Observatree
monitoring tree health

www.observatree.org.uk

'**Host of the month**' is a series of information sheets and blogs that highlight a tree host and their associated priority pests and diseases that are best seen and recorded in that month. For October we're looking at Sweet Chestnut (*Castanea sativa*), Oriental chestnut gall wasp and chestnut blight.

Thanks to a long history of cultivation the true native range of the Sweet Chestnut is difficult to establish, but it is probably across the northern Mediterranean from north-west Spain, Italy, Greece and along the Black Sea coast into the Caucasus. The species is now widespread across Europe, primarily as a source of the nuts which are used whole, as a puree or as flour.

Figure 1: Mature Sweet Chestnut showing distinctive furrowed and spiralling bark (*Matt Parratt*)

The species is not native to the UK but is widespread and may have arrived here with the Romans, though this is based on one find of five chestnut shells from a single site in Essex. The edible nuts are not reliably produced in the UK, but large areas were planted in the 19th century and managed as coppice. Depending upon the length of the coppicing cycle this could produce poles suitable for post and rail fencing (20-35 years) or chestnut paling and hop poles (12-18 years).

There are 6-10 species of *Castanea* spread across the Northern Hemisphere from North America, through Europe and into Asia. All belong to the *Fagaceae* family along with Beech (*Fagus* spp.) and Oak (*Quercus* spp.). *Castanea* are characterised by nuts produced in an extremely spiny case and catkin-like male flowers with one or two female flowers at the base of some of the flower spikes (fig. 2). The simple leaves are spearhead-shaped with large teeth along the margins (fig. 2), and they are arranged alternately on the shoot. The bark on mature trees is deeply furrowed and often spirals around the trunk (fig. 1).

Despite its name Horse Chestnut (*Aesculus hippocastanum*) is not related to Sweet Chestnut and has a much less spiny fruit case, showy 'proper' flowers and palmate compound leaves arranged in opposite pairs (fig. 2). Horse chestnut is not affected by either Oriental chestnut gall wasp or sweet chestnut blight.

Observatree is a citizen science project led by Forest Research, in collaboration with key organisations

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Figure 2: Top row, left to right - Sweet Chestnut foliage (*Piero Amorati ICCroce – Casalecchio di Reno, Bugwood.org*), fully expanded male flowers *(Juan Campa, MGAP*, *Bugwood.org*), and spiny fruit case with nut (*Robert Vidéki, Doronicum Kft., Bugwood.org*). Bottom row, left to right - Horse Chestnut leaves (*Robert Videki, Doronicum Kft, Bugwood.org*), flowers (*Norbert Frank, University of West Hungary, Bugwood.org*), and fruit case with nut (*Chris Evans, University of Illinois, Bugwood.org*).

Priority pest - Oriental chestnut gall-wasp (*Dryocosmus kuriphilus)*

Oriental chestnut gall wasp (OCGW) is native to parts of Asia and was first recorded in the UK in 2015 by an amateur entomologist in Kent. A short time later it was also found in St Albans by an Observatree volunteer. It only affects members of the Genus *Castanea,* including Sweet Chestnut and does not affect Horse Chestnut or any other Genus of trees growing in the UK.

Adult female wasps emerge from the previous year's galls during July and August and lay their eggs in the newly formed buds. Larvae feed for the remainder of the summer, go dormant over-winter then resume activity in the spring when they start to form new galls. Male wasps have never been recorded and are not required for viable eggs to be produced.

The parasitoid wasp *Torymus sinensis* has been successfully used to help control OCGW in mainland Europe but the natural population in England is thought to be too low for effective control. In 2021 approval was given for the release of the parasitoid and its impact and spread will be monitored over a ten-year period.

Identification

The adult female OCGW is very small and unlikely to be seen, around 2.5 to 3.0 mm long (fig. 3). The most obvious sign of their presence are the swellings (galls) which form on twigs, or in the petiole (leaf stalk) or mid-rib of leaves where they cause leaf distortion and deformity. Initially they are either green or pink but as they age they turn first red and then brown (fig. 4). Leaves with galls usually fall from the tree in the autumn but those on twigs can remain on the tree for two years or more where they stand out in winter.

Lookalikes

No other galls have been reported on Sweet Chestnut in Britain so if you find some it is almost certainly OCGW. Other leaf deformities do occur, for example in secondary veins and not the mid-rib, but they are not a result of OCGW.

Figure 3: Adult female OCGW *(©Crown copyright. Forest Research*)

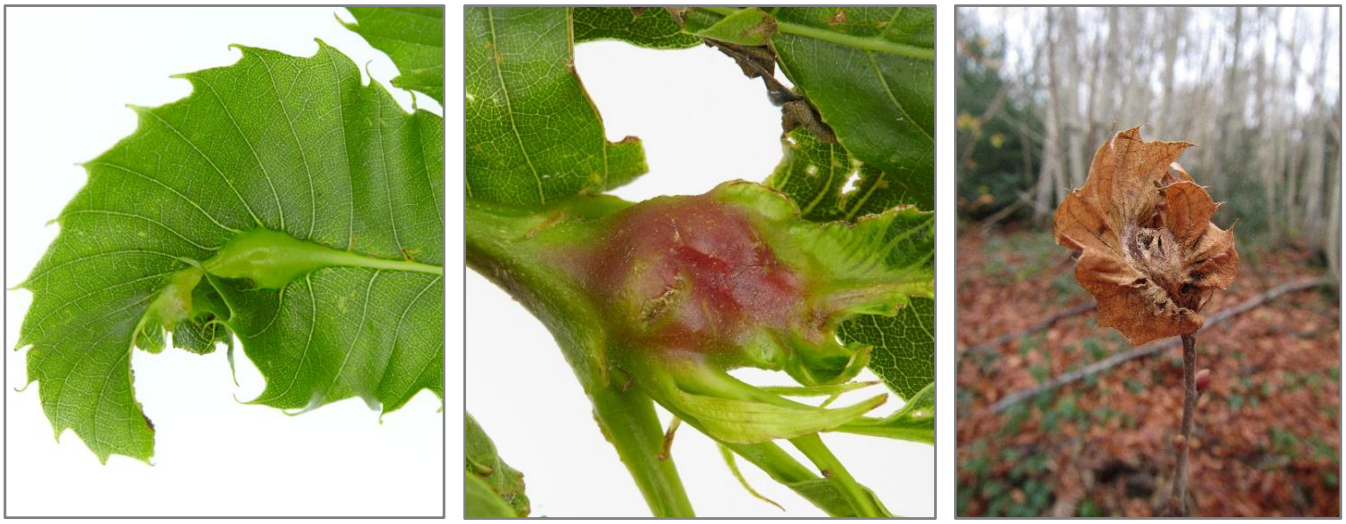

Figure 4: Left to right - fresh OCGW gall on the mid-rib of a sweet chestnut leaf, an older gall showing the characteristic rosy-pink colouring that develops, and an old gall with exit holes still attached to the shoot in winter (*all ©Crown copyright. Forest Research*).

Priority disease - Sweet Chestnut blight (*Cryphonectria parasitica*)

This destructive fungal pathogen is native to eastern Asia but has been reported in North America and Europe. It does little damage to its main host in its native range, Chinese Chestnut (*C. mollisima*), but following

introduction into North America in 1904 it soon spread across the entire range of American Chestnut (*C. dentata*) and killed an estimated 4 billion trees. It appeared in mainland Europe in the 1930's and has since caused extensive damage to Sweet Chestnut plantations. It was first confirmed in the UK after an outbreak in Warwickshire in 2011 where 150 trees had been planted out for nut production, since then a number of infected sites have been identified across the south and south-west of England and the midlands.

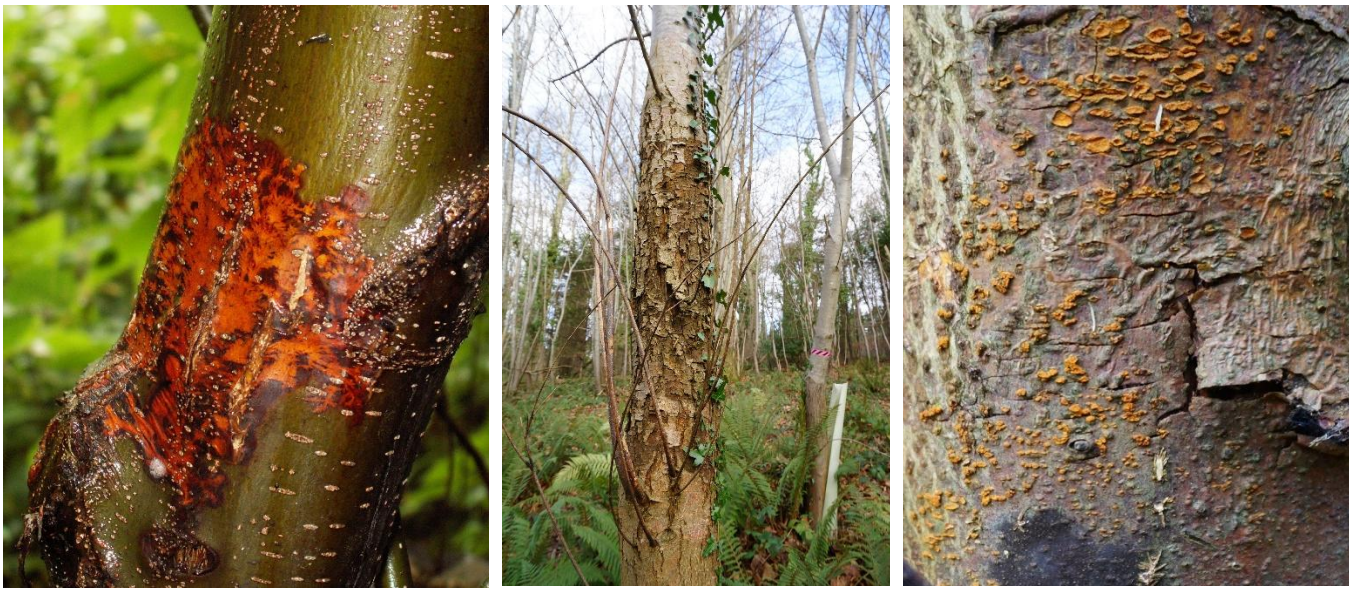

***Figure 5**:* Left to right – bright orange-brown sunken canker on a young Sweet Chestnut branch, ragged canker with abundant epicormic shoots on an older stem, and yellow-orange fruit bodies (all images © Crown copyright, Forest Research).

The fungal spores are spread mainly by wind and water but may also be transmitted by birds and insects. Spores enter host trees through fissures and wounds in the bark where they germinate and spread, rapidly forming lesions. Externally these lesions present as sunken and often brightly coloured cankers on younger material and roughened cracked cankers on older (fig. 5) which eventually girdle stems and branches, cutting off the flow of water and nutrients to tissues above it. Leaves above cankers gradually wilt and die, whilst below the canker there are often many epicormic shoots (*fig. 5*). Fruit bodies are frequent and appear as yellow-orange pustules on infected bark (fig. 5).

Lookalikes

Coral spot fungus (*Nectria cinnabarina*) is a common saprophyte (i.e. it lives on dead wood) that can become a weak pathogen given the opportunity and conditions. It produces fruit bodies very similar to those of chestnut

blight (fig. 6) and can also affect Beech (*Fagus sylvatica*), Horse Chestnut and Hornbeam (*Carpinus betulus*) amongst others.

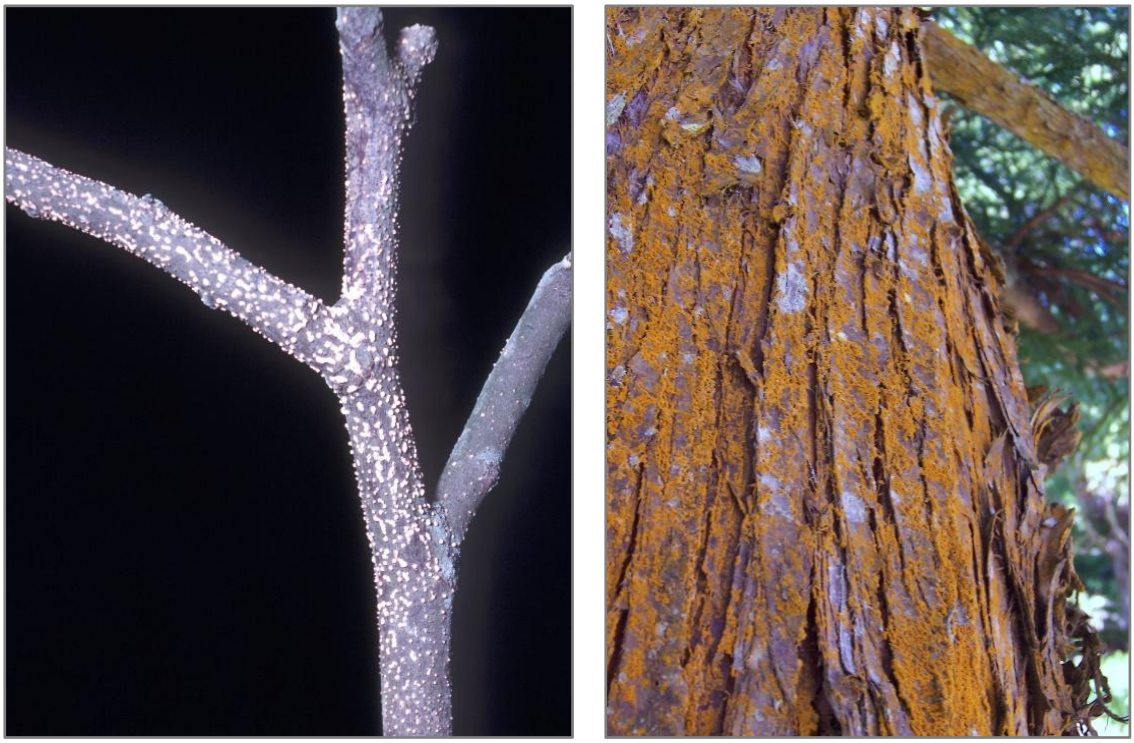

Figure 6: Coral spot fruit bodies (left) and *Trentepohlia* algae on Japanese cedar (right - *B.navez - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=2909861*).

Trentepohlia is a genus of harmless algae that grow on the trunks of a range of tree species**.** Some species are bright yellow or orange but up close it is composed of fine threads rather than the distinct pustule-like fruit bodies of Sweet chestnut blight and will often be spread over the length of the trunk (fig.6).

Several other fungi can cause lesions and cankers on Sweet Chestnut, including ***Gnomoniopsis smith-ogilvyi*** and ***Amphiporthe castanea***. For more information on these see the Observatree Sweet Chestnut blight field guide.

Phytophthora cinnamomi, *P. cambivora* and *P. ramorum* can all infect Sweet Chestnut causing general decline, dieback, foliar discoloration, basal lesions, and eventually tree death. On sites where infection is well-established infected trees frequently produce abundant epicormic shoots (fig. 7).

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***Figure 7**: Left to right – Sweet Chestnut with dieback and leaf browning caused by P. cinnamomi,* basal lesions caused by *P. cinnamomic*, and abundant epicormic shoots on infected trees where *P. ramorum* is well established *(©Crown copyright, Forest Research*).

Reporting

November is an ideal time to seek out Sweet Chestnut trees and look for signs and symptoms of OCGW and Sweet Chestnut blight. Both are priority pests and pathogens so please report possible sightings via TreeAlert. Healthy tree data is equally important so please do report those too.

For more information and resources on OCGW and Sweet Chestnut blight please check the Observatree website.

Matt Parratt, October 2025