New record of the invasive pest species *Cydalima perspectalis* (Walker, 1859) in Emilia Romagna (Italy) (Lepidoptera: Crambidae, Spilomelinae)

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Abstract: *Cydalima perspectalis* (Walker, 1859) is one of the most intensively observed pest species in Europe. Once introduced, the moth has spread from Germany, where the first record was made in 2007, over Switzerland, France, the Netherlands and Austria. In 2008 the moth reached the United Kingdom. In the south this species was also found in Turkey, Hungary, Slovenia and 2011 in Italy. Our new record of *C. perspectalis* in Italy confirms the further southward expansion of this species. Now, there is a new locality in the Emilia Romagna, where *C. perspectalis* was found in Pineta San Vitale, a protected area of the Parco regionale del Delta del Po near Ravenna.

Key words: *Cydalima perspectalis*, neozoic, pest species, Italy, Emilia Romagna

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Introduction

Pineta san Vitale is part of the Parco regionale del Delta del Po and is located about 1 km north of Ravenna (Fig. 1). To the east, the park is limited by a lagoon of the Adriatic Sea. In the northwest there are floodplains and...
The box tree moth *Cydalima perspectalis* (Walker, 1859) (Pyraloidea: Crambidae) is an invasive neozoic species from East Asia. It was most likely accidentally brought to Europe by importing its natural host plant (a Chinese species in the genus *Buxus*) contaminated with eggs, caterpillars or pupae. The first colony was discovered 2006 or 2007 in Weil am Rhein, Germany (Krüger 2008, Lepiforum 2012). However, it appears to be likely that the species came some time earlier to Germany (Leuthardt 2010). From this initial location *C. perspectalis* spread — presumably by active dispersion — further in Germany and possibly also to Switzerland and France (Van der Straten & Muus 2010). Because the species and its dispersal were observed only shortly after its first appearance, the data could be used to analyse the distance of natural spread per year, which is inferred to be no more than 5–10 km/a (Van der Straten & Muus 2010, Lepiforum-Bestimmungshilfe 2012).

Additionally to its active dispersal, this species is evidently transported by humans (for example from infested plant nurseries via big shopping centres selling infested *Buxus* plants) together with its host plant at a much faster pace. Thus, soon there were further localities discovered far away from the first one. For example, this species was found in the Netherlands (2008), in the United Kingdom (2008), in Austria (2009) and in Belgium (2010) (Van der Straten & Muus 2010). Further in Turkey (2011) (Hizal et al. 2012), Hungary (2011) (Szabolcs & Bántli 2011), Slovenia (2011) (Seljak 2012), and Northern Italy (Lago Maggiore) where a location is named on an advertising internetpage (Lago-Maggiore-Urlaub.de 2012).

In its native distribution area in SE China (compare Mally & Nuss 2010 for further details on the distribution in E Asia etc.), the caterpillar feeds on Chinese buxus (*Buxus sinica*) (Zhou et al. 2005). On the basis of previous observations in Europe summarized in Lepiforum-Bestimmungshilfe (2012), *C. perspectalis* there mainly feeds on *Buxus sempervirens*. Details of the systematic position, correct taxonomic placing and other basic information about the species see in Mally & Nuss (2010).

Results and discussion

In the last 15 years samplings of the moths in Pineta san Vitale were made in all habitats of the whole area, across different seasons. For instance in 2011 80 samples were taken with automatic light traps (with fluorescent tubes) in the four different kinds of vegetation. In 2012 26 samples were collected manually. On 8. x. 2012 a collecting light for manual capturing was established in a kind of clearing in front of the Ca’ Vecchia house (44°30′34.91″ N, 12°13′45.24″ E). Adjacent to this site there are floodplain, oak and pinewood areas. As light source, a 500 W (HWL) lamp was used.

At about 20:10 h a box tree moth ♂ arrived at light (Fig. 2). Before, this species was not known in this area. Investigations in the internet revealed further unconfirmed sightings of *C. perspectalis* in the Emilia-Romagna. For example, a photography of a ♀ is shown in a contribution dated 25. ix. 2012 (Entomologitaliani 2012). Therefore it can be assumed that the species is now firmly established in the Emilia Romagna. For Pineta san Vitale this ♂ is the first record.

There are different possibilities how the sampled box tree moth reached the location in Pineta san Vitale. The most likely appears to be a restaurant, which is located at a distance of about 480 m to the light trap site. In the restaurant’s garden, there are a few box trees for decoration. The moth might have been brought in together with the plants. But as we examined the box trees there were no indications of silk or feeding damage. In the park, there is a natural occurrence of *Buxus sempervirens* (Lazzari et al. 2010). Inspection revealed that also these plants had no obvious evidence of infestation.

As Pineta san Vitale is a relatively isolated area, it remains unknown so far from where or how *C. perspectalis* came to the sampling site. The next village in 3 km distance to our sampling location is Marina Romea, but situated between Pineta san Vitale and this village there is a lagoon with more than 2 km of open water. In addition, Scirocco winds frequently blow there in direction from south to north. Hence it is very unlikely that a moth actively disperses or is passively drifted across this area. In the south of Pineta san Vitale, industrial areas of the city of Ravenna are situated about 1 km from the border of the park, but with more than 5 km distance to Ca’ Vecchia this is also somewhat doubtful.

Given that this species is spreading so fast and already changed its diet from exotic to native box tree species, it must be assumed that the damage potential of this neozoic pest species is much higher in southern Europe than previously suspected. *C. perspectalis* could potentially become a large-scale ecological problem, particularly for Italy and other south European countries and also for warm landscapes on the Atlantic side with natural occurrences of box trees. Without doubt, this species has the potential to damage over the time more than only urban parks and ornamental plantings.

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