

ON THE LITTLE KNOWN SPECIES OF THE GENUS *DUDUSA*
WALKER (LEPIDOPTERA ; NOTODONTIDAE) FROM INDIA

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(With 1 Text-figure and 1 Plate)

INTRODUCTION

Walker (1865) described the rare genus *Dudusa* with the type species *D. nobilis* from North China. Hampson (1892), Dudgeon (1898), Leech (1898), Strand (1912, 1916), Grünberg (1913), Mell (1922), Van Eecke (1929), Gaede (1930, 1934), Bell (1935), Roepke (1944, 1953), Okano (1960) and Kiriakoff (1967, 1968) reported the genus from North China to Sunda Islands, Korea, Japan, Taiwan (Formosa), India, Burma, Malacca and Sulawesi (Celebes). Matsumura (1929b) described two new genera, viz., *Dudusoides* and *Dudusopsis*, which were subsequently synonymised with the genus *Dudusa* Walker by Gaede (1934) and Kiriakoff (1968) respectively.

Gaede (1934) reported four species and their subspecies including *D. nobilis vethi* (Snellen) from Andalus, *D. n. distincta* (Mell) and *D. n. rufobrunnea* (Mell) from China, *D. n. synopla* (Swinhoe) from North-East India and Taiwan, *D. sphingiformis* Moore from Sikkim and *D. fumosa* Matsumura and *D. baibarana horishana* Matsumura from Taiwan. Later, Kiriakoff (1968), in *Genera Insectorum* of the family Notodontidae from Indo-Australian region, included *D. nobilis javana* Roepke from Java, *D. n. celebensis* Roepke from North Sulawesi and *D. sphingiformis birmana* Bryk from Burma, considered *baibarana* Matsumura as a subspecies of *D. nobilis* Walker and treated "*synopla* auct" as *D. fumosa* Matsumura as done by Okano (1960).

In the present paper the author attempts to redescribe the two species, *D. nobilis* Walker and *D. sphingiformis* Moore, from India taking into account the detailed colouration and geographical distribution, coupled with the description of the male genitalia. The key to the species has also been incorporated for the easy identification of these two species.

SYSTEMATIC ACCOUNT
Family NOTODONTIDAE
Subfamily NOTODONTINAE
Genus **Dudusa** Walker

1865. *Dudusa* Walker, *List Spec. Lep. Ins. B. M.*, 32 : 446.
[Type : *Dudusa nobilis* (♂), North China, Mr. Fortune's Coll. B. M.]
1929. *Dudusoides* Matsumura, *Ins. Mats.*, 4 : 80.
1929. *Dudusopsis* Matsumura, *Ins. Mats.*, 4 : 81.
1934. *Dudusa*, Gaede, *Lep. Cat.*, 59 : 6. (Syn. *Dudusopsis* Mats.).
1968. *Dudusa*, Kiriakoff, *Genera Insect.*, (Notodontidae), 217C : 20
(Syn. *Dudusoides* Mats. and *Dudusopsis* Mats.)

Diagnostic Characters : Body large and stout. Fore wing with no tuft of scales on inner margin ; vein R5 from middle of discocellulars, R3 anastomosing with R4 to form the areole, R2 arising from upper margin of the areole. Abdomen long with a tuft of long spatulate scales at the end.

Dudusa nobilis Walker

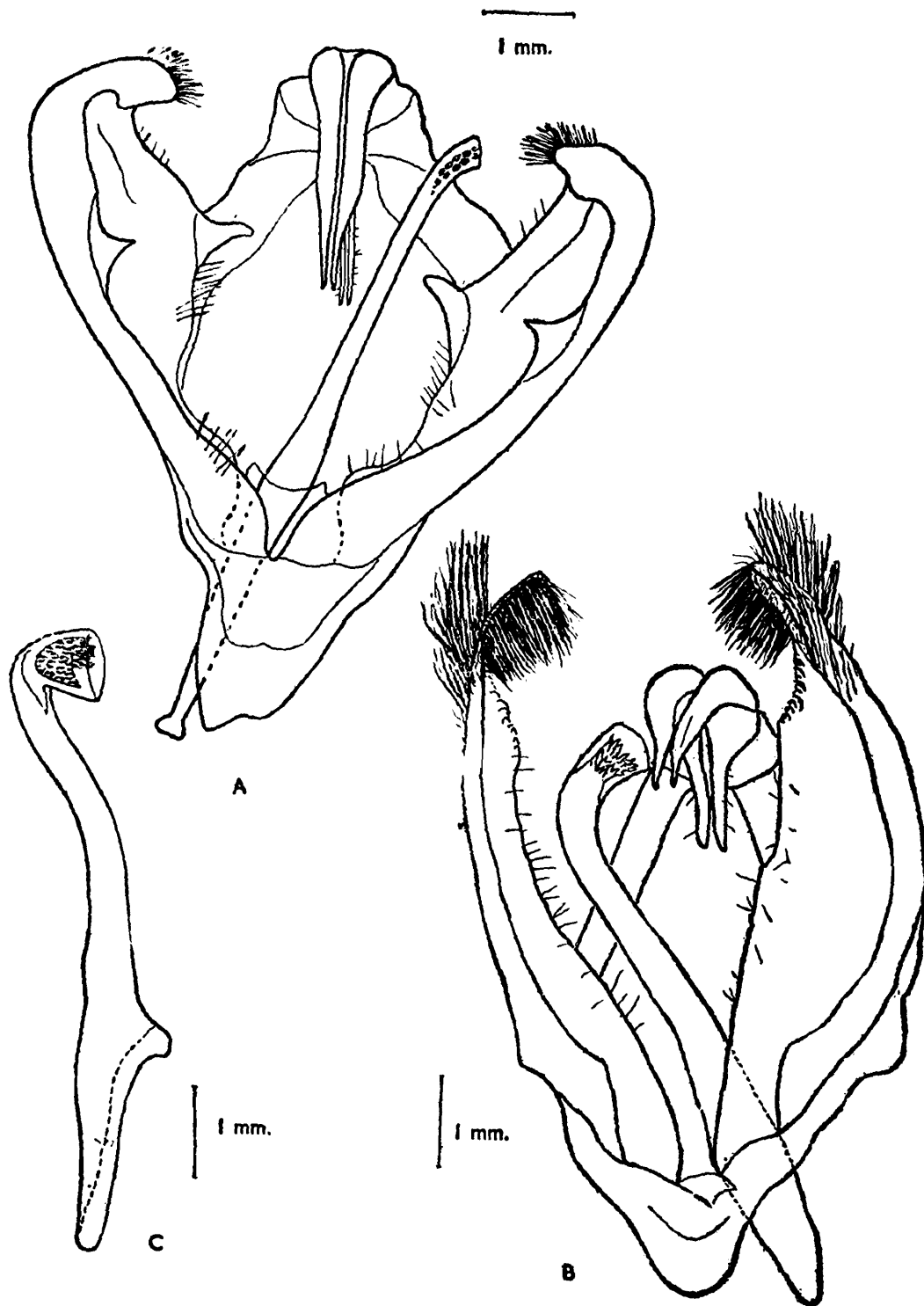
(Text-fig. 1A ; Pl. IV, Fig. 1)

1865. *Dudusa nobilis* Walker, *List spec. Lep. Ins. B. M.*, 32 : 447.
[Type : ♂, North China, (B. M.)]
1896. *Dudusa nobilis*, Hampson, *Fauna Brit. India*, Moths, 4 : 453.
1934. *Dudusa nobilis*, Gaede, *Lep. Cat.*, 59 : 6.
1968. *Dudusa nobilis*, Kiriakoff, *Genera Insect.* (Notodontidae), 217C : 20-22.

Material examined : Karnataka, North Kanara, 2 ♂♂, 1 ♀, 31-i-1914, (Coll. T. R. Bell) and Tamil Nadu, Top Slip, 1 ♀, 29-x-1965, (Coll. K. Reddiah and Party).

Description : Head dark brown. Collar with a pair of dark spots. Thorax yellowish brown and buff ; mesothorax with a pair of dorsal black spots and diffused erect penicillate black hairs. Wings long and broad, outer margin crenulate ; fore wing reddish brown with 2 or 3 small black specks on the basal white patch, two small white patches on costa, a triangular dark brown patch on inner margin near base, traces of double crenulate ante- and postmedial pale brown lines, a dark brown fascia from the middle of costa gradually widening to outer angle, submarginal area dark brown, a series of white and brown lunules in the marginal crenulations ; hind wing smoky brown with outer margin crenulate with darker brown marginal lunules ; underside of both wings pale brown, marginal lunules darker, traces of submarginal

band and a prominent but incomplete median line ; hind wing with a dark brown discocellular lunule. Legs dark brown, mid and hind legs with a tuft of white hairs at end of femur and tibia. Abdomen long, stout, deep brown, with medial and lateral rows of pale brownish



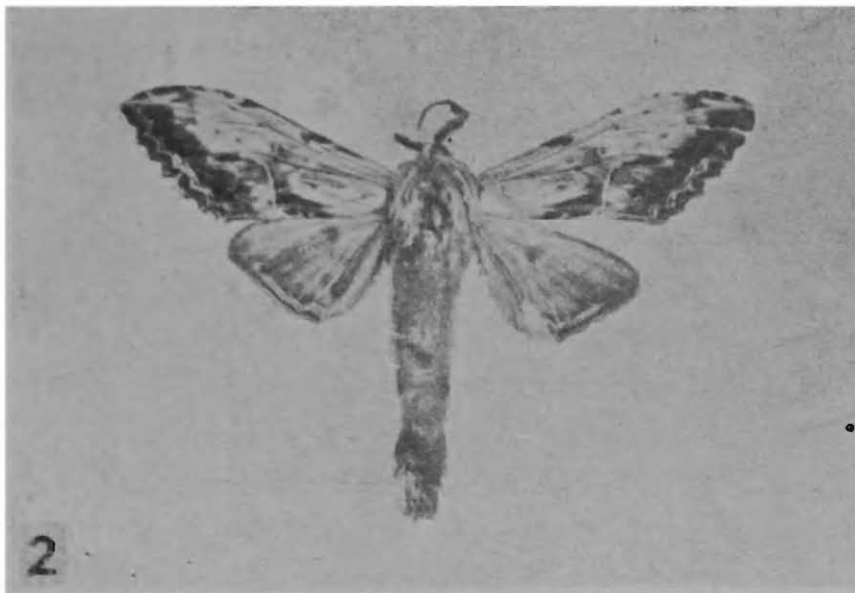
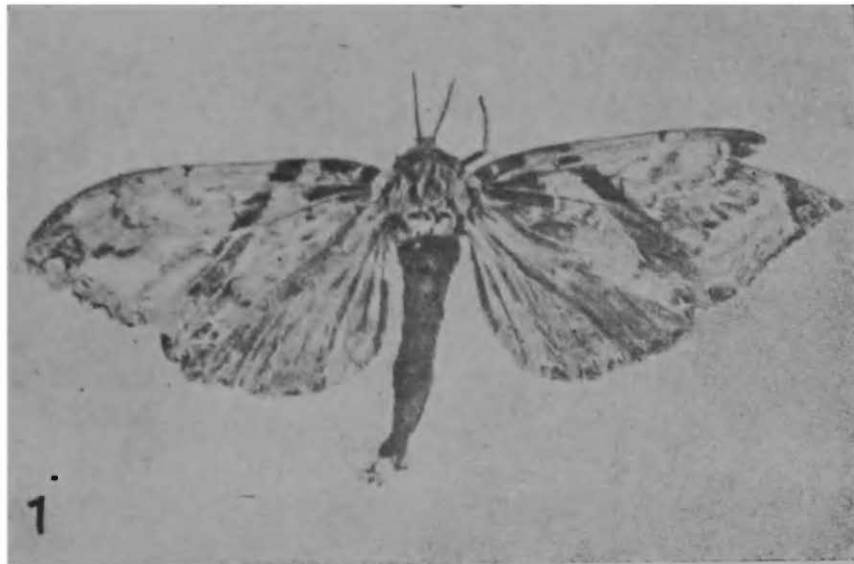
Text-fig. 1. Male genitalia of A—*Dudusa nobilis* Walker,
B—*D. sphingiformis* Moore, C—aedeagus (*sphingiformis*).

white spots and with a large terminal tuft of spatulate scales ; underside ochreous, with pale brown markings and whitish maculated double line from the base terminating in a single line.

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PLATE VI



1. *Dudusa nobilis* Walker, ♀
2. *Dudusa sphingiformis* Moore, ♂

Wing expanse : ♂ 72-90 mm ; ♀ 99-118 mm. The maximum wing expanse for the female recorded earlier was 99 mm. Presently, the Tamil Nadu specimen is found to be much larger with 118 mm wing expanse and this happens to be same as recorded for the female of *D. synopla* Swinhoe, from Khasis, Meghalaya.

The host plant recorded from North Kanara is Sadagi or Kusumb (*Schleichera trijuga* Willd.), a common deciduous tree. Larva : Cylindrical in shape, body clear canary yellow ; length 85 mm. Pupa : Somewhat club-shaped, black, surface not very shining ; length 42 mm ; the larvae descend to the ground to pupate well below the surface of the soil in an earthen cell without any silk lining.

Male genitalia (Text-fig. 1A) : Uncus prominent, extended in the form of a bifid process, each lobe long and slender gradually, curved and terminating in a hook-like process. Gnathi also long, about the length of uncus, slender and recurved towards uncus, with a few terminal long hairs. Tegumen wide, valva broad, triangular shaped, with an extended process before middle of the costa, another short at the two thirds of the sacculus. Aedeagus long, rather dilated in the proximal half, slender gradually and terminating in a club-like process. Vesica with well developed cornuti. Saccus elongated in the form of an obtuse triangle.

Distribution : India : Meghalaya, Khasis ; Maharashtra, Bombay ; Karnataka, North Kanara and Tamil Nadu ; also N. China to Sunda Islands, Taiwan and Sulawesi.

***Dudusa sphingiformis* Moore**

(Text-fig. 1B & C ; Pl. VI, Fig. 2)

1872. *Dudusa sphingiformis* Moore, *Proc zool. Soc. Lond.*, 1872 : 577, pl. 34, fig. 1. (Type ♂, Sikkim, Capt. A. M. Lang and F. Moore Coll.).
1892. *Dudusa sphingiformis*, Hampson, *Fauna Brit. India*, Moths, 1 : 128, fig. 74.
- 1929b. *Dudusoides sphingiformis*, Matsumura, *Ins. Mat.*, 4 : 81.
1934. *Dudusa sphingiformis*, Gaede, *Lep. Cat.*, 59, 6.
1968. *Dudusa sphingiformis*, Kiriakoff, *Genera Insect.*, (Notodontidae), 217C : 22.

Material examined : Sikkim, 1 ♂, ...1868 (Coll. T. C. Jordan) and 1 ♂ Purchased (details not available).

Description : Head black. Collar with a pair of indistinct dark spots. Thorax pale ochreous. Wings long and broad, outer margin crenulated ; forewing pale brown with blackish suffusion towards outer

submargin and inner margin, some black marks on costa at apex and blackish streaks in the middle and towards base ; outer margin deeply scalloped with three pale lunular lines, median one broad, other two narrower, inner line with contiguous black and pale grey curved lines, traces of a doubly curved antemedial pale line towards inner angle, a doubly curved pale grey postmedial line ; hindwing dark fuliginous brown with a darker suffusion at the discocellular, outer margin very similar to forewing with lunular lines narrower and from far below apex, a pale grey mark above anal angle ; underside pale with deep brown suffusion, marginal lunules prominent in both the wings, continuous from apex in the hind wing, a doubly curved median brownish line in both the wings, forewing with an indistinct grey discocellular spot, hind wing with a very prominent B-shaped discal spot. Legs with tuft of long scales except the hind femur. Abdomen blackish brown, very long and stout, tapering from base to the tip, with a large terminal tuft of spatulate scales brownish in colour. Wing expanse ♂ 88-96mm.

Male genitalia (Text-fig. 1B,C) : Uncus prominent, drawn out in the form of a bifid process, each lobe long and stout, triangular shaped, curved inwards and terminated in a hook like process. Gnathi long and slender gradually. Tegumen more or less wide. Valva rather triangular shaped, very wide, a slightly extended process before middle of the costal margin which is slightly curved, dentate and densely hairy distally. Aedeagus long, more or less robust with a little process at the proximal half, gradually slender, terminating in a flat and obtuse angle, distal end funnel shaped. Vesica with cornuti arranged in small circles. Saccus in the form of a triangle with an obtuse end.

Distribution : India : Sikkim ; West Bengal, Darjeeling ; and Naga Hills ; also Bhutan, China, Japan and Korea.

KEY TO THE SPECIES OF THE GENUS *Dudusa* Walker

1. Head and abdomen brown. Fore wing with an oblique dark fascia from middle of costa to near the outer angle. Valva with two processes, one long before the middle of costa and the other about two thirds of sacculus ... *nobilis* Walker
- Head and abdomen black. Fore wing with a doubly curved pale line from beyond middle of costa to near the basal angle. Valva with a single process before the middle of costa *sphingiformis* Moore

NOTES ON OTHER SPECIES

The only other species, reported so far from India, is *D. synopla* Swinhoe (1907) from Khasis, Meghalaya and was subsequently reported from Taiwan by Gaede (1934). Presently, Kiriakoff (1968) has placed it under *D. fumosa* Matsumura with some doubt. As the National Zoological Collection at the Zoological Survey of India, Calcutta, has no representative of the genus *Dudusa* from Khasis nor any collection of *synopla* was available from any other sources for that area, the study of the species *synopla* could not be made and as such no comments on Kiriakoff's work on this is possible at this stage. It may, however, be mentioned that a female of *D. nobilis* Walker has been presently reported from Tamil Nadu with wing expanse of 118 mm in this paper, which measurement is the same as that of female type of *D. synopla* Swinhoe from Khasis and possibly Kiriakoff (1968) was right in putting *synopla* under *fumosa* with some doubt.

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SUMMARY

The paper deals with the detailed morphological description, distribution and Keys for the first time of two species, *D. nobilis* Walker and *D. sphingiformis* Moore. The male genitalia of the latter species has also been figured for the first time.

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