

NEWS AND VIEWS

Threat to the British Elm

SINCE the introduction of elm disease into Britain in the early years of this century, the pattern and impact of its development have been unique. The establishment of epidemic conditions in the south of England following soon after the first record of this disease in Hertfordshire in 1927, and its dramatic decline in the late nineteen-thirties, have been well described by Peace (*For. Comm. Bull.*, No. 33, 1960). Following this and until about 1967, the disease was apparently quiescent with widespread infection rarely causing more than slight damage to tree crowns. The development of epidemic conditions in several areas of the south of England and Wales has recently received much publicity, but the inadequate data available on the early stages of the present epidemic are perhaps symptomatic of a deficiency in the plant pathology services in Britain at present.

The isolation of an aggressive strain of the causal fungus, *Ceratocystis ulmi*, in Britain described by Gibbs, Heybroek and Holmes on page 121 of this issue of *Nature* is a significant and serious development, particularly in view of the demonstration of its virulence on Dutch clones of proven moderate and high resistance to other strains of the pathogen. Although ominous, this demonstration of increased virulence of the pathogen at least seems to provide some concrete explanation, albeit perhaps partial, for the development of the present severity of the disease in Britain.

The disease in its present severe form has a special importance in several ways. Over large areas of southern England, elms are a major and often the principal tree component in the rural landscape. The erosion of tree populations in non-forest conditions in Britain is progressing at an alarming rate, as a result of many factors quite unrelated to disease and principally as a consequence, directly or indirectly, of mechanization and economic developments in agriculture. cursory examination of the landscape from the motor car or train gives rise to little cause for immediate pessimism, except in certain areas, but even the most superficial assessment of the age/class distribution of trees in hedgerows reveals a serious situation which will undoubtedly become only too evident generally in the next fifty years or so. The Forestry Commission's *Census of Woodlands 1965-67* (1970) records a reduction in the percentage of saplings in the general population of hedgerow trees in central and southern England from 31 to 23 per cent in the period between 1951 and 1965, and indicates that this decline will continue in the future. In this context, the rehabilitation of elm populations in the present seriously diseased areas is likely to be less successful than after the epidemic in the 1930s. Elm has a special social and structural significance in some of the new towns and other new development areas in Kent and Essex, counties which are both severely affected by elm disease, and the high mortality of street, garden and park trees in these areas will have a very serious and lasting effect on general amenity.

The effect of elm disease on the home-grown timber industry is uncertain. The geographic pattern of saw-

log supply is likely to be much affected, but unless the disease becomes established at an epidemic level over much larger areas of the country, the effect on overall availability of home-grown elm timber is likely to be small. At present and in the immediate future, the glut in supply arising from control felling of infected trees, and other difficulties imposed by the requirements of the elm disease orders, have created and will continue to produce anomalous market conditions. There is, of course, concern for the effects of the disease on general ecological patterns of plant and animal life, but although these effects will undoubtedly be profound, assessment of these influences will be difficult until the long-term or permanent effect on tree populations becomes clear.

Ecologically, the decline of the elm on any considerable scale in Britain, whether or not caused by disease, is likely to affect the rate of deterioration of the human environment directly and demonstrably. The same is true for several other tree species common both in rural and urban areas, notably oak, beech, sycamore, ash, lime, horsechestnut and birch. Some of these trees, particularly oak and beech, have considerable economic importance in timber production, but the amenity and recreative value of all these species, and of many other species of smaller trees with more restricted urban distribution, is incalculable.

The publicity and genuine public concern generated by the serious mortality of elms caused by elm disease have in many ways been remarkable. Unfortunately, this interest has been almost entirely confined to elm, and has done little to stress the potentially delicate position of several other amenity tree species already and potentially subject to disease and pest infestations, or threatened by other drastically adverse factors of the environment. Few people outside the ranks of forest pathologists even know of the epidemic establishment of killing infection by the fungus *Cryptostroma corticale* on sycamore in north-east London in the late 1940s, which declined as dramatically as it arose, but left the fungus established in London and elsewhere. A general decline of ash resulting from unknown factors is prevalent throughout Britain, but no investigation into its extent and cause seems to have been initiated. Amenity species, including those with some considerable economic value, fall into the research void present between the activities of the various research establishments concerned with horticultural crops (although, even here, tree nursery problems receive comparatively little attention) on the one hand, and the work of the Forestry Commission's Research Division with its primary (but not exclusive) concern with forest tree species, on the other.

This dearth of research activity on amenity trees applies to a wide range of physiological and cultural, as well as pathological, problems. The value of amenity tree nursery stock in Britain, estimated recently to exceed a hundred million pounds, and the large sums spent by public and other authorities on the establishment and care of larger trees surely warrant the development of commensurate research and extension services.—R. G. P.