

REDESCRIPTION OF THE GENUS AND SPECIES  
*TIRACOLA PLAGIATA* (WALKER)  
[LEPIDOPTERA : NOCTUIDAE]

By

D. K. MANDAL AND J. P. N. SHUKLA

*Zoological Survey of India, Calcutta.*

( With 2 Text-figures )

INTRODUCTION

While studying an unnamed collection of moths from Arunachal Pradesh of North-Eastern India, the authors have come across one female specimen of the monotypic genus *Tiracola* Moore. It has been compared with material from Sri Lanka available in the named collections of the Zoological Survey of India. The species appears from the earlier literature to have been described inadequately particularly the antennae, tarsi, wing venation and the clothing and colouration of the wings and body. Some of these features are sexually dimorphic, while still a few others show morpho-variations in female. The diagnostic characters of the genus have, therefore, been reviewed and the species redescribed, including the genitalia.

Moore (1881, 1884-1887) erected the genus *Tiracola* with type species *Agrotis plagiata* Walker (1857) from Ceylon (now Sri Lanka). Cotes and Swinhoe (1888) retained *Tiracola plagiata* in *Agrotis* Ochseneheimer. Hampson (1894), however, treated *Tiracola* as a subgenus of *Arcilasisa* Walker and referred it to his heterogeneous subfamily Trifinae. Later, Hampson (1905) raised *Tiracola* to its original generic status and, chiefly on the basis of its hairy eyes, referred it to the subfamily Hadeninae. Moore (1881) included a second species, *Agrotis spectabilis* Walker from Australia, in *Tiracola*, but Hampson (1894) treated this and *Agrotis plagifera* Walker and also later (1905), *Agrotis grandirena* Herr.-Schäffer as synonyms of *plagiata*, thus giving the genus its monotypic status. This system has been followed by Warren (1909), Gardner (1946) and the present authors.

SYSTEMATIC ACCOUNT

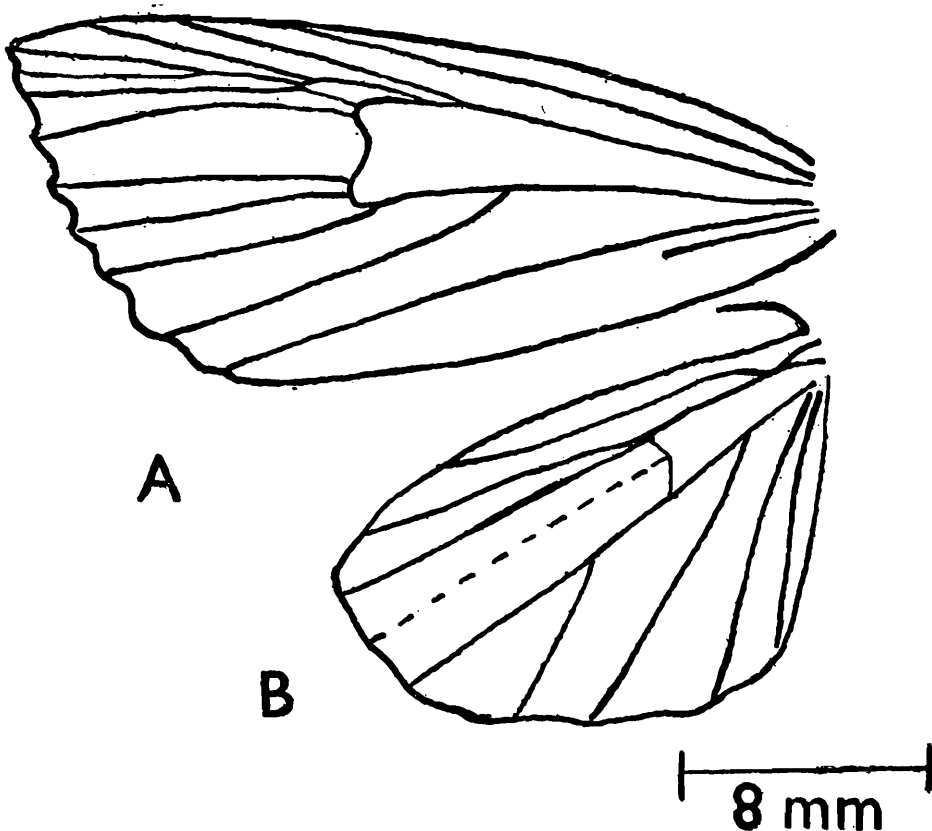
***Tiracola* Moore**

*Tiracola* Moore, 1881, *Proc. zool. Soc. Lond.* : 351.

**Diagnostic characters** ; Body stout and hairy, thorax with prominent

anterior and posterior crests. Eyes hairy. Proboscis fully developed. Labial palpi upturned, with terminal segment short. Antennae in both sexes uniformly ciliated to slightly beyond half their length, then clothed with paired setae on each segment. Tibiae compactly pilose above. Tarsi armed with spines which are longer, more slender and rather apically curved at distal end of each segment. Forewings with costa moderately arched towards apex and terminal crenulations bearing strongly toothed scales alternating with normal scales in the inter-crenular spaces. Hind wings with cell short. Abdomen dorsally flattened, with rough hairs and dorsal crests on basal segments.

*Venation* (Text-fig. 1) : Fore wing (fig. 1, A) with Sc reaching costa beyond middle ;  $R_{3+4}$  anastomosing with  $R_5$  to form a short areole ;  $M_1$  a little below the upper angle of cell,  $M_2$  and  $M_3$  arising a little above the lower angle ;  $Cu_{1a}$  slightly, and  $Cu_{1b}$  well before lower angle. Hindwing (fig. 1, B) with RS and  $M_1$  connate at the upper angle of cell,  $M_3$  and  $Cu_{1a}$  on a fairly long stalk arising from lower angle ;  $Cu_{1b}$  from near middle of cell in male, but very close to its lower angle in female.



Text-fig. 1. *Tiracola plagiata* (Walker), Venation : A. Fore wing ; B. Hind wing.

*Tiracola* is readily distinguished from *Agrotis* and *Arcilasisa* by the hairy eyes, which is one of the chief diagnostic characters of the Hadeninae. Presently, the authors could not compare the genitalic characters of *Tiracola* Moore with those of its closest American ally *Hydraeciodes*

Hampson (*vide* Hampson, 1905), as no material of the polytypic genus *Hydraeciodes* is available at hand.

### **Tiracola plagiata (Walker)**

1857. *Agrotis plagiata* Walker, *List Lep. Het. (Brit. Mus.)*, **11** : 740.  
 1857. *Agrotis plagifera* : Walker, *List Lep. Het. (Brit. Mus.)*, **1** : 741.  
 1865. *Agrotis spectabilis* : Walker, *List Lep. Het. (Brit. Mus.)*, **32** : 704.  
 1868. *Agrotis grandirena* : Herr.-Schäffer, *Corresp.-Blatt. Regensb.* : 149.  
 1881. *Tiracola plagiata*, Moore, *Proc. zool. Soc. Lond.* : 351.  
 1881. *Tiracola spectabilis* : Moore, *Proc. zool. Soc. Lond.* : 352.  
 1884-87. *Tiracola plagiata*, Moore, *Lep. Ceylon (Het.)*, **3** : 34, pl. 148, figs. 1, 1a (redescr.).

**Male** : Upperside : Body and labial palpi with the first and last segments brownish-testaceous, the second segment dark-brown. The patagial scales not wholly black, but hyaline at the base. Legs thickly black-speckled. Tibiae irrorated with black-brown ; spurs with black bands. Tarsi with brown bands. Fore wings of the body colour with sparse black-brown irrorations ; basal and sub-basal lines brownish, indistinct, rather angular and represented by a few deep dots on the costa, cell and 1A ; antemedial line denticulate and with similar dots ; claviform absent ; orbicular very small and pale ; reniform large, marked by its central brownish streak and enclosed in a broad triangular and brown costal patch extending a little below the median vein ; medial line suffused with brown, oblique from costa to the median vein and then waved upto the inner margin ; postmedial line faintly double, oblique from costa to R<sub>5</sub>, then represented by a series of black dots upto the inner margin ; sub-marginal line brownish, faint on the costal area, diffused with ochreous on its either side between R<sub>5</sub> and M<sub>2</sub>, outwardly angled at the former vein and finally waved upto the tornus ; terminal cilia with fine ochreous line at the base. Hind wings pale cinereous-brown with the termen bearing black dots from costa upto Cu<sub>1a</sub> and cilia whitish. Anal tuft prominent. Underside : Paler. Fore wings with the inner area hyaline ; costal area irrorated with black ; postmedial series of black dots indistinct ; a few marginal black dots. Hind wings with the inner area not hyaline, otherwise like the fore wings ; with a prominent tuft of hairs near the base of the cell. Foretibiae with a flap-like epiphysis fitting into a depression which is proximally deep and with a prominent tuft of hairs, and distally shallow and hyaline. Abdomen more testaceous than rufous and with a sub-lateral series of black dots.

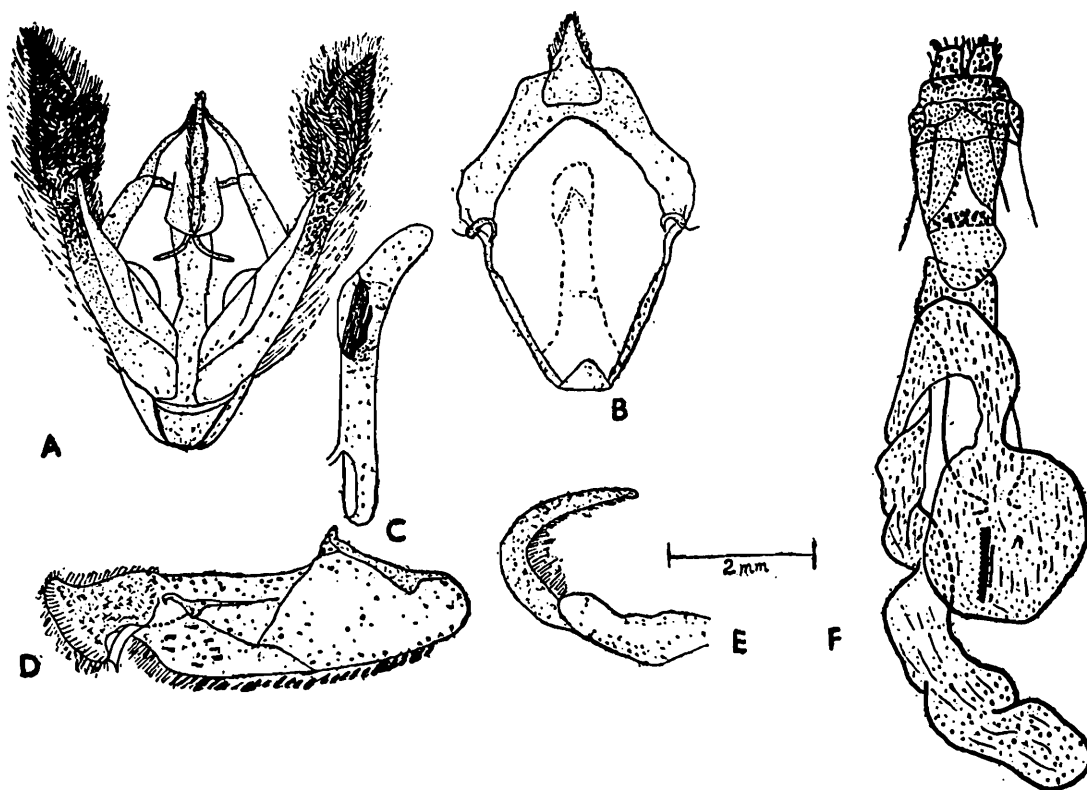
**Female** : As the male, but fore wings with the apical, postmedial and

basal areas prominently grey. Hind wings and foretibiae with the ventral and abdomen with the terminal tufts of hairs obsolescent.

*Morpho-variations* : The female form from Arunachal Pradesh shows some peculiarities from that of Sri Lanka in having the fore wings darker with an olive tinge and without a terminal series of black dots from the sub-apex to the tornus ; hind wings with the costal area paler ; abdomen darker above and black-irrorated below.

<i>Measurements (in mm.)</i>	<i>Male</i>	<i>Female</i>
Maximum width of thorax ...	9	7-7.5
Length of hind wing along the inner margin ...	12-14	12-14
Wing expanse ...	53-60	46-52

*Genitalia* (Text-fig. 2) : *Male* (figs. 2, A-E) : Uncus simple, long, curved and beset with hairs ; tegumen rounded distally, with lateral



Text-fig. 2. *Tiracola plagiata* (Walker), Genitalia : A-E, (♂) A. Ventral view ; B. Dorsal view ; C. Aedeagus ; D. Lateral view of valva ; E. Lateral view of Uncus and Tegumen. F. (♀) Ventral view.

sclerotized strips ; vinculum long, sclerotized and 'U'-shaped, saccus short and rounded ; anellus ventrally supported by the highly sclerotized and serrated juxta which is provided with a pair of curved lateral lobes ; valva proximally simple, narrow, cylindrical and beset with marginal hairs, while distally beak-like, with dense and strong black spines and long setae ; aedeagus chitinized, apically armed with strongly developed

cornutii comprising a compact bunch of long brown spikes which merge with the anterior spines of a highly sclerotized and piceous black plate. *Female* (fig. 2, F) : Corpora bursae membranous and sac-like with a serrated and erect ventral signum ; ductus bursae highly sclerotized, short, stout and nearly straight ; ostium bursae also sclerotized, with the ventral genital plate simple ; papillae anales rectangular, slightly setiferous, with terminal edges more or less blade-like.

*Material examined* : 1 ♀, INDIA : N. E. F. A., Lohit District, Roing, 5. iii. 1969, Coll. S. K. Tandon 3 ♂♂, 1 ♀, CEYLON : Raakgala, -. ii. 1907, Coll. E. E. Green.

*Distribution* : INDIA : Himachal Pradesh (Kulu) ; Maharashtra (Bombay) ; Mysore (now Karnataka) : North Kanara (now Karwar), South Kanara (now Mangalore) ; West Bengal (Darjeeling) ; Sikkim ; N. E. F. A. (now Arunachal Pradesh : new record). CEYLON (now SRI LANKA). SINGAPORE. INDONESIA : Borneo (now Kalimantan) ; Java. AUSTRALIA : Queensland ; New South Wales. PAPUA. SOUTH PACIFIC OCEAN : Tahiti Island ; Marquesas Island. PARAGUAY. MEXICO : Jalapa ; Misantla, Coatepec. CUBA : Matangas. CHINA : Moupin.

#### SUMMARY

The paper redescribes the monotypic genus *Tiracola* Moore and the species *T. plagiata* (Walker) from material in the collection of the Zoological Survey of India. Descriptions and figures of the genitalia of both sexes have been included. This widely distributed species is recorded for the first time from Arunachal Pradesh of the Indian subregion.

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