DIAGNOSIS OF ILL-HEALTH IN TREES

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SOOTY BARK DISEASE OF SYCAMORE

Fungus: *Cryptostroma corticale*

Fig. 379

Fig. 380

Damage Type: Not fully elucidated. Probably a combination of poisoning and interference with water transport.

Symptoms & Diagnosis: *Syndrome A:* The foliage of parts or the whole of a tree's crown has wilted; the wilted leaves are dry and faded and cupped upwards. Shrivelled dead, brown leaves hang firmly attached to the twigs (Fig.379). *Syndrome B:* In spring, the whole of or parts of a tree have failed to come into leaf and some parts bear abnormally small, sparse leaves.

Confirmation: (i) *Wood stain:* If an affected branch is cut across or a tree cut down before it is completely dead, patches of green-, yellow- or brown-stained wood, often with a narrow, dark margin, will be found (Fig.380), appearing as long, discoloured bands if viewed in longitudinal section. If the stain involves the outermost wood, the bark will be found to be dead and perhaps showing (ii) sooty bark: patches or strips of bark, roughly proportional in extent to the crown symptoms, may be dead, puffy and blistered (detectable by finger pressure). Some outer bark may have flaked off exposing a layer of black, soot-like powder (spores) within the thickness of the dead bark (Fig.381). (iii) Black bark: late in the development of the disease, large areas of smooth, black, dead bark may be present, perhaps flaking off.

Caution: Severe drought on its own can kill sycamore bark. The stain caused by C. corticale disappears once the wood is dead. Sycamore wood stains readily from other causes.

Status: The fungus is widespread on dead wood but requires long, hot, dry summers to cause disease. Outbreaks

are, therefore, sporadic and concentrated in the southern half of the country.

Significance: Numbers of deaths, even among large trees, can be alarming and the local impact of the disease considerable, but the short-lived and geographically restricted nature of epidemics limits the effects of damage in the long term to tolerable levels.

Host Trees: The disease is almost confined to Acer pseudoplatanus, but has occasionally been seen on other maples. The fungus has been found growing saprophytically on Aesculus hippocastanum in this country and on other broadleaves abroad.

Infection & Development: The fungus is an endophyte, that is to say it can exist in a latent state in the wood of healthy trees for many years, causing no symptoms. However, if high temperatures and prolonged dry weather prevail it can spread rapidly in the wood and cause the disease. The extent of this spread is evidenced by the stain in the wood but external symptoms do not appear until the outermost sapwood rings are invaded (Fig.380). Then wilting sets in, bark dies, and the fungus spreads through it to form its very extensive fruiting structures. On maturity, these break open as the thin, blistered outer bark flakes off and the exposed powdery spores drift away in the air. The exposed black inner bark weathers to a smooth surface and eventually falls away.

Fig. 381

Control: *Therapy:* None available. *Prevention:* Not possible, but the impact of outbreaks will be lessened if, in the southern half of the country, sycamore, where used, is mixed with other species.

Remarks: London was the first recorded location in Great Britain both for the fungus, in 1945, and the disease, in 1948. It was possibly introduced from North America as it was first described from maple logs in London, Ontario in 1889.

Further Reading: Young, 1978.