

THE EVOLUTION OF GRADES.

(St. Louis Lumberman.)

In respect to its wide variation in quality the output of the sawmill probably stands unique among crude products of manufacture. Between that which is the best that can be made and that which is good for nothing the number of different grades that may be selected, all with distinctive peculiarities, almost passes belief. The lumber trade in some parts of the country has gone far in its refinement of grading, but nowhere has there been made all the varying qualities into which boards and plank are susceptible of assortment. There are evidently possibilities in this direction that have not yet been attempted.

And yet in some varieties of lumber there are grades enough, so many indeed as to give rise to much difference in the practice of the trade in making them, and to lead to a certain disturbance of the equilibrium of the business in consequence. We see frequent, or at least occasional, attempts made to correct these variations from the standard, but the success of them has never been more than partial, and their effect, when apparent at all, the reverse of permanent. It is impossible to point to a single case in which an important change has been made in grading rules or standards by a merely formal agreement. The amendment of inspection rules embodying radical changes in grading has never been successfully undertaken when the changes proposed had not previously been demanded by the altered conditions of the business.

The truth is that lumber grades are the products of evolution rather than in any sense creations. In the beginnings of the trade lumber fell naturally into three qualities—that which was good, and which was so described; that which was of inferior quality, and which was generally called common, and that which was believed to be good for nothing, and which took the suggestive name of cull. The latter was not at first a grade, its name indicating that it was considered to be valueless, but with improvements in manipulation and the increase of economy in consumption it was soon found that even cull stock had its value for certain purposes and it became marketable in part, only the worst of it being reserved for the slab pile or refuse burner.

The development of lumber grades from this assortment was as simple as it was rapid when once it started. There was, even when lumber began selling, but little demand among consumers for a miscellaneous lot of unassorted stock. They wanted certain quantities of certain kinds, suitable for their particular purposes, and the demand quickly led sellers to divide their good, common and cull stock into other grades. Experience showed them that they could make money out of such divisions of the primary qualities, and naturally grades multiplied. In the process of time differences of opinion arose as to what certain grades should be, and these gradually led to variations in the practice of grading which some now hope to reform.

One point not to be lost sight of in this connection is that this evolution of grades has been the direct result of an increasing economy in the use of lumber. The aim has been to assort lumber into such qualities that the buyer desiring stock for any particular purpose could get what he required without having to take along with it a lot of stuff that would be unsuitable for his purpose. In point of facts grades have not been made so much by the lumber maker or the lumber merchant as they have by the consumer. The requirements of the lumber users in New England, New York and Pennsylvania differ materially from those of buyers in the Western states, and we see a like difference in the grades of lumber made for the Eastern and Western trade. It is possibly thought by some that these differences are accidental, but they are not, they are fundamental rather, and have their source either in the variation of users' needs or in the inherent differences in the character of the stock out of which they are made.

It is possible, of course, that the grades of two manufacturers or dealers, drawing their supplies from the same source and selling to the same class of users, should be identical; and in like manner it is possible that all manufacturers and dealers similarly situated in

relation to both supply and demand should be in practical accord in respect to their grading standards, but it is futile to hope that the entire lumber trade can be brought into uniformity. There are limits to the possibility of reform in this direction—and it may be said indeed, to the desirability of a change also—that are not always taken into account.

The practical difficulties in the way of securing an absolute uniformity in grading, even when there are no theoretical grounds of difference, are at least serious. The absence of an accepted standard is one and the differing views of buyers and sellers is another. A standard might be set up, but it is open to question whether all could be made to conform to it. Those who are prejudiced in favor of good grades and those who believe in "skinning" them to the limit of endurance, would be very apt to follow their respective inclinations with a standard as well as without one, and about the best that could be hoped for would be that they might be restrained from going as far in either direction as many have been in the habit of doing in the past. But even this, of course, would be worth striving for.

IMPORTED LOGS.

Between the tropics is a region fanned by ocean breezes and drenched by summer rains. The excessive heat and moisture, together with the rich, sandy loam, produce a luxuriant growth of vegetation.

No man dare venture within these heavy woods without an axe to cut away the giant vines which intercept his path, and to protect himself from the attacks of the boa-constructor and deadly cobra.

Within the vast stretches of gloomy forests of Mexico, India and the Americas are hid the rich and rare woods of nature. It was with a view to getting information concerning these valuable timbers that a representative of the *Times Star* strolled into a veneering establishment on John street and accosted the genial proprietor.

"What kinds of wood do you use for veneering?" was the query he started with.

"Many kinds," the manufacturer replied. "Here are the native woods—oak, poplar, walnut, birch, butternut and sycamore. Besides these, of course, are the foreign kinds, such as mahogany, rosewood, ebony, English brown oak, Circassian walnut, prima vera and satinwood. I know it is the common impression that veneering is all done with imported material, but it is not so."

"Where do you get the various woods?"

"Native wood is bought in this vicinity. The Miami Valley is noted all over the United States for its fine oaks. Of the foreign woods, mahogany comes from the eastern part of Mexico, along the Gulf. Prima vera, or white mahogany, comes from Pacific slope of Mexico. It is cut by the natives and thrown by them into the ocean. The logs are then towed through the surf to the steamers, which carry them to San Diego, Cal.; from there they come of course, by rail. Satinwood is a native of San Domingo. Circassian walnut is shipped from Marseilles, France. It is grown in the region of the Black Sea. English brown oak is shipped from London and Liverpool. It is the oak found in Sherwood Forest. Ebony is bought direct from Madagascar island."

"What duty do you pay on the imported logs?"

"Logs are on the free list, but thirty-five per cent. is charged on manufactured stuff. It is a good thing, too, for this foreign wood is mostly bought by the pound and a great deal is waste."

"What is the original cost of these woods?"

"Circassian burrs is the only variety we buy by the pound. It costs us from twenty to sixty cents per pound. Red mahogany costs us twenty cents per square foot, board measure; prima vera, twenty-five cents; ebony, seven cents; English brown oak, sixteen and satinwood twenty-five cents. Besides this, freight must be added."

"What is a good walnut log worth?"

"A good solid walnut is worth, for our purposes, \$120 per thousand feet. A good oak is worth \$30."

"What is the most popular wood used now?"

"White oak is in great demand, and mahogany just holds its own."

"What is a burr?"

"A burr is a woody wart. They are obtained principally from oak and walnut. Here is a Circassian burr. It weighs about five hundred pounds and cost us nearly \$300. Burrs and knots admit of a very fine polish and are very expensive."

"These burrs are not sawed, but cut. First the bark is trimmed off closely and then holes are bored into them three inches deep. A long iron bar is then laid upon it and bolted fast. The burr is now ready to put into the machine. Before it is bolted on to this iron bar, however, it is put into this large tank and boiled from one to three days, depending upon the nature of the burr. Then, while thoroughly soaked, it is put into the machine and the bar is set in motion. This machine is a kind of lathe, and as the burr turns round and round, the knife, which is nothing but a horizontal plane, comes closer and closer. At last it strikes the burr and peels off a thin shaving, as thin as a newspaper. We generally turn off one hundred of these shavings to an inch. In the case of a log, the iron bar is not used, the log serving as its own support in this manner."

The workmen by this time had a walnut log ready to cut. They rolled it on the machine and lifted it to its place. A screw was turned and a set of sharp teeth advanced from each side and caught the log firmly. The machine was set in motion, and soon the thin paper-like rolls came off. The log was cut within three inches of the heart. It could not be cut any closer because of the iron teeth in each end. If a log big enough could be found the veneering could be made a mile long if need be. As it is, it is run out upon a floor and cut every ten feet. After being cut in large pieces it is piled up, and to a stranger might easily be mistaken for newly tanned leather. The next process it undergoes is to be cut up very carefully for consumers, the waste places being all taken out. The good veneering is then piled in convenient sized bundles and stacked where it may dry and be ready for sale.

Oak, mahogany and rosewood logs are sawed; oak, because of its cheapness; mahogany and rosewood, because cutting spoils their grain by pressing the pores together. This sawing is done by a fine saw, and so thin is it that no sawdust is perceptible. Sawed wood is mostly twenty thicknesses to the inch. Oak is sawed in a way called "quartering," that is, the log is first split into four. Now, as most everybody knows, oak logs are "flaked," that is, they have cracks, or lines, running from the heart out to the sap. After a log is quartered, a triangular strip is taken off of each side of the quarter, so that the saw may be run, as nearly as possible, parallel with these "flakes," or cracks. This makes fine curves, which are very desirable for a hardwood finish.

A good deal of oak veneering is sold to be placed on the outside of oak-finish, such cases as railroad cars, fine panelling in houses, etc. Rosewood is used mostly for tool handles, mahogany for inside finish and furniture. Prima vera is much used for fine cabinets. It is a "new" wood and admits of a fine polish.

"What is the extent of this business in this country?" was then asked.

"There is one mill besides ours in this city, one in Indianapolis and none in the East this side of New York. Europe has a great many. There is considerable exchange in veneering, chiefly with Germany, France and England."

"How is veneering put on?"

"Where it is simply for ornament, as in looking-glasses, only one ply or thickness is used. But one ply alone is too liable to crack; for this reason, very often, five ply are put on, firmly glued together. This is why it is shaved to thin. Nothing is gained by the extremely thin sawing, except this. It really takes more wood. Furniture men polish the finer wood to bring out the grain and then varnish it. We employ about twenty-five men. Cutting requires experts, and some cutters get as high as \$8 per day each."

O. P. Doray's saw mill and chair factory at Sutton, Que., was burned Oct. 15th. Loss \$10,000; insurance \$2,000.