against stems and thorns, resulting in so many abrasions and blemishes. It is also of extreme importance in that by reducing air currents it reduces transpiration from the foliage of the citrus trees, and this conserves moisture during periods of inadequate rainfall.

The ideal shelter should be relatively quick growing, remain dense to the base, acquire a height of from 30 to 40 feet, and require no heading back or topping. For permanent shelter on the southern and western boundaries of an orchard the following can be considered:—*Cupressus lawsoniana, C. Benthami, C. arizonica; Pinus radiata (insignis), Cryptomeria japonica,* and *Acmena floribunda.* For intermediate shelter around the various subdivisions of an orchard, which should not be greater than two acres each, *Hakea saligna* and barberry, *Berberis vulgaris* have proved useful. If a wattle is planted as temporary shelter, the black wattle (*Acacia decurrens*) is to be preferred to *Albizzia lopantha,* as the timber of the former is stronger and forms denser shelter.

Time spent now in the preparation of the site for shelter trees and the cultivation and manuring of these trees is well justified, as a citrus orchard should never be established until the shelter is adequate.

Rootstocks and varieties will be discussed in next month's notes.

—A. M. W. GREIG, Citriculturist, Auckland.

Viticulture

Points in Making Cider

Preservation In Bulk

CIDER is undoubtedly best preserved in bottles, and the lighter the cider the greater the risk of keeping it in the wood. However, dry or slightly effervescent ciders (a little life should be kept in the cider if possible) can be kept satisfactorily for some time in barrels that have been varnished or treated with paraffin wax to make them air- and gas-tight. The cider is filled up to the bung, which should be tight-fitting and without sacking wrapped round it, and a little melted tallow or paraffin wax run round it. Bungs four inches or five inches in length dipped in tallow or wax should be used in the cellar; they are much easier to withdraw from the barrel than shorter bungs.

To prevent cider in untreated barrels from becoming quite dry when it is intended to bottle it at a later date, and to assure the generation of sufficient gas to protect the surface of the cider when the barrel is partly empty, an addition of sugar at the rate of eight ounces per month and per barrel of 42 gallons will suffice to keep up the supply of gas.

In commercial cider-making establishments, where large wooden or glass-lined cement vats are used for maturing and storage purposes, carbon-dioxide gas is introduced through a system of pipes and taps from cylinders charged under pressure with the gas to fill up the partly-empty vats and keep the cider from going sour.

Perry

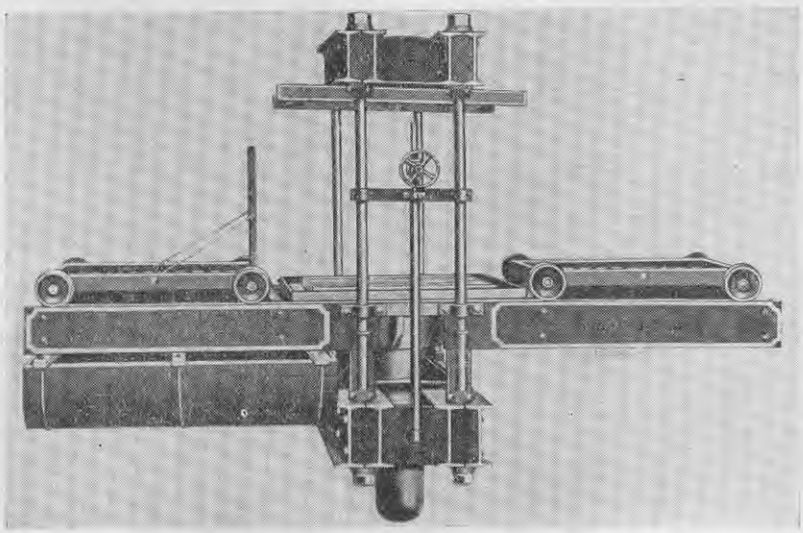
Perry is made from pears in the same manner as cider from apples. It is often employed in the manufacture of imitation champagne. When pears are available they can be mixed in a small proportion with apples for making cider, or a small proportion of apples can be employed in the manufacture of perry. About 10 per cent. of either would not materially alter the nature of the cider or of the perry. Quinces are also recommended for giving an extra flavour to cider. As the juice is rather difficult to extract, it is advisable to let the quince-pomace macerate after grinding, protected from the air, for 12 to 24 hours before pressing; or the quinces can be boiled and then pressed, and the juice added to the apple juice.

Care of Cellar And Plant

The most scrupulous cleanliness should be exercised in regard to the cellar and plant—everything, in fact, that comes in contact with or near the cider. This is most important. Cider is very subject to deterioration through taking up bad odours and flavours from its surroundings, and is extremely susceptible to invasion by vinegar bacteria. The press-house and cellar should be thoroughly whitewashed and the floors concreted—more especially that of the press-house—and well drained. A good water supply is essential for hosing and scrubbing down the mill and press every day, and for cleaning barrels, washing press cloths, etc. Press cloths should be washed daily in water to which a little washing soda has been added to neutralise the acidity, and then rinsed in pure water.

Barrels and vats should be kept quite dry and sweet when not in use. As the barrels are emptied they should be well rinsed out with clean water and allowed to drain, and, when dry, filled with sulphur fumes by burning a piece of sulphur wick or sulphur rings in them and then bunging them tightly. This treatment, which should be renewed about every three months, will keep the barrels free from mould.

When examining a barrel before use to ascertain if it is in a suitable condition for the storage of cider, take out the bung and give the barrel a sharp rap with a stick or bung starter;



A large type hydraulic cider press.