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The curious case of Bryopolia orophasma BOURSIN, 1960:
a special Euchalcia from the highest ranges
(Lepidoptera, Noctuidae)

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Abstract: The discussion of the taxonomic status of Euchalcia orophasma (BOURSIN, 1960), comb.n. (avinovi KLYUCHKO, 1987, syn.n., grisescens KLYUCHKO, 1987, syn.n.) with some historical aspects of this interesting story is given.

Zusammenfassung: Diskussion über den taxonomischen Status von Euchalcia orophasma (BOURSIN, 1960), comb.n. (avinovi KLYUCHKO, 1987, syn.n., grisescens KLYUCHKO, 1987, syn.n.) mit einigen interessanten, geschichtlichen Bemerkungen.

The peculiar species Bryopolia orophasma was described even in the first period of the intensive exploration of the Lepidoptera fauna of Afghanistan. The unique type specimen (male) was collected by Klapperich in Badakhshan, "Sarekanda" (according to the opinion of Prof.Clas Naumann, one of the best European explorers of this region, a locality of such name does not exist. The locality must be in the W part of Badakhshan) in 4200 m altitude. The description was rather short, without illustrations of either the specimen or the configuration of the male genitalia.

As a result of the survey of the Plusiinae collection of the Zoological Institute, Leningrad in 1984, a very unusual Euchalcia specimen was found. The collecting locality is a less known one, but the altitude was extremely high: "Rupshu, Taga-lung-La, 17500 ft. (= 5425 m), 23.VII.1912, A.Avinoff". This specimen has the colouration and wing pattern very distinct from all the known Euchalcia species, the antennae relatively strongly ciliate, but the configuration of the male genitalia was surprisi-

singly similar to those of the species of the variabilis group. This specimen was described later as a new species by Klyuchko (avinovi KLYUCHKO, 1987) beside another new Euchalcia species from the Pamir (grisescens KLYUCHKO, 1987).

During the investigations of the huge noctuid material of Prof. Clas Naumann collected in Badakhshan a short series of this incriminated, fine Euchalcia species was found, luckily this series consists of both males and females. By the studies of the everted vesica and the female genitalia some good and conspicuous specific features were found and it was pointed out that this species is conspecific with both of avinovi and grisescens, as they represent two extremities of the range of variability of the same species. The differences mentioned in the descriptions - the size of the specimens, the length of the harpe, the slightly different shape of valvae and the dentation of the distal lamina of the aedeagus - display only the large variability of these characteristics which can be observed in the series from Afghanistan.

On the other hand, at the same time we began the revisional studies on the genus Bryopolia, in which some interesting new taxa were recently found. And, on our largest surprise, in the genitalia documentation of Ch. Boursin, we have found our Euchalcia orophasma BOURSIN, 1960.

Because of this taxonomic mistake being very unusual in the works of Boursin and the new synonyms the redescription of this species seems to be necessary. The possibly reasons of this error were the real morphological convergences between the two subfamilies Plusiinae and Cucullinae and that Boursin had opportunity to study only a seldom male specimen.

Euchalcia orophasma (BOURSIN, 1960), comb.n. (Plate 1 - 2)
Bull.mens.soc.linn., Lyon, 29:146 (Bryopolia)

Examined material: the photo of the holotype and its male genitalia in the documentation of Boursin, 4 males, 1 female, NE Afghanistan, Prov. Badakhshan, Pamir-e-kalon, Kotal-e-Shaur, 4300 m, 18.-19.VII.1972, Nos 382, 383 Naumann, leg. Brade et Naumann.

Holotype male of Euchalcia avinovi, Rupshu, Taga-Lung-Ia, 17500 ft., 23.VII.1912, leg.A.Avinoff. Slides Nos 2568, 2569 Ronkay, 4521 Varga (males), 2406 Ronkay (female), the genitalia of Euchalcia avinovi is preserved on a paper label without number.

Redescription:

Male genitalia (Figs. 1 - 3, 6): uncus long, strong and regularly curved, tegumen wide and relatively low. Vinculum long, V-shaped, saccus membranous, fultura inferior (= juxta) subtriangular with curved, finger like apical processus. Valvae elongate, medially dilated, apex rounded. Harpe usually long and fine, but its length very variable. Clavus relatively long and pointed, sacculus short. Aedeagus cylindrical, less sclerotized except its distal end. Dentation of distal sclerotized lamina very variable but usually with few (2-4) teeth. Basal part of vesica inflated, globular, posterior part arcuate, tubular, cornutus with wide basal plate, placed very near to ductus ejaculatorius on dorsal surface.

Female genitalia (Fig. 7): ovipositor short, gonapophyses long and slender. Ostium bursae narrow, membranous, ductus bursae with heavily sclerotized crests running longitudinally on both surfaces, characteristically L- or boots-shaped with acute angle, conjoined with bursa copulatrix at caudal third. Bursa copulatrix large, peach-shaped, membranous with granulose apex bursae.

Specific differences and taxonomic position

The discussed species has an unique olive - grey colouration with variable orange - brown irroration and diffuse but visible grey - whitish pattern consisting of the three stigmata and the transversal lines. The latter are wide and double, dark with lighter filling (whitish or reddish) and lighter irroration on outer side. The apex of the forewing is less acute than in the other Euchalcia species. By these features orophasma is easily separable from the other taxa of the genus. The pectination of the antennae of the males is not the same as those of gerda (PÜNGELER, 1907) and serraticornis (DUFAY, 1965) but only the cilia of the joints are significantly longer than in the species of the variabilis group. The configuration of the male genitalia is similar in type to that of variabilis (PILLER et MITTERPACHER, 1973)(Figs. 4-5) but the valvae of the latter are narrower and the vesica is strongly different. The posterior part of vesica of orophasma is regularly curved and more tubular since the distal tube of variabilis is much broader and less curved, its proximal inflated part is larger. The female genitalia of orophasma has a special shape of ductus bursae being dissimilar to the allied species.

Phylogeny

The genus Euchalcia, by the morphological and zoogeographical characteristics of the known species, is a group of Inner Asian origin, with the ancient taxa restricted to the high mountain ranges of the Himalaya region and Tibet. These old species seems to be fairly isolated and known only by very few specimens, unfortunately the females are usually unknown. The main plesiomorphic features are the more or less serrated or bipectinate antennae of the males with wide basal joint and the bundle of spiculiform cornuti in the proximal part of the vesica. The two main lines of development are the cashmirensis line with ciliate antennae, reduced valvae and bundle of cornuti and sharp pattern (from the "serraticornis-like" ancestor) and the variabilis s.l.

line which has some very different Central Asian isolated taxa and few species with more expanded area. This line can be characterized with the ciliate antennae, the well - developed valvae and the proximal part of vesica with either a diffuse granulation or a wider, dentated lamina. Orophasma is a specialized member of this latter line having stronger and longer cilla on the antennae, relatively large teeth on the proximal lamina of the vesica and special, diffuse wing pattern. Its area is restricted to the high plateau of the Pamir Mts. and to the NW Himalaya (the type locality of avinovi was not succeeded to identify more exactly), all the known specimens were found above 4200 m altitude.

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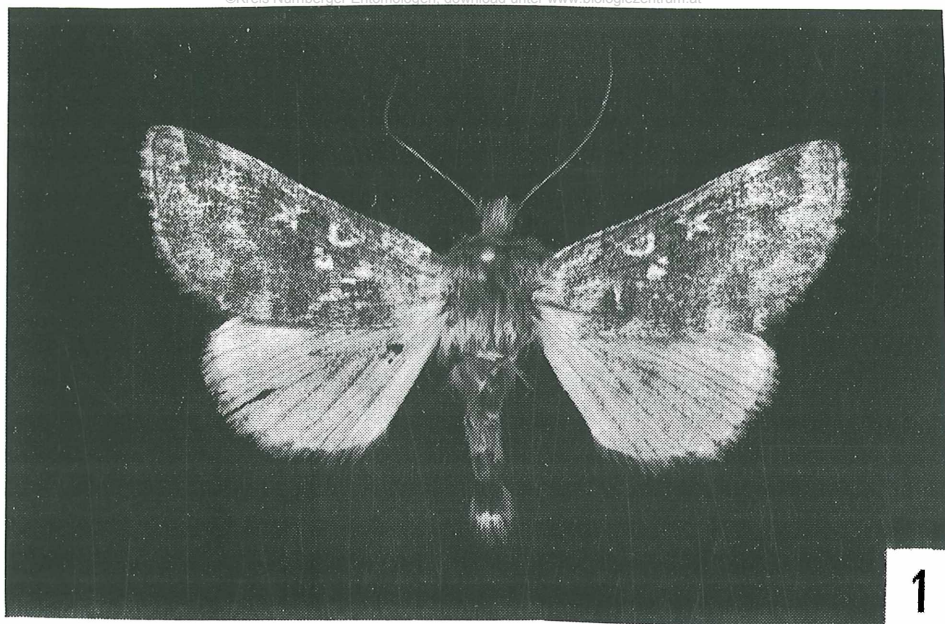


Plate 1: *Euchalcia orophasma* BOURSIN, male, Afghanistan



Plate 2: *Euchalcia orophasma* BOURSIN, female, Afghanistan

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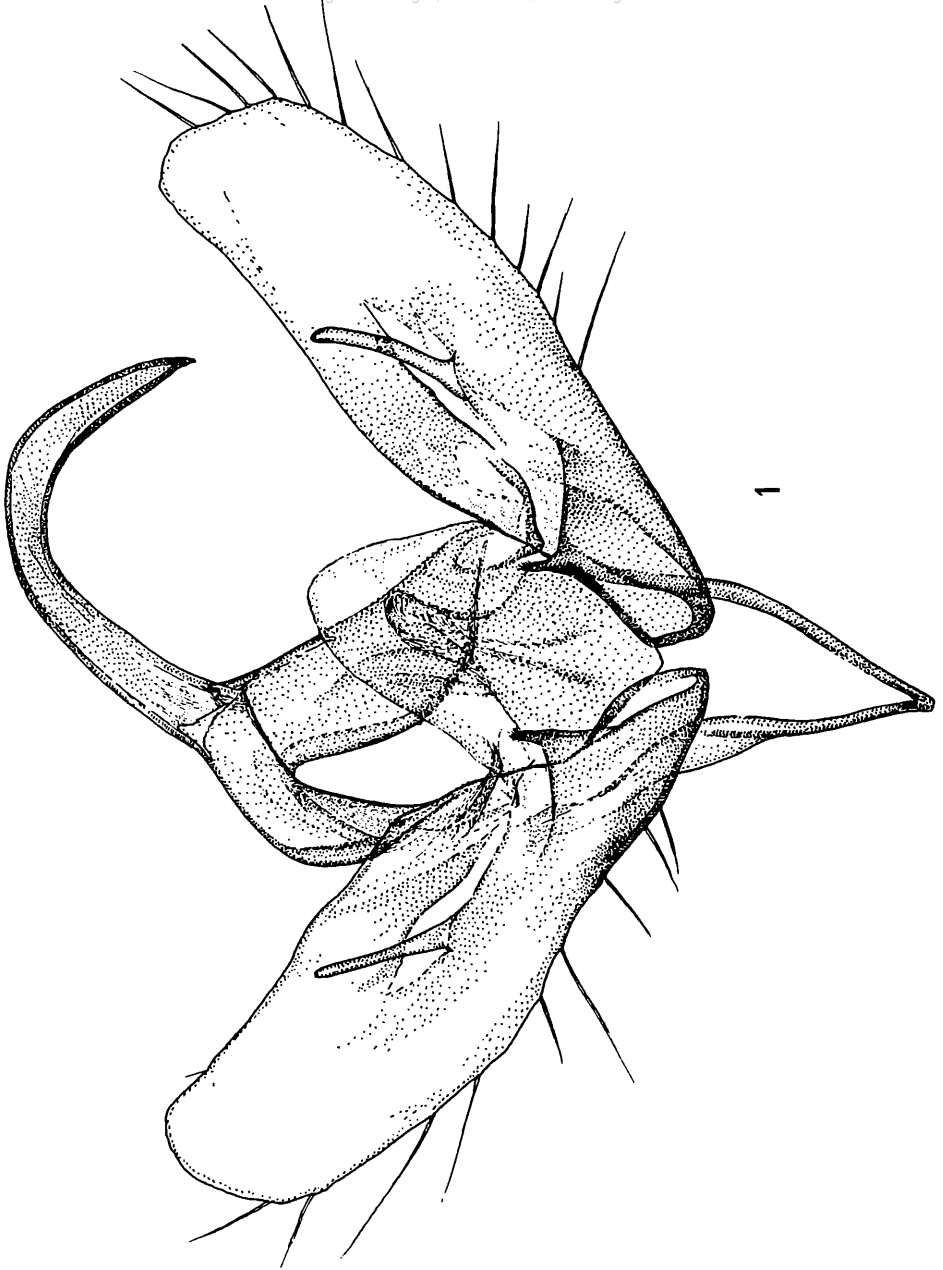
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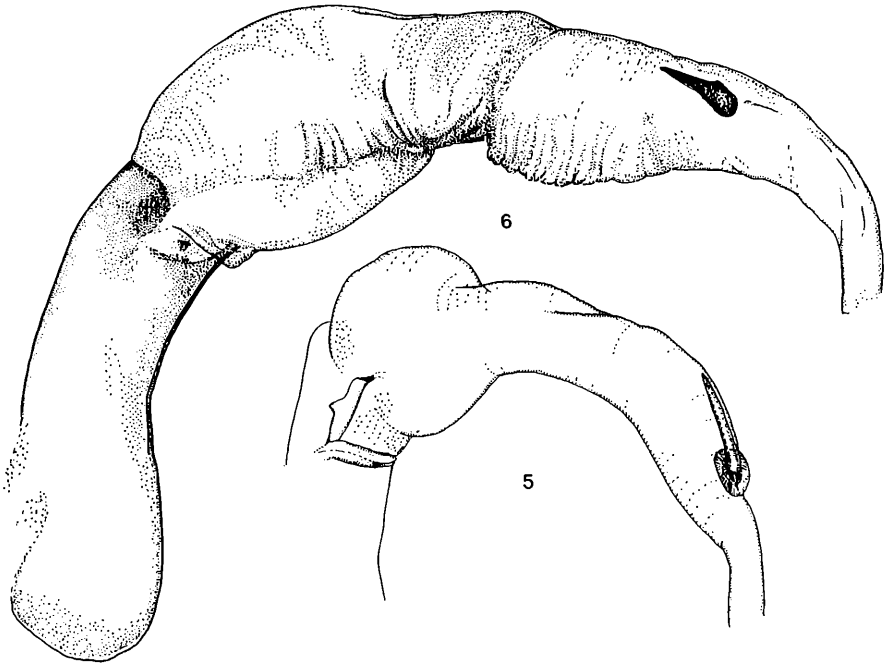
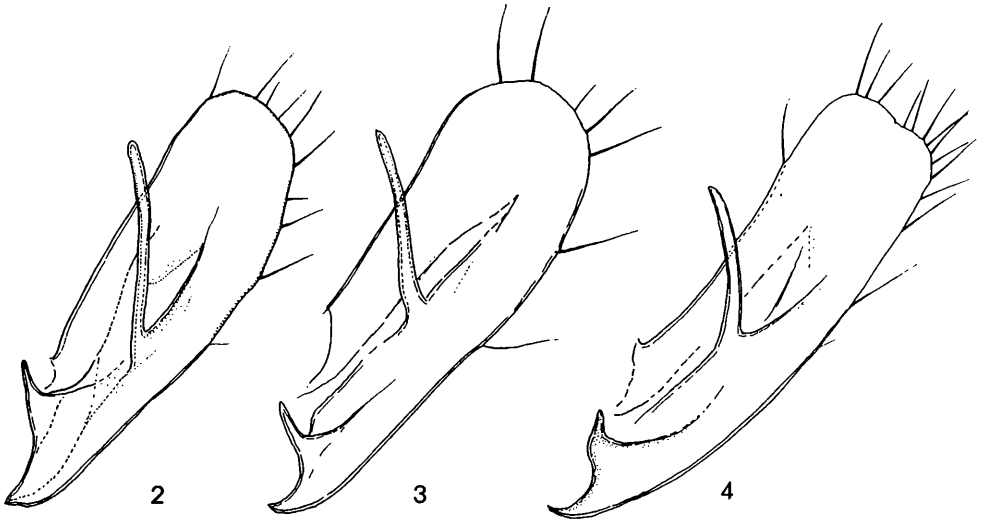
Explanation of the figures (Genitalzeichnungen)

- Fig. 1** *Euchalcia orophasma* BOURSIN, Afghanistan
Figs.2-4 2-3: Right valvae of *Euchalcia orophasma* BOURSIN, Afghanistan
4: Right valvae of *Euchalcia variabilis* PILLER et MITTERPACHER, Hungary
Figs.5-6. 5: Vesica of *Euchalcia variabilis* PILLER et MITTERBACHER, Hungary
6: Aedeagus and vesica of *Euchalcia orophasma* BOURSIN, Afghanistan
Fig. 7 Female genitalia of *Euchalcia orophasma* BOURSIN, Afghanistan

Explanation of the plates (Fotos)

- Plate 1** *Euchalcia orophasma* BOURSIN, male, Afghanistan
Plate 2 *Euchalcia orophasma* BOURSIN, female, Afghanistan
(colour photo) ex coll. Naumann







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