

## FIRST RECORD OF THE BOX TREE MOTH *CYDALIMA PERSPECTALIS* (WALKER, 1859) (LEPIDOPTERA: CRAMBIDAE) IN LITHUANIA

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### Introduction

Biological invasion by alien species is a great ecological and economical threat, with a multitude of negative impacts on human and animal health, local biodiversity (flora and fauna) and cultural landscape (Hulme & Roy, 2010). The box tree moth *Cydalima perspectalis* (Walker, 1859) (Lepidoptera: Crambidae) is an invasive species on box tree *Buxus spp.* in Europe, which has been spreading and establishing across the continent during the last decade. The pest was included in the alert list of the European Plant Protection Organisation (EPPO) in 2007 but was removed in 2011 (Strachinis *et al.*, 2015).

The box tree moth *Cydalima perspectalis* (Walker, 1859) is known from the humid subtropical regions of East Asia, India (Hampson, 1896), China (Walker, 1859), Japan (Inoue, 1982), Korea (Park, 2008), and Far East Russia (Kirpichnikova, 2005). The larvae feed on the leaves of *Buxus microphylla* Siebold & Zucc., but also accept other *Buxus* species (Maruyama, 1993). In 2006, the box tree moth was registered in southwestern Germany (Krüger, 2008). In 2007, it was also found in Switzerland (Billen, 2007) and in the Netherlands (Muus *et al.*, 2009). At present this species is known from many European countries: Britain (Mitchell, 2009), France (Feldtrauer *et al.*, 2009), Austria (Rodeland, 2009), Liechtenstein (Slamka, 2010), Belgium (De Prins, Steeman, 2011), Italy (Grifo *et al.*, 2012; Bella, 2013), Hungary (Sáfián & Horváth, 2011), Czech Republic (Šumpich, 2011), Romania (Székely *et al.*, 2011), Slovenia (Seljak, 2012), Turkey (Hizal *et al.*, 2012), Croatia (Koren & Črne, 2012), Russia (Proklov & Karayeva, 2013), Slovakia (Pastoralis *et al.*, 2013), Denmark (Hobern, 2013), Georgia (Matsiakh, 2014), Spain (Pérez-Otero *et al.*, 2014), Bulgaria (Beshkov *et al.*, 2015), Bosnia Herzegovina (Ostojić *et al.*, 2015), Serbia (Konjević *et al.*, 2015; Stojanović *et al.*, 2015), Greece (Strachinis *et al.*, 2015), Ukraine (Budashkin, 2016) Albania (Raineri *et al.*, 2017), Luxemburg (Ries *et al.*, 2017), Poland (Bury *et al.*, 2017). Data on this species from Lithuania has not been known. At present, this is the northernmost area of distribution of this species.

### Material and Methods

The material was collected using light trapping at night (250W DRL type bulb lamp was used) in Vilnius district, Žudiškės (54.826962 N, 25.227542 E), 20 09 2018 by Darius Mikalauskas.

The species was identified using external appearance. The terminology used for

morphological structures mostly follows that of F. Slamka (2013). The forewing length was measured from the base of the wing to the end of its terminal fringe scales. The specimen is deposited in the collection of the Kaunas T. Ivanauskas zoological museum (Lithuania).

## Results and Discussion

This species, originally described as *Phakellura perspectalis* Walker, 1859, has been placed in various spilmeline genera including *Palpita* Hübner, 1808, *Diaphania* Hübner, 1818 and *Glyphodes* Guenée, 1854. Based on phylogenetic analysis, the box tree moth has been transferred to *Cydalima* Lederer, 1863; since *perspectalis* is the type-species of *Neoglyphodes* Streltsov, 2008, this genus name can be synonymized with *Cydalima* (Mally & Nuss, 2010).

The box tree moth adults are variable. The most common color form has white, slightly iridescent wings with a large dark brown band at the outer margin and a characteristic white spot on the forewing, in the discoidal cell. Hindwings are white with the same band at the outer margin as in the forewings. In a less common colour variant, the adults are completely brown, but still show a white forewing spot. The wingspan is 30–45 mm. Antennae are filiform, with short ciliae in male, thinner in female. Male has tufts of hair on the end of abdomen (Mally & Nuss, 2010) (Fig. 1).

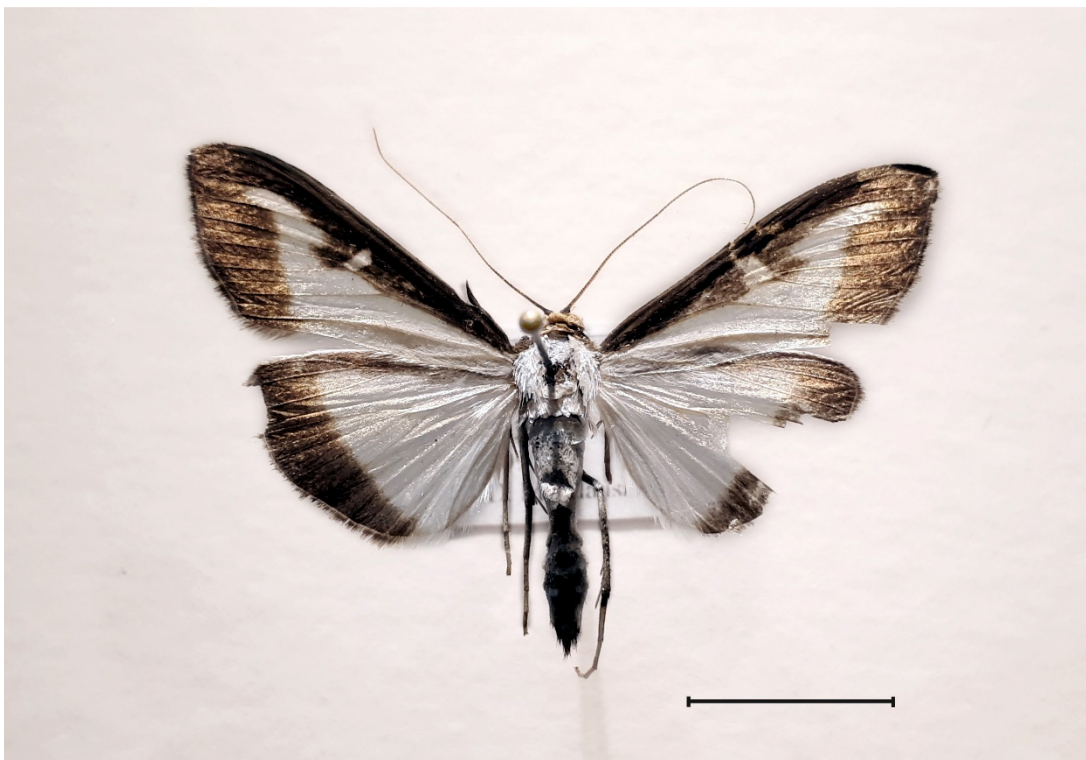


Fig. 1. *Cydalima perspectalis* (Walker, 1859), Žudiškės, Vilnius district, Lithuania (Photo: D. Mikalauskas). Scale bar 1 cm.

Eggs are laid on the leaves of the host plant in groups of 5–20 (Leuthard & Baur, 2013). The light green larvae are characterized by black stripes with white dots and hairs and shiny black head. In the last larval stage they can reach a length of up to 4 cm (Bella, 2013). The pupae are between 1,5 and 2,0 cm long. Initially green with dark stripes on

the dorsal surface, towards the end of pupation they turn brown with a dark pattern corresponding to the brown wing borders of the adult. They are concealed in a cocoon of white silk spun among the leaves and twigs (Korycinska & Eyre, 2009).

The host plants of *C. perspectalis* are *Buxus* spp. In origin countries, it has also been reported on *Euonymus japonicus* Thunb., *E. alata* (Thunb.), *Ilex purpurea* Hassk., *Pachysandra terminalis* Siebold & Zucc., and *Murraya paniculata* (L.) where larvae feed on leaves and are considered serious defoliators (Korycinska & Eyre, 2009; Wang, 2008).

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### **Naujas pranešimas apie *Cydalima perspectalis* (Walker, 1859) (Lepidoptera: Crambidae) Lietuvoje**

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Straipsnyje pateikiamas pirmas pranešimas apie *Cydalima perspectalis* (Walker, 1859) radimą Lietuvoje. Tai kol kas šiauriausia šios rūšies paplitimo vieta. Nurodyti rūšiai būdingi morfologiniai požymiai, pagrindiniai biologijos bruožai ir paplitimas Europoje ir už jos ribų.

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