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THE FIRST REPORT ON POWDERY MILDEW CAUSED BY *ERYSIPHE FLEXUOSA* (SYN. *UNCINULA FLEXUOSA*) ON *AESCULUS* IN POZNAŃ

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Powdery mildew occurs frequently on various *Aesculus* species in North America. Symptoms of the disease were described on *A. arguta* Buckl., *A. georgiana* Sarg., *A. glabra* Willd., *A. hippocastanum* L., *A. pavia* L. and *A. ×carnea* Hayne. Powdery mildew on plants of *Aesculus* spp. is caused by *Uncinula flexuosa* (Peck) U. Braun (Braun 1987). Braun and Takamatsu (2000) in their study based on molecular analyses classified the fungus to the *Erysiphe* genus and proposed a name of *E. flexuosa* (Peck) U. Braun & Takamatsu comb. nov. *Erysiphe flexuosa* was recorded in Eastern Asia in the Russian Far East (Braun 1987). The pathogen was also brought to Europe and powdery mildew on horse chestnut was observed in Germany and Switzerland, as well as in Poland. Adamska (2002) reported the incidence of *E. flexuosa* on *A. hippocastanum* in September 2000 in Szczecin (north-western Poland) and in 2002 the disease was described on *A. hippocastanum* in Tarnów (southern Poland) (Piątek 2002).

The disease is being spread in Poland, as it is indicated by the incidence of powdery mildew symptoms in Poznań in the beginning of September 2007 on a red horse chestnut (*Aesculus ×carnea* Hayne) with pink-coloured flowers. Powdery mildew was not recorded on *A. hippocastanum*, however, at that time leaves on trees of this species were badly damaged by an invasive species of pest, *Cameraria ohridella*.

Disease symptoms were reported in Poznań in the western town district (Ogrody) in August 2007. The tree was strongly infested with the disease. It was a tree of ca 50 yrs, several meters high. All leaves in the crown were covered with fine white powdery coating, giving the crown a grey-green colour. On the leaves numerous cleistothecia occurred on the underside of leaf blades.

Cleistothecia, cleistothecial appendages, asci and ascospores were described in detail by Braun (1987) and Ale-Agha et al. (2000). These structures of the fungus were also described and measured in the material collected in Poznań. A total of 50 measurements were taken from each structure mentioned. Both morphology and dimensions of cleistothecia, cleistothecial appendages, asci and ascospores corresponded to the description of *E. flexuosa*.

Cleistothecia on the underside of leaves were numerous, subglobose, 108–162.5 μm in diameter. Cleistothecial appendages, 129–154 μm , some in the apical part were undulate-helicoid.

Asci, with six to eight ascospores, were sessile or shortly stalked, 51.6–64.5 \times 31.0 \times 36.1 μm in size. Ascospores were 20.6–23.2 \times 10.3–12.9 μm , ellipsoid-ovoid.

In recent years the biggest damage in horse chestnut trees in Poland has been caused by *C. ohridella* (Baranowski et al. 2004, Dziegielewska et al. 2005). The appearance and spread of *E. flexuosa* may be a new threat to *Aesculus* spp. That is why development of powdery mildew, incidence of the disease on horse chestnut trees and assessment of damage will be analysed in the following years.

Literature

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