

# *Leucania punctosa* (Lepidoptera: Noctuidae), a new species in the Romanian fauna

Levente Székely & Vlad Dincă

**Abstract.** *Leucania punctosa* (Treitschke, 1825) is recorded for the first time in Romania based on material collected in the steppes of northern Dobrogea (south-eastern Romania), where ca. 300 specimens were attracted to light traps. Adults of both sexes, as well as male and female genitalia, are illustrated. The faunistic importance of the steppe areas from northern Dobrogea is briefly discussed.

**Samenvatting.** *Leucania punctosa* (Lepidoptera: Noctuidae), een nieuwe soort voor de Roemeense fauna *Leucania punctosa* (Treitschke, 1825) wordt voor het eerst gemeld uit Roemenië op basis van materiaal dat verzameld werd in de steppes van Noord-Dobrogea (Zuidoost-Roemenië) waar ongeveer 300 exemplaren aangetrokken werden door lichtvallen. De vlinders en de genitalia van beide geslachten worden afgebeeld. Het faunistisch belang van de steppegebieden van Noord-Dobrogea wordt kort besproken.

**Résumé.** *Leucania punctosa* (Lepidoptera: Noctuidae), espèce nouvelle pour la faune roumaine *Leucania punctosa* (Treitschke, 1825) est signalée pour la première fois de Roumanie sur base de matériel récolté dans les steppes du Nord de la Dobrogea (Sud-Est de la Roumanie) où environ 300 exemplaires ont été attirés par les pièges lumineux. Les adultes et les genitalia des deux sexes sont illustrés. L'importance faunistique des zones de steppe du Nord de la Dobrogea est brièvement discutée.

**Key words:** Romania – Dobrogea – Macrolepidoptera – distribution – steppes – conservation

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## Introduction

Beginning with 2007 the authors started to investigate the Lepidoptera fauna from northern Dobrogea (south-eastern Romania) with focus on steppe and salt steppe habitats that have previously received little attention from lepidopterists. Although during daytime the salt steppes appear fairly poor in butterflies, nocturnal collecting revealed the presence of several new species for the Romanian entomofauna. Furthermore, there have been recorded a considerable number of taxa of high zoogeographical significance, including several reaching in Dobrogea the western limit of their distribution in Europe. Results of the research have already been published (Székely & Dincă 2009) and synthesized in a recent study covering the period 2007-2009 (Székely et al. 2011). The 2011 research on the salt

steppe areas from northern Dobrogea revealed the presence of yet another new species for the Romanian entomofauna, namely the noctuid *Leucania punctosa* (Treitschke, 1825), which is presented in this study.

## Methods

### Collecting

The research focused on the *Artemisia* salt steppes of the north-eastern shore of Razelm Lake (Tulcea county, Romania) (Fig. 1, 2). Moths were captured by using a 160W mercury vapor bulb placed in front of a white sheet and powered by a portable gasoline electricity generator. In addition, eight portable (bucket type) UV light traps with 8W and 16W tubes were placed at the collecting site and separated by ca. 100 m from each other.

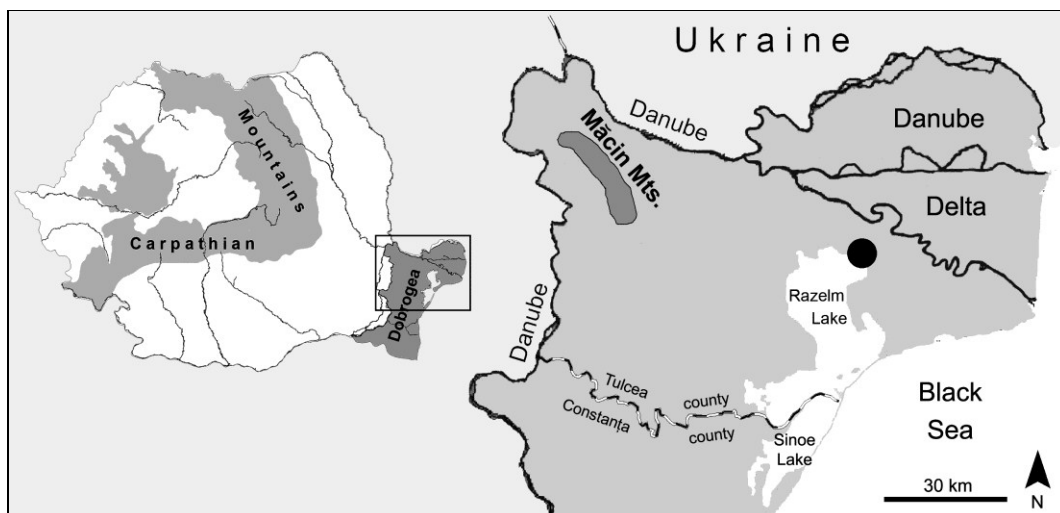


Fig. 1.– Map of northern Dobrogea with the collecting site of *Leucania punctosa* indicated by a black dot: north-eastern shore of Razelm Lake (Tulcea county, Romania). The upper left corner map indicates the position of Dobrogea and of the inset map within the territory of Romania.



Fig. 2.– Habitat of *Leucania punctosa* on the north-eastern shore of Razelm Lake, south of Sarinasuf and Plopu villages (Tulcea county, Romania), 30.viii.2011. Photo L. Székely.

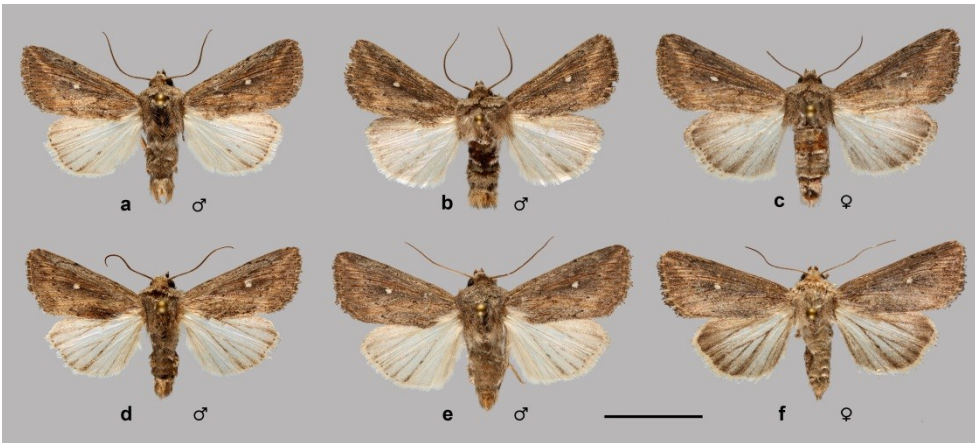


Fig. 3.– Adults of *Leucania punctosa* in dorsal view - North-eastern shore of Razelm Lake (Tulcea county, Romania), 29-30.viii.2011, leg. L. Székely; a. male, genit. prep. 1794/Dincă; b. male, genit. prep. 1793/Dincă; c. female, genit. prep. 1797/Dincă; d. male, genit. prep. 1795/Dincă; e. male, genit. prep. 1798/Dincă; f. female, genit. prep. 1796/Dincă.. Scale bar is 10 mm. Photo V. Dincă.

### Genitalia examination

The male and female genitalia were processed as follows: maceration in 10% potassium hydroxide (ca. 15 minutes at 90°C), cleaning in distilled water, examination under a stereomicroscope and storage in tubes with glycerine. Photos of the genitalia were taken in 70% ethanol by using a digital camera attached to the stereomicroscope.

### Results and discussion

**Material.** *Leucania punctosa*. 67♂, 25♀, north-eastern shore of Razelm Lake, (south of the Sarinasuf and Plopu villages, Tulcea county, Romania), 1 m, 29–30.viii.2011 (Fig. 1, 2). All specimens leg. & coll. Levente Székely (Romania) and Tamás HácZ (Hungary). In addition to the collected material, ca. 200 more specimens were attracted to the light traps, so that the real number of specimens observed is of about 300. The collecting overlapped with the eighth edition of the European Moth Nights (25–29.viii.2011).

*Leucania punctosa* is a univoltine xero-thermophilous species and adults are usually on wing from September to November (Hacker et al. 2002). Our records from northern Dobrogea show that the species, at least in some years, can also start flying slightly earlier (end of August). The larvae feed on various Poaceae species (Hacker et al. 2002).

The most similar species to *L. punctosa* is *Leucania putrescens* (Hübner, [1824]) (Hacker et al. 2002), the latter being very rare in the Romanian fauna (Rákósy 1996).

In terms of external morphology (Fig. 3a–f), *L. punctosa* has a less contrasting wing pattern compared to *L. putrescens*. The dark basal dash of the forewings is weakly marked or often absent in *L. punctosa*. The sinuous postmedial line is usually better marked in *L. punctosa* and the whitish spot of the reduced reniform stigma is slightly larger in *L. punctosa* compared to *L. putrescens* (Hacker et al. 2002).

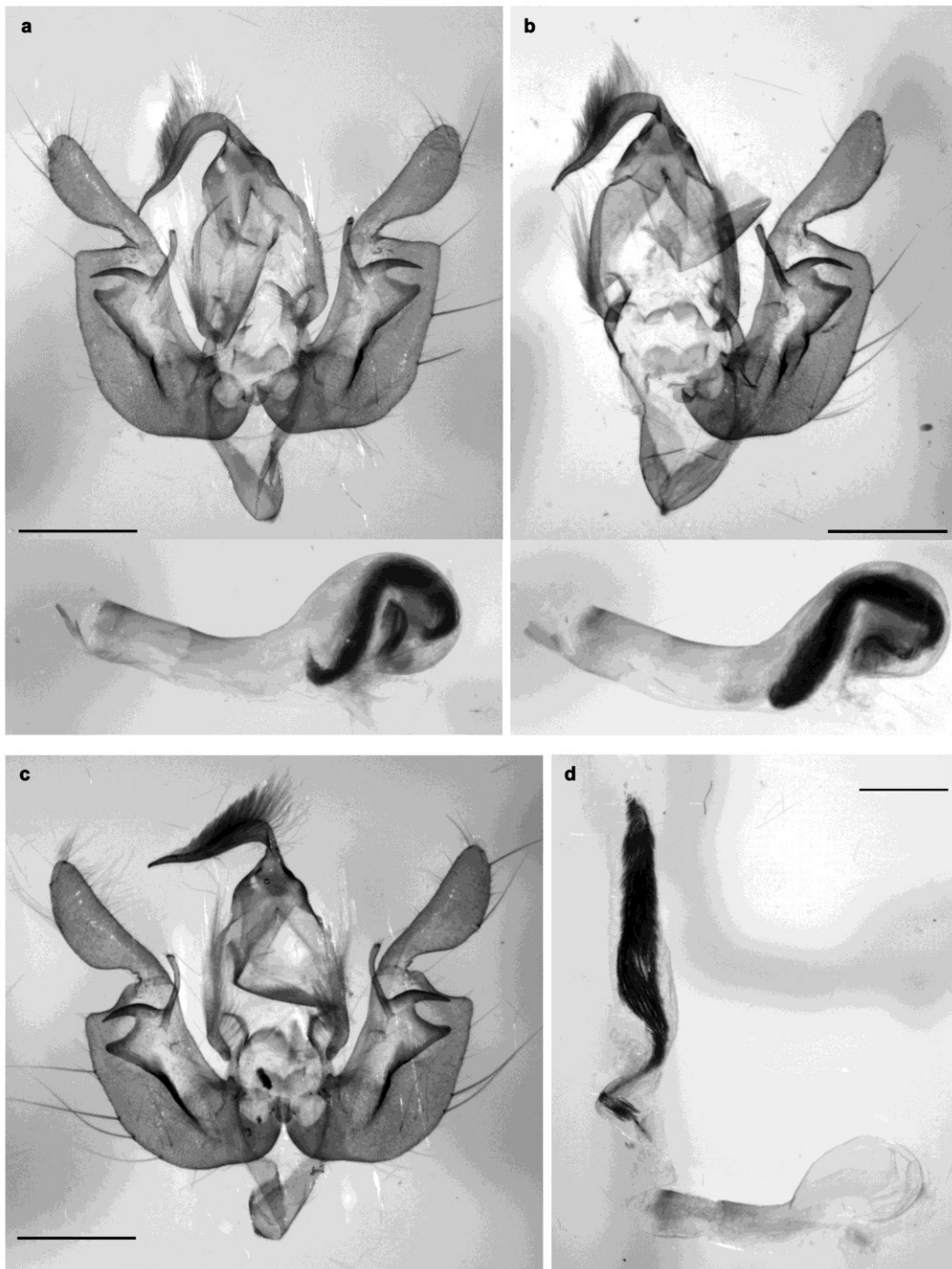


Fig. 4.– Male genitalia of *Leucania punctosa*, North-eastern shore of Razelm Lake (Tulcea county, Romania), 29–30.viii.2011; a. genit. prep. 1794/Dincă; b. genit. prep. 1798/Dincă, left valva removed; c. genit. prep. 1795/Dincă; d. genit. prep. 1795/Dincă, phallus with everted vesica. Scale bar is 1 mm in all cases.

Both male (Fig. 4a–d) and female (Fig. 5a–b) genitalia are fairly similar to those of *L. putrescens* (Hacker *et al.* 2002). The males of *L. punctosa* have smaller cucullus and clavus, but longer vesica with a longer cornuti field compared to *L. putrescens*.

The females of *L. punctosa* have longer ductus bursae and appendix bursae compared to *L. putrescens*.

*Leucania punctosa* is a Holo-Mediterranean-Iranian species, largely distributed from the Mediterranean Basin in the west to Turkmenistan in the east. It occurs in North Africa (from Morocco to Libya and Sinai in Egypt), southern Europe including the large Mediterranean islands (Balearics, Corsica, Sardinia, Sicily, Crete, Malta, Cyprus), southern Ukraine, Turkey, Armenia, Israel, Lebanon, Jordan, Iran, Iraq and Turkmenistan (Ivinskis &

Miatleuski 1999, Hacker *et al.* 2002, Klyuchko 2006, Kravchenko *et al.* 2007, Klyuchko *et al.* 2009).

To our knowledge, *L. punctosa* has never been mentioned in papers dealing with the Romanian Lepidoptera fauna, including the latest version of the Romanian Lepidoptera Catalogue (Rákósy *et al.* 2003) and the more recently published addenda and corrigenda to this catalogue (Rákósy & Goia 2007). Therefore, the specimens from the north-eastern shore of Razelm Lake represent the first record of this species in the Romanian fauna. However, the presence of *L. punctosa* in Romania was to be expected since the species occurs in neighbouring countries (Bulgaria and Ukraine). In Bulgaria the species is rare, being known based on only two specimens collected in the south of the country

(Byalo Pole village near Ivaylovgrad and Momina Skala Chalet near Madzharovo) (Beshkov 2000, Beshkov & Langourov 2004). In Ukraine *L. punctosa* occurs in Crimea (Klyuchko 2006), but it has also been recently found in the Odessa region (Klyuchko *et al.* 2009), about 200 km north-east from the Romanian locality reported in this study. Therefore, the presence of *L. punctosa* in northern

Dobrogea fills a gap in the general distribution of the species by linking the populations from Asia Minor and the Balkans to those from southern Ukraine. Furthermore, since steppe areas similar to the collecting site are present in several other parts of northern and eastern Dobrogea, the presence of other populations is likely.

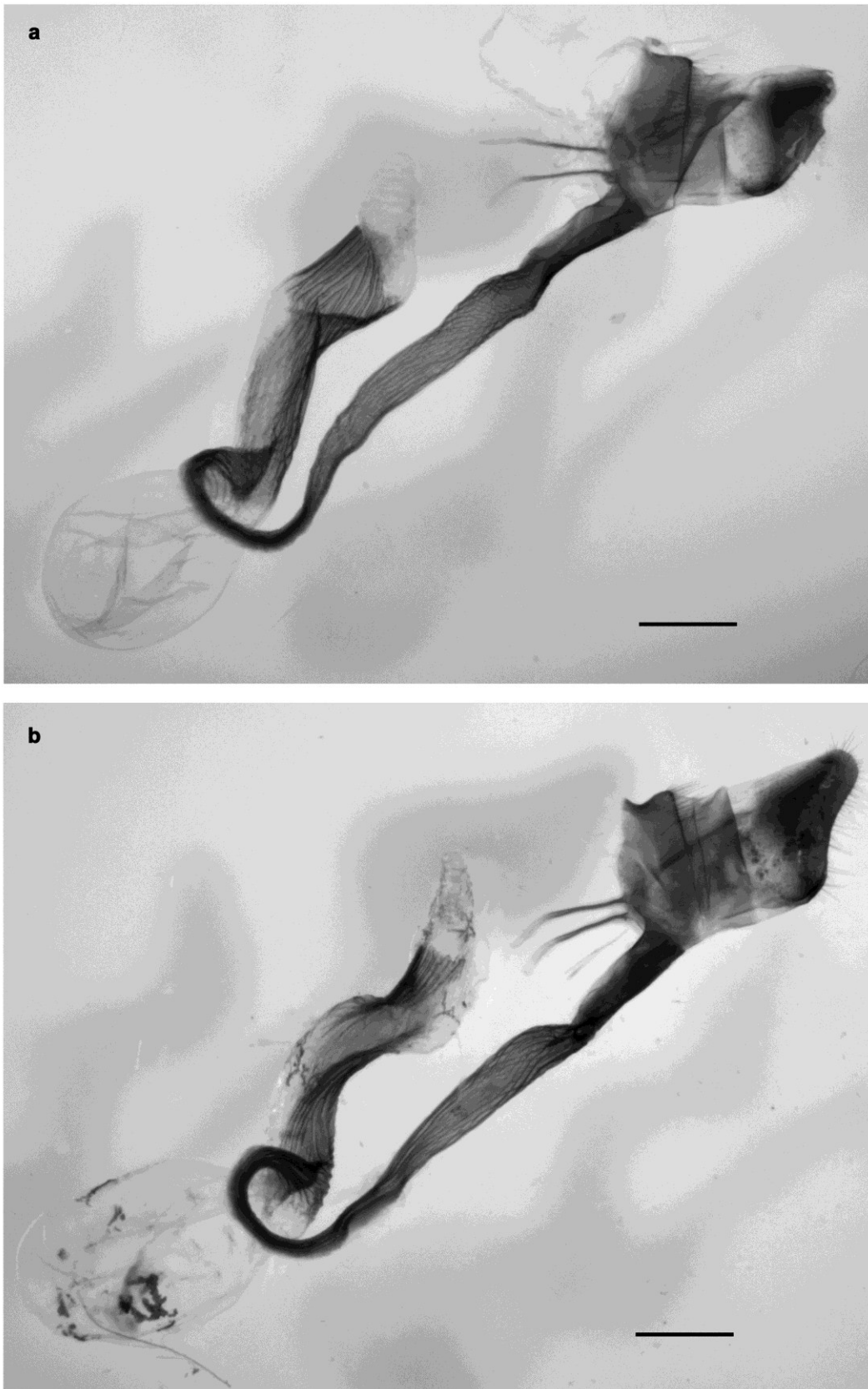


Fig. 5.– Female genitalia of *Leucania punctosa*, North-eastern shore of Razelm Lake (Tulcea county, Romania), 29-30.viii.2011; a. genit. prep. 1797/Dincă; b. genit. prep. 1796/Dincă. Scale bar is 1 mm in both cases.

The abundance of *L. punctosa* on the shores of Razelm Lake is noteworthy and further research is needed to establish if this reflects the presence of a large population in the area, or if it is the outcome of a massive migration. Interestingly, although lepidopterological research in the area started in 2007 and several collecting events took place in autumn (Székely *et al.* 2011), no specimen of *L. punctosa* has been collected until 2011.

*Leucania punctosa* is not among the species protected by law in Europe or Romania. However, the salt steppes neighbouring the large lakes from northern Dobrogea (Fig. 2) host several species that are protected in Romania (e.g. *Cucullia biornata* Fischer v. Waldheim, 1840, *Eupithecia biornata* Christoph, 1867), as well as some that are proposed for protection (e.g. *Hadula stigmosa* (Christoph, 1887), *Gortyna cervago* Eversmann, 1844, *Saragossa porosa* (Eversmann, 1854)) (Rákósy 2006). In addition, it is worth mentioning several taxa that are very rare in the Romanian fauna such as *Mycteroplus puniceago* (Boisduval, 1840), *Cardepija hartigi* (Parenzan, 1981), or *Saragossa siccanorum* (Staudinger, 1870) (two new specimens were collected by the first author on 29.viii.2011, together with *L.*

*punctosa*). These steppes may also host populations of *Paracossulus (Catopta) thrips* (Hübner, 1818), listed on Annex 2 of the Habitats Directive (92/43/EEC) and recently found by the first author (26.viii.2011) on the steppes lying south of Babadag forest (Tulcea county), less than 40 km away from the northern shores of Razelm Lake.

The presence of *L. punctosa* on the salt steppes of northern Dobrogea reinforces their faunistic value and calls for further studies that are likely to provide important contributions to our knowledge of Europe's entomofauna.

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