

Appearance of *Tinocallis takachioensis* (Homoptera: Aphididae) in The Netherlands

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KEY WORDS

Aphidoidea, distribution, new record, Sternorrhyncha, *Ulmus minor* var. *plotii*

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In September 2011, I found the Asian elm aphid *Tinocallis takachioensis* Higuchi (Homoptera: Aphididae) on *Ulmus minor* var. *plotii* in Wageningen, The Netherlands. This species has not been described from The Netherlands before, but appeared to be present in Wageningen already since 2006. The first record of this species from eastern Asia in Europe was in 1986 in southern France from *Ulmus* trees. Since then it also was recorded from other European countries.

Distribution

Originally the Asian elm aphid *Tinocallis takachioensis* Higuchi (Homoptera: Aphididae: Calaphidinae: Panaphidini) (figure 1) was described from elm (*Ulmus* sp.) in Japan (Higuchi 1972).

Tinocallis takachioensis is native to eastern Asia, it is for example also found in the Soviet Far East (Quednau & Shaposhnikov 1988), in China on *Hemiptelea davidii* à (Zhang & Zhong 1980 as *Tinocallis hemipteleae*), and in eastern Siberia (Pashchenko 1988 as *Tinocallis ussuriensis*).

In 1986, *T. takachioensis* was recorded for the first time in Europe in southern France from *Ulmus* species; alate individuals were caught with a high suction trap (Leclant 1986). In England, *T. takachioensis* was found in 1997 on imported *Zelkova serrata* and *Ulmus* species and outdoors on *Ulmus glabra* (Döring 2007). Then *T. takachioensis* was observed in 2007 in Germany (K. Schrameyer personal communication) and Sicily (Patti & Barbagallo 1998), and in 2008 in Turkey (Görür et al. 2011) and Malta (Mifsud et al. 2009). In the USA, *T. takachioensis* was first recorded in Maryland in 1996 (Footitt et al. 2006).

Findings in The Netherlands

I discovered *T. takachioensis* in a private garden with three *Ulmus minor* var. *plotii* trees. Identification of the aphids was done using the key in Blackman & Eastop (1994). In September 2011, one out of three trees harboured some individuals of *T. takachioensis*. The tree has a height of approximately 2.50 m. Remarkably, in 2013 in the beginning of July, I again observed the aphid only in this single tree and not in the other two. These observations may suggest that the spread of *T. takachioensis* between these trees is not that fast as one would expect. This is rather strange, since alate individuals appear rather frequently on the observed tree.

Nevertheless, *T. takachioensis* was already present in Wageningen since 2006. Ping-ping Chen (personal communication) has found this species on several *Ulmus glabra* trees alongside a road, every year from 2006 till 2013 in the period mid-June till the end of August. From these trees, specimens are also harboured in the collection of Naturalis Biodiversity Center and DNA barcodes are made.

Biology

Tinocallis takachioensis is found from different species of *Ulmus*, from *Zelkova serrata* and *Hemiptelea davidii*, all belonging to the Ulmaceae.

Although the Asian elm aphid has been discovered more than 40 years ago, not much is known about its life-cycle. Only from Sicily males and oviparae are mentioned (Patti & Barbagallo 1998). Despite sexuals have been observed, it is still not known for sure if/how *T. takachioensis* survives the winters in western Europe, because it is not mentioned whether there were fundatrices or not in spring. One can also assume that *T. takachioensis* can adapt rather easily to the climate in countries with a climate more or less the same as in Takachiho, Japan, where the aphid has been discovered. Takachiho is in the northern part of Miyazaki Prefecture on the island Kyushu and has a temperate to sub-tropical climate. Maybe due to changes of temperature in western European countries, *T. takachioensis* could be able to survive the milder winters here in spite of small periods with severe frost.

Pest species

In general, tree dwelling aphids hardly harm the trees on which they feed. Like all aphids, *T. takachioensis* produces honeydew. According to K. Schrameyer (personal communication), this species produces extraordinary amounts of honeydew covering the leaves giving black rusts (Puccinales) a rich medium, but apparently the tree doesn't suffer and the tree continues to form new leaves. It is not known how the Asian elm aphid has spread all over the world, but one possibility can be by international trade of trees, among others bonsai.

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1. Winged *Tinocallis takachioensis* feeding on a leaf of *Ulmus minor* var. *plotii*. Foto: Paul Piron

1. Gevleugelde *Tinocallis takachioensis* voedend op een blad van veldiep, *Ulmus minor* var. *plotii*.

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Samenvatting

Het verschijnen van *Tinocallis takachioensis* (Homoptera: Aphididae) in Nederland

In 1986 is de Aziatische iepenluis, *Tinocallis takachioensis* Higuchi, voor het eerst in Frankrijk op iep gesignaleerd. Sindsdien is ze ook in andere Europese landen zoals Engeland, Duitsland, Sicilië en Malta op iep waargenomen. In 2011 vond ik de soort ook in Nederland op veldiep (*Ulmus minor* var. *plotii*) in Wageningen. Later bleek de soort al sinds 2006 jaarlijks in Wageningen te zijn gezien. *Tinocallis takachioensis* veroorzaakt geen zuigschade op iepenbomen en de aantallen zijn meestal laag.

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