

A Serious Pest Alert for Turkey: A Newly Introduced Invasive Longhorned Beetle, *Anoplophora glabripennis* (Cerambycidae: Lamiinae)

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A SERIOUS PEST ALERT FOR TURKEY: A NEWLY INTRODUCED
INVASIVE LONGHORNED BEETLE, *ANOPLOPHORA GLABRIPENNIS*
(CERAMBYCIDAE: LAMIINAE)

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The genus *Anoplophora* (Cerambycidae: Lamiinae) of which all species are xylophagous and attack both coniferous and deciduous trees, has 36 species that occur throughout Asia (Lingafelter & Hoebeke 2002; Hu et al. 2009). According to Löbl & Smetana (2010), the genus is

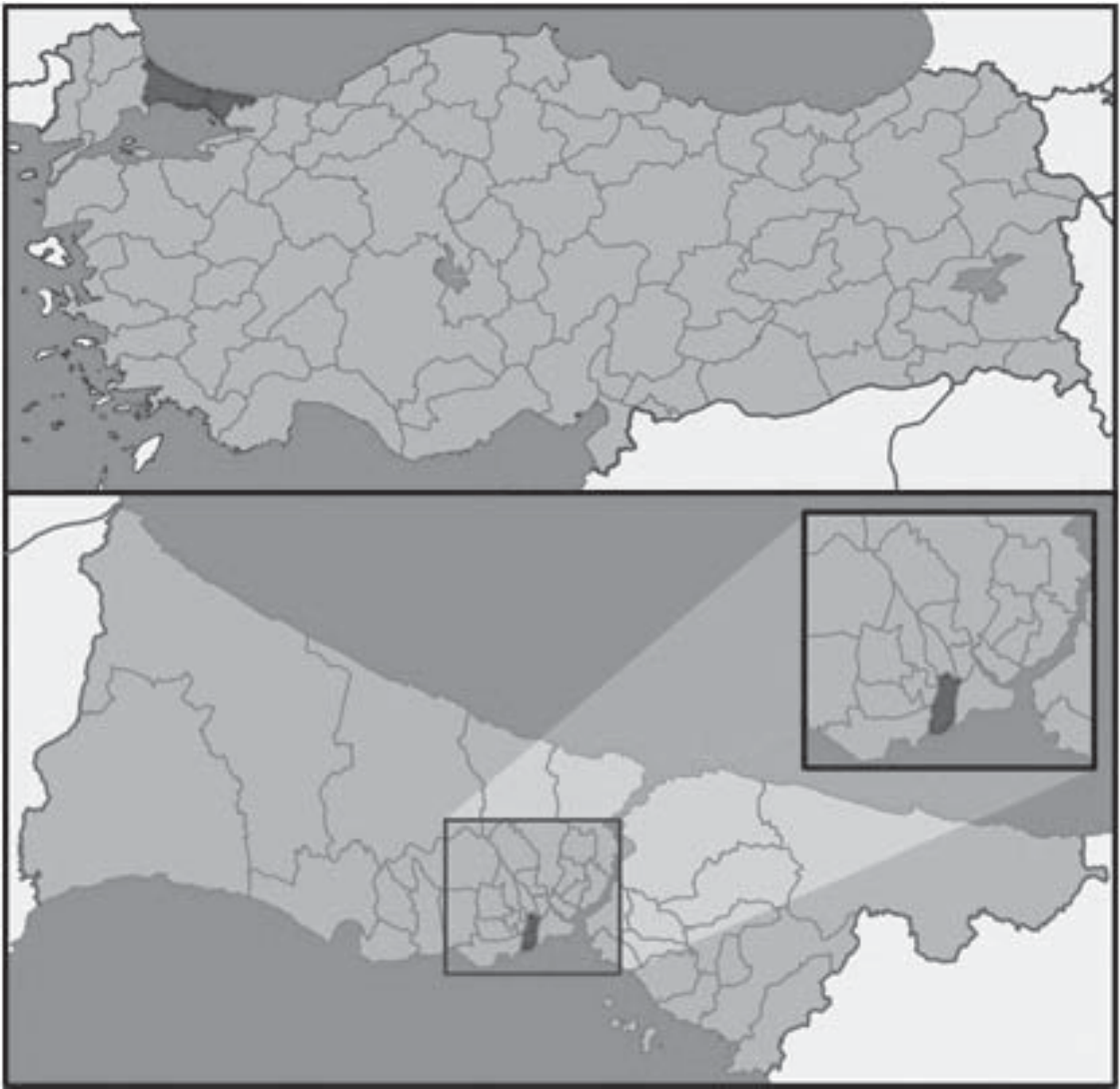


Fig. 1. Location of Zeytinburnu county in Istanbul province.



Fig. 2. Adult Asian longhorned beetle, *Anoplophora glabripennis*.

represented by twenty-nine species in Palaearctic Region. Yet, according to Danilevsky (2014), *Anoplophora viriantennata* W.-K. Wang & Jiang 1998 is a missing name in his catalog; and *Anoplophora granata* Holzschuh 1993, described from Thailand, was recorded for Guangxi, China (Yang et al. 2013). Consequently, the genus is represented by 31e species in the Palaearctic Region.

The Asian longhorned beetle, *Anoplophora glabripennis* Motschulsky, 1854, is the most widespread species of the genus. This species is native to China, Korea and Japan, and is an extremely dangerous pest. Experts believe this beetle was introduced into the U.S. during the early 1990's in solid wood packing or crating materials on a cargo ship from China. By 2012 this beetle had also invaded Canada (Ontario) and Europe (Austria, Czech Republic, France, Germany, Italy, Netherlands and United Kingdom).

Anoplophora glabripennis has 1 or 2 generations per year. Adult beetles are usually present from Jul to Oct, but can be found later in the fall if temperatures are warm. Adults usually stay on the trees from which they emerged, or they may disperse short distances to a new host, to feed and reproduce. *Anoplophora glabripennis* grows and reproduces within healthy as well as stressed deciduous hardwood tree species, such as *Acer* spp., *Aesculus* spp., *Albizia* sp., *Betula* spp., *Celtis* spp., *Cercidiphyllum* spp., *Fraxinus* spp., *Platanus* spp., *Populus* spp., *Salix* spp., *Sorbus* spp., and *Ulmus* spp. Adults feed on bark, leaves and leaf stalks soon after exiting from eclosion holes prior to mating and laying eggs. Females typically lay and deposit 30-90 eggs, or even more, during their lifetime. Eggs hatch in 10-15 days. Larvae then feed under the bark in the living tissue of the tree until it is time for them to pupate, they then bore deep into the wood and construct a pupation chamber. Tunneling by the larvae is most destructive as it girdles attacked stems and

branches. Repeated attacks on the same tree lead to dieback of the crown, and eventually death of the tree. The adult emerges from the pupation site by boring a tunnel through the wood to the surface chewing an exit hole (Yang 2005; Weilun & Wen 2005; USDA Forest Service 2008).

Adults of *A. glabripennis* were collected from Istanbul province in NW Turkey in July, 2014. These specimens have been deposited in the museum of Istanbul University, Faculty of Forestry, Department of Forest Entomology and Protection (Istanbul, Turkey).

Anoplophora glabripennis Motschulsky, 1854 has not been included in the Turkish longhorned beetle fauna previously (Özdikmen 2012). So, this extremely dangerous quarantine pest is reported for the first time for Turkey with the present work.

Genus *Anoplophora* Hope, 1839: 43

Type sp.: *Anoplophora stanleyana* Hope, 1839

Species *Anoplophora glabripennis* (Motschulsky, 1854: 48)

Original comb.: *Cerosterna glabripennis* Motschulsky, 1854: 48

Synonyms: *Cerosterna laevigatrix* J. Thomson, 1857: 297; *Melanauster nobilis* Ganglbauer, 1889: 82; *Melanauster angustata* Pic, 1925: 21; *Melanauster luteonotata* Pic, 1925: 21; *Melanauster nankinea* Pic, 1926: 2; *Melanauster laglaisei* Pic, 1953: 3.

The current range of this species includes Asia (China, Korea and Japan), North America (America and Canada), Europe (Austria, Czech Republic, France, Germany, Italy, Netherlands and United Kingdom), and Turkey (European part of Istanbul).

We detected many specimens in Zeytinburnu county of Istanbul province (on trees of *Acer negundo* L. in the garden of Abdi İpekçi Sport Hall



Fig. 3. Indication of damage to a boxelder tree (*Acer negundo* L.) caused by *Anoplophora glabripennis*.
a. Oval to round pits in the bark of boxelder (*Acer negundo* L.).
b. Round holes on the trunk.
c. Accumulation of coarse sawdust around the base of infested trees.

(Arena) and on roadsides of 10th year street, N 40° 59' 46.7" E 28° 55' 13.9") in 07.VII.2014. Zeytinburnu is located in European part of Istanbul province and thereby of Turkey (Fig. 1). We observed adult beetles (Fig. 2), oval to round pits in the bark of boxelder trees (these egg-laying sites are chewed out by the female beetle, and a single egg is deposited in each site) (Fig. 3a), accumulation of coarse sawdust around the base of infested trees (this sawdust is created by the beetle larvae as they bore into the main tree stem and branches) (Fig. 3c), round holes on the trunk (these exit holes are made by adult beetles as they emerge from the tree) (Fig. 3b).

Anoplophora glabripennis is a weak flyer. But eggs, larvae, pupae and adults can be transported great distances within host logs or vehicles. Transported this way, *A. glabripennis*, which originated in Asia (China, Korea and Japan), has invaded the Nearctic (Canada and USA) and Palaearctic (Europe) Region, and now Turkey.

Most of the known host plants of *A. glabripennis* occur in Turkey. With respect to this, the discovery of *A. glabripennis* in Turkey has a very important impact on management of Turkish forests. The first management step should be to determine the distribution of *A. glabripennis* in Turkey. Subsequently the control of *A. glabripennis* would require the removal of infested trees with their immediate destruction by chipping or burning. After being introduced into an area, *A. glabripennis* spreads by people cutting or trimming infested tree and moving the wood, thereby spreading the infestation. To reduce its spread an educational program to the public to help curtail this practice must be paired with any quarantine policy that prohibits the movement of infested materials.

The authors wish to express their gratitude to Miss Çağdan Uyar (Forest Engineer) for her valuable help in discovering this extremely damaging pest in Turkey.

SUMMARY

Anoplophora glabripennis Motschulsky, 1854, an extremely damaging pest originating in Asia, is recorded the first time as a new genus and spe-

cies for the Turkish longhorned woodborer beetle fauna.

Key Words: *Anoplophora glabripennis*, pest, alert, new record, Turkey

RESUMEN

Se registra por primera vez *Anoplophora glabripennis* Motschulsky, 1854, una plaga muy perjudicial originaria de Asia, como un nuevo género y especie para la fauna de escarabajos de cuernos largos barrenadores de madera en Turquía.

Palabras Clave: *Anoplophora glabripennis*, plaga, alerta, nuevo registro, Turquía

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