Transatlantic Perspective on Exotic Plant Pathogens

In the editorial in the October 1987 issue of PLANT DISEASE (p. 863), Charles L. Wilson reviews the problems posed by exotic plant pathogens and asks research plant pathologists to provide "better strategies and tools to fight the good fight." In his support, may we offer a transatlantic perspective?

First, in Europe, as in North America, tree pathogens feature large in the list of potentially damaging exotic organisms; a very high proportion of the dangerous plant pathogens listed by the European Plant Protection Organisation are pathogens of trees. There are various reasons for the emphasis on tree pathology, but one, not mentioned by Dr. Wilson, is that biogeographical changes in the Northern Hemisphere over the last 50 million years have led to the evolution of a number of major floristic regions, each containing different species within the same genus (pine, spruce, oak, etc.). When a coevolved tree pathogen is transported from one of these regions to another, it frequently encounters tree species that are closely allied to its original host. In the ensuing confrontation, the balance may well be tipped very much in favor of the pathogen. It is important that administrators as well as scientists should be alive to this process, as it helps to explain the phenomenon, touched upon by Dr. Wilson, that many of the most destructive introduced pathogens cannot be identified as being damaging in their area of origin. If plant quarantine regulations are based only on known pathogens, they will not safeguard our forests!

Second, from our experiences in a Europe that is currently being ravaged by Dutch elm disease and cypress canker, that is seeking to limit the expansion of epidemics of canker stain of plane and of chestnut blight, and that is threatened by, inter alia, oak wilt and pine wilt nematode, we would like to indicate three approaches to the problem with which we have been associated. They are:

1. To enlist the aid of pathologists in a particular forest region to evaluate the export risks posed by their endemic and epidemic pathogens;

2. To conduct defensive research abroad on particular exotic pathogens where risks of damage to our forest region are deemed to be high; and

3. To monitor the changes that occur in the population of introduced pathogens to provide a basis from which to predict their behavior and to assess the potential for the development of a more stable relationship with their new hosts.

The scope for investigation along these lines is of course almost limitless, whereas research funds are, as we all well know, very much limited. Nevertheless, it is important to sustain awareness of these issues among plant health administrators and research directors and to keep the continuing threat posed by exotic pathogens in sharp focus—especially at a time when concern over pollution-associated tree problems is tending to deflect minds and resources elsewhere.

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