

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY

Amherst, Mass.
February 9, 1926

FOREST PATHOLOGY

Mr. Walter Deane,
29 Brewster Street,
Cambridge, Mass.

Dear Sir:

The future of the eastern white pine and chestnut, two of the most valuable timber trees of the Northeast, is seriously threatened by introduced fungous diseases. In the last twenty-five years our extensive and valuable chestnut forests have been killed by the fungus *ENDOTHIA PARASITICA* which came to us from China. The chestnut, as a timber tree, has disappeared from its northernmost range to western Pennsylvania and Virginia and is being exterminated from there southward. Such complete destruction of an important timber tree by a parasitic fungus has never been previously known by man. It brings us to the serious consideration of means of replacing the chestnut with some resistant timber tree if possible. The breeding of races of short-lived field crops resistant to destructive fungous diseases has been accomplished successfully. Races of cotton, watermelon and cowpea have been bred which resist wilt so successfully as to yield good crops on land which is infected so thoroughly that the unselected races of these crops are entirely useless. It is well known to plant pathologists that in areas where a crop plant is ruined by fungous disease outbreaks, there usually are a few resistant plants which manage to survive and in some instances may even approach normal vigor of growth. Such resistant individuals may serve as a basis for selection and breeding for greater resistance. There is no apparent reason why this should not happen with our chestnut also, but it will take many more years to prove it with a long-lived tree than in the case of the short-lived field crops. A beginning has been made in the breeding of resistant chestnut trees which may serve for the production of nuts of satisfactory size and quality. But no resistant tree has yet been found which has the size needed to produce timber.

An effort is being made to find any tree of our native chestnut which may be resistant to the blight. Many such suspected cases are under observation already. A tree to be considered resistant must have had the blight present in its vicinity at least ten years and preferably longer. It should have a considerable portion of its top and branches still alive, and should show evidence of having had the blight on large branches or trunk for five to ten years. It appears to be too much to expect to find a tree which is completely immune to the disease. If all observers who have a chance would keep this matter in mind and report the exact location and size of chestnut trees which seem to be

resistant, there would be a good chance of our finding such trees, if there are any. Dr. Perley Spaulding, Pathologist of the Northeastern Forest Experiment Station at Amherst, Massachusetts, will be glad to receive notes concerning apparently resistant trees. Such trees will be visited and inspected, so far as possible, so that really resistant ones may be watched. This will be done with the idea of finally getting nuts or cuttings from such trees to begin the breeding of even more resistant trees. While such effort to get a resistant timber chestnut may seem visionary, no one can say that it is impossible or even improbable. The former great value of our chestnut in the forests of the Northeastern States is sufficient justification for our exhausting all possible hopes for replacing it on a forestry basis. You may chance to see such resistant trees. Don't fail to report it as it may be of much greater importance than you believe possible.

Very sincerely yours,

Perley Spaulding

Pathologist.

P. S. While not directly mentioned in the above, this letter is a plea not to cut too closely the few remaining partly living chestnut trees. It is obvious that clean cutting of all such trees will prevent their standing long enough to show real resistance to the blight. In cuttings made by you or under your direction leave one or two such trees to fight out their battle and reveal to us resistant individuals, if there are any. F. S.



Spaulding, Perley. 1926. "Spaulding, Perley Feb. 9, 1926." *Walter Deane correspondence*

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