was followed by Fang<sup>6</sup> in her work. Holloway<sup>7</sup> again synonymised genus *Tarika* under *Eilema* Hübner. However, Černý & Pinratana<sup>8</sup> and Dubatolov & Zolotuhin<sup>9</sup> resurrected genus *Tarika* Moore, thus restored its generic status.

In the present manuscript, the genus has been recharacterized by adding female genitalic attributes, which has been described here for the first time. Male genitalic attributes of the species have also been given for comparison.

## MATERIAL AND METHODS

The studied material was collected from North-Eastern states of India. The collected material was treated as per standardized techniques in Lepidopterology. Comstock<sup>10</sup> and Klots<sup>11</sup> have been followed for study of wing venation and genitalia. Adult moths were photographed by using digital camera. Photography of external male genitalia was done with the help of an Image Processing Unit in the Department of Zoology & Environmental Sciences, Punjabi University, Patiala.



**Figure 8: Collection site: Phadamchen, Sikkim, India**

## ABBREVIATIONS

AED: Aedeagus, ANT.APO: Anterior apophyses, CO.PR: Costal process, CRN: Cornutus, CRP. BU: Corpus bursae, CU<sub>1</sub>: First cubital vein, CU<sub>2</sub>: Second cubital vein, DU. BU: Ductus bursae, JX: Juxta, M<sub>1</sub>: First median vein, M<sub>2</sub>: Second median vein, M<sub>3</sub>: Third median vein, PAP.A: Papila analis, PO.APO: Posterior apophyses, RS: Radial sector, 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, SA: Saccus, TG: Tegumen, UN: Uncus, VES: Vesica, VIN: Vinculum, VLV: Valva, 1A: First Anal Vein.

## RESULTS

### GENUS *TARIKA* MOORE<sup>1</sup>

**Type species:** *Lithosia varana* Moore.

**Distribution:** India; Thailand; China.

**Diagnosis:** Labial palpi porrect. Proboscis long. Hind leg with two pairs of tibial spurs. Male genitalia with uncus moderate in width, with an apical spine; Vinculum double in length than tegumen; saccus present. Valvae with an ovoid costal process; a hook-like, sclerotized saccular process; short, triangular harpe present. Aedeagus long and moderately broad; vesica tubular, unequally bilobate,

smaller lobe with scobinations; numerous, spine-like cornuti presented at vesica base; a short, robust cornutus at the base of lobes bifurcation; ductus ejaculatorius entering laterally. Female genitalia with ductus bursae and corpus bursae membranous; signum absent.

***Tarika varana* (Moore)<sup>1</sup>(Fig. 1- 7)**

**Material Examined:** **India.** Arunachal Pradesh: Lumla, 2350m, 16.v.2011,(1♂); Uttarakhand: Mussorie, 1830m, 02.viii.2008,(1♂); Nagaland, Wokha, 1440m, 30.v.2010,(1♀); Sikkim: Yaksum, 1780m, 09.v.2009,(1♀); Sikkim: Phadamchen, 1700m, 04.v.2009, (1♀) (**Fig. 8**). Coll. RAHUL JOSHI; (Registration number: PUP/RJ - 140)

**Description:** Head with frons fuscous; vertex dull white in males, pale yellow in females. Antennae blackish. Labial palpi porrect, black at tips. Proboscis coiled, long.

**Thorax** with patagia and tegulae dull white, pale yellow in females; pectus dull orange, pale yellow in females. Forewing in males dull white, underside suffused with fuscous except terminal area. In females, forewing pure white with costa orange; vein Sc anastomosing with R<sub>1</sub>; R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> from areole; R<sub>3</sub>, R<sub>4</sub> stalked; M<sub>1</sub> from upper angle below areole; M<sub>2</sub> absent; M<sub>3</sub> and Cu<sub>1</sub> shortly stalked; Cu<sub>2</sub> from middle of cell; 1A curved downwards. Hindwing dull white in males; pure white in females; Vein Sc+R<sub>1</sub> from middle of cell; R<sub>s</sub> and M<sub>1</sub>, M<sub>3</sub> and Cu<sub>1</sub> shortly stalked; Cu<sub>2</sub> from middle; 1A, 2A present. Legs dull white in males; pale yellow in females; hind leg with two pair of tibial spurs.

**Abdomen** with terminal half and ventral surface orange. **Male genitalia** with uncus moderate in width and length, sclerotized, apical spine present; tegumen longer than uncus; vinculum double in length than tegumen, broad, U-shaped; saccus present. Valvae with an ovoid costal process, sparsely setosed; a hook-like, sclerotized saccular process; short, triangular, harpe present. Juxta without apical process, oblong, sclerotized; transtilla membranous. Aedeagus long and moderately broad; vesica tubular, unequally bilobate, smaller lobe with scobinations; numerous, spine-like cornuti presented at vesica base; a short, robust cornutus at the base of lobes bifurcation; ductus ejaculatorius entering laterally. **Female genitalia** with corpus bursae membranous, human-foot-like; signum absent; ductus seminalis entering corpus bursae; ductus bursae long, broad, membranous; anterior apophyses longer than posterior apophyses; papilla analis beset with short setae.

**Wing span:** Male 38mm; Female 40mm.

**Distribution:** India, Sikkim, Assam; Thailand; China.

**Remarks:** The adults of species, *Tarika varana* (Moore) shows sexual dimorphism. Female genitalia of the type species has been described for the first time.

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**Corresponding author:** Dr. Rahul Joshi; Department of Zoology and Environmental Sciences, Punjabi University, Patiala-(Punjab) INDIA