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Brachygystia coxi sp.n. (Lepidoptera: Cossidae: Cossinae) from Jordan

Brachygystia coxi sp.n. (Lepidoptera: Cossidae: Cossinae) из Иордании

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KEY WORDS: entomology, biodiversity, Carpenter moths, fauna, Middle East.
КЛЮЧЕВЫЕ СЛОВА: энтомология, биоразнообразие, древоточцы, фауна, Ближний Восток.

ABSTRACT. The article describes *Brachygystia coxi* **sp.n.** (Lepidoptera, Cossidae, Cossinae) from Jordan. We give a detailed description of the external characters and the male genital apparatus. We provide an accurate diagnosis to differentiate the new species from *Brachygystia mauretanicus* (Lucas, 1907). The complete illustrated catalog of the genus *Brachygystia* Schoorl, 1990 is provided.

РЕЗЮМЕ. В статье описан *Brachygystia coxi* **sp.n.** (Lepidoptera, Cossidae, Cossinae) из Иордании. Дано детальное описание внешних характеристик и генитального аппарата самца. Приводится его подробный отличительный диагноз от *Brachygystia mauretanicus* (Lucas, 1907). Приведен полный иллюстрированный каталог рода *Brachygystia* Schoorl, 1990.

Introduction

The monotypic genus *Brachygystia* Schoorl, 1990 was established for *Cossus mauretanicus* Lucas, 1907 [Schoorl, 1990: 71]. The later described *Holcocerus powelli* Oberthür, 1911 and *Catopta minor* Rungs, 1972 were contracted to synonyms for *Cossus mauretanicus* Lucas, 1907 [Daniel, 1961; Schoorl, 1990]. This synonymy was confirmed by Yakovlev [2011].

During the work of the second author in Natuurmuseum Brabant (Tilburg, the Netherlands), he found a male of the genus *Brachygystia* from Jordan, which turned to be of a species new to science; its description is given in this article.

Material and methods

The examined specimens are housed at the: MNHN — Muséum National d'Histoire Naturelle (Paris, France); NHMUK — Natural History Museum, London (Great Britain); NMBT — Natuurmuseum Brabant (Tilburg, the Netherlands); MWM — Museum Witt (Munich, Germany); ZSM — Zoologische Sammlung der Bayerischen Staates (Munich, Germany).

Male genitalia were mounted in Euparal on slides following method described by Lafontaine & Mikkola [1987] and examined using an Olympus SZX16 microscope. Images were captured with a 20.7-megapixel CMOS digital camera and processed in Corel PhotoPaint 2017.

The distribution map was generated using SimpleMappr [Shorthouse, 2010] and Mapbox (https://www.mapbox.com).

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Taxonomical part

Description of new species

Brachygystia coxi **sp.n.**
Figs 1, 9.

MATERIAL. Holotype, male, Jordan, Sad as Sultani, 1000 m, 11.IX.1997, Leg. A. Cox (NMBT, slide NMB 003).

DESCRIPTION. Male. Length of fore wing 13 mm. Antenna twice shorter than fore wing, bipectinate, rami 2.5 times longer than antenna stem in diameter. Antennae, head and thorax grey. Abdomen light-brown. Fore wing short, wide, apically semicircular, light-grey, with uniform reticulated light-brown pattern throughout all wing area, with expressed brown bands postdiscally and submarginally, border thin, brown, fringe mottled (brown at veins, light-grey between veins). Hind wing brown, without pattern, border thin, creamy, fringe mottled (brown at veins, light-grey).

Male genitalia. Uncus short, tapered, slightly narrowing from base to apex, apex wide, blunt; gnathos arms long, thick; gnathos poorly structured; valve relatively short, slightly narrowing from base to apex, costal edge almost smooth, abdominal edge slightly curved, sacculus almost reduced, valve apically semicircular; transtilla processes very short, apically obtuse; juxta tiny with leaf-like lateral processes and hook-likely curved short frontal processes; saccus robust semicircular; phallus slightly shorter than valve, thick, straight, very large wedge-shaped cornutus in vesica.

Female unknown.

DIAGNOSIS. From *B. mauretanicus*, the new species differs in a series of characters:

– *B. coxi* **sp.n.** has a relatively uniform reticulated pattern on the front wing (*B. mauretanicus* has the forewing pattern with clearly defined bands and blurred spots);

– in *B. coxi* **sp.n.** the hind wing is brown, without pattern (in *B. mauretanicus,* on the hind wing there is a faint, weakly expressed reticulated pattern);

– in *B. coxi* **sp.n.** the uncus is apically blunt (in *B. mauretanicus*, the uncus is apically semicircular);

– in *B. coxi* **sp.n.** the valve is narrow (in *B. mauretanicus*, the valve is more extended in basal third).

DISTRIBUTION. Jordan.

ETYMOLOGY. New species named after Dr. Anton Cox (Mook, the Netherlands), collector of the first specimen. He was a well-known amateur entomologist and collector of Western Palearctic Lepidoptera, whose collection is currently housed in the Natuurmuseum Brabant (Tilburg, the Netherlands).

Catalogue of the genus

Genus *Brachygystia* Schoorl, 1990

Schoorl, 1990: 71.
Type species (by original designation) *Cossus mauretanicus* Lucas, 1907.

Brachygystia coxi **sp.n.**

Type locality: Jordan, [Karak Region] Sad as Sultani [31°5'N / 36°0'E].
Type material: holotype (male) in NMBT, examined.
DISTRIBUTION: Jordan.

Brachygystia mauretanicus (Lucas, 1907)
Figs 2–8, 10–12.

Cossus mauretanicus Lucas, 1907: 343.
Type locality: Tunisia S, Tozeur.
Type material: holotype (female) in MNHN, examined.
Synonymy:
= *Holcocerus powelli* Oberthür, 1911: 333; pl. 79, figs 722, 723.
Type locality: [Algeria], Sud-Oranais, région de Géryvelle.
Type material: holotype (male) in MNHN, examined.
= *Catopta minor* Rungs, 1972: 670–671; pl. 1, fig. 1.
Type locality: Mauritania, Adrar, Baten occidental, Yagref.
Type material: holotype (male) in MNHN, examined.

MATERIAL EXAMINED. **Tunisia**: male (holotype of *Cossus mauretanicus*) Tunisia S, Tozeur, viii.1907, leg. D. Lucas (MNHN). **Mauritania**: 1 male, 1 female (holotype and paratype of *Catopta minor*) Mauritanie, Adrar, Baten occidental: Yagref (20°15' N, 13°35' W), ll-IV-1953 (B. Boniface) (MNHN); 3 females (allotype and paratypes of *C. minor*) Adrar, Baten occidental : Touerga (20°20' N, 13°20' W), 10-IV-1953 (B. Boniface) (MNHN); 1 female (paratype) Mauritanie, Inchiri, Graret Zerga (19°20' N, 14°37' W) (B. Boniface) (MNHN); 1 female (paratype) Mauritanie, Inchiri, Khat Thertiate (19°40' N, 14°45' W) (B. Boniface) (MNHN). **Algeria**: 1 male (holotype of *Holcocerus powelli* Oberthür, 1911) S Oran, région de Géryville [El Bayadh] (MNHN); 15 males, 12 females, Guelt es Stel, 1913 (NHMUK; MWM/ZSM, slides Genitalpräparat Heterocera N. 14.562 & 34.613). **Morocco**: 1 male, Middle Atlas, Zeder Forest, near Ifrane, 1750 m, July 23–August 1, 1983, leg. G. Behounek (MWM/ZSM, slide Genitalpräparat Heterocera N. 11.095).

DISTRIBUTION. Algeria, Mauritania, Morocco, Tunisia [Lucas, 1907, 1910; Oberthür, 1911; Rothschild, 1917; Chneour, 1955; Rungs, 1972, 1979; De Freina, Witt, 1990].

Discussion

The new discovery significantly expands the range of the genus *Brachygystia* (Fig. 13), previously considered endemic to North Africa [Yakovlev, Dubatolov, 2013a, b; Yakovlev, 2015]. The special structure of the male genitals (the absence of processes on the valves, the reduction of the sacculus, very short processes of the transtilla and the robust wedge-like cornutus in the vesica) — do not allow this genus to be related to any of the known Cossinae genera.

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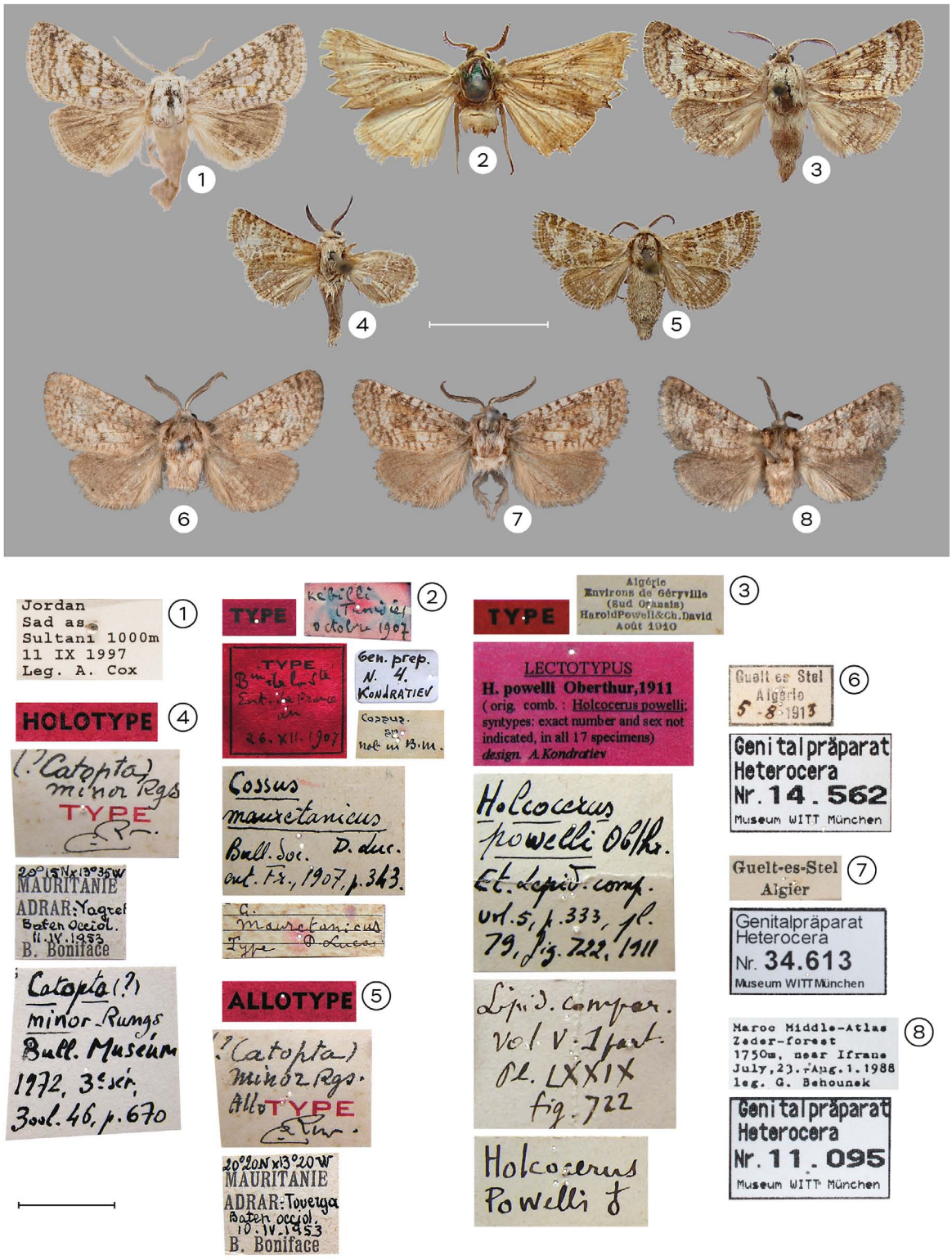
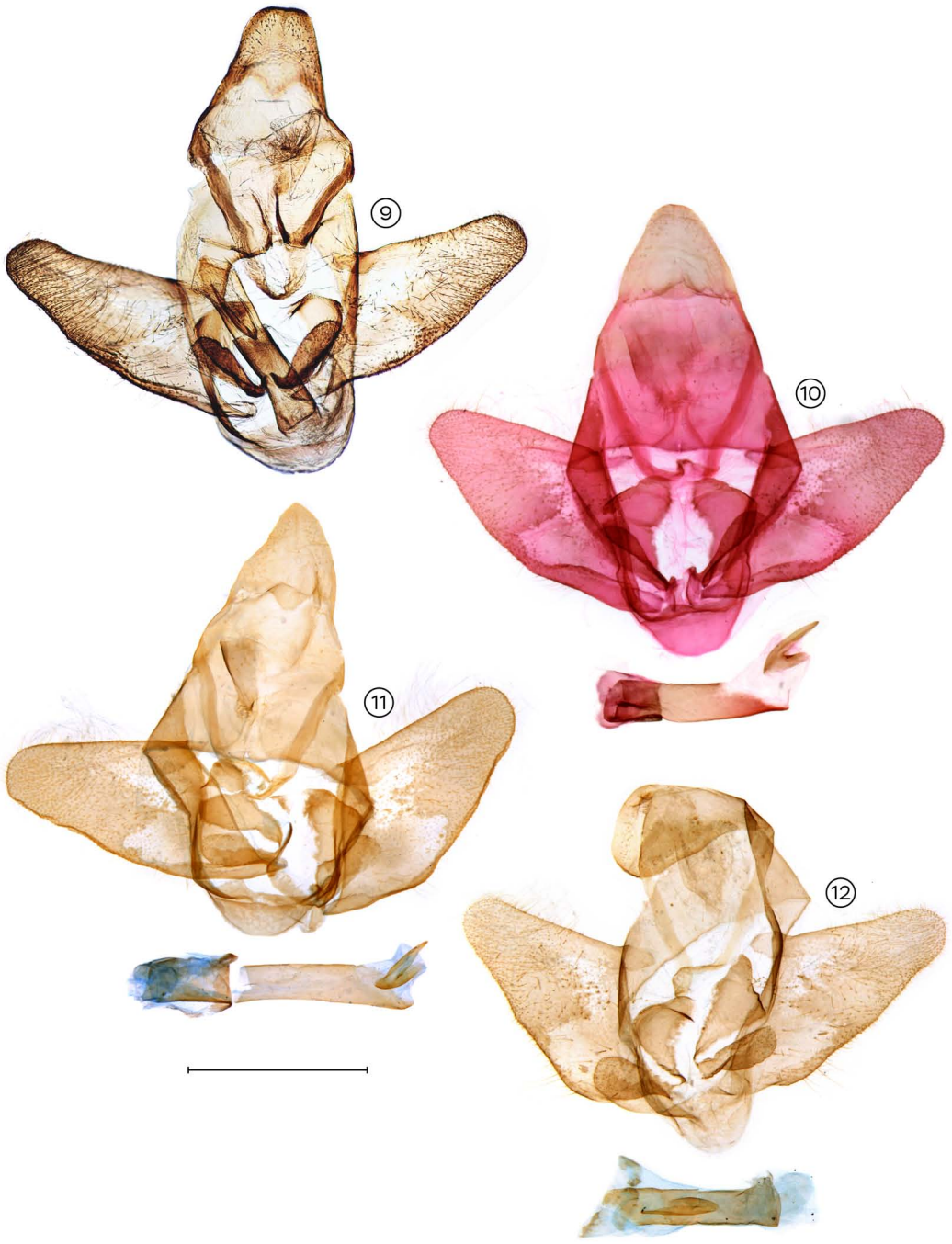


Figs. 1–8. *Brachygystia*, adult specimens with labels: 1 — *B. coxi* **sp.n.**, male, Holotype (NMBT); 2 — *B. mauretanicus*, female, holotype of *Cossus mauretanicus* (MNHN); 3 — *B. mauretanicus*, male, holotype of *Holcocerus powelli* (MNHN); 4 — *B. mauretanicus*, male, holotype of *Catopta minor* (MNHN); 5 — *B. mauretanicus*, female, allotype of *Catopta minor* (MNHN); 6 — *B. mauretanicus*, male, Algeria (MWM/ZSM); 7 — *B. mauretanicus*, male, Algeria (MWM/ZSM); 8 — *B. mauretanicus*, male, Morocco (MWM/ZSM). Scale bar 10 mm.

Рис. 1–8. *Brachygystia*, экземпляры с этикетками: 1 — *B. coxi* **sp.n.**, самец, голотип (NMBT); 2 — *B. mauretanicus*, самка, голотип *Cossus mauretanicus* (MNHN); 3 — *B. mauretanicus*, самец, голотип *Holcocerus powelli* (MNHN); 4 — *B. mauretanicus*, самец, голотип *Catopta minor* (MNHN); 5 — *B. mauretanicus*, самка, аллотип *Catopta minor* (MNHN); 6 — *B. mauretanicus*, самец, Алжир (MWM/ZSM); 7 — *B. mauretanicus*, самец, Алжир (MWM/ZSM); 8. *B. mauretanicus*, самец, Марокко (MWM/ZSM). Линейка 10 мм.



Figs. 9–12. *Brachygystia*, male genitalia: 9 — *B. coxi* **sp.n.**, holotype (slide NMB 003); 10 — *B. mauretanicus*, Algeria (Genitalpräparat Heterocera N. 34.613); 11 — *B. mauretanicus*, Algeria (Genitalpräparat Heterocera N. 14.562); 12 — *B. mauretanicus*, Morocco (Genitalpräparat Heterocera N. 11.095). Scale bar 1 mm.
Рис. 9–12. *Brachygystia*, гениталии самцов: 9 — *B. coxi* **sp.n.**, голотип (слайд NMB 003); 10 — *B. mauretanicus*, Алжир (Genitalpräparat Heterocera N. 34.613); 11 — *B. mauretanicus*, Алжир (Genitalpräparat Heterocera N. 14.562); 12 — *B. mauretanicus*, Марокко (Genitalpräparat Heterocera N. 11.095). Линейка 1 мм.

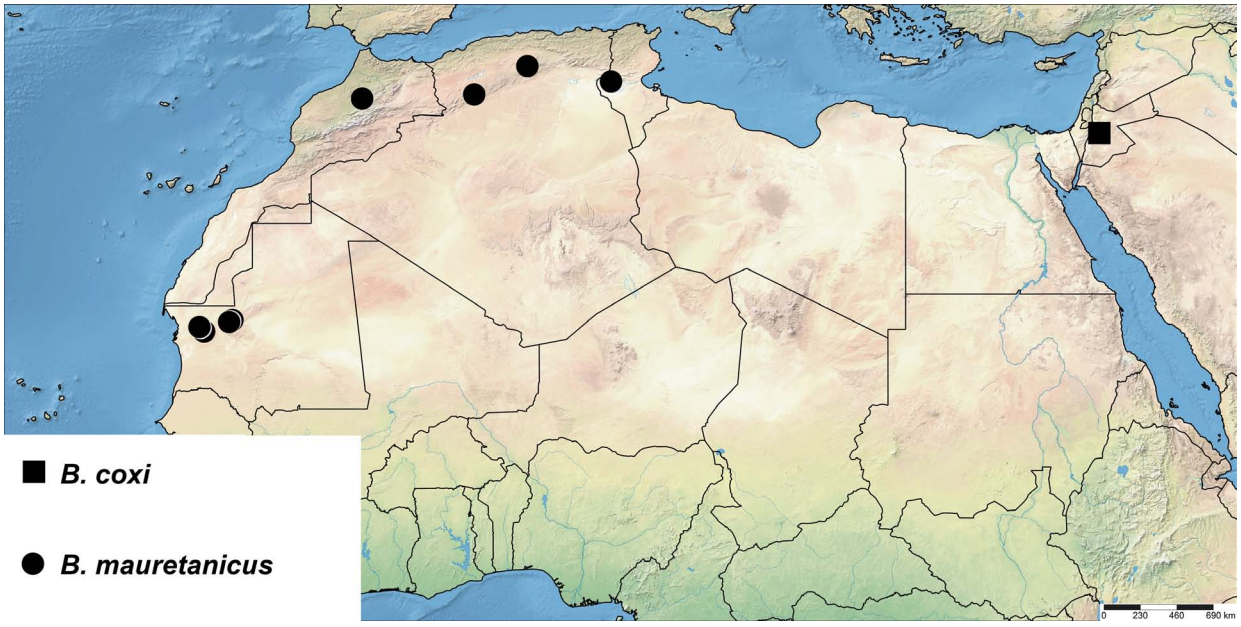


Fig. 13. Distributional map of *Brachygystia*.
Рис. 13. Карта распространения рода *Brachygystia*.

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References

Chneour A. 1955. Macrolépidoptères de Tunisie IV – Bombyces // Bulletin de la Société des Sciences Naturelles de Tunisie. T.8. No.3–4. P.287–289.

Daniel F. 1961. Monographie der palaearktischen Cossidae. V. Die Genera *Parahypopta* g.n., *Sinicossus* Clench und *Catopta* Stgr. // Mitteilungen der Münchner Entomologischen Gesellschaft. Bd.51. S.160–212

De Freina J.J., Witt T.J. 1990. Die Bombyces und Sphinges der Westpalaearktis (Insecta, Lepidoptera). Ein umfassendes, reich illustriertes Bestimmungsbuch europäischer und nordwestafrikanischer Nachtfalter. Bd.2. Cossoidea: Cossidae, Limacodidae, Megalopygidae. Hepialoidea: Hepialidae. Pyraloidea: Thyridae. Zygaenoidea: Epipyropidae, Heterogynidae. München: Edition Forschung & Wissenschaft Verlag GmbH. 134 S.

Lafontaine J.D., Mikkola K. 1987. Lock-and-key system in the inner genitalia of Noctuidae (Lepidoptera) as taxonomic character // Entomologiske Meddelelser. Vol.55. P.161–167.

Lucas D. 1907. Lépidoptères nouveaux de Mauritanie // Bulletin de la Société entomologique de France. T.1907. P.342–344.

Lucas D. 1910. Lépidoptères nouveaux ou peu connus de France,d'Algérie et de Tunisie // Annales de la Société entomologique de France. T.79. P.473–495.

Oberthür C. 1911. Explication des planches // Etudes de Lépidoptérologie comparée. T.5. No.1. P.315–340. https://doi.org/10.5962/bhl.title.8792

Rothschild W. 1917. Supplemental notes to Mr. Charles Oberthür's Faune des Lépidoptères de la Barbarie, with lists of the specimens contained in the Tring Museum // Novitates Zoologicae. Vol.24. No.1. P. 393–409.

Rungs Ch. 1972. Notes de lépidoptérologie marocaine. 27: Lépidoptères nouveaux du Maroc et de la Mauritanie // Bulletin du Muséum national d'Histoire naturelle. T.(3)60. No.46. P.669–692.

Rungs Ch. 1979. Catalogue raisonné des Lépidoptères du Maroc, Inventaire Faunistique et observations écologiques. Tome 1 // Travaux de l'Institut Scientifique, Rabat, Série Zoologie. T.39. P.1–222.

Schoorl P. 1990. A phylogenetic study on Cossidae (Lepidoptera: Ditrysia) based on external adult morphology // Zoologische Verhandelingen. Vol.263. P.1–295.

Shorthouse D.P. 2010. SimpleMappr, an online tool to produce publication-quality point maps, online at http://www.simplemappr.net [accessed on June, 2025]

Yakovlev R.V. 2011. Catalogue of the family Cossidae of the Old World (Lepidoptera) // Neue Entomologische Nachrichten. Vol.66. P.1–129.

Yakovlev R.V. 2015. Patterns of Geographical Distribution of Carpenter Moths (Lepidoptera: Cossidae) in the Old World // Contemporary Problems of Ecology. Vol.8. No.1. P.36–50. https://doi.org/10.1134/S1995425515010151

Yakovlev R.V., Dubatolov V.V. 2013a. [Distribution of carpenter-moths (Lepidoptera, Cossidae) in palaearctic deserts] // Zoologichesky zhurnal. Vol.92. No.6. P.682–694 [in Russian]. https://doi.org/10.7868/S0044513413040193

Yakovlev R.V., Dubatolov V.V. 2013b. Distribution of Carpenter-Moths (Lepidoptera, Cossidae) in the Palaeractic Deserts // Entomological Review. Vol.93. No.8. P.991−1004.