

Cucullia umbratica (Lepidoptera, Noctuidae), a new European noctuid in North America

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Abstract

The discovery of a noctuid new for North America, *Cucullia umbratica* (Linnaeus, 1758) (Lepidoptera: Noctuidae), is reported from the Magdalen Islands (Québec, Canada). A male and a female from the Islands are illustrated as well as specimens of the superficially similar species *Cucullia intermedia* Speyer, 1870. The male genitalia of both species are illustrated.

Keywords

Cucullia umbratica, *Cucullia intermedia*, non-native species, alien species, European noctuid, introduction, Magdalen Islands, Québec

Introduction

Since 1998, whenever the weather was favorable, Sandrine Papageorges has collected Lepidoptera using a light trap on behalf of the senior author (LH) at Havre-aux-Maisons, Magdalen Islands, in the province of Québec, Canada.

Each year, from 1998 to 2003, some specimens (5–10 each season) of the genus *Cucullia* Schrank (Lepidoptera: Noctuidae) were collected, and considering the low numbers and generally poor condition, they were identified as *Cucullia intermedia* Speyer, 1870. After 2003, *Cucullia* appeared in much larger numbers, 40–70 each

season, culminating with more than 100 in 2008. The numbers and the quality of the specimens collected led the author to investigate further and to realize, to his surprise, that the specimens were *Cucullia umbratica* (Linnaeus, 1758), a Eurasian species not previously reported from North America (Poole 1995, Handfield 1999, Ronkay and Ronkay 1994). Re-examination of the older material revealed that both *Cucullia intermedia* and *Cucullia umbratica* had been in the samples since 1998, but the latter had not been recognized.

Considering the small numbers collected when it was first detected, *Cucullia umbratica* was probably accidentally introduced in the 1990s. We believe that its rapid spread on the Magdalen Islands and its strong flight habits (Ronkay and Ronkay 1994) suggest an imminent arrival on the mainland, either in the adjacent Maritime Provinces, or in the Gaspé Region of Québec.

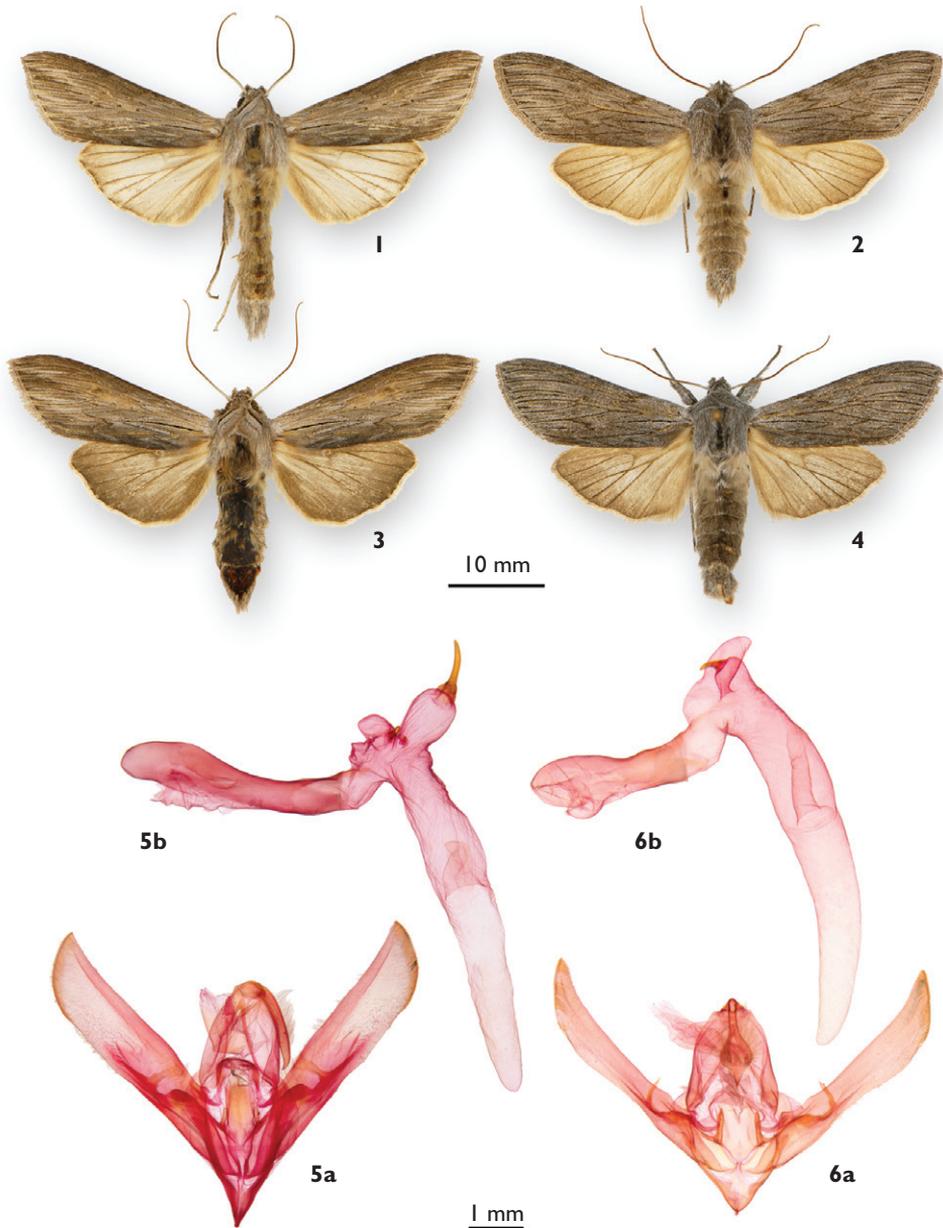
The larvae primarily use the flowers of *Sonchus* L., *Hieracium* L. and *Lactuca* L. (Asteraceae) (Ronkay and Ronkay 1994) as host plants in Europe. Plants in these genera of European origin are now common not only on the Magdalen Islands, but also throughout most of eastern North America (Rousseau 1968, 1974). Consequently, no significant impact is predicted either economically or on the flora and Lepidoptera fauna, including the indigenous species of *Cucullia* because the native species are not known to use these plants as primary hosts (Robinson et al. 2002). *Cucullia intermedia*, however, may be an exception because it has apparently declined in numbers with increasing abundance of *C. umbratica*; it has not been caught since 2002, and was rarely collected prior to this.

Adult specimens of *C. umbratica* were first collected on the Magdalen Islands in 1998 and each year thereafter from mid-June to mid-August, with a peak during the last three weeks of July. Only one generation per year has been observed on the Magdalen Islands. This species most closely resembles the North American *C. intermedia*, although the hind wings of males are mainly dirty white (Fig. 1) compared to fuscous brown in *C. intermedia* (Fig. 2). In females, the hindwing is dark brown in both species (Figs 3, 4). A thin reddish-brown band longitudinally crossing the forewing to the apex is characteristic of *C. umbratica* (Figs 1, 3) (Ronkay and Ronkay 1994).

The male genitalia of *C. umbratica* (Fig. 5) differ from those of *C. intermedia* (Fig. 6) in that the uncus is tapered, the clavus is shorter than the width of the sacculus, the sacculus is angled posteriorly, the clasper is apically enlarged, and in the vesica there is a large subbasal diverticulum with an apical cornutus, both longer than the basal diverticulum. In *C. intermedia* the uncus is expanded and rounded subapically, the clavus is longer than the width of the sacculus, the sacculus is tapered posteriorly, the clasper is apically spine-like, and in the vesica the subbasal diverticulum and cornutus are both shorter than the basal diverticulum.

Acknowledgements

We thank Sandrine Papageorges and Lucie d'Amours for their constant and valuable collaboration in the study of the Lepidoptera fauna of the Magdalen Islands. We are



Figures 1–6. *Cucullia* spp.: **1–4** Adults of *Cucullia* spp. **1** *Cucullia umbratica*, ♂, Havre-aux-Maisons, Magdalen Islands, Québec **2** *Cucullia intermedia*, ♂, Edmundston, New Brunswick **3** *Cucullia umbratica*, ♀, Havre-aux-Maisons, Magdalen Islands, Québec **4** *Cucullia intermedia*, ♀, Edmundston, New Brunswick **5–6** Male genitalia of *Cucullia* spp. **5** *Cucullia umbratica* **6** *Cucullia intermedia*.

also grateful to Donald Lafontaine not only for the loan of the trap used, but also for the dissection of the genitalia of the specimens of *C. umbratica* from Europe and the Magdalen Islands, and of *C. intermedia*. Finally, we thank Jocelyn Gill, of the Canadian National Collection of Insects, Arachnids, and Nematodes (CNC) in Ottawa, for her care in preparing the genitalia and the photographs.

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