

walnuts (over ten thousand) sown in the district of Montreal within the last two years. He based his calculation on the number of bushels imported by Mr. Wm. Evans, seedsman, of Montreal, who has taken much interest in the matter. Mr. Joly said he felt a sense of responsibility toward those who had made the experiment at his request, and would tell them all he had learned on the subject by eighteen years personal experience. He showed samples of black walnut fifteen years old, for which he had been awarded a medal at the Chicago Columbian Exposition. Though he had not yet received that medal, the mere fact that our black walnut was so much appreciated by competent foreign judges ought to be an encouragement for us. Those trees had begun to yield nuts when twelve years old, and he showed young trees grown from these nuts, one, two and three years old, of a fine vigorous growth.

Then he came to the difficulty experienced in transplanting the black walnut, owing principally to the great length and depth of the tap root; showed several samples illustrating the way in which the natural downward direction of the tap root could be altered, by placing a flat stone or other obstacle under the nut when sown, so as to send the tap root horizontally near the surface, instead of letting it run down perpendicularly to a great depth. He preferred, however, cutting the tap root about ten inches or a foot under ground, with a good neat cut, removing every wounded part of the smaller roots, and he exhibited several samples, showing how rapidly a number of new roots had formed all around the end of the old root when that end had been carefully trimmed. He then alluded to the fact that the head of the black walnut very often dried up after transplanting, but this was no loss, as, by allowing one of the buds lower down on the stem to develop itself, and removing the next year the dead wood above it, one secured a fine straight leader; in fact, he often removed the head when growing, if he was not satisfied with the shape, thereby improving the tree.

Of course, it was better to avoid transplanting the black walnut, by sowing the nut at once where the tree was destined to grow, but for a large plantation that was not always practicable, as it required the previous preparation of a large extent of ground, and much more trouble in weeding and looking after a number of little seedlings scattered over that extensive ground than if the same number of seedlings had been growing close to one another on the limited surface of the seed bed. Furthermore, as only a certain portion of the nuts sprouted, one could not rely on a regular plantation, when sowing them at once where they were meant to remain. It would be a good precaution in the latter case to sow three or four nuts in each hole. Beware of squirrels; they are very fond of the nuts and are guided by a wonderful instinct in looking for them in the ground. They never make a mistake, do not fumble to the right or left, but go straight to the spot where the nut is hidden in the ground.

As the burl, that part of the tree which is found underground, is of the greatest value, selling by the pound weight when cut up in thin strips for veneering, it is a question whether transplanting, though not affecting the ultimate success of the remainder of the tree, may not interfere with the full development of the burl. Time will show. He drew attention to the beautiful tracings and patterns on the burls of the black walnuts he had exhibited at Chicago.

As for the severe cold of our Canadian winter, Mr. Joly's experience tends to show that it affects those parts of the black walnut, the roots, which one would think safely sheltered under ground, much more seriously than the stem and branches, which stand out boldly and with no protection, exposed to the icy breath of the north winds. As the black walnut grows very rapidly, sometimes it does not mature the whole of the summer's growth, and a few inches at the end of the new branches may get burnt by the frost, but the damage is scarcely noticeable.

On the other side, one look at the tap root, which is much thicker than the stem, shows how soft and spongy its composition is when young, and how much water it can absorb and retain. In exposed places, where the wind sweeps away the snow as it falls, and leaves the ground completely bare, the first great frosts congeal suddenly the water in the roots, and cause

them to expand and burst the bark that covers them, separating it completely from the roots and leaving them bare. This kills the young tree as assuredly as if the whole bark was stripped off the stem. It took some time before he could account for the death of many promising young trees, as he was looking for the cause above ground; the moment he looked under ground, and saw the roots stripped of their bark, the remedy suggested itself at once—to retain the snow as it fell at the foot of the trees, by preventing the wind from sweeping it away. Either a fence or hedge or some stones, or any other obstacle answers the purpose equally as well. Since then he has not lost any walnut trees from that cause.

The last point was the care of trees after planting them. In the open, along the roads, avenues, and in isolated groups, all trees, except fir trees, grown solely for ornamental purposes, require pruning. Planted in close order and in large numbers, after a few years' growth they prune themselves. Mr. Joly alluded to the careless habit of pruning observable in so many places, the leaving of stumps too long to be covered by the growing bark before they began to rot. He illustrated his meaning with samples, showing the inevitable progress of decay from the time when a branch had been removed, leaving a stump, until that stump began to decay; then he showed that decay, penetrating gradually into the stem, reaching the heart and finally killing the tree.

Close pruning was the only safe pruning. He showed eight samples of good pruning: In the first the branch (a large one several inches in diameter) had been cut as close to the tree as it was possible to cut it; in the second, the bark was beginning to form like lips round the wound, and each successive sample showed the drawing closer and closer together of these lips, and the gradual healing of the wound until in the last it had completely disappeared. A ninth sample showed by a cross section of a wound so healed how thoroughly the tree had recovered from it.

In conclusion, Mr. Joly made a strong appeal to the present generation, asking them earnestly to repair the damage done to the forest by those who had preceded them, telling them that, if they did not all live long enough to enjoy the fruit of their labor, their reward would be in the feeling that if those who came after them would reap the benefit of their work, it would not be lost.

#### COMPRESSED WOOD.

THE enormous advance which has of late taken place in the price of some of the hardwoods required in various special branches of trade, says the English Mechanic, has directed attention to the possibility of producing some less expensive material as a substitute, and in one branch of trade this has been carried out with very successful results.

For the manufacture of loom shuttles boxwood has hitherto been very largely used, but the price of this description of wood has become almost prohibitive, and it has been found that by compression of cheaper classes of timber—teak being about the most suitable for this purpose—a substitute meeting all the requirements can be obtained.

For carrying out this purpose, Sir Joseph Whitworth & Co., of Manchester, have completed for Robert Pickles of Burnley, a powerful hydraulic press to be used in compressing timber for loom shuttles. This press consists of a strong cast-iron top and bottom, with four steel columns and steel cylinder, with a large ram. In the center of this ram is fitted a smaller ram, with a rectangular head, fitting into a die which is placed on the top of the large ram. The timber is put into this die, and a pressure of fourteen tons per square inch is applied. The pressure is then relieved, and the large ram descends. The top pressure block, which fits the die, is then removed, and the small ram rising pushes the timber out at the top of the die.

The timber so treated is made very dense and uniform, and so close-grained that it is capable of taking a very high finish. For the manufacture of shuttles it has been found as good as boxwood, and there is no doubt it might be applied to other branches of industry where expensive hardwoods have been used.

#### DRY ROT.

DRY rot is about the worst enemy timber has. In fact, if attacked by it, the fall of the wood is only a matter of time. The struggle may be long or short, but dry rot is always the victor. Every reader knows that, and if he be an owner—we do not say a builder—of property, he bears the acknowledged fact well in mind, and does everything he can to prevent it occurring. It does seem strange to say it, but dry rot is damp rot, and occurs only where there is damp. This may seem stranger still, since dry rot has been thought to occur in dry places. The places though were only apparently dry, or the wood was damp. What are the causes of this fell complaint? It may be due to the fact that a parasite has entered through a branch wound in the tree while standing in the forest, and continues to grow in the tree even after it is cut down, providing the wood contains a portion of its moisture; such wood will suffer from dry rot when used. Perfectly sound timber may be infected during the time it is lying in the forest, as, for instance, when peeled timber is in immediate contact with the ground. Every timber merchant knows that the bottom plank of a stack is often covered with the white fungus, a fact which illustrates the above point. Peeled timber piled upon supports and exposed to the air throughout, stands little chance of being affected. The germs of dry rot may be produced, though, in timber exposed to the heat of the sun. The wood cracks and the rain enters, carrying with it any spores (seeds) it may contain. The wood then swells and the cracks close, and decomposition enters upon its first stages. Thus timber merchants and others can not be too careful about piling logs, round or square, or timber and planks, and of protecting them from rain and heat, that is, provided they desire to have perfect timber. It is maintained by authorities who know much more upon the subject, that dry rot is also more likely to affect timber felled in summer, than timber cut in winter. Winter felling takes place in the lowlands (abroad) and in the less elevated mountains. In these districts the timber is chiefly removed from the forest by land, after it has lain with or without the bark. Such timber is either free from spores, or should it contain spores that have entered by cracks formed in the alburnum (sapwood) during drying, it is asserted that it afterwards remains dry, and therefore sound, because the spores are unable to germinate in dry wood. On all the higher mountains felling takes place in summer. The wood is peeled and piled on supports, and in winter is conveyed on the snow to the streams, and rafted in the spring. The timber cracks just after felling, and the spores enter. During floating, the logs are saturated and the cracks close. On reaching the saw mills, the logs are indifferently piled all together, and do not dry; while the summer weather is suitable for the germination of the spores; again the initial stages of dry rot commence. Red stripes in timber and brown-colored wood are sure signs that the stuff will suffer from dry rot when used.—Timber News, Liverpool, Eng.

#### SOME STRONG FOREIGN WOODS.

ONE of the strongest timbers in existence is said to be the Borneo ironwood, whose breaking strain is 1.52 that of English oak. It is of a dark brown color, turning to a deep red when seasoned, and becoming as black as ebony on long exposure. It neither swells nor shrinks under any degree of dryness or humidity. The white ant and teredo fail to perforate or destroy it. It weighs 80 pounds per square foot, that of lignum vitae 83 pounds, boxwood 88 pounds, ebony 74 pounds, and African oak 62 pounds. The Quebarcho wood in Argentina, is said to have extraordinary durability. Posts that have been in the ground one hundred and fifty years, in soil alternately sodden by tropical rains or parched by great heat, were found to be in sound condition. This wood is free from attacks by insects, does not decay and is not compressible, and weighs 78 pounds per cubic foot. These qualities make it a splendid material for railroad ties.

John Nicol, jr., Queensboro, Ont.: "I would not be without the CANADA LUMBERMAN for twice the price of it."