

rect for the movie. The slides were also redone so that they complied with regulations. The narration was also revised accordingly.

On behalf of our ad hoc Committee, on August 12, 1974, in Atlanta, Georgia, I requested from the I.S.T.C. a grant of \$2,000 in order that the slide presentation be made into a training film. The I.S.T.C. then co-sponsored this movie with the Society of Municipal Arborists. The S.M.A. at their conference in Chicago granted us \$2,100 toward production cost of the movie. The National Arborist Association gave our committee \$500 and the American Society of Consulting Arborists \$100 toward the production of the movie.

By August 29, we were filming the new movie using the Motion Picture Students from Fort Monmouth at the Holmdel Arboretum. We filmed again on September 22 at the Arboretum and much of the basic part of the film was completed. Since this was the last student class to be available, the rest of the film was done by Mr. Welle, an instructor from the Fort Monmouth Motion Picture Division.

By December 1974, all the filming was completed: the editing was completed by mid-

January. The entire committee viewed the finished work print for one last time to make sure that all scenes were correct and within the pesticide guidelines and recommendations.

Peg Crooks, our narrator, and I went to New York City to Magno-Sound Studio to have the sound recorded and synchronized with the film. This recording was then sent to Calvin Laboratories in Kansas City, Missouri to be blended with the music and put on the answer print. Because of some technical problems with the blending and mixing of the narration and music, and the processing of the answer prints, it was not until May 1974 that we were able to receive an acceptable print. So a year and a half after we began, we had our movie.

The cost of prints is \$100 per copy. Paid to the Pesticide-Safety Film Fund, c/o David C. Shaw, 20 Court Street, Freehold, New Jersey 07728.

*Shade Tree Commission
Monmouth County, New Jersey*

ABSTRACT

Brasier, C.M. and J.N. Gibbs. 1975. **Highly fertile form of the aggressive strain of *Ceratocystis ulmi*.** *Nature* 257(5522):128-131.

The ability to recognize the aggressive and non-aggressive strains of *Ceratocystis ulmi* in culture has enabled us to survey the *C. ulmi* population in the field and thereby monitor any variation that might indicate a change in the course of the present epidemic of Dutch elm disease in Britain. When sampling from diseased elm twigs in the outbreak areas, we have found that while most wild isolates can be assigned to the two strains, there also exist in low frequency (about 2%) isolates with some affinity to the 'fluffy' aggressive strain but which produce small black-brown sclerotium-like bodies throughout the culture and are dark centred because of the presence of brown pigment. We show here that these isolates are a highly fertile form of the aggressive strain, with a special function in the perithecial, or sexual stage of the fungus.

The occurrence of the protoperithecial form of the aggressive strain, and the phenomenon of pseudoselfing, reveal previously unknown properties in *C. ulmi* with considerable ecological implications. Perithecia occur naturally in beetle breeding galleries within the bark of diseased elms and the ascospores, together with asexual spores, are thought to be carried by the newly emerging beetles in the spring. Until now it has been assumed that for perithecial formation the absence of an aggressive A type in Britain would mean that the aggressive strain would have to hybridise with the non-aggressive strain, leading to a decline in pathogenicity. It is now clear that this is not the case and that an aggressive B type could undergo pseudoselfing to produce two progeny genotypes, one the fluffy B form, close to the parent itself, and the other the highly fertile proto A form.