

***Cilix asiatica* O. Bang-Haas, 1907 (Lepidoptera: Drepanidae) in the Romanian entomofauna**

Levente SZÉKELY & Vlad DINCĂ

Abstract

Cilix asiatica O. Bang-Haas, 1907 is recorded for the first time in Romania based on material collected in southern Dobrogea (south-eastern Romania). Diagnostic elements of the wing pattern as well as male and female genitalia are illustrated by comparison with *Cilix glaucata* (Scopoli, 1763). The actual and potential distribution of *Cilix asiatica* in Romania is discussed.

Rezumat

***Cilix asiatica* O. Bang-Haas, 1907 (Lepidoptera: Drepaniidae) în fauna României**

Cilix asiatica O. Bang-Haas, 1907 este semnalată pentru prima dată în fauna României, pe baza unui material colectat în sudul Dobrogei. Sunt ilustrate elemente ale aripilor anterioare cu caracter de diagnostic precum și armătura genitală masculă și femelă în comparație cu *Cilix glaucata* (Scopoli, 1763). Sunt comentate distribuția actuală și cea potențială a taxonului *Cilix asiatica* în România.

Key words: *Cilix asiatica*, Romania, distribution

Introduction

For many decades, the only species of *Cilix* known to occur in Europe was the widely distributed and common *Cilix glaucata* (Scopoli, 1763) (FREINA & WITT 1987/1). On the other hand, *Cilix asiatica* O. Bang-Haas, 1907 was for a long time considered as a subspecies of *C. glaucata* (SEITZ 1909), distributed from Asia Minor to Pakistan. FREINA & WITT (1987/2) clarified the specific status of *C. asiatica* and improved the data on its distribution. It is about one decade ago that the species is recorded from Europe, first from Crimea (1 specimen) (ZOLOTUHN 1997) and shortly after from a few regions in the Balkans (ZOLOTUHN 1999). The records of *C. asiatica* from the Iberian Peninsula and the Balearic islands (PÉREZ DE-GREGORIO & VALLHONRAT 2001, PÉREZ DE-GREGORIO et al. 2001) proved to belong in fact to a new species, namely *Cilix hispanica* Pérez De-Gregorio, Jeremías, Requena, Rondós & Vallhonrat, 2002 (PÉREZ DE-GREGORIO et al. 2002). Under these circumstances, *Cilix asiatica* is a species with a very poorly known distribution in Europe, due to its novelty and external similarity to *C. glaucata*.

Cilix asiatica was not mentioned in the latest version of the Romanian Lepidoptera Catalogue (RÁKOSY et al. 2003), so that we record it here for the first time in the country based on material col-

lected in southern Dobrogea (Canaraua Fetei and Hagieni nature reserves) (Fig. 1).

Results and discussion

Material. 7♂♂, 7♀♀: Canaraua Fetei (Constanța county, south-western Dobrogea), 23.05.1997 (1♂), prep. genit. 569/Dincă, 24.09.2006 (1♂), 21.05.2007 (1♂), 1.05.2008 (2♂♂, 4♀♀), 17.09.1993 (1♀), prep. genit. 571/Dincă, 3.06.1995 (1♀), 2.05.1998 (1♀); Hagieni forest (Constanța county, south-eastern Dobrogea), 7.08.1980 (1♂), 11.08.1980 (1♂). All specimens leg. et coll. L. Székely.

Cilix asiatica is externally similar to *C. glaucata*, but both sexes can be easily distinguished from the latter by genitalia examination. Nevertheless, a closer examination of the wings also offers apparently constant characters for identification (ZOLOTUHN 1999). For the Romanian specimens, the external margin of the forewings bears four grey spots in *C. asiatica*, while in *C. glaucata* they are always five or (most often) six (Figs. 2a, 2b). These findings are identical to the ones pointed out by ZOLOTUHN (1999), based on material originating from the Balkans.

Male genitalia: significant differences between *C. asiatica* and *C. glaucata* can be observed



Fig. 1. The two collecting sites of *Cilix asiatica* in Romania: Canaraua Fetei (south-western Dobrogea) and Hagiieni forest (south-eastern Dobrogea).

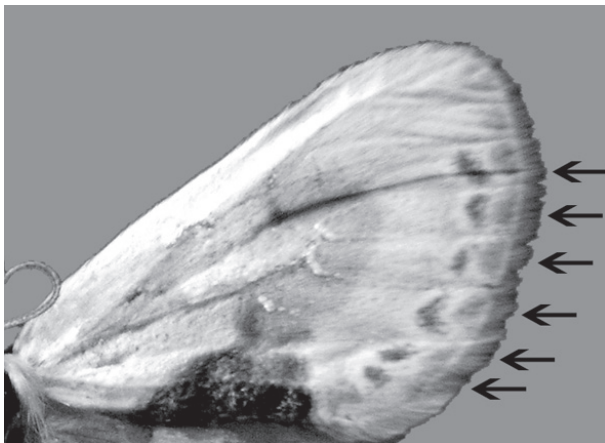


Fig. 2a. (above) Upper side forewing of *Cilix asiatica* bearing four marginal grey spots

Fig. 2b. (below) Upper side forewing of *Cilix glaucata* bearing six marginal grey spots

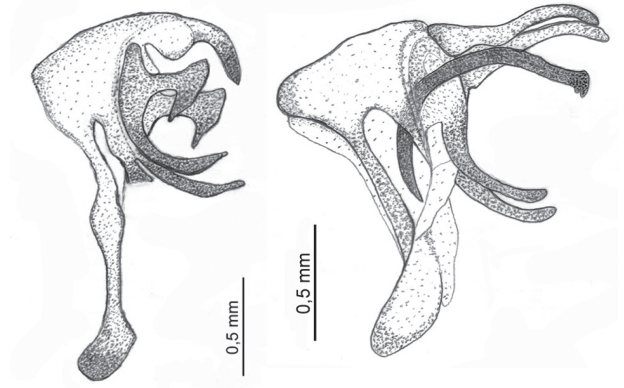


Fig. 3a. (left) Male genitalia of *Cilix asiatica* (lateral view). Canaraua Fetei, 23.05.1997. Prep. genit. 569 / DINCĂ

Fig. 3b. (right) Male genitalia of *Cilix glaucata* (lateral view). Frumușica (Botoșani), 20.04.1989. Prep. genit. 570 / DINCĂ

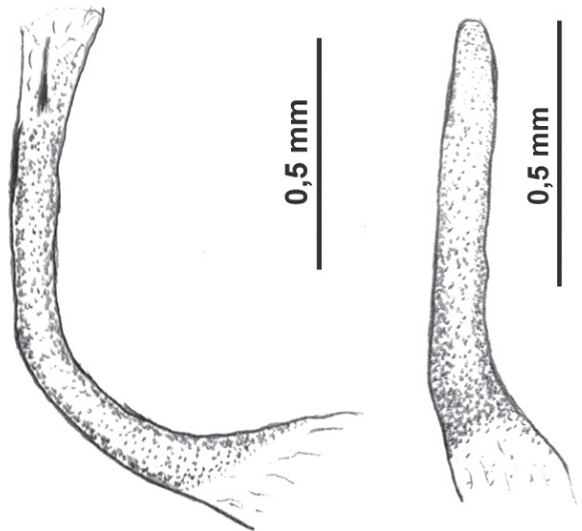


Fig. 4a. (left) Aedeagus of *Cilix asiatica*. Canaraua Fetei, 23.05.1997. Prep. genit. 569 / DINCĂ

Fig. 4b. (right) Aedeagus of *Cilix glaucata*. Frumușica (Botoșani), 20.04.1989. Prep. genit. 570 / DINCĂ

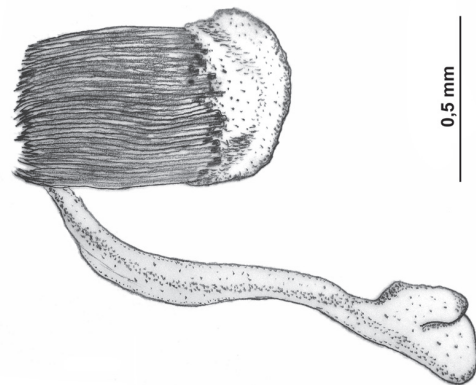


Fig. 4c. (below) Detail of the eighth tergite of *Cilix asiatica*. Canaraua Fetei, 23.05.1997. Prep. genit. 569 / DINCĂ

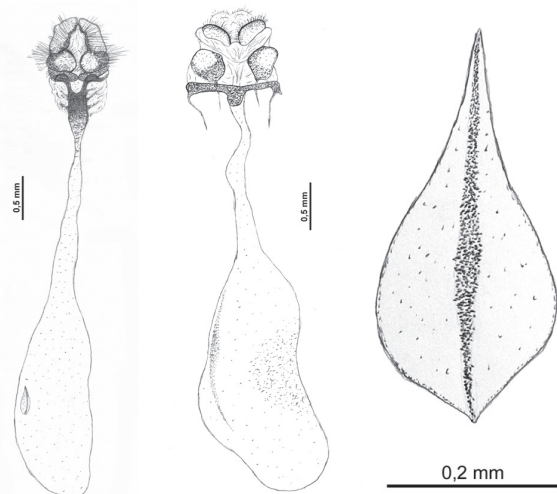


Fig. 5a. (left) Female genitalia of *Cilix asiatica*. Canaraua Fetei, 17.09.1993. Prep. genit. 571 / DINCĂ

Fig. 5b. (middle) Female genitalia of *Cilix glaucata*. Pădurea Rediu (Botoșani), 13.05.1988. Prep. genit. 572 / DINCĂ

Fig. 5c. (right) Signum of the female genitalia of *Cilix asiatica*. Canaraua Fetei, 17.09.1993. Prep. genit. 571 / DINCĂ

in the shape and size of the socii, transtilla arms, valvae (Figs. 3a, 3b), aedeagus and eighth abdominal tergite. The aedeagus of *C. asiatica* is longer and strongly curved, while in *C. glaucata* it is comparatively shorter and almost straight (Figs. 4a, 4b).

The eighth abdominal tergite of *C. asiatica* (Fig. 4c) bears dense and long chetae that are probably involved in pheromone related processes; these elements are not present in *C. glaucata* (FREINA & WITT 1987/2, ZOLOTUHN 1999).

Female genitalia: anal papillae as illustrated in figs. 5a (*C. asiatica*) and 5b (*C. glaucata*). Corpus bursae is pear-shaped in *C. asiatica* and bears a small, but obvious lanceolate signum with dark median line (Figs. 5a, 5c); in *C. glaucata* the corpus bursae is comparatively wider, more irregularly shaped and its signum is much longer and more slender (Fig. 5b).

The localities in which the material was collected belong to two nature reserves famous among the Romanian entomologists for their insect diversity. Canaraua Fetei is a mosaic of forest-steppe and limestone canyons, while Hagieni forest is mainly a forest-steppe area enclosing humid areas. Based on our observations, *Cilix asiatica* and *C. glaucata* fly together at least in Hagieni forest. Both species seem to have at least two annual broods, flying between April-June and July-September. The larval food plant of *C. asiatica* is unknown. Nevertheless, given the fact that *C. asiatica* and *C. glaucata* seem to fly sometimes in the same habitat, it is possible

that the larvae of both taxa feed on the same plants, namely *Prunus spinosa* and *Crataegus* (known as the main food plants of *C. glaucata*) (DE AIZPÚRUA 2002, PÉREZ DE-GREGORIO et al. 2002, FAJČÍK 2003, ROBINEAU et al. 2007).

The currently known distribution of *C. asiatica* covers south-eastern Romania, Bulgaria, Macedonia, Greece (including Crete), Turkey, Syria, Armenia, Azerbaijan, south Ukraine (Crimea), northern Iran, Afghanistan and western Pakistan (FREINA & WITT 1987/2, ZOLOTUHN 1999).

Nevertheless, the number of known localities is rather low, especially in Europe and much more data is needed to improve the general mapping of the species.

Although *C. asiatica* was collected only from the extreme south-east of Romania, it is likely that it is in fact more widespread than currently known. Since sylvo-steppe areas similar to the ones where the species was collected are fairly well represented in parts of south and east of Romania, we expect the species to be more widespread at least in Dobrogea, but also in parts of Muntenia and southern Moldavia. A general revision of the *Cilix glaucata* material from the Romanian collections is necessary in order to clarify the distribution of *C. asiatica* in the country.

Acknowledgements

We thank Vadim ZOLOTUHN and Jordi DANTART for bibliographical help and Roger VILA, István JUHÁSZ and Tamás HÁCZ for their comments on the manuscript.

REFERENCES

- DE AIZPÚRUA, G. 2002. Orugas y mariposas de Europa. Tomo III. Organismo Autónomo Parques Nacionales, 321 pp.
- FAJČÍK J. 2003. Motýle strednej a severnej Európy / Die Schmetterlinge Mittel-und Nordeuropas. Bratislava, 172 pp., 60 pls.
- FREINA J. & T. WITT 1987/1. Die Bombyces und Sphinges der Westpalaearktis. Vol. 1. Edition Forschung y Wissenschaft, Verlag GmbH, München, 708 pp.
- FREINA J. & T. WITT 1987/2. Über Trennungsmerkmale und die Verbreitung von *Cilix glaucata* (Scopoli, 1763) und *Cilix asiatica* Bang-Haas, 1907 (Lepidoptera, Drepanidae). Nachrbl. Bayer. Entomol., **36**(1): 10-14.
- PÉREZ DE-GREGORIO J. J. & F. VALLHONRAT 2001. Lepidoptères nous o interessants per a la fauna de les Illes Balears (II). Butll. Soc. Cat. Lep., **86**: 27-32.

- PÉREZ DE-GREGORIO J. J., JEREMÍAS X., OROZCO R., REQUENA E., RONDÓS M., VALLHORNAT F. 2001. *Cilix asiatica* Bang-Haas, 1907, Drepanidae nou per a la fauna ibèrica i de l'Europa occidental (Lepidoptera). In: "12 Sessió Conjunta d'Entomologia ICHN-SCL" (abstracts), 10.
- PÉREZ DE-GREGORIO J. J., JEREMÍAS X., REQUENA E., RONDÓS M., VALLHORNAT F. 2002. *Cilix hispanica* sp. n., nuevo Drepanidae para la fauna Ibero-Balear (Lepidoptera: Drepanidae: Drepaninae). Bol. S. E. A., **30**: 33-36.
- RÁKOSY L., GOIA M., KOVÁCS Z. 2003. Catalogul Lepidopterelor României / Verzeichnis der Schmetterlinge Rumâniens. Soc. Lepid. Rom., Cluj-Napoca, 446 pp.
- ROBINEAU R. (coord.) 2007. Guide des papillons nocturnes de France. Delachaux et Niestlé, Paris, 288 pp.
- SEITZ A. 1909-1913. Die Gross-Schmetterlinge der Erde. 1 Abteilung: Die Grossschmetterlinge des Palearktischen Faunengebietes. Vol 2. Alfred Kernen Verlag Stuttgart, 479 pp.
- ZOLOTUHIN V. V. 1997. New and little-known Lepidoptera (Carposinidae, Drepanidae, Thyatryidae) of the fauna of Russia and adjacent territories. Zool. Zhurn., **76**(3): 304-311.
- ZOLOTUHIN V. V. 1999. *Cilix asiatica* O. Bang-Haas, 1907 new for Europe. Atalanta, **29**(1/4): 285-287.

LEVENTE SZÉKELY

Str. Viitorului, bloc 31, sc.B, ap. 9
Săcele (Braşov), 505600
ROMANIA
E-mail: levi.szekely@gmail.com

VLAD DINĂ

Department of Genetics and Microbiology
Universidad Autónoma de Barcelona
Edificio C, Campus UAB
08193, Bellaterra (Barcelona), SPAIN
or:
Str. Gheorghe Doja, nr. 5, bloc 36 C2
ap. 44, Ploieşti (Prahova), 100400
ROMANIA
E-mail: sudistu@yahoo.com

Received: 28.10.2008

Accepted: 17.11.2008

Printed: 5.12.2008