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**On the distribution of *Hadena bicruris* (Hufnagel, 1766) and
Hadena capsincola ([Denis et Schiffermüller], 1775)
in Hungary (Lepidoptera: Noctuidae)**

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Abstract – *Hadena capsincola* and *Hadena bicruris* specimens were examined from several localities of Hungary. The morphological data suggest the presence of a hybridisation zone between the two closely related species in Hungary. With 8 figures.

Key words – *Hadena capsincola*, *H. bicruris*, distribution, Hungary.

INTRODUCTION

There are contradicting records about the existence of *Hadena bicruris* (HUFNAGEL, 1766) and *Hadena capsincola* ([DENIS et SCHIFFERMÜLLER], 1775) in Hungary. In the monograph of the genus *Hadena* SCHRANK, 1802, HACKER (1996) interpreted *H. capsincola* as a species distinct from *H. bicruris*, providing the re-description of the taxon and all associated former references from Hungary with *H. capsincola*. The checklist of the Hungarian Macrolepidoptera (VARGA *et al.* 2004) mentions only *H. bicruris* from the two related species. Most recently, the guide book on the Hungarian Cuculliinae, Hadeninae and Noctuinae (RONKAY & RONKAY 2006) accepted the opinion of HACKER 1996, but supposing also the possible occurrence of *H. bicruris*, waiting for explicit evidence. The main questions, according to the authors, are the possible presence of *H. bicruris* within the Carpathian basin and the possible existence of a zone of hybridisation between the two species in Hungary.

MATERIAL AND METHOD

The main problem is the reliable identification of the two species due to their high external similarity, which requires the study of their genitalia. The author examined the genitalia of 55 male and 26 female specimens belonging to the *H. bicruris*/*H. capsincola* species complex.

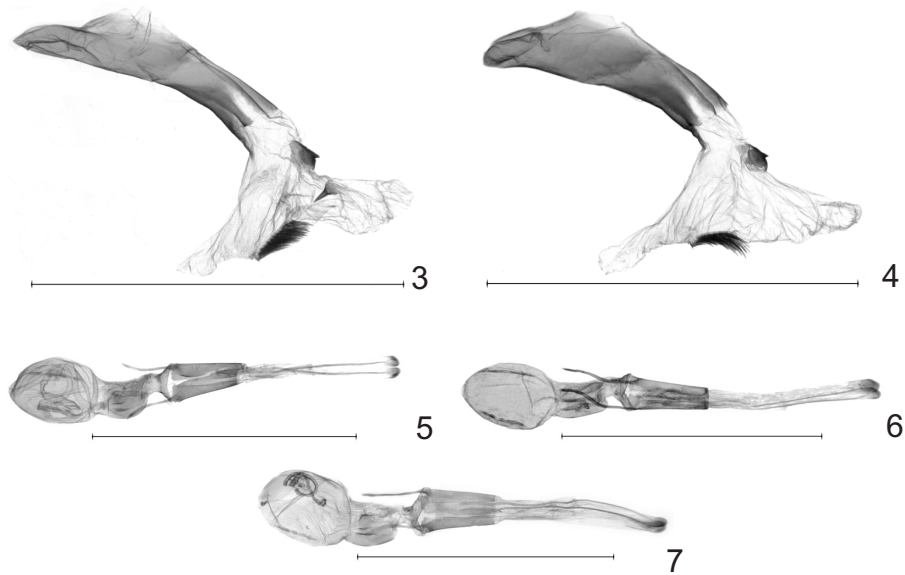
RESULTS

The great majority of the male specimens was proved to belong to the typical *H. capsincola*. The clasp apparatus of certain males showed a transitional stage between *H. capsincola* and *H. bicruris* according to their narrow valvae (Figs 1–2) but the vesica showed the features of *H. capsincola*. Only two males have the vesica displaying the specific characters of *H. bicruris* (e.g. strong cornuti field and/or lack of a chitinised subbasal bar; see the Figs 3–4).

The situation was somewhat different in the female genitalia, as four specimens showed the distinctive features of *H. bicruris* in the structure of the ovipositor (Figs 5–6). On the other hand, the material contained specimens displaying transitional structures, too (Fig. 7).



Fig. 1. Clasp apparatus of *Hadena capsincola* ([DENIS et SCHIFFERMÜLLER], 1775). – **Fig. 2.** *Bicruris*-like clasp apparatus. Scale = 4 mm



Figs 3–7. 3 = Vesica with strong cornuti field. – 4 = Vesica without chitinized subbasal bar. – 5 = Female genitalia of the *Hadena capsincola* ([DENIS et SCHIFFERMÜLLER], 1775). – 6 = *Bicuris*-like female genitalia. – 7 = Transitional form of the female genitalia. Scale for Figs 3–4 = 4 mm, for Figs 5–7 = 10 mm



Fig. 8. Localities of the examined specimens: • = *Hadena capsincola* ([DENIS et SCHIFFERMÜLLER], 1775)* = *Hadena "bicuris"* (HUFNAGEL, 1766), o = transitional ("hybrid")

DISCUSSION

H. capsincola is a very frequent and widely distributed species in Hungary, but the presence and distribution of *H. bicruris* can be characterised as a form of a hybrid population. The population(s) of a sporadically distributed *H. bicruris* seem to be “dissolved” within the populations of the common *H. capsincola* (see Fig. 8) and the overlapping areas of the two closely related species produced a rather wide zone of hybridisation in Hungary.

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