VIEWS AND INTERVIEWS.

Ironwood

Lieutenant Schwatka, in describing some of the trees near Sonora, says that the ironwood looks very much like a fine variety of the mesquite, the wood of which is a bright cherry red. Its name is derived for its hardness and is well deserved. It uses up an axe to fell each tree, and as the quality of the different trees is always the same, and that of different axes is not, even that ratio of one axe to one tree has to be changed occasionally, and always in favor of the tree. It is said that a tramp who had wandered into that part of the country with the usual appetite of his class, applied for something to eat. In reply he was told that if he would get out a certain number of rails for a fence, the proprietor would give him a week's board. It was, as he thought, about a day's work he had assigned him, and bright and early the next morning he sallied out with his axe on his shoulder. Unfortunately the most tempting tree he met was an ironwood, and very late in the evening he returned with the axe helve on his arm. "How many rails did you split to day?" asked his employer. "I didn't split any, but I hewed out one," was the reply, and the tramp resigned his position.

Rings In Trees.

Whilst common opinion is settled that the age of trees is to be fixed by the number and character of the rings to be found in every tree, technically the subject is open to debate Accepting general opinion, however, as correct, a writer in the Literary Digest enlarges the subject by noting other phenomena to be explained by these rings. We are told, for example, that in the irregularities of these rings and other signs a very faithful register of climatic and other conditions in any given year during the whole period of growth is given. The years of small rings, that is of little growth, were either very dry, or the tree was exhausted by bearing an exceptionally heavy fruit-crop. The broad rings indicate abundant rain and good growing conditions. Brownish spots on the cut surface, looking as though they were worm-eaten, are evidence of a severe winter, the young sapwood formed in summer having been partly destroyed by severe cold, and the injured part covered over with sound wood the next year. The year may easily be fixed by counting the rings from the outside. If the layers of wood are not of uniform thickness all round they afford evidence that at this stage of growth there were conditions which hindered its growth on one side. The spread of its roots or branches has been arrested, perhaps, by a neighboring tree. The number of layers showing this irregularity indicates the number of years during which the tree was exposed to the unfavorable conditions. The student of forestry may learn lessons of practical value in the management of forests by a careful study of the annual rings.

English Walnut.

In a late number of Hardwood, Mr. O. S. Whitmore, the editor, who is a close student of forestry and attendant subjects, writes a special paper on the English walnut. He tells us that the tree called English walnut is a near relative of the native black walnut grown in certain parts of the United States. The name is a misnomer, for the tree is not a native of England at all, but of Asia, whence it was transplanted to Europe. It is true that it is cultivated to a large extent in England, both for the fruit which is sold in all American markets under the name of English walnuts, and for the lumber which the tree makes when it is fully matured. But it is also cultivated extensively in France, Germany and other parts of Europe. The continent exports far more of the fruit than does England. The tree is indigenous to the valleys and slopes of the Southern foot hills of the Himalaya mountains and on the eastern slopes of the Caucasus, and in fact entirely across the continent and in the islands of Japan. Its habitat is thus very extensive, and everywhere it is valuable, whether native or adopted. It is quite probable that the acclimated tree as now found in Europe, is quite as valuable as the Asiatic in its native wilds. The ancients call it the *Jovis glans*, the nut of Jupiter, whence our botanical term, *juglans*, which term covers the black walnut, *(j. nigra)* and the butternut *(j. cinerea)*. The English walnut is the *juglans regia*. In its native haunts the tree is large, often from four to six feet in diameter and from 75 to 85 feet in height. In thick woods it is tall and with a smooth trunk and a smallish head well up, giving a good body for timber. But in open glades, which it loves best, it is lower and wide branching, like the butternut. The wood is hard, heavy and much like our own black walnut in texture, but not always so finely figured. In color it is a dark brown, almost black, the sapwood lighter. With one exception it is the nearest approach to the native walnut. That exception is the California walnut, *(j rupestris* Eng.) which in some respects is the finest of the three dark species. The wood can be used for the same purposes as the black walnut, and not one person in ten can tell the difference when finished up. The tree flourishes fairly well in any moderately warm latitude. Under good care it is easy to propagate from seeds, and it grows rapidly as a sapling, and under good conditions will commence fruiting when ten years old, and thereafter will increase rapidly and continue to bear a heavy crop for from 50 to 75 years. There are trees in Europe, known to be 200 years old, which still yield abundant crops of nuts. At 40 to 50 years the tree becomes valuable for lumber, increasing from year to year at a pretage.

HARDWOOD MATTERS

So extensive are the white pine resources of the country, that, naturally, at times, they overshadow the hardwood interests. When there is a fight in the Legislature or the Commons only white pine is heard of. Hardwood men know just how seriously this condition has operated against their interests in the past by allowing the duties, under the McKinley tariff, on white pine lumber to have been reduced to $1.00, while the duty on hardwood has remained at $2.00. Possibly when free lumber in its fullest extent becomes a tariff certainty with the United States this grievance may be removed. This is to be remembered that white pine and the softer woods can never fill the place of hardwoods, and already, we hear of cases where hardwoods have commenced to be more generally used, because of the scarcity of pine in some sections. I have always felt that the hardwood men have, unfairly, been compelled to take a side-seat. But possibly they have been to blame themselves, for have they not been altogether too easy going, and in more ways than one neglected to protest against wrongs, and organize to protect their own interests, when a step in that direction was much needed?

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A study of the report of the clerk of forestry for the Province shows that, in many counties, in fact in a large portion of them, what woods are left are hardwoods. In some cases, thanks to our prodigal methods of handling timber years ago, of these there is not any large quantity. But we have still rich resources, taking the province over, in these woods and we ought to make the most of them. It is known that a number of hardwood dealers in the United States, particularly those in the east, draw largely for their supply of lumber on the Dominion. An authority on the question tells us, that there are fine hardwood timbers to be found in Quebec and Ontario, within easy distance of the American border. Some of the best red oak, cherry, hard and soft maple, and rock and soft elm on the continent, says this writer, is found in these two Canadian provinces. Large holdings of hardwood in Canada are among American firms. One New York concern have something like 500,000 ft. of number 1 and 2, 4, 5, 6, and 8 quarter soft elm and probably 1,000,000 ft. of common and shipping cull, all old stock and dry ready for shipping. Other concerns in New York, Boston, Albany, Buffalo, says Hardwood, of Chicago, hold stocks of elm, birch, red oak, and maple in Canada.

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Mentioning this fact reminds me of a conversation I had a few days ago with one of the largest furniture dealers in the city. He tells me, on the authority of Canadian manufacturers, that nearly all the oak and birch, used in making up of furniture in Canadian factories, comes from the United States. These manufacturers say, what ever the reason may be, that they cannot get Canadian oak sawed in such a manner as to bring out the best features of the grain in the wood and this is also the case with burl birch. This occurred to me as an unpleasant reflection on our hardwood men; and certainly a method worthy of Dickens' circumlocution office that we send our woods from here to the States to be sawed, so that they might come back to our manufacturers in proper shape for their use. What have our hardwood men to say about this?

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For the first time, we are told, since quarter white oak came into fashion there is a decided shortage in the visible supply. The situation is explained by Hardwood thus: "In the first place the man who saws quartered oak must have plenty of timber to select from. He can use only his best clear logs, which naturally leaves those for plain sawing averaging a small per cent. of firsts and seconds. To even up, he must realize a price for the product of the selected logs for quarter-sawing which will cover loss on what is left. In the next place no lot of logs quartered will realize the per cent. of clears that they would plain sawed, and further they will produce a lower grade below clears, and the total product in feet will also be less. The difference between first and seconds plain and quartered is quoted at abous $10; but in actual sales has lately been as low as $8, while the average price of the balance of the log is not less than $2, the other way, or in favor of plain sawed. Add to this the extra cost of sawing, which cannot be less than $1 and is often $2, and the loss in percentage of uppers in the rejected logs and the loss in total output of the quartered logs, and it is plain to be seen why mill men cannot afford to quarter saw their white oak. It is doubtful if there is any extra profit in quartered oak when prices are at their best, with the highest difference ever known, even exceptionally fine timber, running extra high to clear logs. This is a point that has been slow to filter through the gray matter of the average hardwood man's brains."

ROB.

POSSIBILITIES OF SPEED BY STEAM.

In his recent inaugural address, the president of the French society of civil engineers, M. du Bosquet, pointed out that express trains daily attain seventy-five miles an hour on down grades, providing that such speeds are not dangerous. But the engines are not sufficiently powerful to maintain such speeds on a level. A draw-bar pull which would give seventy-five miles an hour on a down grade of one in 200 would give only fifty-seven and a half miles on a level, and thirty-one and a fourth miles on up grade of one in 200. A slight increase in the average speed greatly increases the power required. If 322 horse-power will draw a train at fifty miles an hour up an incline of one in 200, for a speed of 125 miles 2,960 horse-power would be necessary. High speeds, moreover, increase the weight of the engines per horse-power, and there is a limit beyond which the engines could not move themselves. At their maximum power, the modern French locomotives weigh about 158 pounds per indicated horse power; but a similar engine of 150 tons generating 2,000 horse-power, would be required to draw a train of 100 tons up a slope of one in 200. The highest possible speed for such an engine and train up the slope would be eighty-seven and a half miles an hour, and for this the engine would weigh 670 tons and would generate 8,932 indicated horse-power.

THE REASON WHY.

An engineer observed his steam gauge indicating a higher pressure than his safety valve spring was set for. He slackened the spring but the gauge kept rising and the steam did not blow off. When the pressure rose to 200 pounds he became alarmed; and as he could not start the engine he started the injector and opened the water blow-off cock. The damper being closed, this had the effect to prevent further increase of pressure. On examining the safety valve it appeared that the brass seat of the valve was a bushing put into an iron casting, that it had become loose, and that the steam had pressed it up against the valve. As the valve rose the seat followed it, and there could not have been a release of steam until the bushing was pushed out of its hole.