



## Tree pathogens and our changing landscape - a tale of human carelessness?

Stefan Buczacki

Some years ago, a distinguished expert on the British landscape called Oliver Rackham remarked that in those areas spared urban development, Sir Thomas More or even the Emperor Claudius would still recognise the English countryside, so unchanging had it been down the centuries. He was probably right, at least until around 1969.

I visited an area of rural Gloucestershire that year and noted symptoms on hedgerow elm trees I did not recognise. The foliage was turning yellow, then brown while branches and some entire trees were dying (**Figure 1**). The cause was to become probably the best known and most infamous of all plant diseases in Britain, at least in the public perception. It is called Dutch elm disease - albeit it is unfair to blame the Netherlands! The name derives from the fact that research on the problem was done there in the 1930s. Yes, the 1930s; the disease caused by the fungus *Ophiostoma ulmi* that is spread by bark beetles carrying its spores had first appeared in north-west Europe around 1910, reached Britain in the 1920s and was serious for many years but then died down to occur sporadically and cause only restricted branch damage, but rarely tree death.

There the matter should have rested but, unfortunately, we had no restriction on the importation of elm timber with the bark intact and in 1969, elm logs from Canada were landed in Britain infected with a related but much more virulent fungal species,

*Ophiostoma novo-ulmi*. The rest, as they say, is history.



**Figure 1.** Dutch elm disease, now known to be caused by *Ophiostoma novo-ulmi*, early crown symptoms, near Newent, Gloucestershire, 15 June, 1969; one of the first outbreaks in the UK.

Lessons must have been learned; such a thing could not happen again. But, Oh dear! Why was more notice not taken of those people - Oliver Rackham was one - who warned about the continuing threat to the country's woodlands from the almost unregulated global transport, not this time of timber, but of trees and shrubs for commercial and garden use? And the consequences became apparent in 2012 when ash trees - and it was ash that had largely taken over elm's role in hedgerows - began to die from a disease that

had been ravaging continental Europe for several years. Ash dieback and its fungal cause *Hymenoscyphus fraxineus* had arrived (**Figure 2**). The trees affected had been imported from European nurseries within the previous five years. So serious was it considered that it gained the rare distinction for a plant disease of being reviewed by a meeting of the Government's emergency Civil Contingencies Committee COBRA. An immediate embargo was imposed on the importation into Britain of ash trees. The stable door was being shut once the horse was inside!



**Figure 2.** Shoot death on hedgerow ash caused by *Hymenoscyphus fraxineus*.

Surely history could not repeat itself again. Yet, practically coincident with the arrival of ash dieback but initially unnoticed, perhaps the biggest impact of all on our landscape was under way. Several species of the pathogenic organism *Phytophthora* (related to the cause of potato blight) were beginning to create havoc, at first on rhododendrons, then other ornamental shrubs, then native woody plants like bilberry, then such unrelated trees as larch, alder, sweet chestnut, beech, birch, western hemlock and Douglas fir and Lawson cypress (**Figure 3**). To add to the problem, some *Phytophthora* species appeared themselves to have hybridised and there is some concern that oaks could be among the next victims.



**Figure 3.** Bark symptoms of attack by *Phytophthora lateralis* on mature *Chamaecyparis lawsoniana*.

Where should we apportion blame - inadequate plant quarantine regulations or insufficient staff to implement the regulations that do exist? Surely it lies with the impossibility of controlling almost anything at today's relatively open borders. If lorry loads of illegal immigrants can arrive undetected, what hope for finding tree pathogens? Might research keep us ahead of the field? Watch this space because our landscape is now changing so fast that we, let alone the Emperor Claudius, may soon not recognise it.

#### AUTHOR PROFILE

**Stefan Buczacki** is a writer, broadcaster and consultant, the author of over 60 books on horticulture, natural history and biography. He read botany at Southampton University and forestry at Oxford and spent fourteen years as a research plant pathologist. He is past-president of the British Mycological Society, an Honorary Professor at Liverpool John Moores University and holds honorary degrees and awards including the RHS Veitch Memorial Medal in gold and the Garden Media Guild Lifetime Achievement Award.