

of water present in the test piece, since this appears greatly to influence results.

From each tree there are cut two or three logs, from each log three or four sticks, two of standard size, the other one or two of larger size. Each standard stick is cut in two, and one end reserved for testing two years later after seasoning. The standard size for the sticks is 4 by 4 inches and 60 inches long for cross breaking tests. There will, however, be made a special series of cross-breaking tests on a specially constructed beam testing machine, gauged to the Watertown testing machine, in which the full log length is utilized with a cross section of 6 by 12 up to 8 by 16 inches, in order to establish the comparative value of beam tests to those on the small test pieces. It is expected that, in the average, 50 tests will be made on each tree, besides 4 or 5 beam tests, or 250 tests for each species and site.

All due caution will be exercised to perfect and insure the accuracy of methods, and besides the records, which are made directly in ink into permanent books, avoiding mistakes in copying, a series of photographs, exhibiting the character of the rupture, will assist in the ultimate study of the material, which is also preserved.

Such work as this, if done as indicated, and well done, will never need to be done over again. The results will become the standard the world over. The strength and value of a given species or even stick will then no longer be a matter of opinion, but a question of established fact, and we will learn not only to apply our timbers to the use to which they are best adapted, but also what conditions produce required qualities, thus directing the consumer of present supplies and the forest grower of the future. —*Scientific American.*

#### EVAPORATING APPLES FOR PROFIT.

All fruit growers, and more especially of the apple, know that much of their fruit is unfit for market, being either wormy, specked, scabby, knotty, or small. Now, all this fruit can be utilized by the evaporator, and placed upon the market at remunerative prices. It is not necessary to have a large establishment to accomplish this result. There are driers with their capacities ranging from one to two bushels of green apples per day up to thousands.

The work can be done just as well and as cheaply on a ten bushel machine as in any of the large factories, and my experience has been that they are the least expensive. Often it will pay to evaporate the whole crop. I have often realized more for culls than for the shipping fruit.

One hand can run a ten bushel drier, with twenty-five cents' worth of fuel, and make fifty pounds of white fruit per day, which, at ten cents per pound, about the average price, would net four dollars and seventy five cents, making nearly fifty cents a bushel, including the day's work, and, at this year's prices, would be over seventy cents, and if the waste is dried, almost a dollar.

Again, one important point thus gained is culling out your shipping fruit, making it grade fancy, and thereby obtain the highest market price for it.

Market only the best, evaporate the rest. Thus you would avoid the breaking down the markets for the green fruit. This is always done by inferior stock being run on the market, and never by good choice fruit. We can, at nearly all times see apples quoted on the market at 75 cents to \$1.45 per barrel. These represent loss to the grower. All of this kind should never go on the market, but in the evaporator. The world is your market for evaporated fruit; you have nearly four barrels of apples in a fifty-pound box that can be shipped just as safely to Alaska, China, or India as to St. Louis, and you need be in no hurry to market it. Next spring is as good as this fall, and often better prices are obtained.

When properly packed, and with proper storage, it can be kept for years as fresh and sweet as when first prepared, except a little loss in color, but even this may be overcome by cold storage.

If prices are as low as they were two years ago, when it was worth only from four to six cents a pound, and the waste and chop less than one cent, it can safely be kept over until there is a shortage like the present, when fifteen cents can be obtained for the white fruit, and four to five cents for chop and waste. The chop is apples sliced just as they are without any paring or coring, and dried; in this the small and knotty apples that cannot be pared are used. The work is done quite rapidly with a machine made for the purpose. Forty or fifty bushels can be sliced in an hour by two hands.

One bushel of apples will make ten pounds of chop, which is now worth four cents a pound.

The waste is the skins, cores, and trimmings from white fruit, which needs no other preparation only to put it in the evaporator, dry it and pack it in sacks or barrels ready for shipment. It is used for making jellies, and usually brings about one-half cent more than the chop. Most of the chop is, I understand, shipped to Europe and there manufactured into fine wines and sent back to this country, and sold at from one to five dollars a bottle. The price is, therefore, greatly influenced and governed by the grape crop in the old country. Many thousands of tons are manufactured each year. Everything can be used, nothing wasted.

A delegate said: "I think still more can be done than the gentleman says. I evaporated some 1,400 pounds of fruit, which sold for ten cents per pound. I made use of every part of the fruit, except the wormy part. Vinegar was made of the waste. I sold some ten or twelve barrels at twenty cents per gallon, \$9.60 per barrel of forty-eight gallons.

"I picked out the choicest to ship and evaporated the culls and seconds, which would have damaged the whole lot if shipped together. The vinegar apples made nearly as much money as any. I netted \$85, using a cider mill that cost \$15. We use a pear corer and slicer to prepare the apples for drying. Wife and two little girls did the work, apples and wood being brought to the house for them.

"Some of the apples kept a year and a half were as white and good as when first put up. No trouble to keep them five years. We used about a tablespoon of sulphur to a half bushel. When dry, we put the fruit right into flour barrels, and headed it up tight. Some kept eighteen months are as nice and fresh as when first put up. They are better to cook than