

tree being its centre. Then by a rope of straw or some soft material the tree should be braced firmly between the protecting stakes, and thus it is being kept from being whipped around by the wind. Should periods of drought ensue during the growing season it would be well to rake the mulch one side, and saturate the ground around the young tree with an abundance of water, and the mulch afterwards spread as before. Such watering is often essential, and it should be thorough."

EXPANSION OF LUMBER BY MOISTURE.

The supreme difficulty encountered by all manufacturers of wooden ware, materials, buildings and articles of every kind results from the shrinking and swelling—or, to put it more elegantly, the contraction and expansion—of wood when exposed to alternations of dry and moist situations. It may be asserted as a fact that no process of seasoning and no condition of dryness will render any wood unchangeable under varying conditions or moisture and dryness. The nearest approach probably that can be made to it is the oven-baked process for the closest grained of the hardwoods, such as ebony, lignumvite, boxwood, mahogany, etc., used by the instrument makers. Still, a general precaution, born of long experience, is observed by those who own them. In this connection there is a question that has never been settled in the public mind, and that is, does dry or seasoned lumber "stretch," or expand lengthwise when exposed to dampness, and "draw up" or contract in length after drying? Most people labor under the belief that lumber or timber is not effected endwise, or with the grain, by moisture and dryness, but such is not the fact. The expansion and contraction in the direction of the grain is not nearly so much as in a transverse direction, but is quite perceptible, and is common in a greater or lesser degree to all woods. A gate in the centre of a line of plank fencing that has an inch or more space between the posts will often be found difficult to open in wet weather. A long line of fencing put up with green lumber will often pull apart in one or more places in seasoning, more especially if the line of fencing crosses a knoll or sharp elevation. But the strangest phenomenon connected with the expansion and contraction of lumber is the withdrawal of a nail driven up to the head into two different pieces of wood. For instance, where white oak fencing plank are nailed to cedar posts, the nails will in time be drawn entirely out and fall to the ground. Unpainted poplar siding nailed to green oak studs will not loosen the nails. The acid in the oak rusts the nail so as to fix it immediately but will rot the poplar around the nail until the plank can be pulled off over the heads of the nails. No process of drying lumber will entirely prevent the expansion and contraction of lumber in any direction, but that which has been thoroughly air-dried and exposed for a long time to varying conditions of moisture and dryness will possess the minimum defect in this regard. —Exchange.

THE OAK.

The oak has not inaptly been called, says *Popular Science News*, the "king of the forest." The size and age to which it attains are noteworthy. Humboldt mentions an oak, near Berlin, which measured nearly ninety feet in circumference near the base. A tree in the same neighborhood was blown down in 1857 which measured 68 feet in circumference. Their ages have been estimated at from 1,000 to 2,000 years. Gilpin, in his "Forest Scenery," mentions a few old oaks. Of the most venerable of these monarchs is one in Norfolk, reputed to be the "Old Oak," during the reign of William the Conqueror, said to be 1,500 years old, a plate attached to the tree bearing the inscription: "This oak in circumference at the extremity of the roots is 70 feet; in the middle, 40 feet." This was in 1820. The "King's Oak," in Windsor forest, is represented as having been a favorite tree of William the Conqueror, and the largest in the forest, and is being reputed as being upwards of 1,000 years old, measuring, some twenty years ago, 26 feet in circumference at three feet from the

ground. An oak in Dunnington park ran up fifty feet before a limb appeared, the base squaring five feet. An oak in Holt forest, in Hampshire, measured, in 1859, thirty-four feet in circumference seven feet from the ground. An oak felled in Norbury, as stated by Dr. Platt, was of the enormous size of forty-five feet in circumference: so that when it was lying upon the ground, two men mounted upon horses, on opposite sides, were concealed from the view of each other. He also mentions an oak in Keicot, beneath whose branches it was estimated that 4,274 men could have stood. The largest sum ever realized from the sale of one tree was that of the Gerona oak, a few miles from Newport, Monmouthshire, felled in 1810. According to the *Gentleman's Magazine* for 1817, it was sold standing for 100 guineas, under the belief that it was unsound, and was resold for £405, and subsequently was sold again for £675, and was found to contain 2,426 cubic feet of timber. Its bark was estimated to weigh six tons. The Wadsworth oak in Genesee, N. Y., near the river Genesee, was a giant of the forest. It grew in one of the most fertile valleys of the Middle States. Its trunk measured thirty-six feet in circumference, and the tree was a marvel to all who saw it. In Flushing, L. I., formerly grew a rare specimen of the oak. It measured a little short of thirty feet in circumference.

The oak is acknowledged to be the most picturesque of trees. As a shade tree it cannot be excelled. Of the oak family there have been enumerated by botanists more than one hundred and thirty species. Michaux the elder described twenty and Michaux the younger twenty-six species of North America; and Nuttall thirty-two. Emerson found twelve species growing in considerable numbers in Massachusetts. DeCandolle in his "Prodromus" described 281 species of the oak. The first to be named for planting is the white oak. This tree needs but little description as it is well known. Emerson said of the white oak that it is beautiful in every stage of growth, and is therefore a most desirable ornamental tree, and concludes with these words:—"Let every one who has an opportunity to do so plant a white oak." He measured one of the species in Bolton that was nineteen feet in circumference just above the surface of the ground, and one in Greenfield that was 17½ feet in circumference. The soil suited to their growth is a strong tenacious loam. There is ample room in the oak family to suit the most fastidious taste.

WOOD AS A BEVERAGE.

A sign in a Third avenue grocery window in New York City, read: "Pure Russet Cider, 4c. a Quart."

"That cider was never moved by a breath of country air," said a man who was passing the window, "and it was never any nearer an apple than it is now as it stands in the barrel in the rear of the grocery."

"Made of sulphuric acid, then," suggested a companion.

"No; that's too expensive."

"What is it made of?"

"Sawdust. I work in a shop where it's made. Pure apple cider is worth thirty cents a gallon. Sawdust cider costs about one-fourth of that. We take the sawdust from a couple of wood yards—hemlock, hickory, maple—every kind, just as it comes. We dump it into a big retort and heat with a coal fire. Just forty-seven per cent. of which boils over is crude vinegar. It has to be purified a bit and boiled down a little, but it is pretty good vinegar. When the wood reaches a certain point in the heating process it becomes charcoal, and is cooled off and sold to filter makers. We can beat the grangers on the vinegar business and not half try."—N. Y. Tribune.

VALUE OF A TREE.

A German railway which is building an extension at Niederlahnstein has just paid six hundred dollars for one cherry tree. The owner asked nine hundred dollars for it and proved that it crops sold for sums equivalent to the interest on that amount. This is really the true way to estimate the value of a fruit tree. The value of a business or a house is usually estimated by regarding the annual income

derived from it as interest on the capital and there is no reason why the value of an orchard should not be estimated in the same way.

No doubt this tree was exceptionally fruitful, but if any Canadian farmer will estimate the average annual crop obtained from one of the best fruit trees in his orchard, ascertain its market price and then calculate how large a sum of money must be put out at interest in order to secure as large an income, he will be surprised at the result. Suppose the rate of interest to be five per cent., then a tree whose average annual crop sells for ten dollars is worth two hundred dollars. If the rate of interest be four per cent. the value of the tree is two hundred and fifty dollars. Of course in making calculations a certain allowance must be made for the aging of the tree. A tree may have a certain value apart from its crop as timber, and it is important to know how long it may be expected to bear fruit and what its value as timber will be after it is cut down. Certain kinds of wood are very costly, and trees that do not bear fruit at all often command very high prices. Unfortunately the profit from trees of this class usually falls to speculators or middlemen instead of to producers. There are men who make a business of inspecting logs and buying up the valuable ones, often paying a mere trifle for what they are sure of selling for a small fortune. A good walnut log is sometimes sold at a very high figure. It would pay the farmers of Canada to make a thorough study of tree culture, the best methods of packing fruit and the value of various kinds of wood. If farmers realized the real value of trees of all kinds they would treat them tenderly and with care and would view with horror their indiscriminate cutting. They would take care to replace the large trees that they cut down either for use or for sale, by young shoots that would grow into valuable trees.

Aside from the direct income to be derived from an orchard or a plantation of walnut or other high priced trees, if the farmers in general devoted more attention to tree culture they would all be directly benefitted. It has been demonstrated by experience both in Europe and America that after a country is denuded of its trees seasons of prolonged drought and annual spring floods are certain to follow. Some districts of Europe formerly renowned for their fertility are now desert wastes, owing to the destruction of trees, and in some sections of the United States similar results have already been noticed. The floods on the Ohio and Hudson rivers have only occurred during recent years, and all who have studied the matter unite in saying that they are due to the destruction of the trees. The snow in an open, treeless country melts rapidly instead of gradually, as in a well wooded country.

So far as the value of a tree concerns only the individual the Government is not called upon to interfere, but it is evident that each tree has a general as well as a special value, and it is the duty of the Government to see that this general value is not converted into a source of general loss.

American newspapers are almost unanimous in advocating the free admission of lumber into the United States, and the chief reason they advance for altering the tariff, in this particular, is the fact that the forests of the United States have almost disappeared, and that unless a stop is put to the cutting of trees, floods, drought and famine will inevitably ensue. With the abolition of the American duty on lumber there is certain to be a wholesale slaughter of trees in Canada, and the Government should take every precaution to prevent disastrous results.—*Montreal Star*.

This question has been asked of contemporary whether boards ever shrink lengthwise—that is, with the grain or not. The same journal answers: "The effect of moisture upon the length of boards is the reverse of its effect upon their width. That is, when the board is wet it is shorter than when it is dry."

The oldest and the largest tree in the world is a chestnut near the foot of Mount Etna, Italy. The circumference of the main trunk is 212 feet.—N. Y. Times.

Perhaps the most extraordinary that success has been achieved in modern science has been attained by the Dixon treatment for Cataract. Out of 1,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. This is none the less startling when it is remembered that not five per cent. of the patients presenting themselves to the regular practitioner are benefited, while the patent medicines and other advertised cures never record a cure at all. Starting with the claim now generally believed by the most scientific men that the disease is due to the presence of living parasites in the tissues, Mr. Dixon at once adapted his cure to their extermination; this accomplished the Cataract is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Cataract in this manner, and no other treatment has ever cured Cataract. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure, the majority of cases being cured at once treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 305 King street west, Toronto, Canada, and enclose a stamp for their treatise on Cataract.—*Montreal Star* 17/22.

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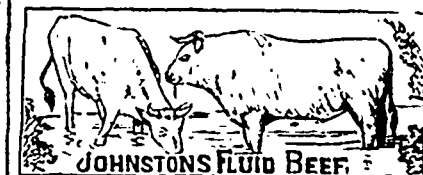
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