

AN INDESTRUCTIBLE TIMBER.

The Western Australian timber is attracting the attention of European manufacturers and builders on account of its strength and durability, and the *Timber Trades Journal* has undertaken to collect all reliable data, bearing upon the subject, from which we learn the following:

Analyses made by Prof. Abel, in England, show the valuable property of the timber which enables it to resist decay, and at the same time form a vegetable poison to insect life. Prof. Abel says: "In accordance with instructions received, I have made a qualitative analysis of sundry specimens of the Jarrah, with a view of obtaining from its chemical composition, actual proof of the principle which renders the timber impervious to the action of dry rot, and proof against the attacks of the *teredo navalis* and the white ant.

"I find that the duramen contains from sixteen to twenty per cent. of an astringent gum, somewhat resembling the gum kino of commerce, sparingly soluble in alcohol, but completely so in boiling distilled water.

"Upon further analysis, this gum was found to consist almost entirely of coloring matter, and a highly astringent vegetable acid, which may be termed 'Jarrah tannic acid,' inasmuch as it possesses some of the characteristics of tannic acid, together with other relations peculiar to itself.

"I have failed to discover an alkaloid or organic base (although several different processes have been adopted), since, after the separation of the gum, albumen and coloring matter, I obtain nothing more than traces of saccharose and glucose with fatty matter, which in the present inquiry are of little or no importance. It is therefore evident that the active principle of the Jarrah is the powerfully astringent acid, which, uncombined with any base, is suspended in the gum, and thereby uniformly diffused throughout the tissues of the wood in a thin section, of which innumerable translucent particles of the gum may be seen by the aid to a small convex lens."

The following is an extract from a communication forwarded to India, by H. C. Victor, Esq., C. E., of Perth, in reply to inquiries made by some gentlemen engaged in the carrying out of several large contracts for public works in Scinde, Rajpootana, and Central India:—

"Undoubted authority is unanimous in declaring that the timber of the Jarrah under certain conditions, is indestructible. His excellency, Governor Weld, in a communication to Earl Kimberly, on the subject of Jarrah for marine purposes, expresses himself to the same effect, his positive declaration being based on strict inquiry, and the collection of information from all sources likely in any way to set at rest doubt, and to introduce to the world its true character. Prof. Von Mueller, the Government Botanical Director of Victoria, a gentleman well acquainted with the Jarrah, says:—Its wood is indestructible, is attacked neither by chelura, teredo, nor termites, and is therefore so much sought for jetties and other structures exposed to sea water. Vessels built with this timber have been enabled to do away with all copper plating. It is very strong, of a close grain, slightly oily, and resinous in its nature, works well, takes a fine finish, and is by shipbuilders in Melbourne considered superior to oak, teak, or any other wood for this purpose. The committee of Lloyd's, under the authority of their secretary, after the representations of his Excellency, Governor Weld, informed the Earl of Kimberly, that they had determined to rank this timber with those named in line No. 3, table A, attached to the societies' rules for the construction and classification of ships. Among the facts arrived at by the Government of Western Australia, in submitting this timber for acknowledgment at Lloyd's, are several of a very interesting and valuable character. The Imperial Government clerk of works at Fremantle, speaking from twenty years' experience, and use of considerable quantities of this timber, says:—It is remarkably free from all the action of nearly all the ordinary forms of decay incidental to woods which are in contact with, or buried under ground, under water, at mortises or other joinings, in piles in sea jetties, and in planking sea-going vessels, without sheathing or other protection, it has proved

sound and enduring to an extent which appears to denote exemption from decay, so far as evidence can be derived from observation on timber, exposed for upwards of thirty years. I have recently taken up piles that were driven for a whaling jetty in the year 1834 or 1835, making a period of at least thirty-five years; the timber is small, but perfectly sound and free from insects, although the place is swarming with teredo.

"The purposes to which Jarrah timber may be applied are innumerable; it fills the place where oak and teak could not be admitted, as well as where they are used; and as the material can be supplied at a price somewhat less than the timbers named, in the log, at half their price in scantling, it should be employed where hitherto timber has been considered undesirable—for instance, in sea-facing, dock-lining, landing-stages, break-waters, and beacons; kerbs, road-paving, block-flooring, weather-boarding, and wainscot-partitions; wallings, ceilings, and roof-coverings. As a substitute for the roofing usually constructed in India, I believe shingling with Jarrah, only requires to be known to be appreciated. At a distance these shingles might be mistaken for grey slates; they lie so close and regularly; thin as they are, they make a remarkably cool roof, and when once set require little or no repairs for years. I have seen here, where many roofs are of this material, houses that have not cost \$5 in roof repairs for twenty five years. Their lightness admits of a considerable saving in the roof framing, and yet with all these advantages, the shingles do not readily catch fire, burning charcoal thrown on them chars a hole, but does not flame them. It is one of the most unflammable timbers that can be found. A fair trial cannot fail to make the Jarrah very popular."—*Ex.*

THE PLANTING OF TREES.

A new word, forestry, formerly a mere dictionary word, and hardly that even, has come into common daily speech, and we hear of forestry congresses, schools of forestry, and other applications of it which indicate altogether a change of sentiment on the subject of trees. For centuries the dweller on this continent looked upon the forests that overspread so much of its surface as a barrier in the way of his progress which had to be removed. So, with might and main the pioneers everywhere assailed them, and ruthlessly to right and to left a path was hewn out for advancing civilization. It was long before any practical man discovered that such indiscriminate slaughter of the trees of the forest was a mistake, and those who first uttered words of warning received small attention. Only when the great treeless plains of the west, overswept by icy blizzards, made the new comers regret the grove shelters of the east, did men begin to realize the blunder of making havoc among those natural protectors. Other regrets followed in time as it was discovered that not only for warding off storm in winter and heat in summer, not only as fuel in building material, but as serving an admirable purpose in connection with climate and temperature and the distribution of rainfall and other features of the wonderful economy of nature, the destruction of the trees in the usual wholesale fashion was a waste of resources of which the consequence could not fail to be widely injurious. During the last few years this conviction has gradually spread over the whole of North America (not to speak of other countries) and with it has come a desire to repair, as far as possible, the mischief done, as well by putting restrictions on the cutting of timber and taking other measures for its preservation as by giving all possible encouragement to forest renovation and tree-planting, where needed.

It is not necessary to recount all that has been done in this direction during the past few years. Suffice it to say that both in the United States and our own provinces governments and people have fully awakened to the advisability of vigilance in preventing further waste, and of fruitful effort in reforestation, and what the public now require to know is exactly what and how to plant, so as to effect most good. Anyone who would compile a handy volume or manual on the subject, giving intelligibly and concisely all needful directions on those points would surely, one might think, be performing a

task of universally recognized utility. Nor, perhaps, could any one be found better fitted to undertake it than the zealous and active chief of the forestry division in the department of agriculture at Washington. For years Mr. N. H. Egleston has, by reports, addresses at conventions and articles in magazines, been advocating the cause of forestry and recommending the course to pursue in actual conditions and circumstances. His name is as familiar in Canada as in the United States to all those who have given the subject any attention, and there is no one whose authority on any forestry question is likely to have more influence than his. It is, therefore, with pleasure we announce that Messrs. Appleton & Company have just published a little work from his pen entitled a "Hand-book of Tree-planting" which is at once concise and comprehensive and thoroughly practical. And as it deals with the whole extent of American territory, it is almost as well adapted for use in Canada as in the United States.

Mr. Egleston says that a high civilization is impossible without trees and, therefore, no time should be lost in covering, if possible, the treeless regions of the continent. The wheat fields of the plains are made far more productive when supplied with tree shelter. For these and other reasons he does not hesitate to place the treeless western regions first in giving his answer to the question, where to plant? Of the practicability of tree planting there, even in masses, he writes hopefully basing his judgment on experience. The hill sides and mountain slopes of the north and east and the Pacific region, stony, sour, sandy or otherwise sterile lowland tracts, lines of railroad, and the country roads and streets of cities and towns, follow in the order named as localities on which trees might be probably planted.

On the question, what to plant, Mr. Egleston begins by saying that in general it is safe to advise the inexperienced tree-planter to plant native trees—that is, such as grow spontaneously in the region where the planting is required. On that point the decision of nature herself may be accepted as to the best choice to make. It may be added that, as Mr. Gibb and Prof. Budd have shown, the trees of the old world may generally be expected to thrive when planted in like climates and conditions in the now. But how about those treeless wastes where it is so important to have both a speedy and permanent covering of woody vegetation? In such case let the puzzled experimenter go to the nearest stream or wherever a few trees have been spared from fiery devastation or are struggling into life amid surrounding desolation and take them as his sure indication. Seeds or sprouts from those trees he may plant with confidence and after he has covered the nakedness of the ground and made himself a little shelter, he may persevere with still greater confidence, making new trials with suitable exotics till the injuries of the past have been repaired. On this continent, both in the United States and Canada, there is ample variety from which to choose, whether for fuel or building, or ornament or shelter be the object.

We cannot, of course, attempt to summarize the valuable information that Mr. Egleston gives his readers on the manifold stock of native and domesticated trees, nor can we pretend to give the substance of his instructions as to the mode of tree-planting. We have called attention to his work as one likely to create and deepen the interest in a most important movement—one of the most important in which the statesman or the citizen can be engaged at the present time.—*Montreal Gazette.*

FORESTRY.

In the annual address of the President of the Fruit Growers' Association for Ontario we find the following remarks on forestry:—

In the important department of forestry, which now comes within the scope of our Association, much useful work has been done. The report of the delegates appointed to attend the meetings of the American Forestry Congress last year, which was published as an appendix to our report, was full of useful information; and has done much towards bringing about a healthy sentiment in favor of tree planting. Early in August last a delega-

tion from this association, consisting of your Secretary and President, were sent by the Commissioner of Agriculture to represent the Province of Ontario at the meeting of the Forestry Congress held at St. Paul, Minnesota. The assembly was presided over by the United States Commissioner of Agriculture, Dr. Geo. B. Loring, and some important business transacted. Our sister Province of Quebec was represented by the Hon. Mr. Joly, of Quebec, and Mr. Stewart Thayne, of Ottawa. At the close of the meeting the delegates of your association accompanied by the Hon. Mr. Joly, visited Manitoba where they were joined by Mr. Gibb, of Abbotsford. At the instance of the Deputy-Minister of Agriculture, a public meeting was called at Winnipeg, at which the Lieut-Governor presided; where the visitors were glad to give a large and deeply interested assembly, all the information at their command. As one of the results of our visit, a Provincial Association was there and then formed for the promotion of Horticulture and Forestry, and an order for hardy Russian fruit for Manitoba is now being forwarded along with that for Ontario.

REVIEWS.

SHAVINGS AND SAWDUST.—We have received from the publishers of the *Lumber World* of Buffalo, N. Y., a very interesting and instructive work called "Shavings and Sawdust," by Mr. John Kane. It treats in a very practical and yet lively manner of the designing, construction, care and operation of woodworking machinery. Some of the chapters were published in the *Lumber World* under the name of "Observer," but they have been extensively revised, and much has been added. To the millowner, to the manufacturer of machinery, and to the mechanic, whether employed in the making or using of woodworking machinery, this work will suggest ideas that may be of the utmost value to them. Some chapters such as those on belts are even of more general application. The book is well printed and got up. A portrait of the author forms the frontispiece.

Testing Steel Rivets.

The following are the test instructions issued by the British Admiralty for testing steel rivets. The rivets are to be made of steel bars, having an ultimate tensile strength of not less than 58,000 pounds per square inch of section, nor more than 67,000 pounds, with a minimum elongation of not less than twenty per cent. in a length of eight inches. A portion of one bar in every fifty to be taken for testing before being made into rivets. Pieces cut from every bar, heated uniformly to a low cherry red, and cooled in water at 82° F., must stand bending in a press to a curve of which the inner radius is equal to the radius of the bar tested. Rivets are to be properly heated in making, and the finished rivets allowed to cool gradually. The rivets to stand the following forge tests:—(1.) The shank to be bent double cold, without fracture, to a radius equal to the radius of the shank. (2.) Bent double hot, without breaking, to as small a radius as possible. (3.) Flattening of the rivet head while hot, without cracking at the edges—the head to be flattened until its diameter is 2½ times the diameter of the rivet shank. (4.) The shank of the rivet to be nicked on one side, and bent over to show the quality of the material. One rivet in every hundred to be forge tested as a sample.

CURE FOR RHEUMATISM.—Sufferers from either acute or chronic rheumatism will find no more ready relief or better cure than Hagedorn's Yellow Oil, the popular household remedy for external and internal use in all painful affections.

NAMES, FACTS AND FIGURES.—Will be cheerfully given by the proprietors of Burdock Blood Bitters, regarding the many certificates of wonderful cures made by that medicine in chronic diseases of the blood, liver and kidneys, revealing proof that it is beyond the possibility of dispute by the most incredulous.

A QUESTION TO THE POINT.—Reader, have you a languid, weak and tired feeling, with nervous exhaustion, especially in the early spring? Then your liver is inactive and circulation poor. Arouse the torpid liver, cleanse the sluggish blood and regulate the secretions with that purifying tonic Burdock Blood Bitters.