Suhela N. Singh, Ranjan, Kirti & Chandra, gen. n.,
a new genus for Conogethes alboflavalis Moore, 1888
(Lepidoptera: Crambidae, Spilomelinae)

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Abstract

We describe a new genus for the Spilomelinae: Conogethes alboflavalis Moore, 1888, known to occur in India and Nepal. We provide diagnostic characters for the new genus and comparison with the closely related genera, Conogethes Meyrick, 1884 and Pycnarmon Lederer, 1863.

KEY WORDS: Lepidoptera, Crambidae, Spilomelinae, Suhela, Conogethes, distribution, diagnosis, India.

Introduction

Spilomelinae is the largest subfamily of superfamily Pyraloidea with 4,097 described species in 338 genera worldwide (NUSS et al., 2003-2020; MALLY et al., 2019) and 557 species under 153 genera from India (Singh et al. in prep.) representing about 25 % of the total Pyraloidea. Of the 338 genera, 87 are monotypic, many others with a very few species, and only about 20 genera are species rich, heterogeneous (MALLY et al., 2019) and in need of thorough revisions. Many new genera and species are being described as the taxonomic studies on Spilomelinae are conducted (XU & DU, 2016; ZHANG & LI, 2016; SINGH et al., 2019; LU et al., 2020; XIAO-QIANG et al., 2019; LIU et al., 2020; KO et al., 2020; JIE et al., 2020). During our studies on the genitalia of Pycnarmon alboflavalis (Moore, 1888), we found that this species does not conform to the characterization of Pycnarmon Lederer, 1863. Originally, P. alboflavalis was described in Conogethes Meyrick, 1884. However, the study and interpretation of the genitalia of Conogethes also not allow us to place P. alboflavalis in its original genus. Therefore, we describe here a new genus Suhela, gen. n. for the correct placement of P. alboflavalis (Moore).

Adult moths were collected with vertical sheet light traps and Lepi LED fitted in the field. Collected material was processed as per standard techniques in lepidopterology (HOLLOWAY, 2001). Adult moths were photographed using a Canon EOS 1300D digital SLR camera. The detailed microphotography of external male genitalia was conducted with a Leica M165C stereomicroscope.
attached with a Leica MC190HD camera and enabled with a Leica Application Suite (LAS). The examined specimens are deposited in the National Zoological Collections, Lepidoptera Section, Zoological Survey of India (ZSI), Kolkata, India.

**Taxonomy**

**Genus Suhela N. Singh, Ranjan, Kirti & Chandra, gen. n.**

Type species: *Conogethes alboflavalis* Moore, 1888. *Indian Lep. Atk.*: 220

The new genus is described here as a monotypic genus for its type species *Conogethes alboflavalis* Moore, 1888 that was originally described from the collections of Staudinger and Moore collected from Darjiling [Darjeeling], India. Later, HAMPSON (1896) studied this species under *Pycnarmon* Lederer, 1863. YAMANAKA (1998) reported *P. alboflavalis* (Moore) from Nepal as a member of *Pycnarmon* and to date it is considered a member of *Pycnarmon*.

Diagnostic characters: The genus *Suhela*, gen. n. is distinguished on the basis of i) underside of male forewing with a fringe of long scales in cell, arising from subcostal nervure, ii) in male genitalia, uncus is triangular, concavely angled on ventral side, giving the appearance of a petal of a lotus temple; chaetae simple, (non-bifid), iii) valva with costa produced medio-dorsally, iv) saccus, having an inwardly produced triangular structure with its dorsal edge forming a series of mountain like structures, v) middle area of valva is transparent, vi) cucullus is broad, highly setosed, flap like, with a small, mid-ventral spine, vii) spatulated fibula originating from the inner centre of valva and projecting baso-dorsally (towards costa), viii) vesica with two dagger-shaped spines.

Comparison to *Conogethes* and *Pycnarmon*: The species *Suhela alboflavalis*, comb. nov., was incorrectly described in *Conogethes* because i) in male genitalia of *Conogethes* the uncus is capitate with a bulbous ovate head on a tubular, curved neck, the dorsal side of uncus head is densely covered with deeply bifurcated chaetae, ii) saccus is v-shaped, iii) fibula is spine like with broad base, and iv) the cornutus is long needle shape, stretching through almost entire length of aedeagus (in the genus *Suhela*, gen. n., uncus is triangular and covered with simple, non-bifurcated chaetae, saccus is broad U shaped, fibula is spatulated, and the cornuti are robust, dagger-shaped covering half of the phallus length). Furthermore, the genus *Pycnarmon* does not conform to the characterisation of *S. alboflavalis* based on the following characters: i) in *Pycnarmon* (Figs 4, 7) antennae of the male with the shaft thickened to about one-third length, where there is a cleft fringed with hair on each side, ii) in the male genitalia (Figs 16-19) the uncus has a bifurcated tip with a small base, iii) tegumen robust, iv) valva has a bow-shaped costa, v) fibula comma-shaped with broad base, and v) vesica with a small cornutus.

Remark: *Suhela*, gen. n., belongs to the tribe Agroterini based on the upturned labial palpi, and a truncate uncus with simple, non-bifid chaetae (MALLY et al., 2019). There is no other genus in Agroterini or in Spilomelinae which can accommodate *P. alboflavalis*. Therefore, we erect *Suhela*, gen. n., for nomenclatural stability.


Etymology: The generic name is after S. Suhel Singh Gill, a social reformist and the great grandfather of the first author.

*Suhela alboflavalis* (Moore, 1888), **comb. n.** (Figs 1-3, 5-6, 8-15) *Conogethes alboflavalis* Moore, 1888: 220. *Indian Lep. Atk.*: 220

Material examined (4 ♀♂, 9 ♂♂): INDIA: Mizoram, Mamit, 2 ♀♂, 26-IX-2013; Mizoram, Mamit, 4 ♀♂, 28-IX-2013; Mizoram, Mamit, 1 ♂, 29-IX-2013, leg. R. Ranjan (Coll. NZCZSI); Meghalaya, Lailad, 1 ♂, 13-IX-2014, leg. R. Ranjan (Coll. NZCZSI); Mizoram, Thingsul, 1 ♂, 18-X-2009, leg. R. Joshi (Coll. NZCZSI); Jharkhand, Dalma Wildlife Sanctuary, Pindrabera, 1 ♀, 21-X-2013, leg. Navneet Singh & Party (Coll. NZCZSI); Jharkhand, Dalma Wildlife Sanctuary, Makulakocha, 1 ♂, 2 ♀♂, 18-IX-2019, leg. R. Ranjan (Coll. NZCZSI).
Description adult: Wingspan: male 16 mm; female 20 mm. Head with vertex and frons pale white; antennae ciliated in male, simple in female; labial palpi upturned, broadly scaled, reaching up to vertex of head, third segment long, acuminate. Thorax whitish with some black spots, collar and tegulae pale whitish, later with a basal and a medial black spot. In male, forewing whitish at base, medial area pale yellowish, terminal area orange yellow, basal and subbasal black bands interrupted at middle; a medial band from below cell to inner margin; discocellular with black lunule followed by some large and smaller spots beyond cell; postmedial line straight from costa to vein M3, then bent outward to a fine obsolete marking with a large spot below it on inner margin; a black speck at apex; a double, jointed black spot at submarginal area on vein M2-3; underside with a fringe of long scales in cell, rising from subcostal nervure. Hindwing whitish with terminal area orange yellow, a basal black spot below cell; a double, postmedial series of a few large, conjoined black spots below cell; a submarginal black spot on the vein M2-3; few specks on marginal area. In female, underside of forewing is without any fringe, the discocellular lunule is curved.

Male genitalia (Figs 8-14): Discussed under the diagnostic characters of the genus.

Female genitalia (Fig. 15): With papillae anales broad; posterior apophyses shorter than anterior apophyses; ductus bursae short, sclerotised; corpus bursae large, elongate, membranous, sclerotised proximally; signa absent.

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