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Autor(en): **Bänziger, Hans**

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Description of 3 new species of Calyptra Ochsenh. (Calpe Treit.) (Lep., Noctuidae)

HANS BÄNZIGER
Dept. of Entomology, Fac. of Agriculture, Chiengmai University, Chiengmai, Thailand[1]

Calyptra nyei sp. nov., *C. parva* sp. nov. and *C. pseudobicolor* sp. nov. from S and SE Himalayan mountain ranges are described and illustrated with photographs of the adults and drawings of the genitalia. The first species is near *C. subnubila* (PROUT), the second vaguely resembles *C. eustrigata* (HAMPSON), while the third is so similar to *C. bicolor* (MOORE) that genitalia examination is generally needed for its identification.

During a revisionary study of the genus *Calyptra* OCHSENHEIMER *(Calpe* TREITSCHKE) carried out at the British Museum (Natural History), London, three hitherto undescribed species belonging to this genus were discovered. In this first paper the description of these new species is given. A full revision of all known *Calyptra* species is in preparation.

DESCRIPTION OF THE SPECIES

Calyptra nyei sp. nov. (fig. 2-4, 12)

Male: Head, thorax and legs dark brown as the fore wings, palpi, tibiae I and tarsi I rufous, tibiae II without androtheca[2]. Abdomen bright yellow as hind wings. Antennae bipectinate ciliate with setae, longest processi 0.32-0.35 mm. Fore wings upperside dark brown, hook (fig. 1) at tornus very distinct, lobe (fig. 1) at inner margin well developed. Oblique lines (fig. 1): basal, antemedial and medial faint and diffuse. Diagonal line (fig. 1) from apex to inner margin merges at ⅓ to ½ of the distance from lobe to hook; it is well marked, dark reddish brown, with a very faint, slightly violet outer border. Reniform spot barely visible, if at all. No white dot (fig. 1) in the antemarginal-tornus region but sometimes there is a diffuse area with slight violet tone. Colour of fringes like wing. Underside light brown with marginal area lighter. Hind wings upper and underside plain bright yellow except a brown, very thin terminal line to which the yellow fringes are attached. Genitalia (fig. 2-4) similar to those of *C. subnubila* (PROUT) and *C. bicolor* (MOORE) but processus of sacculus much broader and with serrations distinctly less sclerotized than in the first and less conspicuous than in the latter; also, among other differences, cornuti of aedoeagus larger than in the two species above.

Female: Colouration similar to that of the male.

Wingspan: Male, 51-60 mm (⌀ 56, n=4); female, 57-62 (⌀ 60, n=3).

[1]Mailing address: c/o Swiss Embassy, P.O. Box 821, Bangkok, Thailand
[2]Term as proposed by BERIO, 1956

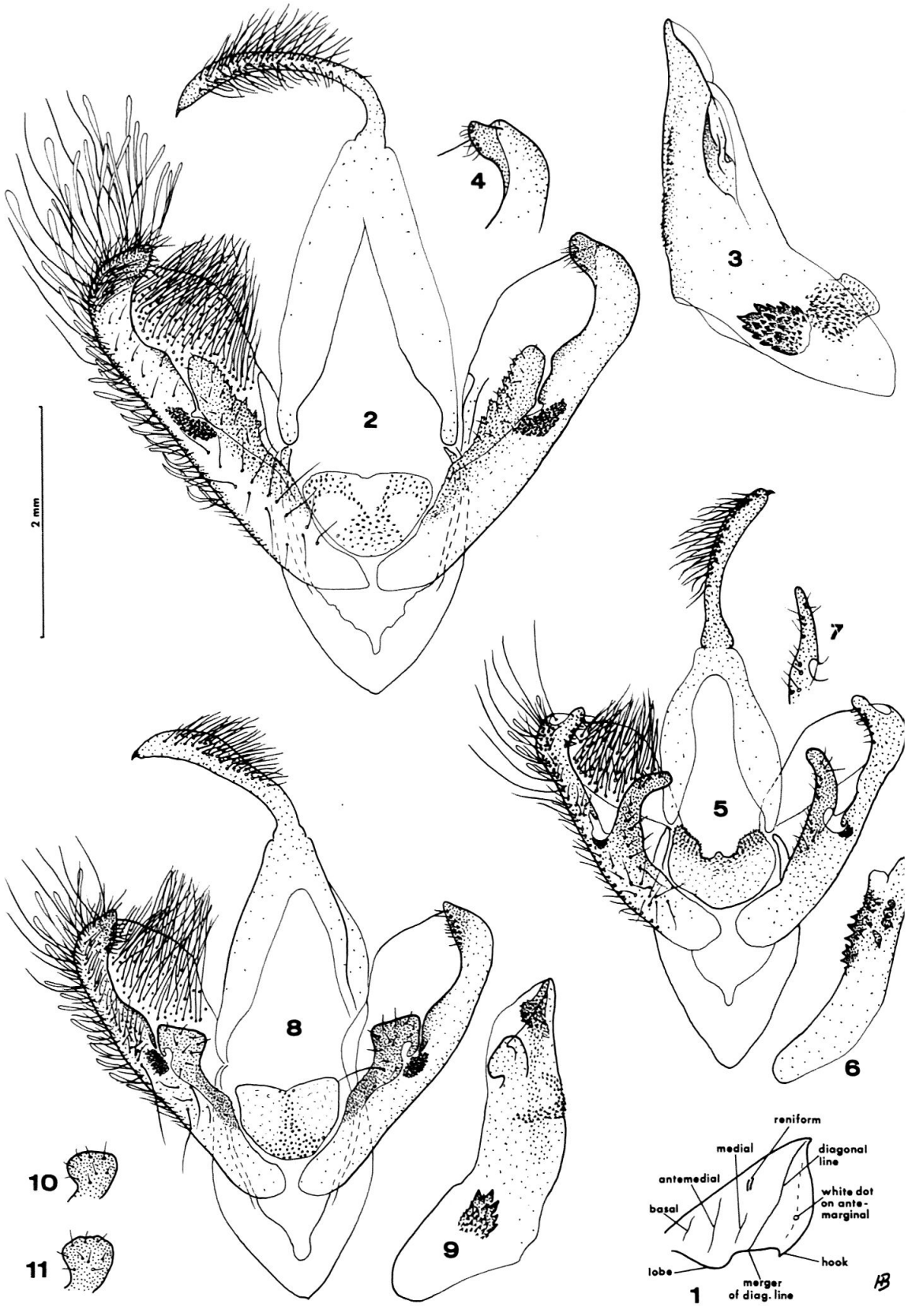

Fig. 1–11: Wing pattern terminology (1); ♂ genitalia of *Calyptra nyei* sp. nov. (2–4; 4: variation of apex of valva); ♂ genitalia of *C. parva* sp. nov. (5–7; 7: variation of processus of sacculus); and ♂ genitalia of *C. pseudobicolor* sp. nov. (8–11; 10 and 11: variations of processus of sacculus).

Nearest species: *C. subnubila* which differs, however, in many respects, such as the dark brown abdomen, much longer processi on antenna (0.63 mm), genitalia, etc.

Distribution: Southeastern mountain ranges of the Himalayas, at altitudes between 5000–8000 feet.

Holotype: Male, Naga Hills (India), 5000–8000 feet, July–August 1889, W. DOHERTY leg., BMNH[3], gen. prep. slide No. 9901.

Paratypes: Males, Naga Hills, 5000–7000 feet, August 1889, W. DOHERTY leg., BMNH. Darjeeling (India), F. MÖLLER leg., BMNH, gen. prep. slide No. 9912. Sikkim, 20.7.1889, J.G. PILCHER leg., BMNH, gen. prep. slide No. 9927.

Allotype: Female, Naga Hills, 5000–8000 feet, July–August 1889, W. DOHERTY leg., BMNH.

Calyptra parva sp. nov. (fig. 5–7, 13)

Male: General colouration greyish brown, darker than other *Calyptra* species. Head, palpi and thorax above brownish with very fine whitish lines, abdomen greyish brown and somewhat lighter than thorax. Head and palpi rufous laterally. Antennae unidentate basally, more distally processi assume «V» shape and thus tendency to fused bidentation. Tibiae I and tarsi I brown, rest of legs light grey. Tibiae II with androtheca. Fore wings upperside dark brownish grey, hook at tornus well visible though small, lobe at inner margin well developed but not very protuberant. Oblique lines: basal broad but less well visible than antemedial; medial often not visible. Diagonal line from apex to inner margin merges at ⅓, or slightly more of the distance from lobe to hook; it is brownish red, lined basally by a fine, well defined dark brown-rufous line, distally by a diffuse, very light greyish violet shadow. Antemarginal line generally very faintly marked, of «S» shape; it may be interrupted and thus give rise to 2–3 very faint, diffuse whitish spots. Reniform spot often very faint as 2 short vertical bands. Fringes basally brownish yellow, distally brownish grey. Underside dark brown. Hind wings upperside often somewhat darker than fore wings, and the base may be somewhat lighter than the rest. Fringes basally yellowish white, distally brownish grey. Underside lighter than that of the fore wings, lunule and postmedial line generally distinctly darker, marginal shade may also be darker that the base. Genitalia (fig. 5–7) with a slightly asymmetric, large, finger-like processus of sacculus, juxta with serration, the slender aedoeagus laterally with some strong teeth and few cornuti.

Female: Colouration and pattern similar to that of the male.

Wingspan: Male, 38–40 mm (n=6); female, 38 mm (n=2).

Nearest species: *C. eustrigata* (HAMPSON) but quite distinct. This species is lighter coloured and more brownish, the wings lack the hook and have the white dot on the antemarginal, the male antenna is pectinate, and the wingspan is generally larger.

Distribution: Southeastern mountain ranges of the Himalayas, at altitudes between 4600–7000 feet.

Holotype: Male, Naga Hills, 5500–7000 feet, June–September 1889, W. DOHERTY leg., BMNH.

[3]BMNH = British Museum (Nat. Hist.), London, England

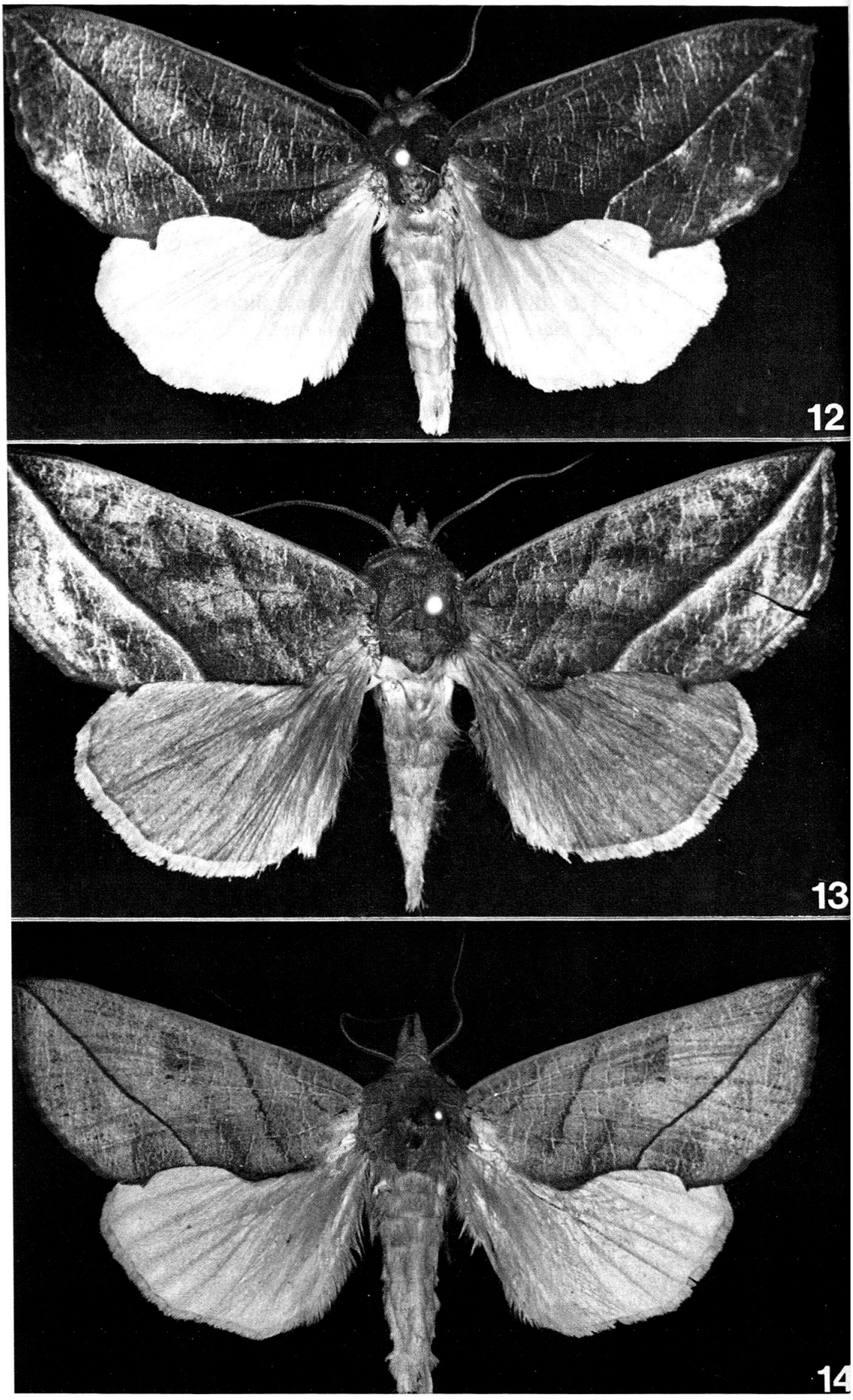

Fig. 12–14: *Calyptra nyei* sp. nov., ♂ (12); *C. parva* sp. nov., ♂ (13); and *C. pseudobicolor* sp. nov., ♂ (14).

Paratypes: Males, Manipur (India), 5000–7000 feet, May (Year?), W. DOHERTY leg., BMNH, gen. prep. slide No. 9907. Urianotong (?) (Tibet), BMNH, gen. prep. slide No. 9916. Wary (Burma), October 1935, R. PEREGO leg., MCSNM[4], gen. prep. slide No. 518.

Allotype: Female, Wary, October 1935, R. PEREGO leg., MCSNM.

Calyptra pseudobicolor sp. nov. (fig. 8–11, 14)

Male: Head, palpi, thorax and legs yellowish brown as fore wings, abdomen yellow as hind wings, but sometimes slightly darker. Antennae bipectinate ciliate with setae, longest processi 0.33–0.37 mm. Tibiae II without androtheca. Fore wings upperside yellowish brown, hook at tornus and lobe at inner margin well developed. Oblique lines: basal less visible than antemedial which is generally well-defined, medial faint, if present. Diagonal line from apex to inner margin merges about ⅓ of the distance from lobe to hook and is well-defined brown with a yellowish brown lining on the outside. Reniform spot diffuse and more or less well visible, vertical. No white spot in the antemarginal-tornus area. Fringes brown to dark brown. Underside plain light yellow with brown fringes. Hind wings upperside plain yellow with yellow fringes; underside plain light yellow. Genitalia (fig. 8–11) differ from other *Calyptra,* among other characters, in the broad semi-quadrangular to pan-like processus of the sacculus.

Wingspan: 52–60 mm (⌀ 55, n=10).

Nearest species: *C. bicolor,* from which it is exceedingly difficult to separate externally. *C. bicolor* is somewhat smaller (45–54 mm, ⌀ 51, n=19), has slightly darker fore wings often with somewhat lighter areas between the oblique lines *(C. pseudobicolor* is more homogeneous in this respect), has longer processi on antenna (0.37–0.41), and the antemedial line, though well visible, is diffuse, at least on the inner side. The genitalia of *C. bicolor* are very distinct in the strongly serrate and finger-like shape of the processus of the sacculus, and in the sclerotized structures of the aedoeagus.

Distribution: Southern and southeastern mountain ranges of the Himalayas, at altitudes between 2000–8500 feet.

Holotype: Male, Sikkim, 4000–7000 feet, F. MÖLLER leg., BMNH, gen. prep. slide No. 9918.

Paratypes: Males, 2 specimens from Sikkim, 2000 feet, August 1897, BMNH, gen. prep. slide No. 9902 and 9925. Bhutan, BMNH, gen. prep. slide No. 9921. Hills E of Toungho (Burma), May 1896, BMNH, gen. prep. slide No. 9914.

DISCUSSION

The fact that *C. bicolor* (MOORE) actually consists of 2 species, *C. pseudobicolor* sp. nov. being described here, came as a surprise. No really obvious and consistent variations in colour and design are apparent. Also other characters, e.g. wingspan and antennal morphology, often are not sufficiently differentiated to ensure correct identification. But, as mentioned above, the structure of the geni-

[4]MCSNM = Museo Civico di Storia Naturale, Milano, Italy

talia leaves no doubt. The genitalia of *C. bicolor* will be illustrated, together with other details, in the revisionary study of the genus.

C. parva sp. nov. stands somewhat apart from other *Calyptra* owing to its small size, dark and unusual design [though less so than that of *C. fasciata* (MOORE)]. It vaguely resembles *C. eustrigata* (HAMPSON) from which, however, it differs in many conspicuous characters.

C. nyei sp. nov. with its bright yellow abdomen can be easily distinguished from the similar *C. subnubila* (PROUT) which has a brown abdomen and which is known only from Sumatra. On a specimen of *C. nyei* the label *«hilaris»* WARREN was found. Evidently WARREN realized that this was a new species and named it; in the BMNH collection no published description has been found.

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