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Redescription of the genus *Costarcha* HAMPSON (Lepidoptera: Arctiidae: Lithosiinae)

Jagbir SINGH KIRTI & Navneet SINGH GILL

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Abstract. The diagnosis of genus *Costarcha* HAMPSON (1891) is corrected and revised. The male genitalic structure is discussed here in detail for the first time and included to the revised diagnosis of the genus.

Key words: Lepidoptera, Arctiidae, Costarcha, diagnosis, type species, male genitalia, India.

Jagbir SINGH KIRTI, Navneet SINGH Gill, Department of Zoology, Punjabi University, Patiala-147 002, Punjab (INDIA).
E-mail: prjagbir2005@gmail.com
nsgill007@gmail.com

I. INTRODUCTION

Genus *Costarcha* was proposed as a monotypic genus by HAMPSON (1891) for its type species *C. indistincta* HAMPSON collected in Nilgiris. The same nomenclature was followed by the same author in 1900 and by STRAND (1922). During the present studies, five representatives of *C. indistincta* were collected from a single locality, the Kodanadu in Nilgiris. The specimens have been compared by the junior author with the syntypes housed in Natural History Museum, London (NHM 5/89-129; HAMP.coll; Nilgiris). HAMPSON (1894) mentioned and depicted that vein 6 (M_1) in forewing is absent in this genus. However, the position of vein M1 was shown correctly on illustrations in his other publications (HAMPSON, 1891, 1900). In the present studies vein M_1 of forewing is found to be present in all the representatives of the species discussed. Moreover, HAMPSON (1894) stated that, "hind wing with vein 4 (M_3) and 5 (M_2) originate from angle of cell; vein 3 (Cu_1) and 6 (M_1) absent." But the diagrammatic view of hindwing veins given by HAMPSON (1894, 1900) completely matches with the presently studied species in which only vein 5 (M_2) is absent in hindwing whereas all other veins are present. Therefore, the diagnosis of the genus given by HAMPSON (1894, 1900) is here revised with inclusion of the male genitalic structures and corrections of the wing venation.

II. MATERIAL AND METHODS

The material was collected exclusively from fluorescent lights at night hours from different localities of Western Ghats of India and were killed with the ethyl acetate vapours in the killing bottle.

The freshly killed specimens were pinned and stretched on adjustable wooden stretching box. The method proposed by COMMON (1970) and advocated by ZIMMERMAN (1978) was followed for the preparation of permanent slides of fore and hindwings. For study of the male genitalia, methodology given by ROBINSON (1976) was followed.

Genus *Costarcha* HAMPSON

HAMPSON, 1891, *Ill. Lepid. Het.,* 8: 53.

Type species: *Costarcha indistincta* HAMPSON.

D i s t r i b u t i o n. India: Nilgiri Hills (Tamil Nadu).

D i a g n o s i s. Labial palpi porrect. Antennae bipectinate in males. Forewing with vein R_1 and R_2 originating from cell; R_3, R_4 and R_5 stalked; M_1 near upper angle; M_2 towards middle of discocellulars; M_3 from angle of cell; Cu_1 and Cu_2 from cell. Hindwing with vein $Sc+R_1$ originating from middle of cell; Rs and M_1 stalked; M_2 absent; M_3 and Cu_1 from lower angle; Cu_2 beyond middle of cell. Hind tibia with two pairs of spurs. Male genitalia with uncus slightly swollen towards distal end; tegumen longer than uncus; saccus present; valvae with sacculus produced to two horn like saccular processes; aedeagus short and broad with corrugated walls; vesica membranous with one large bidigitate foot like spine along with series of small spines; ductus ejaculatorius entering laterally.

Costarcha indistincta HAMPSON

Costarcha indistincta HAMPSON, 1891, *Ill. Lep. Het.,* **8**: 53.

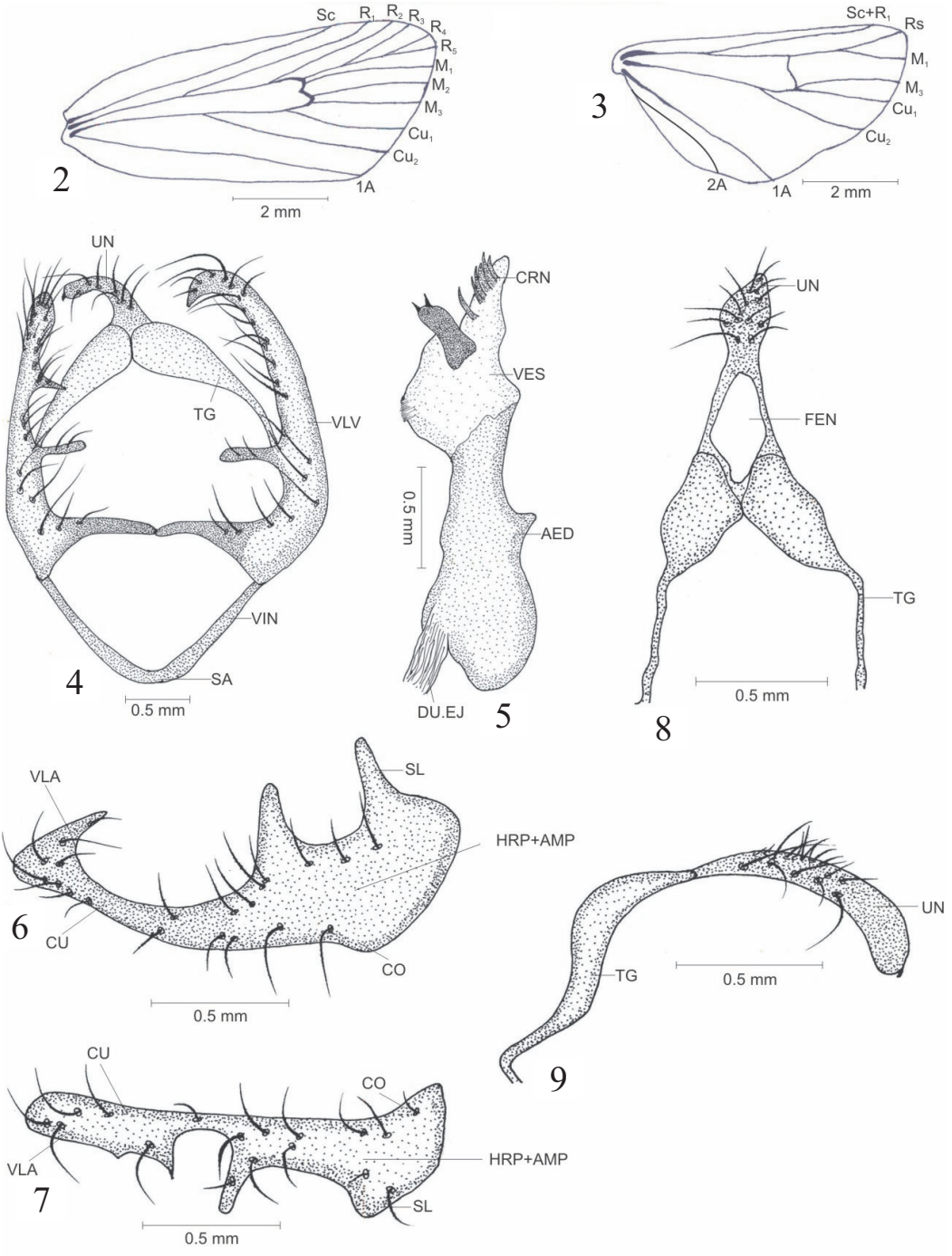
M a t e r i a l e x a m i n e d: India, Tamil Nadu, Kodanadu, 1920 m, 25.XI.05. 4 males, 26.XI.05, 1 male. (Coll. N.S. Gill)

Description of male. Head with frons and vertex covered with brown scales. Antennae bipectinate in males, simple in females; scape pedicel and shaft furnished with brown scales, shaft comparatively dark. Eyes dark brown. Labial palpi porrect; laiden with dark brown scales.

Thorax, collar and tegula covered with brown scales; pectus same. Forewing with ground colour brown, irrorated with dark brown scales; two antemedial spots; two black spots at end of cell; a post medial diffused band, not reaching costa; marginal series of brown spots; underside uniformly irrorated with dark brown scales; fringe brown; venation as for the genus. Hindwing with ground colour brown; underside and fringe same; venation as for the genus. Legs decorated with brown scales; hind tibia with two pairs of spurs.

Abdomen clothed with dark brown scales; underside same; tuft pale brown. Male genitalia with uncus long and narrow, curved, slightly swollen towards distal end, ending to a small spine, setosed

Fig. 1. *Costarcha indistincta* HAMPSON – adult male.



Figs 2-9. *Costarcha indistincta* HAMPSON:, 2 – forewing, 3 – hindwing, 4 – male genitalia, 5 – aedeagus, 6 – valva (right), 7 – valva (left), 8 – uncus with tegumen (dorsal view), 9 – uncus with tegumen (lateral view).
Abbreviations: AED – aedeagus; AMP+HRP – ampulla & harpe (fused); CO – costa; CRN – cornuti; CU – cucullus; DU.EJ – ductus ejaculatorius; FEN – fenestrula; SA – saccus ; SL – sacculus; TG – tegumen; UN – uncus; VES – vesica; VIN – vinculum; VLA – valvula; VLV – valva.

with long setae, well sclerotized; acrotergite absent; fenestrula oval; tegumen longer than uncus, v-shaped; vinculum longer than tegumen, v-shaped, well sclerotized; saccus developed. Valvae asymmetrical, left valva with costa slightly circular, narrow and sclerotized; sacculus well differentiated with a pair of horn like, sclerotized saccular processes; harpe+ampulla simple; cucullus elongated, rod like with hooked structure at tip; valvula weakly developed; right valva with saccular process short; cucullus membranous, tip rounded, setosed with long setae. Transtilla membranous; juxta wanting; aedeagus short and broad; vesica membraneous with one large bidigitate foot like spine along with series of small spines; ductus ejaculatorius entering laterally.

Wingspan: Male 26 mm.

D i s t r i b u t i o n. India: Nilgiri Hills (Tamil Nadu).

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