

WISTERIA SCALE, *EULECANIUM EXCRESCENS* (HEMIPTERA: COCCIDAE) SPREADING IN SOUTH EAST ENGLAND

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ABSTRACT

Information is given about the current distribution and host plants of wisteria scale, *Eulecanium excrescens* (Ferris), in Britain. It was first detected in a London garden in 2001 and has since spread within the Vice Counties of Hertfordshire, Middlesex, South Essex, Surrey and West Kent. It is recorded feeding on seven plant species belonging to seven families.

INTRODUCTION

The wisteria scale, *Eulecanium excrescens* (Ferris) (Hemiptera: Coccidae), a native of China, was first reported in Britain from central London in 2001, where it may have been present for at least three years (MacLeod & Matthews, 2005). By the end of 2003, it had been found in 13 private and one public garden in the greater London area (Malumphy, 2005). Between December 2003 and July 2010, 28 verifiable reports of *E. excrescens* were received by the Royal Horticultural Society (RHS) and the Food and Environment Research Agency (Fera), indicating that the scale is spreading in south-east England. Details of the distribution and host plants of these reports are presented here.

The globular, dark brown, mature adult females of *E. excrescens* can usually be distinguished from other Coccidae found in the UK by their large size, up to 13 mm long and 10 mm high (Fig. 1). A grey powdery wax resembling a growth of mould usually covers the scale, although this may be lost as they mature. The immature

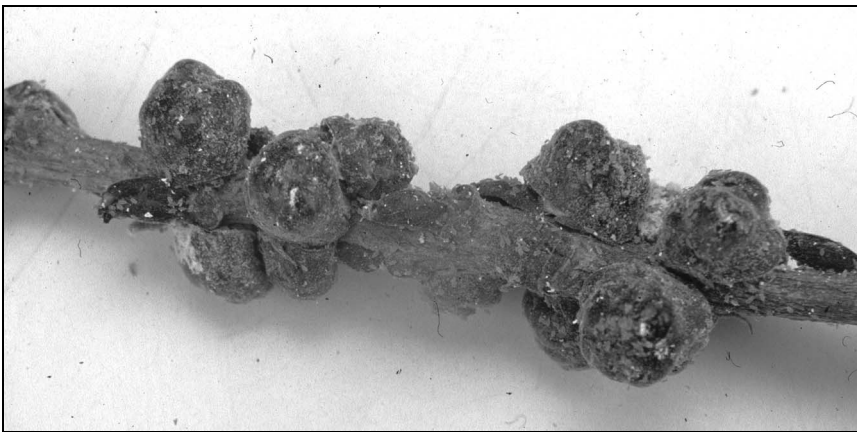


Figure 1. Adult and immature wisteria scale *Eulecanium excrescens* on *Wisteria* sp., copyright RHS.

nymphs are pale brown with rectangular whitish encrustations on their surface. Both adults and nymphs occur on the stems and branches of the host plants. A detailed description is given in Malumphy (2005 and references therein). It is a highly polyphagous scale and has been found feeding on many deciduous orchard and ornamental trees in the USA, where it is also an established non-native species (Gill, 1988). Other scale insects likely to be found on *Wisteria* in Britain are brown scale, *Parthenolecanium corni* (Bouché) and nut scale *Eulecanium tiliae* (L.), neither of which is more than 7 mm in length.

DISTRIBUTION IN BRITAIN

Most of the 28 verified reports of *E. excrescens* received since 2003 are from the greater London area, 23 within the Vice Counties of Surrey and Middlesex, and one report each from the Vice Counties of South Essex and West Kent (Fig. 2). This is

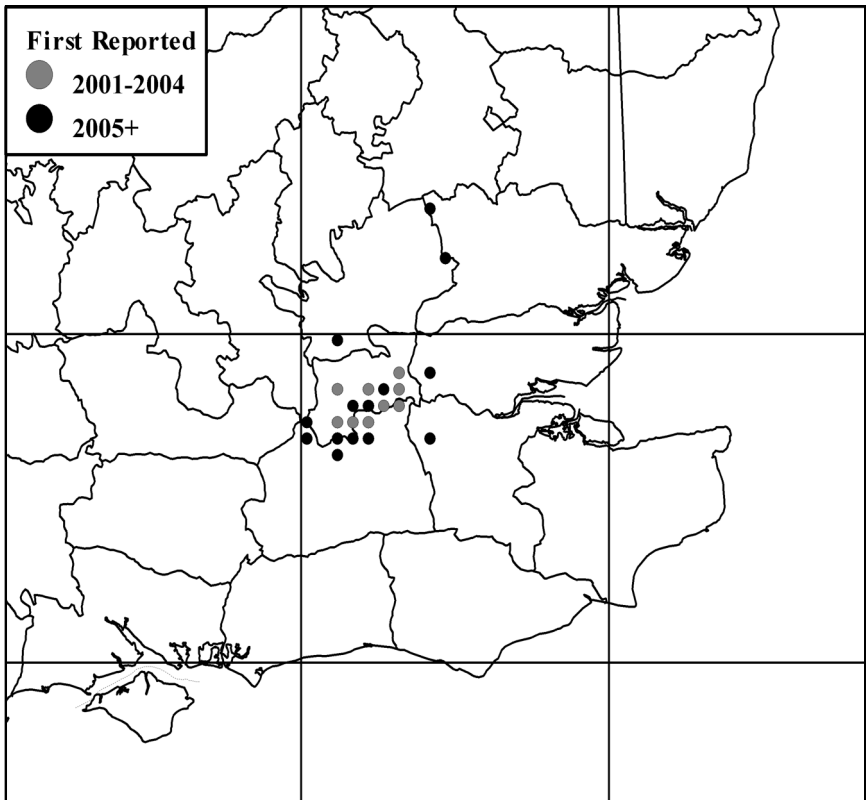


Figure 2. The distribution of wisteria scale *Eulecanium excrescens*, in south-east England based on a 5km grid (RHS and Fera data, May 2010), produced using DMAP. 2001 to 2003 records published in Malumphy (2005). These data will be made available via the National Biodiversity Network (www.nbn.org.uk) and the Royal Horticultural Society (www.rhs.org.uk).

evidence that the scale is established and probably dispersing naturally in the Greater London area. The first-instar nymphs are highly mobile and may be carried in air currents. Such aerial dispersal has been demonstrated in several coccid species (Washburn & Frankie, 1985; Barras, Jerie & Ward, 1994) and birds and animals have also been suggested as a means of dispersal (Stephens & Aylor, 1978). Outside Greater London, *E. excrescens* has been reported from three locations in Hertfordshire: Royston (TL43, July 2007), Bushey (TQ19, August 2007), and Bishops Stortford (TL42, February, 2010), confirming the hypothesis that this insect would be able to establish outside of London (Malumphy, 2005). How it reached these new areas is unknown, although it is likely that it will be spread over longer distances through the movement of infested plant material by gardeners or the horticultural trade.

HOST RANGE

In the USA, *E. excrescens* is considered highly polyphagous and has been recorded on a wide range of deciduous orchard and ornamental trees (Essig, 1958; Gill, 1988; Kosztarab, 1996). Some of the most economically important host plants in the UK are apple (*Malus* spp.), almond (*Prunus dulcis* (Mill.)), apricot (*Prunus armeniaca* L.), cherry (*Prunus* spp.), elm (*Ulmus* spp.), peach (*Prunus persica* (L.)), pear (*Pyrus communis* L.), sycamore (*Acer pseudoplatanus* L.), walnut (*Juglans regia* L.) and *Wisteria* spp. (Essig, 1958; Gill, 1988). To date, in the UK, it has been found on seven genera from seven plant families (Table 1). As more records are forthcoming, it can be expected that the host list in the UK will expand. In the vast majority of cases the host plant has been *Wisteria* and this is likely to be the preferred host, as it is in the USA (Gill, 1988). As yet there are no British reports of the scale being found on fruit trees in gardens or commercial orchards.

DISCUSSION

Several of the most common coccids (soft scale insects) found outdoors in urban areas in southern England are non-native invasive species, for example, *Coccus hesperidum* L., *Pulvinaria floccifera* (Westwood) and *Pulvinaria regalis* Canard. The last species was first reported from Kew, London in 1964 (Harris, 1970; Malumphy,

Table 1. Reported host plants of wisteria scale, *Eulecanium excrescens*, in the UK, based on a total of 42 reports. The scale being present on more than one host in some locations. (RHS and Fera data).

Plant Family	Host	No. of reports
Rhamnaceae	Californian Lilac <i>Ceanothus</i> sp.	1
Bignoniaceae	Pink Trumpet Vine <i>Podranea ricasoliana</i> (Tanfani)	1
Rosaceae	<i>Prunus</i> sp.	1
Sapindaceae	Sycamore <i>Acer pseudoplatanus</i> L.	1
Vitaceae	Virginia Creeper <i>Parthenocissus quinquefolia</i> (L.) Boston ivy <i>Parthenocissus tricuspidata</i> (Siebold & Zucc.)	1
Leguminosae	<i>Wisteria</i> sp.	39
	<i>Wisteria sinensis</i> (Sims)	1
Ulmaceae	<i>Zelkova serrata</i> (Thunb.)	1

1988) and within two decades it had spread throughout much of southern England reaching as far north as Chipping Norton, Oxfordshire (Speight & Nicol, 1985). It was first recorded in York in 1996 (Malumphy, 2009) and Glasgow in 2008 (Jeanne Robinson, 2010 *pers. comm.*). It is clear that *Eulecanium excrescens* is established in London and is spreading into adjacent counties. Records from Hertfordshire indicate that it could become widespread across southern England. It is possible that *E. excrescens*, like *Pulvinaria regalis*, will spread throughout much of southern England over the next few decades.

The impact of this pest in the UK remains unclear. The insect feeds on phloem sap and this can directly weaken plants. Heavy infestations can cause die-back on *Wisteria*. The scale also excretes excess plant sap as ‘honeydew’, which can encourage the growth of sooty moulds, having the secondary effect of reducing photosynthesis and the aesthetic quality of plants. When the host is *Wisteria*, it can directly affect the appearance of buildings swathed in this plant. The impact on commercial crops is less clear. It is considered a pest in China (Deng, 1985) but not in California where it is rare (Gill, 1988). None of the hosts on which it has been found in the UK so far are commercial orchard trees, although, as this insect spreads away from city gardens into fruit growing regions, it does pose a potential threat.

The Royal Horticultural Society is monitoring the spread of *E. excrescens*. Records with photographs or samples will be gratefully received at the e-mail or postal address above.

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