

## Description of the male genitalia of *Dyspessa wiltshirei* Daniel, 1938 (Lepidoptera, Cossidae) based on the type specimens

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The article gives a detailed illustrated redescription of the rare little-known species, *Dyspessa wiltshirei* Daniel, 1938, including description of the male genital structure which is presented for the first time. The differences of this species from its closely related species are also provided.

**Keywords:** Cossidae, Carpenter-Moths, *Dyspessa wiltshirei*.

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### Introduction

Carpenter moths (Lepidoptera, Cossidae) of the Middle East are relatively poorly studied and there is still difficulties in identifying many species of this region. The species of the genus *Dyspessa* Hübner, [1820] 1816 (type species – *Phalena pantherina* Hübner, 1790, by subsequent designation by Kirby (1892)) are among the most difficult taxa to identify. The Palaearctic Region with more than 70 known *Dyspessa* species is the richest region in this regard; however, the specific status of several species occurring in this area have not clearly been resolved (Yakovlev, 2011). Most of the species of the genus are found in desert, semi-desert and mountainous areas of the southwestern Palaearctic (Yakovlev & Dubatolov, 2013a, b; Yakovlev, 2015) and many species are local endemics. Among which, *D. wiltshirei* Daniel, 1938 is one of the weakly studied species. In the present study, the male genitalia of this species are newly described, figured, and compared with its closely allied species.

### Material and Methods

The examined material examined for this study is deposited in the Museum of Thomas Witt (Munich, Germany) (MWM). Male genitalia were mounted in euparal on slides following Lafontaine (2004) and examined with the Zeiss Stemi 2000 C microscope. The images were taken with the Olympus XC 50 camera.

*Dyspessa wiltshirei* Daniel, 1938 (Figures 1, 2, 3).

The species was described from Irac [Iraq], Qaraghan [220 m, 34°16'13"N; 45°10'12"E] (Daniel, 1938) based on the series of three specimens (1 male, 2 females), collected 13.iii.1937 by the famous British diplomat and entomologist E. P. Wiltshire. Wiltshire (1944, 1957) referring to F. Daniel (1938) indicated that the species is univoltine, “flying in late February or March in the foot-hill region, and April–May in Shaqlawa”. Daniel (1962) provided black-and-white photographs of the holotype and allotype of *D. wiltshirei*. The species has also been reported from Lebanon based on one female (Saldaitis et al., 2007).



Figure 1. *Dyspessa wiltshirei* Daniel, 1938, male (holotype) (MWM)

**Redescription.** Wingspan of the holotype 28 mm. Antennae bipectinate, comb processes 1.2–1.5 times longer than the rod diameter. Head, thorax and abdomen densely covered with yellow scales. Forewing creamy yellow, costal and rear edge pale brown, expressed small brownish spot with fuzzy edges, fringe unicolorous, yellow. Hind wing yellow, without pattern, fringe unicolorous, yellow. Wingspan of the allotype 23 mm. Antennae filiform, not pectinate. Head, thorax and abdomen densely covered with yellow scales. Fore wing creamy yellow, without pattern, fringe unicolorous, yellow. Hindwing greyish-brown, without pattern, fringe unicolorous, yellow.



Figure 2. *Dyspessa wiltshirei* Daniel, 1938, female (allotype) (MWM)

**Male genitalia** (holotype, GenPrMWM: 28.027). Uncus very wide, short, triangular; tegumen large; gnathos arms very thin, almost filiform; gnathos small, poorly sclerotized; valve long, wide, strongly concave, apex lanceolate, distal ½ of valve more sclerotized than the proximal half, transition zone of the sclerotized part to the membranous one almost imperceptible, with a semicircular distal process at costal margin armed with unclearly indented edge; arms of transtilla strongly sclerotized, triangular, tapered apically; juxta tiny, with small notch on lower edge and two thin and long (slightly longer than arms of transtilla) lateral processes, diluted at an angle of 130°; saccus oval, large; phallus one-fifth shorter than the valve, very thin, aperture of vesica in dorso-apical position, its length ½ of the length of phallus, vesica without cornuti.

**Diagnosis.** *Dyspessa wiltshirei* is member of the *D. salicicola* (Eversmann, 1848) species-group. It differs from almost all the known species of this group, i. e. *D. salicicola* (type locality – Saratovischen Gouvernement, in der Gegend von Wolsk), *D. kostyuki* Yakovlev, 2005 (type locality – Ukraine, "Proval'skaya Stepp" Naturschutzgebiete), *D. arabesca* Yakovlev, 2005 (type locality – Asia min., Turcia, 50 km östl. Istanbul), *D. artemis* Yakovlev, 2008 (type locality – Turkey, Hakkari, Altin Daglari O-Seite, Süvarihalil Gecidi), *D. tyumasevae* Yakovlev, 2008 (type locality – Turkey, Konya, Bakaran village) and *Dyspessa aphrodite* Yakovlev & Witt, 2007 (type locality – Greece, Peloponnes, Mega Spileon) in nearly entire reduction of wing markings. In *D. wiltshirei*, the male's forewing has a poorly developed brownish discal spot; while forewing of the female has no pattern. *Dyspessa blonda* Yakovlev, 2008 (type locality – Turkey, Hakkari, Tanin Tanin Pass) is the only species that resembles to *D. wiltshirei* in general habitus;

however, *D. blonda* is lighter in color. The forewing of this species is white with a slight creamy tint. Moreover, in *Dyspessa blonda* gnathos arms are much thicker, the lateral processes of juxta are shorter, and the phallus is less curved.



Figure 3. Male genitalia of holotype of *Dyspessa wiltshirei* Daniel, 1938 (GenPrMWM: 28.027).

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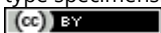
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## References

- Daniel, F. (1938). Neuheiten aus Vorderasien. Mitteilungen der Münchner Entomologischen Gesellschaft, 28, 2–6.
- Daniel, F. (1962). Monographie der palaearktischen Cossidae. VII. Genus *Dyspessa* Hbn. Erster Teil. Mitteilungen der Münchner Entomologischen Gesellschaft, 52, 1–38.
- Kirby, W.F. (1892). A synonymic Catalogue of Lepidopteren Heterocera. Vol. 1. Sphinges and Bombyces. London.
- Lafontaine, J.D. (2004). Noctuoidea, Noctuidae (part), Noctuinae (part–Agrotini). In R.W. Hodges (Ed.), *The Moths of America North of Mexico*, fasc. 27.1 (pp. 1–385) Washington: The Wedge Entomological Research Foundation.
- Saldaitis, A., Yakovlev, R.V., & Ivinskis, P. (2007). Carpenter Moths (Insecta: Lepidoptera, Cossidae) of Lebanon. *Acta Zoologica Lithuanica*, 17 (3), 191–197.
- Wiltshire, E.P. (1944). The Butterflies and Moths (Lepidoptera) of Iraq. Their distribution, phenology, ecology and importance. Government of Iraq, Ministry of Economics, Directorate-general of Agriculture. Bulletin 30.
- Wiltshire, E.P. (1957). The Lepidoptera of Iraq. Nicholas Kaye Lim.
- Yakovlev, R.V. (2011). Catalogue of the Family Cossidae of the Old World. *Neue Entomologische Nachrichten*, 66, 1–129.
- Yakovlev, R.V. (2015). Patterns of geographical distribution of carpenter moths (Lepidoptera: Cossidae) in the Old World. *Contemporary Problems of Ecology*, 8 (1), 36–50. doi: [10.1134/S1995425515010151](https://doi.org/10.1134/S1995425515010151)
- Yakovlev, R.V., Dubatolov, V.V. (2013a). Distribution of Carpenter-Moths (Lepidoptera, Cossidae) in Palaeartic Deserts. *Zoologicheskyy Zhurnal*, 92 (6), 682–694. (in Russian). doi: [10.7868/S0044513413040193](https://doi.org/10.7868/S0044513413040193)
- Yakovlev, R.V., Dubatolov, V.V. (2013b). Distribution of Carpenter-Moths (Lepidoptera, Cossidae) in the Palaeartic Deserts. *Entomological Review*, 93 (8), 991–1004. doi: [10.1134/S00138738130800](https://doi.org/10.1134/S00138738130800)

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