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REVIEW OF THE GENUS *ACOSMA* YAKOVLEV, 2011 (LEPIDOPTERA: COSSIDAE)

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Summary. The genus *Acosma* Yakovlev, 2011, distributed in equatorial Africa, has been revised. One new species *Acosma stanleyi* Yakovlev, **sp. n.** is described from Democratic Republic of the Congo. *Azygophleps equatorialis* Yakovlev, 2011 is transferred to the genus *Acosma* and a new combination is proposed: *Acosma equatorialis* (Yakovlev, 2011), **comb. n.**

Key words: carpenter moths, Cossidae, Zeuzerinae, *Acosma*, taxonomy, new species, key, Africa.

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Резюме. Проведена ревизия древоточцев рода *Acosma* Yakovlev, 2011, распространенных в экваториальной Африке. Из Демократической Республики Конго описан новый вид *Acosma stanleyi* Yakovlev, **sp. n.** Вид *Azygophleps equatorialis* Yakovlev, 2011 перенесен в род *Acosma* и установлена новая комбинация: *Acosma equatorialis* (Yakovlev, 2011), **comb. n.**

INTRODUCTION

Carpenter moths (Lepidoptera: Cossidae) of Extrapalaeartic Africa are quite poorly studied. There are significant gaps in both faunal and taxonomic studies. Currently, the most revised are the Cossidae faunas of Malawi (Yakovlev & Murphy, 2013), Zimbabwe (Yakovlev & Lenz, 2013), Zambia (Yakovlev, 2014), Swaziland (Yakovlev & Witt, 2016), and South Africa (western part of Republic of Southern Africa and Southern Namibia) (Mey, 2015, 2016, 2017).

The monotypic genus *Acosma* Yakovlev, 2011 was established for *A. gurkoi* Yakovlev, 2011 from South Sudan. In the same paper Yakovlev (2011) described *Azygophleps equatorialis* Yakovlev, 2011 from Congo Republic and Democratic Republic of the Congo. During the supplementary study in 2018, we reexamined the holotype of *A. equatorialis* and studied the genitalia of one of the paratypes (GenPr Heterocera MWM: 32.940). It was revealed that the genitalia of both specimens have the features characteristic of the genus *Acosma* (the processes on the abdominal edge of the valve). Due to a small deformation in the genitalia of the holotype *A. equatorialis*, caused by molding, this important feature was not found and correctly described at that time. Additionally, it was established that the paratypes of *A. equatorialis*, originating from the locality remote almost 1200 km east from the type habitat, represent a well differentiated species new to science.

MATERIAL AND METHODS

The study was based on the materials from Museum Witt. Genitalia slides were examined with a Zeiss Stemi 2000 C microscope and images were taken with the Olympus XC 50 camera. Images of imago were taken by the digital camera of Apple iPhone 7 32GB, illuminated in Lightbox. The images were processed using CorelDraw software.

Holotype and paratypes of a new species are deposited in the collection of the Museum Witt, Munich, Germany (MWM) and in the collection of Roman Yakovlev, Barnaul, Russia (RYB).

TAXONOMY

Family Cossidae

Subfamily Zeuzerinae

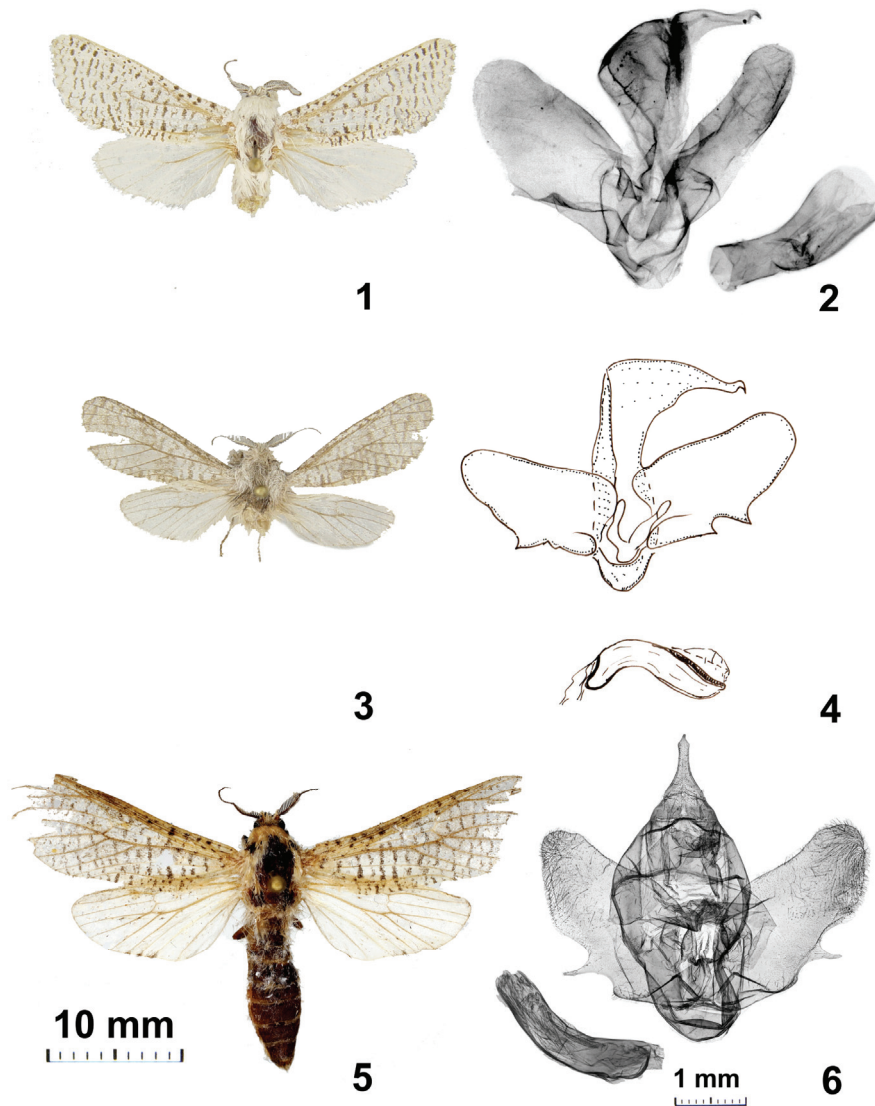
Genus *Acosma* Yakovlev, 2011

Acosma Yakovlev, 2011: 82.

Type species: *Acosma gurkoi* Yakovlev, 2011, by monotypy.

NOTES. The genus *Acosma* was established for *Acosma gurkoi* (Figs 1–2), described by one specimen from South Sudan (Yakovlev, 2011). The unusual male genital structure, particularly, the narrow lanceolate processes on the abdominal edge of the valves, is the apomorphic feature of this genus.

In the same paper (Yakovlev, 2011) a new species, *Azygophleps equatorialis* Yakovlev, 2011 (Figs 3–4), was described based on a series of 4 specimens: holotype (male) from Congo [Congo Republic], Odzala NP, 0°23'N, 14°50'E, and three



Figs 1–6. Imago and male genitalia of *Acosma* spp. 1 – *A. equatorialis*, holotype, male (MWM); 2 – *A. equatorialis*, genitalia (GenPr Heterocera MWM: 14.450); 3 – *A. gurkoi*, holotype, male (MWM); 4 – *A. gurkoi*, genitalia (GenPr Heterocera MWM: 17.168); 5 – *A. stanleyi* **sp. n.**, holotype, male; 6 – *A. stanleyi*, **sp. n.**, genitalia (GenPr Heterocera MWM: 32.490).

paratypes (all males) from Rep. Congo (Zaire) [Democratic Republic of the Congo], 35 km SSE Kisangani, Yoko vill., 0°17'N, 25°17'E). For the description, only the holotype genitalia have been examined and illustrated (GenPr Heterocera MWM: 14.450).

Key to species

- 1(2) Fore wing (after degreasing) white, with fine contrast pattern of strokes; phallus strongly curved in medium third 3
2(1) Fore wing (after degreasing) grey, with poorly noticeable grey pattern of strokes; phallus strongly curved in medium third *A. gurkoi*
3(4) A series of small black dots along the hind wing edge (cubitaly) *A. stanleyi*
4(3) The hind wing edge without black dots *A. equatorialis*

List of species

Acosma equatorialis (Yakovlev, 2011), comb. n.

Figs 1, 2

Azygophleps equatorialis Yakovlev, 2011: 86 (type locality: Congo [Congo Republic]).

MATERIAL. Congo [Congo Republic]: Odzala NP, 0°23'N, 14°50'E, 29.I–03.III 1997, 1 ♂ (**holotype**), leg. Siniaev & Murzin (MWM).

DISTRIBUTION. Congo Republic (Fig. 7).

NOTES. The male genitalia of *Azygophleps equatorialis* holotype (Figs 1, 2) have the features characteristic of the genus *Acosma*. Thus, this species must be transferred to *Acosma* and a new combination is proposed here. The detailed description of holotype was given by Yakovlev (2011).

Acosma gurkoi Yakovlev, 2011

Figs 3–4, 7

Yakovlev, 2011: 82 (type locality: South Sudan.)

MATERIAL. South Sudan: East Equatorial State, Akotos province, Lolibai Mts., 1300 m, 15.VIII–10.IX 2010, 1 ♂ (**holotype**), leg. Vladimir Gurko (MWM).

DISTRIBUTION. South Sudan, East Equatorial State (Fig. 7).

NOTES. The detailed description of this species was given by Yakovlev (2011).

Acosma stanleyi Yakovlev, sp. n.

<http://zoobank.org/NomenclaturalActs/9F91ED44-4A2F-49E4-BD57-039D757B3352>

Figs 5, 6

MATERIAL. Holotype – ♂, Democratic Republic of the Congo (Zaire): 35 km SSE Kisangani, Yoko vill., 0°17'N, 25°17'E, 413 m, 12–15.II 2008, leg. Gurkovich & Zolotuhin (MWM, GenPr Heterocera MWM: 32.940). Paratypes – 3 ♂, same data and locality as holotype (MWM, RYB).

DESCRIPTION. Wingspan of holotype 37 mm (paratypes – 36–38 mm). Proximal half of antenna bipectinate, crest processes 3 times longer than antenna rod diameter. Distal half of antenna unipectinate, crest poorly expressed, crest processes a little shorter than antenna rod diameter. Thorax and abdomen densely covered with white scales. Fore wing elongated, white, series of dark brown spots along costal edge, poorly expressed transverse dark brown strokes throughout wing, slight sputtering of grey scales more expressed on wing periphery. Hind wing white, without pattern, hardly noticeable dots along edge (in cubital area).

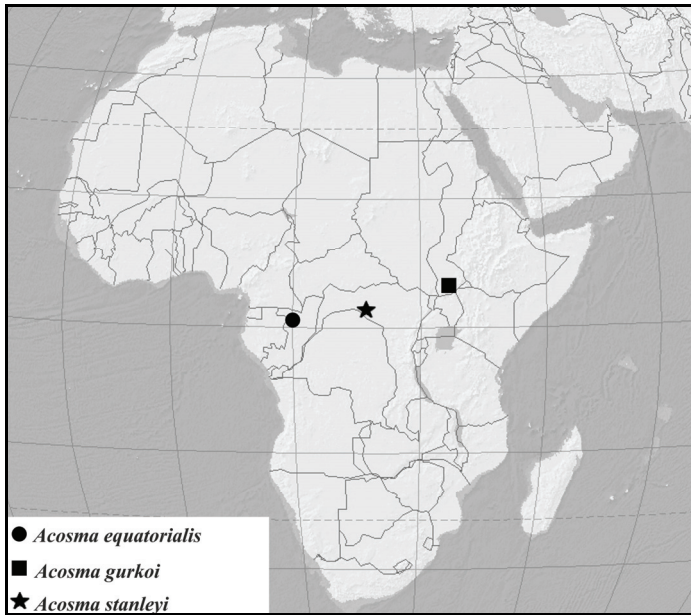


Fig. 7. Map of distribution of *Acosma* spp.

Male genitalia. Uncus short, thin, apex beak-pointed; gnathos arms ribbon-like, relatively long and wide, not fused, tegumen robust; valve short, with smooth dorsal edge, semicircular outer edge and abdominal edge of complicated shape (shallow notch in basal third, long narrow needle-like process in medium third); saccus robust, semicircular; juxta of medium size, with long leaf-like lateral processes; phallus short (a little shorter than length of valve), thick, strongly curved in medium third, vesica with scabination.

DIAGNOSIS. Externally, the new species is mostly close to *A. equatorialis*, from which it differs externally by the poorly noticeable dots along the hind wing edge (in cubital area). Besides, the new species has a very long process of the abdominal edge of the valve, and the robust (comparing to the other species of the genus) gnathos arms.

DISTRIBUTION. Democratic Republic of the Congo (Fig. 7).

ETYMOLOGY. The new species is named after Henry Morton Stanley (1841–1904), a well-known explorer of Equatorial Africa.

DISCUSSION

The genus *Acosma* is endemic to Equatorial Africa (Fig. 7). It belongs to the subfamily Zeuserinae. The taxonomic position of the genus in the subfamily needs clarification. It is necessary to note that the process on the abdominal edge of the valve is observed only in some Zeuserinae genera, distributed in other tropical regions of the world. These structures are found in some representatives of the Australian genus *Sympycnodes* Turner, 1932, united into “*Sympycnodes digitata* group” (Kallies & Hilton, 2012), and the Neotropical genera *Brypocitia* Schoorl, 1990 [type species: *Xyleutes strigifer* Dyar, 1910, by monotypy] (Penco *et al.*, 2016) and *Morpheis* Hübner, [1820] [type species: *Phalaena pyracmon* Cramer, 1780, by subsequent designation (Roepke, 1957)] (Donahue, 1980). However, in terms of this study we will not discuss possible relationships of these groups. This might be a convergent feature, but not of a phylogenetic kinship.

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