



**An unusual aberration of the hindwing veins in
Luxiaria amasa (Butler) (Lepidoptera:
Geometridae: Ennominae) with a note on female
external genitalia**

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ABSTRACT: Aberration of the hindwing veins in *Luxiaria amasa* (Butler) of family Geometridae is presented along with the description of its external genitalia. The tips of hind wing veins are spatulate and this type modification is rather rare in Lepidoptera. © 2013 Association for Advancement of Entomology

KEYWORDS: Lepidoptera, Geometridae, Ennominae, *Luxiaria amasa* (Butler), unusual vein endings.

Genus *Luxiaria* was established as a monotypic genus by Walker in 1860 for its type species *Luxiaria alfenusaria* Walker from Borneo and presently is known by 41 species and 11 subspecies from all over the world (Scoble, 1999). *Luxiaria* Walker is distributed throughout the Oriental and Palearctic region and is diagnosed on the following characters: ciliated male antennae, hind wing margins are rounded and generally crenulated, male genitalia with subapical processes or flanges on ventral arm of valve, uncus strongly bilobed with a dorsal spur set within the cleft between lobe, aedeagus vesica has a lateral digitate lobe that terminates in a single cornutus (Holloway, 1993). The members of *Luxiaria* Walker were collected with the help of vertical sheet light traps from the localities mentioned in the material examined. The collected moths were processed as per standard techniques in Lepidopterology. The identification was done with the help of relevant literature (Hampson, 1895; Scoble, 1999). For the study of wing venation and external male and female genitalia Comstock (1918), Kukulova (1978, 1983) and Klots (1970) has been followed.

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While making a study of the geometrid genus *Luxiaria*, an unusual type of aberration was noticed in the shape of hind wing veins of *Luxiaria amasa* (Butler). Usually, the vein endings are simple however, in this species each of the hindwing vein ends into a flat and spatulate structure. This condition has not been so far reported in any other Lepidopteran species. As the male genitalia of *Luxiaria amasa* (Butler) has been studied in detail by Holloway (1993), the morphological details of the female genitalia are studied and the description is given below.

***Luxiaria* Walker, 1860**

Luxiaria Walker, 1860, *List spec. lipid. Insects Colln Br. Mus.* **20**: 231.

Type species: *Luxiaria alfenusaria* Walker

***Luxiaria amasa* (Butler)**

Bithia amasa Butler, 1878, *Ann. Mag. nat. Hist.* (5) **1**: 405.

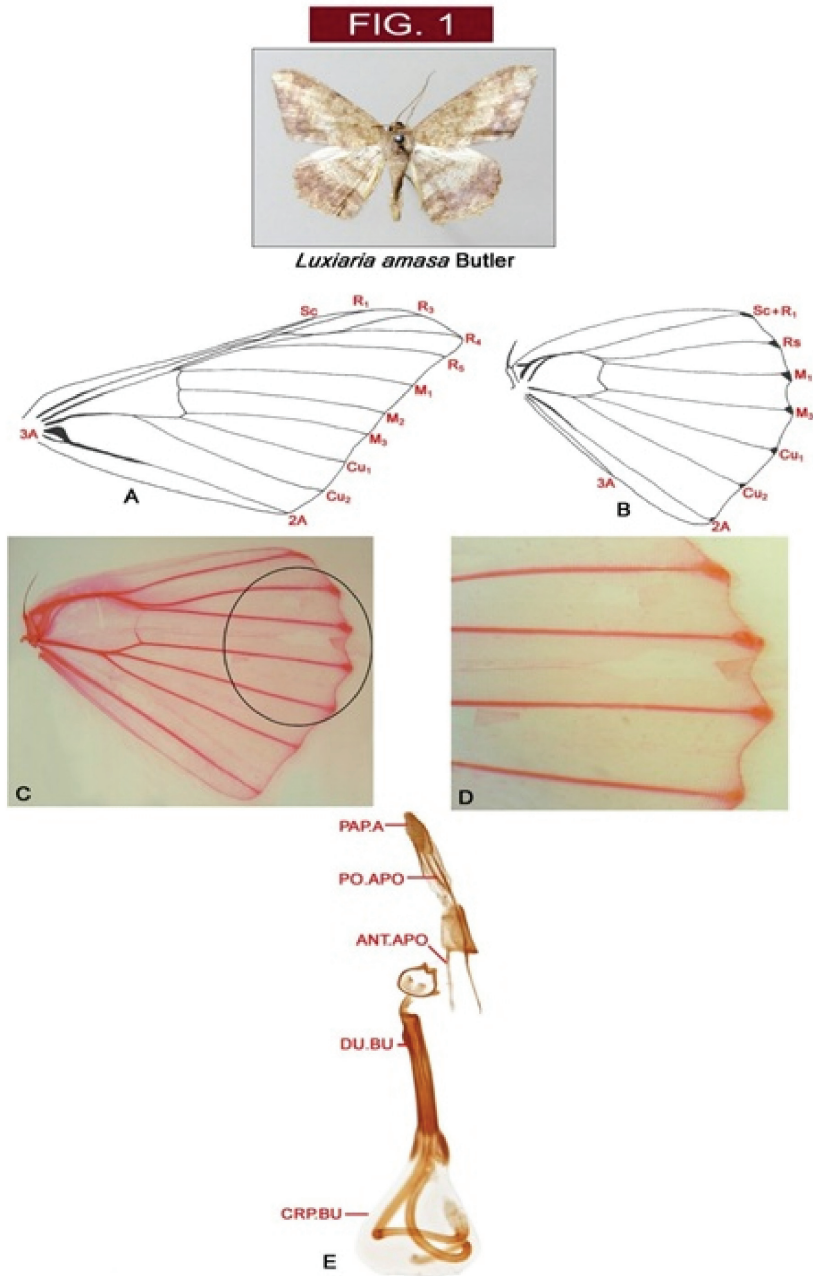
Diagnosis: The species can be identified from its pale yellow ground colour with irroration of dark brown scales on head, thorax, abdomen and basal and terminal portion of wings. Forewing with vein R₁ anastomoses with Sc and then with stalk of R₃ and R₄, vein R₂ absent, R₃-R₅ stalked from upper angle of cell and hindwing with vein Sc+R₁ connected with cell at middle, vein Rs rising from before upper angle of cell. Hind tibiae of male dilated with a longitudinal fold containing a ridge of silken hairs with two pair of spurs. **Male Genitalia** as in genus. **Female Genitalia** with corpus bursae conical flask like, long and sclerotized, tube like towards ductus bursae, signum absent; ductus bursae small, tube like; anterior apophysis almost equal to posterior apophysis, sclerotized; ostium bursae ring shaped; papilla anales elongated, setosed.

Wing Span: Male: 27mm; Female: 26mm.

MATERIAL EXAMINED: **Arunachal Pradesh:** Dirang, 1500m, 7.x.10- 1♂, 2♀♀; Bomdila, 2530m, 9.x.10, 1♂; Hunli, 1460m, 19.ix.11-2♂♂, 1♀. **Mizoram:** Thingsul, 850m, 18.ix.09- 1♂

Abbreviations

| | | | |
|-----------------|-----------------------|----------------|-----------------------|
| ANT.APO | : Anterior apophyses | M ₃ | : Third median vein |
| CRP.BU | : Corpus bursae | PAP.A | : Papila anales |
| CU ₁ | : First cubital vein | PO.APO | : Posterior apophyses |
| CU ₂ | : Second cubital vein | R ₁ | : First radial vein |
| DU.BU | : Ductus bursae | R ₂ | : Second radial vein |
| M ₁ | : First median vein | R ₃ | : Third radial vein |
| M ₂ | : Second median vein | R ₄ | : Fourth radial vein |



| | | | | | |
|----------------|---|-------------------|----|---|------------------|
| R ₅ | : | Fifth radial vein | 2A | : | Second anal vein |
| Rs | : | Radial Sector | 3A | : | Third anal vein |
| SC | : | Sub costa | | | |

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