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EXPERIMENTAL FARM PLANTINGS OF ASIATIC CHESTNUTS

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Foresters and farmers often ask the following questions about Asiatic chestnuts: Can they produce nuts and timber? Are they resistant to the blight? Where and under what conditions do they thrive?

In the spring of 1939, the U.S. Department of Agriculture, through its Soil Conservation Service and Bureau of Plant Industry, Soils, and Agricultural Engineering, furnished 132 Pennsylvania and West Virginia farmers about 3;000 one- and two-year-old Asiatic chestnut trees of Chinese, Japanese, and mixed parentage.

Each farmer received from 10 to 25 trees, and was advised about their planting and care by a local S.C.S. farm forest technician. The important points stressed were: A, the selection of a suitable planting site--one that would be favorable to some of our better native hardwoods, if planted; and B, the vulnerability of chestnuts to severe damage by rabbits, deer, and livestock, necessitating screening or fencing until trees reached a height of 10 to 12 feet. Planting chestnuts, it was pointed out, required no special skill and was no more difficult than planting young fruit trees.

In June 1947, 8 years later, a survey was made of fifty of these planting~. The survey afforded an opportunity to observe the practices, errors, and hazards that made the establishment of chestnuts on individual farms a success or a failure.

Of the 50 farm plantings inspected, 25 showed satisfactory disease resistance and growth; the other 25 were complete failures. The ten best plantings occurred on deep, fertile soil with good moisture conditions. Aspect and slope were of little importance. A high survival percentage, rapid growth (about 11 feet average height), good form, and freedom from disease characterized these promising plantings. The survey also revealed the superiority of Chinese chestnuts to Japanese or mixed varieties.

Poor site selection was responsible for at least 25 percent of the mortality among the plantings that failed. The application of fertilizer could not offset the harmful effects of this error. Suppression by overstory hardwoods and competition from sprout hardwoods accounted for 14 percent of the failures. Damage caused by livestock, principally cattle, contributed to 6 percent of the failures. Some farmers allowed cattle to graze among successful chestnut plantings after the expiration of their 5-year SCS fencing contract. The current high market prices for cattle, they felt, did not justify withholding fine agricultural land for forestry purposes.

In June 1959, 20 years after the experiment had started, a visit was made to six of the plantings in West Virginia that looked promising in June 1947. At the first stop, the chestnuts had only recently been annihilated as a result of a local strip-mining operation. At the second stop, the chestnuts were completely suppressed by the older competing native hardwoods, among which they had been planted. No releasing had ever been done.

Inspection of the remaining four plantings, all in Marshall County, W. Va., was highly rewarding. Over 80 percent of the trees had survived. These averaged 8 inches in diameter and nearly 28 feet in height. Because the chestnuts had been planted in the open, the crowns assumed the shapes of orchard trees rather than forest trees (figs. 1 and 2).

The farmers were well pleased with their experimental Asiatic chestnuts. The trees are now bearing nut crops ranging from a peck to nearly a bushel, and are expected to progressively increase their yields from year to year. Some farmers have standing orders for nuts at 50 cents per quart in their local community. The four cooperators felt that the Department of Agriculture had done them a good deed in introducing the Asiatic chestnut, particularly the Chinese variety, to their lands.

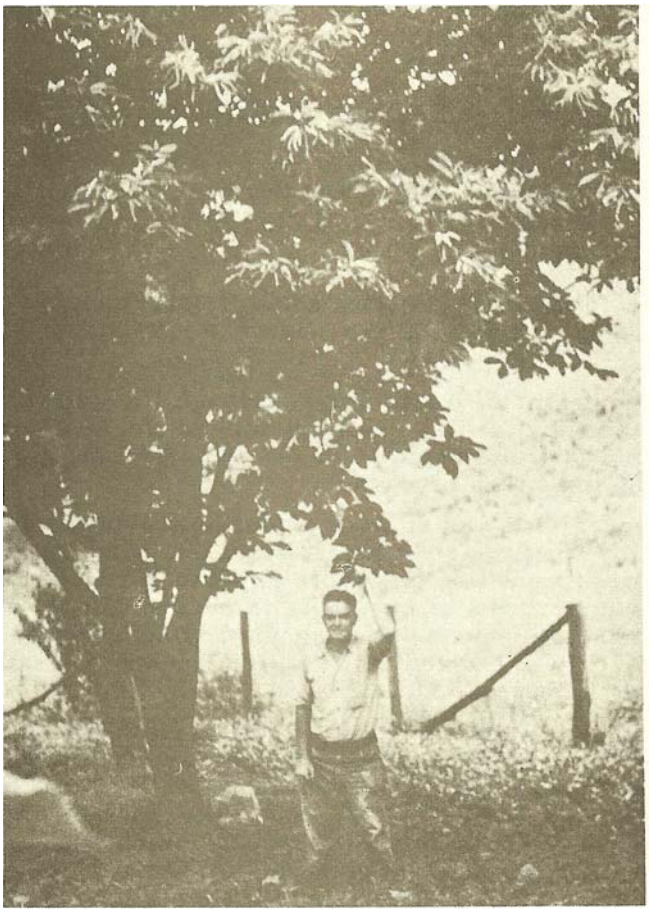

Figure 1.--A West Virginia farmer and two of his eight 20-year-old Asiatic Chestnut trees, which were furnished for an experimental planting by the· U. S. Department of Agriculture in spring of 1939.' The trees, planted in orchard formation are now bearing yearly crops of nuts.

Figure 2.--Another West Virginia farmer, with hi s grandson, one the row of Asiatic chestnuts which he planted 20 years ago. These trees are every year bearing increasing heavier yields of nuts. His only regret, **“I** wish someone had told me to plant these trees farther apart".