ON THE GENUS *CTEIPOLIA* STAUDINGER (LEPIDOPTERA, NOCTUIDAE), WITH DESCRIPTION OF A NEW SPECIES FROM NEPAL

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(With 3 Text-figures and 1 Plate)

CONTENTS

I—INTRODUCTION

The genus *Cteipolia* Staudinger is of interest from several points of view. It is a denizen of the colder regions of central Asia and of the high altitudes in the Himalayas. The body is densely covered with long hair and is apparently adapted to living under rigorous climatic conditions prevailing there. The coloration, which is generally fuscous and irrorated with black and white, matches that of rocks on which the moths are generally found.

When the genus was first described by Staudinger in 1896, it contained only one species, namely *Cteipolia sacelli* Staudinger, from Issy Kul, in Kargiz, Russian Turkestan. Ten years later, in 1906, Hampson described another species, *Cteipolia acrophila*, from Kashmir, the exact localities being Kardong, 14,000 ft. (4267·20 m.) in Ladak, and Hunza in Gilgit. In 1914, Pungeler described the third species, *Cteipolia isotoma*, from Tien-Shan mountains in Chinese Turkestan. From the published records it would appear that Ladak and Tien-Shan are the most southern and eastern localities, respectively, in the distribution of the genus. Lately, however, the present writer has come across material which extends its distribution to Rohtang Pass, *ca.* 13,800-14,000 ft. (4206·24—4267·20 m.), and its environs in the Kulu Valley in the Punjab and to Khumbu, *ca.* 16,000 ft. (4876·80 m.), above the Bhote Kosi Valley, in eastern Nepal. While the material from the former belongs to *C. acrophila* and was collected by me in 1955, the example from the latter appears to belong to an hitherto undescribed species of the genus and was collected by my colleague, Dr. B. Biswas, who visited the area in 1954 as a member of the 'Daily Mail' Himalayan Expedition. The present note is written with a view to record further observations on the genus and to describe the material from eastern Nepal.

I am grateful to Dr. B. Biswas for the opportunity to examine insects collected by him. In 1956, during a brief visit, I examined the material of *Cteipolia* in the British Museum (N.H.), London, and received valuable help from Mr. W.H.T. Tams of the said Museum. My sincere thanks are due to him and to Dr. M. L. Roonwal, Director of this Survey, for showing interest and providing facilities for this piece of work.

II—Systematic Account

Genus **Cteipolia** Staudinger

1896. *Cteipolia* Staudinger, *Iris*, 9, p. 191.
1906. *Cteipolia*, Hampson, *Catalogue of the Lepidoptera Phalaenae in the British Museum*, 6, p. 421.

The genus *Cteipolia* constitutes a rather aberrant group of species in the subfamily Cucullianae of the family Noctuidae. Its closest ally is *Dasypolia* Guen. from which it is easily distinguished by the rather small and elliptical eyes (Pl. 6, fig. 3), the narrow forewings (Pl. 6, figs. 1-2) and the shortly stalked veins 6 and 7 of the hind-wings (Text-fig. 2).

Hampson, while redescribing the genus *Cteipolia*, divided it into two sections, the first being with veins 3 and 4 of the hind-wings strongly stalked and the second in which these veins arise from the cell (Text-fig. 2). *C. sacelli* was placed by him in the first section and *C. acrophila* in the second. The present writer has not seen an example of *C. isotoma*, but from the description and illustration available this species would appear to belong to first section. The new species, that is being described below as *Cteipolia lithophila*, falls in the second section and is also otherwise fairly closely related to *C. acrophila*. Both these species are further characterised by the presence of hair (hair-scales) which are dispersed among scales all over the dorsal surface of the forewings (Pl. 6, fig. 4). Excepting a few fine hairs at the base of the forewing, this condition is absent in the examples of *C. sacelli* in the British Museum collection. Although more extensive material would be necessary for a better understanding of the phylogenetic relationship between various species, the division of the genus into two sections, as made by Hampson, appears to gain support by the presence of the characteristic hair-scales on the forewing of species included in the second section.

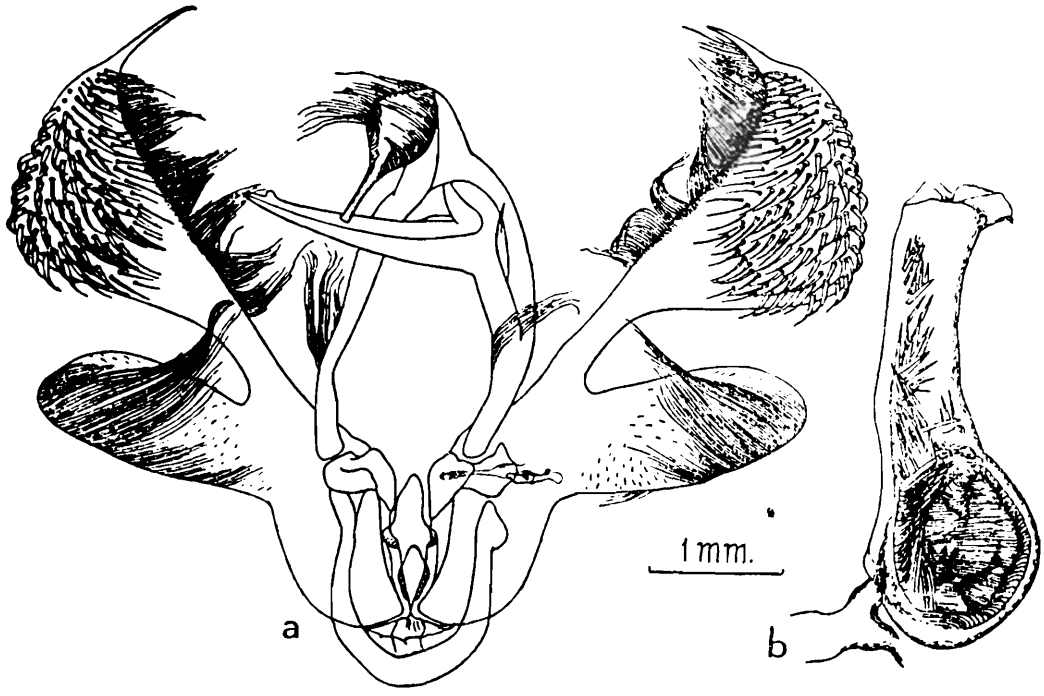
Cteipolia acrophila Hampson

1906. *Cteipolia acrophila* Hampson, *Catalogue of Lepidoptera Phalaenae in the British Museum*, 6, pp. 421-422, fig. 144.

The material, comprising ten examples of the species, before me agrees with the description and type from Kardong, except for minor differences in coloration (Pl. 6, fig. 2) and wing-expanse. While in some examples the sub-basal line of forewing is 'indistinct diffused blackish,' as stated by Hampson, in others it is distinct, diffused blakish in the anterior two-thirds and is incurved below costa and before the basal dash which is also diffused blackish in colour. The orbicular and the reniform are variable in size and outline ; the former may be small and roundish to fairly large and oval ; the latter may be oblique and narrow to subtriangular with the apex of the triangle pointing towards the costa. In all the female examples before me the reniform is narrow and oblique, while in the males it shows a tendency to increase and become subtriangular. The males are smaller than the females, the expanse of the forewings in each sex being :♂—25·5 mm. (3 examples), 26·0 mm. (1 ex.) ; ♀—28·0 mm. (1 ex.) ; 28·5 mm. (1 ex.) ; 29·0 mm. (1 ex.) ; 30·0 mm. (3 exs.). Hampson gave the wing expanse as 24-28 mm.

The genitalia of none of the species of the genus have been described before. A brief description of the genitalia of *C. acrophila* is as follows :—

♂ genitalia (Text-fig. 1) : Tegumen hood-like, laterally sclerotized, rounded at apex, and twice as long as wide. Uncus mostly ovate except



TEXT-FIG. 1.—Male genitalia of *Cteipolia acrophila* Hampson.
(*b*) Aedeagus (detached).

the distal part, drawn out and truncate at apex ; covered dorsally with long hair situated mostly along the margins. Gnathos like an elongate shelf, gradually tapering towards the apex and about five times as long as broad. Valvae very well developed, produced at the apex to a narrow, elongate point ; sharply bilobed about the middle into the distal cuculus and the proximal sacculus ; the former mostly covered with many stout and sharply pointed setae and long, dense hair, especially near the inner margin; the sacculus bears fine, long hair which are specially long and dense along the outer margin ; near the inner margin of sacculus and costae arise a pair of small processes. Anellus ovate, moderately sclerotized. Aedeagus stout, bulbous proximally, slightly narrowed distally with many cornuti. Vinculum a little longer than wide, rounded at terminal margin.

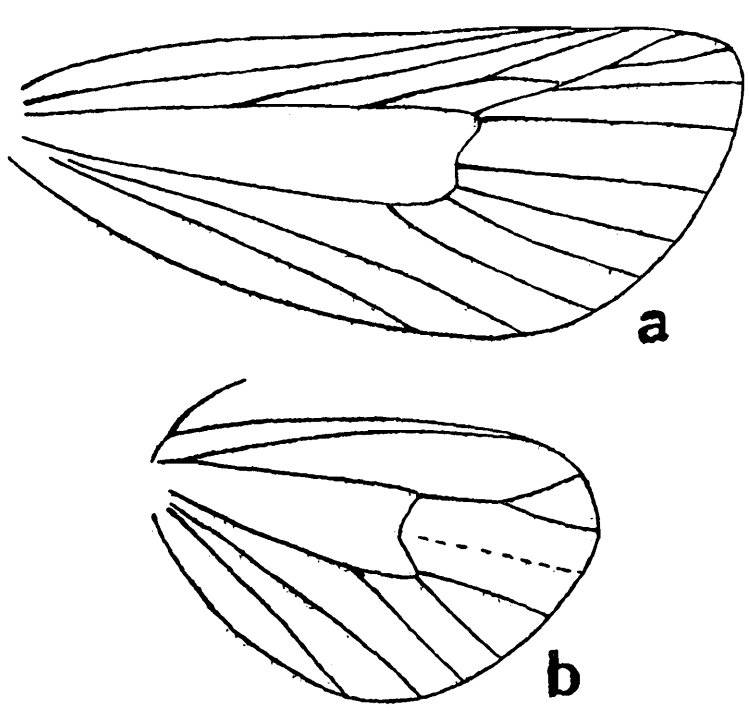
♀ genitalia (Text-fig. 3*a*) : Ovipositor moderately long ; papillae analis subquadrangular, when viewed from the side and with rather dense and long hair, postapophyses 1·5 mm. long, uniformly narrowed towards apex ; the eighth segment unevenly chitinized dorsally, forming a narrow, medianly incomplete band, and margined posteriorly with short and moderately long hair, wide and strongly chitinized latero—ventrally, especially towards the base where it gives the appearance of two roundish discs, the median part weakly chitinized, antapophyses about two-thirds the length of postapophyses, compressed and gradually tapering towards apex; sinus bursae moderately wide, ductus bursae long and moderately wide and chitinized at the base but gradually narrowed and weakly chitinized distally, forming a simple loop anterior to corpus bursae, one or two short folds of the wall of ductus bursae visible in the middle ; corpus bursae broadly club-shaped, without signum.

Material.—10 examples as follows :—INDIA, Punjab, Kulu Subdivision (N. W. Himalayas) : Kulu Valley, 2 miles north of Ralha, *ca.* 11,800 ft. (3,596·64 m.), May 30, 1955, (1 ♀) ; Rohtang Pass, *ca.* 13,800-14,000 ft. (4,206·24-4,267·20 m.), on grey (granite) rocks surrounded by snow, June 4-5, 1955, (4♂, 4♀), June 19, 1955 (1♀), (all *A. P. Kapur coll.*).

Remarks.—The grey colour of the moths matched perfectly the colour of a few bare rocks on and among which the moths were collected. At the time of collection the Pass was covered by winter snow and it was only in some sheltered nooks in the neighbourhood that the vegetation had begun to sprout. The females contained relatively large, and rounded eggs. The moths, when disturbed, would fly only short distances ; none was seen in copula.

Cteipolia lithophila, sp. nov.

♀. Head, thorax and abdomen fuscous, mixed with white. Antennae with alternate rings of brown and fuscous. Forewing (Pl. 6, fig. 1) with grey and fuscous hair (hair-scales) of moderate length dispersed among scales all over dorsal surface ; colour pattern as follows : whitish, suffused and irrorated with fuscous and brownish fuscous ; an indistinct, posteriorly interrupted basal line with two triangular emarginations externally, the emarginated area being whitish grey, irrorated with fuscous ; basal dash narrow, deep fuscous ; antemedial line indistinct and diffused ; the orbicular and the reniform represented by small whitish spots, each defined by deep fuscous laterally, and indistinctly so anteriorly and posteriorly, shape of the orbicular roundish or oblong, and of the reniform, narrow, elongate and oblique ; postmedian line rather indistinct and diffused especially in the middle and on the whole bent outward but incurved gently near middle of vein 6 (M1) and again at about two-thirds of vein 1b (1A); subterminal line white, irrorated with brownish fuscous mostly, rather ill-defined by fuscous suffusion and deeply fuscous irregular patches situated near the costa, in the middle, and near the hind margin, the line being excurved near each patch ; costal margin

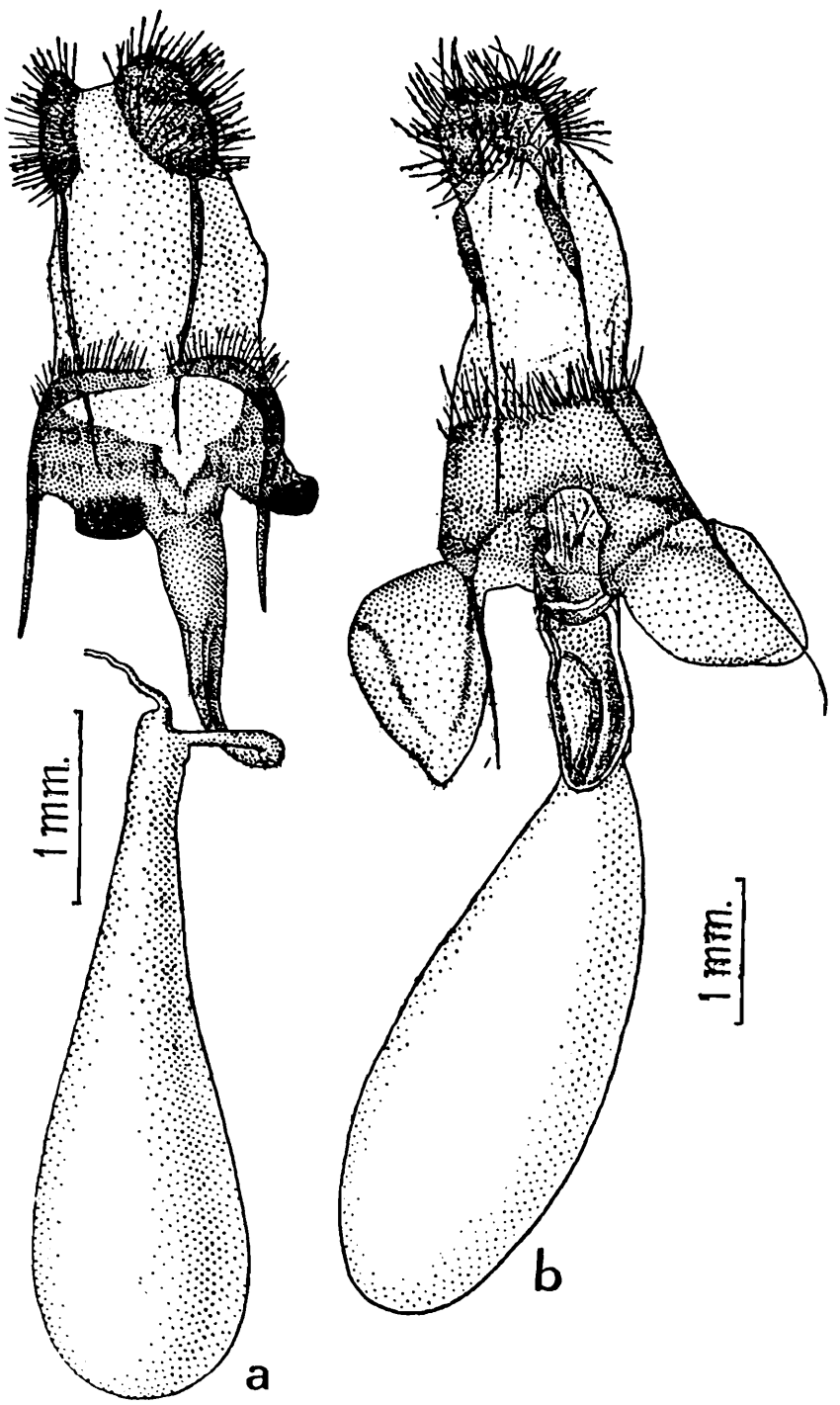


TEXT-FIG. —Venation of the fore-wing and hind-wing of *Cteipolia lithophila*, sp. nov.

with seven white spots including the two near apex or the area of subcostal line ; terminal line with a series of eight spots of irregular outline; fringe with a median white line. Hind wing semihyaline specially near below the cell, grey, suffused with light fuscous near margins and discal area ; underside with an oblong brownish discal spot and brownish irrorations near costa and along the external margin.

Venation (Text-fig. 2) typical of the genus and with veins 3 and 4 of the hind-wing arising from angle of the cell, as in *C. acrophila.*

♀ genitalia (Text-fig. 3 *b*) : Ovipositor moderately long, papillae analae broadly spatulate when viewed from the side, with long hair



TEXT-FIG. 3.—Female genitalia of *Cteipolia acrophila* and *C. lithophila.*

(*a*). Female genitalia of *Cteipolia acrophila* Hampson. (*b*). The same of (*C*) *lithophila*, sp. nov.

all over ; postapophyses about 2 mm. long, compressed laterally in the proximal one-third and very narrow for the remainder of the length ; eighth segment rather broadly and uniformly chitinized all round, with antapophyses slender and about 1·5 mm. long and ventrally with a subtriangular, sclerotized area on either side ; ostium bursae and ductus bursae wide, the latter rather short, and showing a number of prominently chitinized, sculptured folds ; corpus bursae elongate oval, without signum. The female genitalia differ from those of *C. acrophila* in the shape and structure of bursae copulatrix, especially that of ostium and ductus bursae which are narrow, long, coiled and unsculptured in *acrophila.*

Wing expanse (♀) : 33 mm.

Type—NEPAL : Khumbu, *ca.* 16,000 ft. (4,876·80 m.) above Marlung, (27°53'N, 80°40'E), Bhote Kosi Valley, eastern Nepal, 9. III. 1954 (*B. Biswas 'Daily Mail' Himalayan Expedition,* 1954). A single female (genitalia mounted on slide), in the Zoological Survey of India, Calcutta. Reg. No. 224/H10.

Remarks.—The species is closely allied to *C. acrophila* in that veins 3 and 4 of the hind-wing arise from angle of the cell instead of being stalked, as in *C. sacelli,* and in the presence of hair (hair-scales) dispersed all over the dorsal surface of the forewings ; in respect of general coloration it may be stated that *lithophila* is more bright grey compared to *acrophila,* which is rather dull grey ; the pattern of the wings also differs considerably in regard to several details. It may be further distinguished from *acrophila* by its larger size and by the differences in structure of the female genitalia, as described above.

III.—SUMMARY

Brief notes are given on the geographical distribution and taxonomy of the species of the genus *Cteipolia* Staudinger, which inhabit central Asia and the high altitudes in the Himalayas. *Cteipolia acrophila* Hampson is recorded from Rohtang Pass, *ca.* 13,800—14,000 ft. (4206·24—4267·20 m.) and its environs 11,800 ft. (3596·64 m.) in the Kulu Valley, Punjab. A new species from Khumbu, *ca.* 16,000 ft. (4876·80, m.), in eastern Nepal is described under the name *Cteipolia lithophila.* Records from these localities considerably extend the distribution of the genus in the southern and eastern directions. Some field observations and further descriptions, including those of genitalia, are recorded for C. *acrophila,* and a comparison made between it and *C. lithophila,* where possible.