Nota lepid. 23 (2): 141–146; 01.VII.2000 ISSN 0342–7536

Phantosoma witti gen. et sp. nov., a new autumn lasiocampid moth from Turkmenistan (Lasiocampidae)

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Summary. A new monotypic genus *Phantosoma* gen. nov. is established for a new species *Phantosoma witti* sp. nov. from the Kopet-Dagh Mts., S. Turkmenistan. The systematic position of the taxon within the family Lasiocampidae is still uncertain because only a single female is known.

Zusammenfassung. Eine neue monotypische Gattung *Phantosoma* gen. nov. wird für eine neue Art, *Phantosoma witti* sp. nov. aus Süd-Turkmenistan (Kopet-Dagh-Gebirge), errichtet. Die systematische Position des Taxon in der Familie Lasiocampidae ist unklar, weil nur ein einziges Weibchen bekannt ist.

Résumé. Un nouveau genre monotypique *Phantosoma* gen. nov. est établi pour la nouvelle espèce *Phantosoma witti* sp. nov. des monts du Kopet-Dagh, au sud du Turkménistan. La position systématique du taxon au sein de la famille des Lasiocampidae reste incertaine à l'heure actuelle, vu qu'une seule femelle est connue jusqu'à présent.

Key words: Lasiocampidae, *Phantosoma* gen. nov., *witti* sp. nov., Turkmenistan.

A single female of an unknown lasiocampid moth species was collected in November 1991 in the Kopet-Dagh Mts (south Turkmenistan) by our Hungarian colleagues, Gábor Ronkay and Márton Hreblay. To our surprise, examination of this specimen revealed the necessity to establish a new genus for it.

Phantosoma gen. nov.

Type-species: *Phantosoma witti* sp. nov.
Derivation: phantasma (Gk. appearance, phantom) + soma (Gk. body); gender: neuter.

Diagnosis (female). Lasiocampid moth of small size. Head small; eyes small. Antenna bipectinate, flagellar processes long.

Labial palps (Fig. 2) short, porrect, 3-segmented. Proboscis reduced. Front with longitudinal, sclerotized, wrinkled keel.

Thorax and abdomen strong, covered with long scales. Legs long and slender, without epiphysis (Fig. 3). Abdomen with apical tuft of modified scales forming a pillow at its tip.

Female with developed wings (Fig. 4). Frenulum absent; costal margin of the hindwing slightly extended. Forewing with 5 branches of R: R_1 free; R_2 and R_3 on a long stem, both running to the costal wing margin; R_4 and R_5 on a short stem, both running to outer wing margin; origins of R_2+R_3 and R_4+R_5 stalked; M_1 free but its origin common with radial branch; origins of M_2 and M_3 in close proximity. Origins of Cu_1 and Cu_2 moved apart, only one A present. In hindwing, Sc forming an anastomose with Rs, both forming a long and slender Sc–R cell; the common branch Sc+Rs connected with M_1 by a short transversal vein; origins of M_2 and M_3 in close proximity; both Cu and two A present. Discal vein slender in both wings.

Wing pattern almost completely reduced, forewing with postmedian line hardly visible. Scale cover thin.

Female genitalia (Fig. 5). Anterior apophyses vestigial; both vaginal plates present; antrum and ductus short; bursa copulatrix bag-shaped, without signum.

Male. Unknown.

So far the genus includes only a single species.

Phantosoma witti sp. nov.

Holotype ♀: "USSR, Turkmenia, Kopet-Dagh Mts., 15 km SE of Nochur, 1300–1400 m, 57°09'E, 38°21'N, 13.–14.XI 1991. N° L49, leg. M.Hreblay & G.Ronkay". Deposited in Museum Witt (Munich).

Description. Female (Fig. 1) with characteristics as given under generic diagnosis above. Wingspan 26 mm, forewing length 14.5 mm. Outer margin of the wings rounded. Forewing olive-green with greenish-yellow spot at R_1 tip; hindwing yellowish-grey, darker towards external area; cilia dark grey on both wings. Body covered with long ash-grey scales sprinkled with less numerous black ones. Anal tuft consisting of dark elongated scales, widened distally and slightly curved. Fore tibia without apophysis (Fig. 3).

Fig. 1. *Phantosoma witti* gen. et sp. nov. holotype ♀: *a* – upperside, *b* – underside.

Female genitalia (Fig. 5). Papillae anales with short setae; apophyses anteriores forked, 7–7.5 times shorter than apophyses posteriores. Antevaginal plate membranous but distinct and presented as a wrinkled lobe; postvaginal plate transverse, strongly sclerotized, U-shaped. Ostium membranous; antrum and ductus short, indistinct, membranous: practically, the ostium is opened immediately into bursa copulatrix; signum absent.

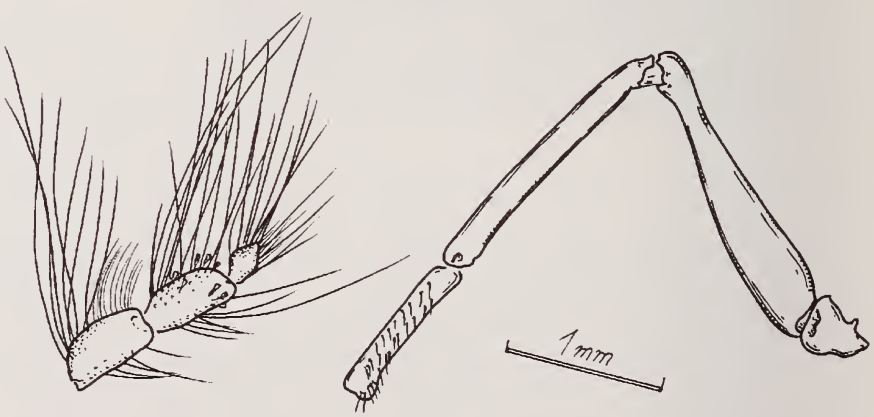
Biology. Late autumn species, admittedly hibernating at the egg stage; the eggs apparently laid in clusters and covered with scales from the female abdominal tuft. The following information about the biology and habitat of this species was given by Gábor Ronkay:

"The new species was found in an uplifted area of the Karayalchi valley, inside the nature reserve, at an elevation of 1300–1400 m above sea level. The relief is rather complex, consisting of rocky slopes, deep gorges and large limestone cliffs. The slopes and the lower parts of the gorges covered with shrubby deciduous forest and smaller grassy patches with low *Cytisus* shrubs.

Two individuals were observed during the day in strong sunshine flying rapidly over the surface, looking like a small yellowish bullet. These specimens were probably males, resembling in flight *Chondrosoma fiduciarium* Anker, 1854 (Geometridae) but even stronger, faster. Due to the surface relief conditions and rapid flight the moths cannot be overtaken at a run.

The single female specimen was picked up at a frosty dawn sitting on grass under a *Cytisus* shrub, having the wings folded over its back like a resting individual of some *Chondrostega* species.

The collecting period was the very late autumn, possibly the last aspect of the year. *Dasypolia, Agrochola, Pachyagrotis* species were observed during that night appearing around the light and the portable light traps".



Figs. 2–3

Fig. 4

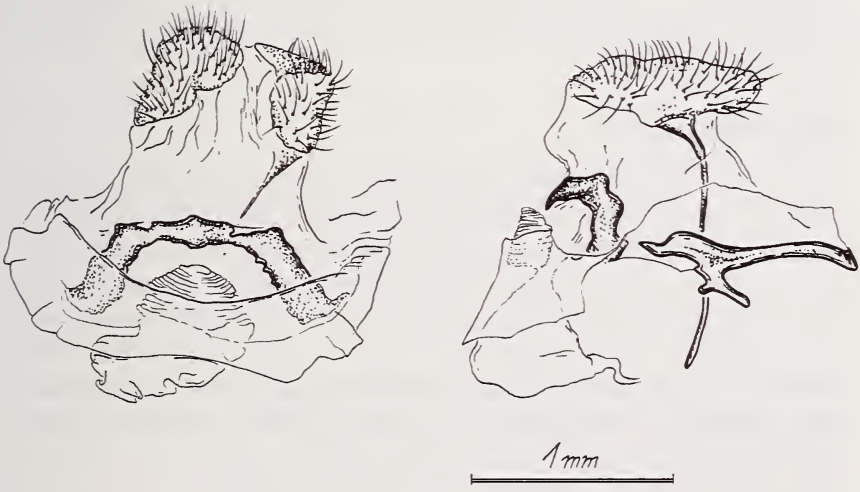


Fig. 5

Figs 2–5. *Phantosoma witti* gen. et sp. nov. holotype ♀: 2 – labial palp, 3 – foreleg (tarsus removed), 4 – venation, 5 – female genitalia (ventral and lateral view).

Discussion. The new species is distinct from other lasiocampid moths by several unique characteristics. The presence of the frontal keel (a plesiomorphic character) suggests pupation in a stiff, parchment-like, bag-shaped cocoon, typical for the primitive Lasiocampidae (e.g. *Chondrostega, Trichiura, Poecilocampa, Eriogaster*). At the same time, the moth has no specific teeth or spurs on the fore tibia, suggesting pupation on the ground or on the host plant. Very long flagellar processes on the female antennae are absolutely uncommon for the Lasiocampidae. Venation as a whole is of a primitive type as well as the lack of humeral veins in the costal hindwing area. Conversely, a large Sc–Rs cell is quite untypical for a lasiocampid complex with the venation characteristics pointed above.

When the female genitalia structure is taken into consideration, it becomes possible to suppose the male genitalia to be of a slightly modified type. Among all known Lasiocampidae no genus has forked apophyses in the female genitalia as in this new species.

Thus, the systematic position of this interesting genus within the family Lasiocampidae is not clear. It can be defined more precisely only when males and immature stages will become available for examination. Now this genus is provisionally placed between the so-called "gastropachoid" lasiocampid branch and the subfamily Poecilocampinae.

Acknowledgements

We would like to express our sincere thanks to all persons who helped us in this study. Gábor Ronkay and Márton Hreblay kindly gave this specimen for examination and provided us with the information about its biology. Dr Dieter Stüning (Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn) made photographs of the holotype and assisted us in many other ways. Thomas Witt (Munich) kindly provided an access to his rich collection enabling a comparative analysis; the new species is named in his honour.