

Newest Uninvited Insect Guests in the Hungarian Forests

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Abstract

Due to the increased international trade and the climate change, more and more non native insects appears in Hungary, some of them establishes and becomes significant pest. Most recent Hungarian examples are *Obolodiplosis robiniaea* and *Aproceros leucopoda*. On top of this – due to the environmental conditions becoming more favourable – a number of native insects have become pests during the last decade. Recent examples are *Chrysomela cuprea* and *Pheosia tremula*. Urban and roadside trees and plantations are particularly vulnerable from point of both invasive and native insect species.

Keywords | invasive insects, new pests, *Aproceros leucopoda*, *Chrysomela cuprea*, *Pheosia tremula*

Kurzfassung

Neue ungebetene Insekten-Gäste in den ungarischen Wäldern

Aufgrund des zunehmenden internationalen Handels und des Klimawandels kommen mehr und mehr nicht heimische Insekten in Ungarn vor, einige können sich etablieren und werden zu Schädlingen. Aktuell trifft dies in Ungarn auf *Obolodiplosis robiniaea* und *Aproceros leucopoda* zu. Da die Klimabedingungen für ihre Entwicklung günstiger werden, wurden im letzten Jahrzehnt auch einige heimische Insekten zu Schädlingen. Aktuelle Beispiele dafür sind *Chrysomela cuprea* und *Pheosia tremula*. Stadtbäume und Bäume entlang von Verkehrswegen sowie Plantagen sind besonders anfällig sowohl gegen invasive als auch heimische Insektenarten.

Schlüsselwörter | Invasive Insekten, neue Schädlinge, *Aproceros leucopoda*, *Chrysomela cuprea*, *Pheosia tremula*

Introduction

Invasive pests and pathogens are major threats on forest ecosystems all around the world. They often threaten both the native flora and fauna and also the economical productivity of the forestry sector. The explosively growing quantity of international trade increases the chance of the accidental introductions; the climate change is likely to provide more favourable environmental conditions for the introduced species' establishment and spread. A highly increased number of non native forest insect species appeared in Hungary in the last two decades. Some of the established species

have the ability to become significant pests. An increasing number of native species earlier considered rare or having less importance are becoming severe pest in the Hungarian forests. This short paper reports a few examples of both, the newest non-native invasive insect species and native species that unexpectedly became pests.

Non-native invasive species

Locust gall midge (*Obolodiplosis robinia*) was first recorded in Hungary in autumn 2006 (Csóka 2006). It is now widespread and common everywhere in Hungary and can also be found in many European countries (Skuhrava et al. 2007, Tóth et al. 2009).

The zigzagging elm sawfly (*Aproceros leucopoda*), native in China and Japan, was first found in Hungary in summer 2003, but the species was only properly identified in 2009 (Blank et al. 2010). Only females are known, the species can have up to four generations per year. Its main host is *Ulmus pumila*, but was also recorded from other elm species as *U. campestris* and *U. glabra*. Its name is given after its typical serpentine chewing pattern (Figure 1). During 2009 it has been recorded from many locations in Hungary. Since 2006 it has been causing repeated defoliations of urban and roadside trees. It was recently found in several other European countries, such as Austria, Poland, Slovakia and Ukraine.

The oriental sweet chestnut gall wasp (*Dryocosmus kuriphilus*) is univoltine, known only from its asexual generation, and native to China. The female lays her eggs into buds, and the galls formed block the development of the shoots. The species is considered worldwide as a major pest of *Castanea*. It has been accidentally introduced to distant continents as North America and Europe. In Europe, it was first recorded in 2002 in Northern Italy. In May 2009 it was found on a single tree (height: ca. 6 m., diameter: ca. 12 cm) in a garden district at Budapest's vicinity. The tree was bought from an international garden store chain in autumn 2008. Knowing the circumstances and the life history of the gall wasp, we assume that the tree was most likely carried from Italy to the store during autumn 2008.



Figure 1: Typical chewing pattern of *Aproceros leucopoda* larvae.

Abbildung 1: Typische Fraßmuster der Larve von *Aproceros leucopoda*.

Native species becoming pests

The leaf beetle *Chrysomela cuprea* was considered a rare species in Hungary until May 2006, when it totally defoliated 20 hectares young hybrid poplar plantation and caused 30 to 40 % defoliation in 40 hectares older stands at Monor (ca. 30 km SE of Budapest). Nine hectares of young plantation had to be replanted as a consequence of its damage (Hirka 2007, Hirka and Csóka 2007). In 2009 it caused again 90 hectares severe defoliation in older stands. Besides hybrid poplars the white poplar (*Populus alba*) was also damaged. Hardly anything is known about the life history of the species.

The notodontid *Pheosia tremula* is common and widespread in poplar and willow stands in Hungary. The moths are regularly caught by the traps of the Forestry Light Trap Network, but evident damage caused by this species has not yet been reported. Defoliation on 120 ha (including 90 ha total defoliation) was reported from Monor in September 2009 (Figure 2). *P. tremula* has two generations per year, and overwinters as pupa.

The buprestid *Coraebus florentinus* was known as an occasional xylophagous pest of oaks for a long time (Paszlowszky 1885), but its mass occurrences are rather rare. It attacks and kills 1.5-2 m long branches with 20-30 mm diameter. Main hosts are *Q. pubescens*, *Q. petraea* and *Q. robur*, but it is also found on *Q. cerris*. The species becomes practically "invisible" between its outbreaks, which is the reason why it was declared as protected species in Hungary. Its last damage was reported by Koltay and Leskó (1991). Following the severe drought in the first years of the new millennium and the country-wide outbreak of gypsy moth (2003-2006), it became common and abundant in many different regions in Hungary.



Figure 2: Fully grown caterpillar of *Pheosia tremula*.

Abbildung 2: Ausgewachsene Raupe von *Pheosia tremula*.

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