



Studies on external genitalia of *Mangina syringa* (Cramer) (Lepidoptera: Erebidae: Arctiinae)

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ABSTRACT: External male and female genitalia of *Mangina syringa* (Cramer) is described and illustrated in detail. A key to the Indian species of genus *Mangina* Kaleka & Kirti has also been given. © 2013 Association for Advancement of Entomology

KEYWORDS: Lepidoptera, Erebidae, Arctiinae, *Mangina syringa* (Cramer), external genitalia.

INTRODUCTION

Originally, *Mangina syringa* Cramer was described under genus *Phalaena* (Cramer, 1775). Hampson (1894) transferred it to genus *Argina* Hübner and recently Dubatolov (2010) catalogued *syringa* Cramer under genus *Mangina* Kaleka & Kirti, 2001. The external male genital attributes like size of vinculum, weakly developed saccus, shape of cucullus and valvula and female genital attribute like presence of signum makes *syringa* Cramer congeneric with the type of *Mangina* Kaleka and Kirti, a genus known by three species, 'with two of them' *M. argus* (Kollar) and *M. syringa* (Cramer) from India. The present manuscript relates to the details of external male and female genitalia of *M. syringa* collected from different localities in the Western Ghats of India. A key to both the Indian species has also been given in this communication.

MATERIALS AND METHOD

The moths were collected, preserved and studied using standard techniques in lepidopterology. For the preparation of permanent slides of fore and hind wings, the method

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proposed by Common (1970) and advocated by Zimmerman (1978) has been followed. For the study of external genitalia, methodology given by Robinson (1976) has been followed. The diagrams of genitalia were drawn with the help of a graph eye piece fitted in a stereo zoom binocular, on graph papers. Multiple dissections of the studied species were made to examine any population variations. The terminology given by Klots (1970) has been followed in the present studies for nomenclatural purpose.

RESULTS AND DISCUSSION

Genus *Mangina* Kaleka & Kirti

Kaleka & Kirti 2001, J. Bomb. Nat.Hist.Soc.98 (2): 250.

Type species: *Argina argus* Kollar.

Distribution: India, Pakistan, Sri Lanka, Burma, Bhutan, Nepal, Indochina, China, Taiwan, Japan, Philippines.

Diagnosis: Labial palpi upturned. Antennae simple in both sexes. Forewing with vein R₃ and R₄ anastomoses to form a long areole; M₁ from upper angle of cell; M₂, M₃ and Cu₁ near lower angle of cell. Hindwing with vein Sc+R₁ originating towards base of cell; Rs and M₁ from upper angle of cell; in males tornus produced acutely and bears an elongated patch of dark scales. Male genitalia with uncus long, tip pointed; acrotergite absent; fenestrula present; saccus weakly developed; valvae long and narrow, costa produced to a plough like structure; aedeagus long, vesica membranous with suffusion of small denticles, ductus ejaculatorius entering laterally. Female genitalia with corpus bursae membranous, signum present.

Mangina syringa (Cramer)

Phalaena syringa Cramer, 1775, *Pap. Exot.*, 1 : 5.

Deiopeia syrygna (Cramer); Walker 1854, *Cat. Lep. Het. B.M.*, 2: 572.

Argina syringa (Cramer); Hampson 1894, *Fauna Br. Ind. Moths*, 2 : 51.

Mangina syringa (Cramer); Dubatolov 2010, *Neue Entomologische Nachrichten*, 65: 1-106

Male genitalia: Uncus long and moderately broad, horn-bill beak shaped, setosed with minute setae, uniformly sclerotized, gradually ends to a pointed tip; acrotergite absent; fenestrula triangular; tegumen longer than uncus, v-shaped; vinculum shorter than tegumen, u shaped, narrow, uniformly sclerotized; saccus weakly developed. Valvae long and narrow; costa produced to a plough like structure, sclerotized, slightly wavy; sacculus well defined, produced to an outgrowth towards proximal end, folded; cucullus and valvula not differentiated; tip of valvae pointed and produced to a snout like structure, sparsely setosed with short setae.

Transtilla membranous; juxta triangular plate like; aedeagus long and broad, slightly wavy, series of small spines at distal end; vesica membranous with patches of sclerotized spots; ductus ejaculatorius entering laterally (Plate 1).

Female genitalia: Corpus bursae bilobed, membranous, single signum present; ductus bursae short, sclerotized; ductus seminalis entering corpus bursae; anterior apophyses shorter than posterior apophyses; papilla anales covered with short setae.

Wing span: Male 56-64 mm; female 60-64 mm.

Material Examined

Maharashtra	:	Mahabaleshwar (1320 m), 29.xi.04–3 m, 30.xi.04–5 m, 1.xii.04 - 2 ♂ 1f, 8.x.05–4 ♂; Amboli (850 m), 10.x.05–4 ♂.
Goa	:	Keri (90 m), 25.ii.04–1 ♂.
Karnataka	:	Medikeri (1100 m), 23.xi.03–2 ♂.
Kerala	:	Devikulam (1620 m), 13.ix.04–1 f, 14.ix.04–1 ♂.
Tamil Nadu	:	Kodai Kanal (2133 m), 19.iv.03–1 ♂; Doddabeta (2640 ♂), 1.x.03– 1 m; Kotagiri (2020 m), 22.xi.05–2 ♂ 2 ♀; Kodanadu (1920 ♂), 26.xi.05–1 ♂.

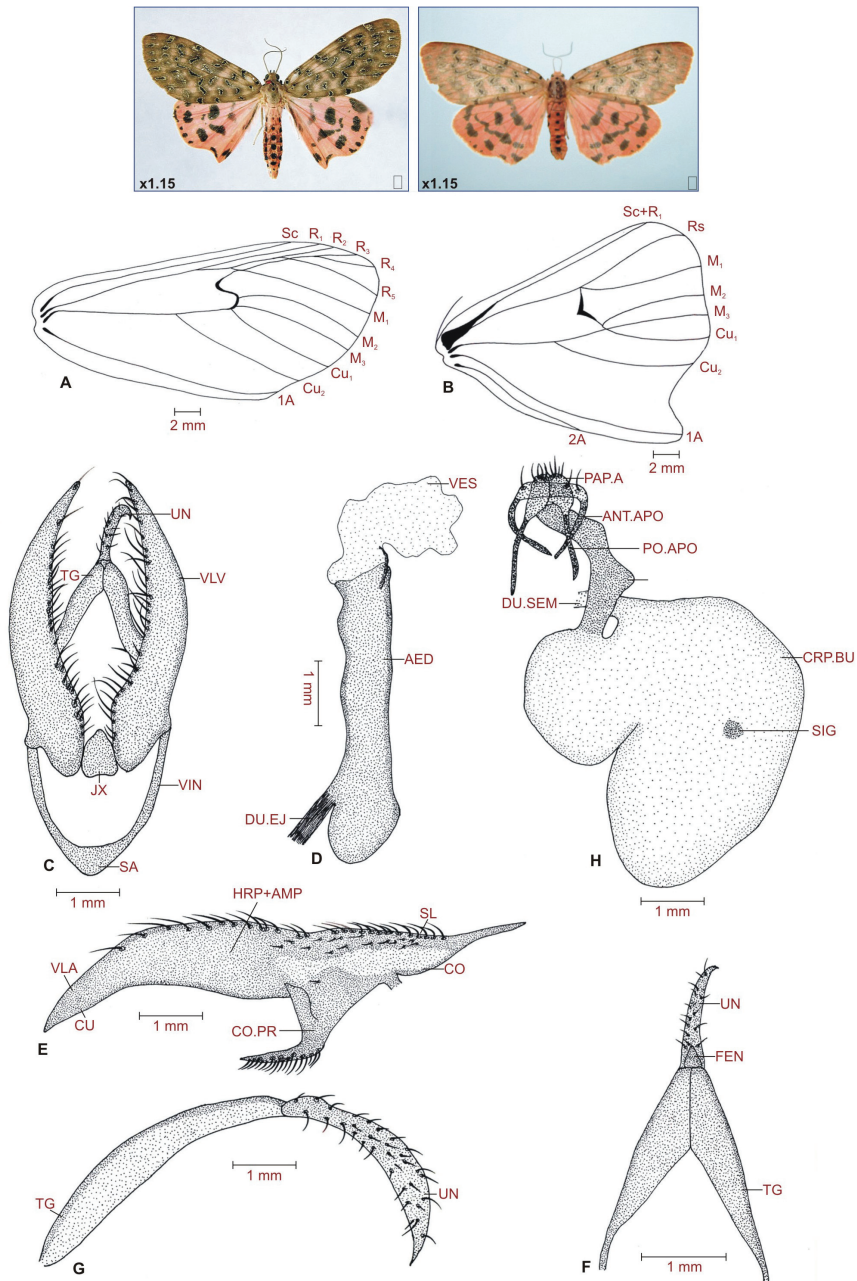
Distribution: India, Sri Lanka.

Key to the Indian species of genus *Mangina* Kaleka and Kirti

1. Forewing with ground colour ferruginous; vein Cu₂ beyond middle of cell; hindwing with vein M₂ and M₃ from lower angle; Cu₁ before angle of cell; male genitalia with fenestrula rounded; tip of valvae bifurcated; female genitalia with a pair of semicircular signa..... *M. argus* (Kollar)
2. Forewing with ground colour brown; vein Cu₂ originating from middle of cell; hindwing with vein M₂ beyond lower angle; M₃ and Cu₁ from angle of cell; male genitalia with fenestrula triangular; tip of valvae pointed; female genitalia with single signum..... *M. syringa* (Cramer)

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(Figs.A- H): *Mangima syringa* (Crammer):

A - Forewing, B - Hind wing, C - Male genitalia, D - Aedeagus, E - Valvae (inner view), F - Tegumen and Uncus (dorsal view), G - Tegumen and Uncus (lateral view), H - Fenake genitalia

Indian Arctiidae (Lepidoptera)". We are thankful to The Director, Zoological Survey of India for providing necessary facilities. Thanks are also due to all the PCCFs, DFOs & other staff of forest departments of different states encompassing the Western Ghats who cooperated for the collection of *M. syringa*.

ABBREVIATIONS

1A : First anal vein ; 2A : Second anal vein; AED : Aedeagus; AMP+HRP : Ampulla & Harpe (fused); ANT.APO : Anterior apophyses; CO : Costa; CO.PR : Costal process; CRP.BU : Corpus bursae; CU : Cucullus; CU₁ : First cubital vein; CU₂ : Second cubital vein; DU.EJ : Ductus ejaculatorius; DU.SEM. : Ductus seminalis; FEN : Fenestrula; JX : Juxta; M₁ : First median vein; M₂ : Second median vein; M₃ : Third median vein; PAP.A : Papilla anales; PO.APO : Posterior apophyses; R₁ : First radial vein; R₂ : Second radial vein; R₃ : Third radial vein; R₄ : Fourth radial vein; R₅ : Fifth radial vein; RS : Radial Sector; SA : Saccus; SC : Subcosta; SC+R₁ : Stalk of SC + R₁; SIG : Signum; SL : Sacculus; TG : Tegumen; UN : Uncus; VES : Vesica; VIN : Vinculum; VLA : Valvula; VLV : Valva.

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