

railway round fence posts, hewed ties, and all the uses that follow where sapwood is not objectionable.

Sapwood decayed but heartwood sound, trees dead two to four years.—Use for sawed products, as box and yard lumber, mill products, coffins and caskets, furniture, core stock (veneer), cabinet work, woodenware novelties, and slack cooperage. Where lumber is to be kiln dried, there is no fear that decay will spread, for this process sterilizes the lumber effectually.

Sapwood decayed and heartwood checked but fairly sound, trees four to six years dead. Tannin wood, pulp wood, farm fence posts, lumber or timbers for temporary construction. Wood less sound can be used for fuel. This class of material should never be supplied for the purposes listed in the preceding paragraphs. Where this has been done it has in some regions brought about an embargo on all chestnut.

Chestnut constitutes about 25 per cent of the woods and forests on 33,000,000 acres in the Appalachian region, and represents in merchantable timber fifteen to twenty billion board feet. To utilize this timber before it is destroyed is a national obligation. To delay doing so will in many instances result in a considerable loss to the owner.

R. D. GARVER.

CHINESE Jujube in Southwestern United States The Chinese jujube (*Ziziphus jujuba*) has been grown in northern China since ancient times. It is one of the five principal fruits of that country, and many excellent varieties have been developed by the Chinese. The tree is deciduous, rather small, and somewhat spiny, with firm, shining-green, oval or oblong leaves 1 to 3 inches long. (Fig. 44.) The fruit is a drupe, elliptic or oblong, up to about 2 inches long, with a thin dark-brown skin, and crisp, whitish flesh of sweet, agreeable flavor, inclosing a hard two-celled point stone. (Fig. 45.)

Although a few seedling trees were grown in the United States as early as about 1837, it was not until Frank N. Meyer, agricultural explorer, visited China in 1908 that scions of large-fruited varieties were introduced. As a result of Meyer's work there are now established in California and the Southwest a number of the best and largest-fruited forms of the jujube.

The fruiting of these varieties in this country has stimulated interest among fruit growers and others, especially in Texas and California, and there is an ever-increasing demand not only for propagating material, but also for information concerning culture and utilization of the fruits.

The tree has withstood successfully temperatures as low as -22° F., and as high as 120° . It reaches its best development where the weather is dry, the sunshine brilliant, the nights warm, and the summers long and hot. Large areas of the southwestern United States, therefore, are well adapted to jujube culture. Because of its habit of late flowering, the jujube is free from injury by spring frosts and bears regularly and abundantly. In respect to soil requirements, the jujube has shown that it thrives in sandy alkaline soil and also in

heavy nonalkaline soils, but the best results are obtained on sandy loams and lighter soils.

Varieties of the Jujube

Of the many different varieties introduced by Meyer from China, four have been selected as being distinctly superior to all the others.

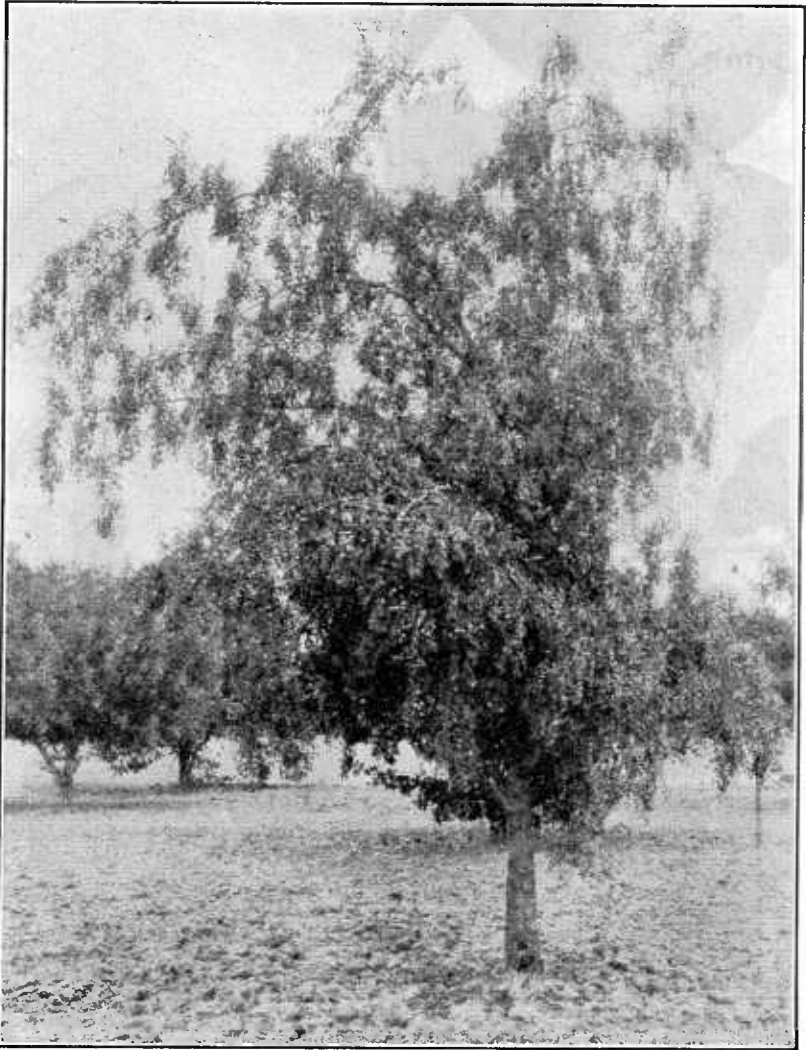


FIG. 44.—Fruiting tree of the jujube at the plant introduction garden, Chico, Calif.
This tree is about 18 years old and is a heavy bearer

These are the Mu Shing Hong (S. P. I. No. 22684), the Lang (S. P. I. No. 22686), the Sui Men (S. P. I. No. 38245), and the Li (S. P. I. No. 38249). These varietal names are the ones sent in by Meyer with his notes. The largest of these is the Li, whose rounded-oval fruits are sometimes 2 inches long and nearly that much in diameter.

The Li also has the smallest pit, considered in relation to the amount of flesh. For general purposes, it is probable that the Lang is the best variety. Its pear-shaped fruits are produced in abundance and

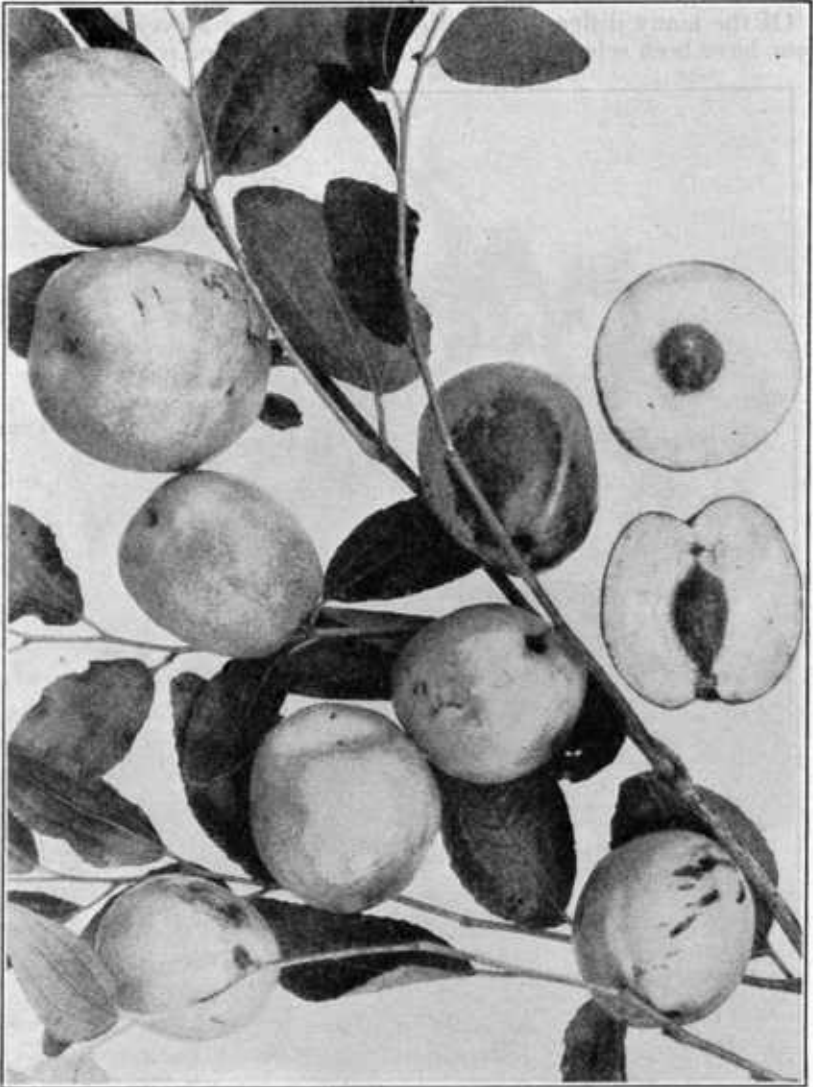


FIG. 45.—Fruits of the Li jujube (S. P. I. No. 38249) grown at the plant introduction garden, Chico, Calif. This variety has the largest fruits of any grown in the United States, has a relatively small stone, and processes well.

are easily processed in sirup. This variety is also one of the most readily propagated. Although these are considered the best varieties at present, there are several others which may prove to offer particular advantages after further trials.

The jujube is used in several ways. It may be eaten fresh or the dried fruits may be ground and added to bread or cake as a seasoning, or used to make a mock mincemeat. The fresh fruits may be made into a jujube butter. Excellent sweet pickles may be made from the skinned whole fruits. The most satisfactory method to utilize the fruits, however, is as a confection. The skin is punctured or scored in some manner and boiled in sirup, the scoring allowing the sirup to penetrate the fruit easily. This scoring may be done with old safety-razor blades held together by bolts with thin pieces of cardboard between the blades. Or a board may be driven full of nails with the points barely projecting from one side, and the fruits punctured by rolling over the points.

How Sirup is Made

The sirup is made by using 1 or 2 parts of sugar to 1 of water, according to taste, the lighter sirup allowing more of the fruit flavor to be retained. The perforated fruits are then placed in the sirup and boiled from 20 to 35 minutes, the larger fruits requiring the longer boiling. The fruits are then allowed to cool in the sirup, after which they are boiled again for the same length of time. Then the fruits are taken out and allowed to dry on trays, either in the sun or by artificial means. Drying should be carried to a point where the fruits are firm, but not too hard.

The jujube compares very favorably with the fig in point of edible matter, total sugars, acid, and ash, and contains more protein than the date. It is therefore of high food value.

The immediate future of the jujube is in its culture as a home fruit, and as such it should appeal to growers and residents generally in the drier portions of the Southern and Western States.

C. C. THOMAS.

CHINESE Elm in American Horticulture

Among the many valuable contributions of northern China to American horticulture the Chinese elm (*Ulmus pumila*) stands out as one likely to prove of increasing value to certain sections of the United States. First introduced in 1908 by Frank N. Meyer, agricultural explorer, from near Peking, Chihli, China, the tree is established in a number of places in this country, and seeds and plants are offered for sale by several nurseries in the South and West.

It is a rapid grower, with slender, almost wiry branches. The leaves are elliptical and smaller than those of the American elm. If allowed to assume its natural habit, the Chinese elm develops numerous branches along its trunk, making a rather dense growth from near the base and resembling in some instances large shrubs. It is one of the first trees to leaf out in the spring and the last to shed its leaves in the fall. Throughout the long season the leaves remain a beautiful green and are remarkably free from the usual plant diseases and insect injuries so common in many of the other elms.

Tree is Very Hardy

It is very hardy and has proved valuable under a greater variety of climatic and soil conditions than any tree yet introduced. Very