

### EMERY WHEELS v.s. GRINDSTONES FOR WOODWORKING TOOLS.

In speaking of the emery wheel, says a writer in the *Builder and Wood Worker*, comparing it with the common grindstone I know I shall make a counter-current to the opinion of a great many who advocate its use to the exclusion of our old tried and trusty helpers, the staid and always reliable grindstone. I can not, nor can any one, honestly deny but that the emery wheel has created an entire revolution in the old method of grinding, and for small tools used in the manufacture of sewing machines, guns, pistols and such like work, it would seem that when we came to know their true value it would be almost if not quite impossible to get along without them. And we can not, when we come to take convenience and economy into account.

We can not use a grindstone as inch or less in diameter, as we often have to use emery wheels or plugs in grinding mills and small tools in gun making. Here is where the emery and corundum wheels come in, and there is no competition with the grindstone, for they are a long way in advance of any at present known method of grinding.

Here is where I concede to the value of emery and corundum, but when we come to grinding wood-cutting tools, I must take exceptions and stand up for the grindstone. To those who have both it seems to me that there needs but little argument to convince all that the edge of a tool when ground on an emery wheel is hard and brittle, and not as likely to stand right up to good, hard work as when ground on a grindstone. My attention was first called to this fact when a few years ago I had the job of assembling ten thousand Remington locks. The screw drivers had to be ground very nicely, and very often they would break and have to be reground. Emery wheels were very convenient and it was much less trouble to grind on them than it was to go to the grindstone. But we always found that would not stand near as much when ground on the emery wheel, and so well were we satisfied of the fact that we always used the grindstone for this purpose. This fact led me to observe the effect of emery grinding on other tools, and especially on wood cutting tools, as I was then, and have been ever since, interested in woodworking machinery. Anybody that knows, or has had experience in grinding chisels and plane irons on an emery wheel, knows how almost impossible it is to bring any thin-edged tool right up to an edge without making blue spots on them, showing that the temper has been started in these blue spots, which take a great deal from the value of a plane iron or chisel, especially for nice work.

I know there is great deal in getting used to an emery wheel, and when we have, so to speak, got "trade learned," we can take more liberties than when we first begin to use them. When I first began to use one I had work that I ground on the face of an upright one 24 inches in diameter, and I used to grind the ends of my fingers every little while, but when I got the hang of the thing, or got the "trade learned," there was no trouble about grinding off the ends of my fingers (so much for illustration). The introduction of emery wheels for sharpening saws was a long stride in advance of the common method of sharpening saws with a file so far as economy is concerned, but there has been hundreds of saws ruined by inexperienced persons grinding them.

But a few days since I knew of a 60 inch circular saw that was sent back to the makers because the owners could do nothing with it. The makers found that nearly every tooth was cracked down in the throat and were obliged to cut it down the whole length of the tooth before they could get rid of the cracks. The filer instead of milling out the throats, had worked them down with an emery wheel, and they say that is what made the saw crack as it did.

Here, too, is where the grindstone and emery wheel do not come in competition, although I have seen large circular saws ground very nicely on a common grindstone, and I do not see why a saw may not be sharpened on a grindstone as well as on an emery wheel, if the proper

arrangements are made to get the saw to the stone.

Had there been as much of an effort made to make the arrangements for grinding planer knives on a grindstone as there has been to bring the emery wheel into use, I have no doubt that the work would be just as well and perhaps a little better done. There never has, to my knowledge, been any such machinery made to grind planer knives with. And if we except the common knife grinder made by most makers of wood working machines and which is worked by hand, nothing has been done to bring out what might be done on a common grindstone.

There may be objections to using water as we do on them, but with the arrangements that could be made, there is no reason why work and men could not be kept as clean on a grindstone as on an emery wheel. I know that one objection to the grindstone is that unless the person buying knows what he is about, he is just as likely to get a poor quality as a good one. The usual way of ordering is to get the size wanted of either kind of stone and that ends it. The stone comes and is hung, and if it is good all right, and if poor the help call it bad names until worn out and replaced by another one not a whit better.

The emery wheel has this advantage, that you can order and get a uniform grade without trouble, and also they never are injured by being left with one side in the water to soften, so that when we come to use them one side wears faster than the other. But for all these adverse conditions I must say that if properly selected, used, and cared for, there is nothing superior to the grindstone for all wood-cutting tools. We do not know the possibilities of a thing until we bring it to the test. We do not know what an animal will do until it passes through a long course of training, and has its good qualities developed. So we hardly know what we can do with our grinding stone till we put our brains to the work, and bring out devices and apply good machinery to it, and then we shall find out this old friend of ours shall stand the test and do all and more than some other material. My idea is that it is especially adapted to grinding knives and cutters of all wood-working machines.

It leaves whatever is ground on them in a much better condition after grinding than either emery or corundum, and this partly, if not altogether, comes from the fact that the work ground is always kept cool and never burns the edge to make it brittle. I think a great trouble in selecting stones for common grinding in planing mills is that they get too thick ones. A stone four or four and one half inches thick is far better than one seven or eight inches thick.

Now if some good genius would get up the same machine to grind knives on a grinding stone that has been gotten up to use with the emery wheel, I think he will meet with great success. Each, of course, has its special field where it must necessarily succeed best, some of which I have already noticed, but I must yet hold to the belief that the common grindstone is far the best for grinding all manner of wood-cutting tools.

### TREE PLANTING ON SCHOOL GROUNDS.

Some years ago I found several young oaks growing up among a hedge of rose trees in our garden. As there were no oaks in the immediate vicinity it was rather a subject of astonishment to me, until I found out that my children had picked up some acorns in the woods and had sown them there. Nothing could be more simple and trivial, I admit; nevertheless it set me a thinking, and I have not done thinking yet. The children were so young then that I would not have credited them with sufficient reason to go through the process of looking for seeds in the woods, sowing them with the purpose of producing trees, and watching in the following spring for the realization of that purpose.

It struck me then that the growing of trees would be a valuable help towards the education of children. We try to teach them to observe, to think, to discover, and we have done a great deal when we can make them see clearly for

themselves that success is the direct result of labor, and when they have learned to associate the two in their minds. Among all the mental exercises resorted to in our schools, I can scarcely see one that will secure the same results more easily and more effectively than the culture of trees.

There are not so many schools—there ought to be none—with so little ground as not to allow room for at least a seed bed and a nursery for young trees. Get the children, first of all, to work the ground until it is well drained and sufficiently deepened and mellowed for the purpose. There you combine physical and mental work, and an important lesson for the future; for it is a matter of vital importance that the attention of the growing generation should be turned seriously in the direction agricultural pursuits; we cannot begin too soon to impress the youthful mind with the idea that conscientious care in the preparation of the soil will be bountifully repaid.

We have been skimming over the surface of this continent of ours, as if it were limitless; we shall, sooner than we expect, be induced to wish, like Alexander the Great, for other worlds to conquer. We must remember that this is the ground upon which the children of over sixty millions of people will have to find food for themselves and their increasing families, and millions of people on the other side of the Atlantic, and will make room for the surplus population of the Old World. It is time to find out what our soil is worth, and learn how to get as much as possible out of it; and the best way to reach the people is to teach the children. But this is a digression; let us return to our subject.

When they have prepared their ground carefully, take the children to the woods to collect the seed, in its season, or buy it if you are too far from the woods. Teach them to discriminate between good seed and bad, and make them sow it properly.

Make them study the form and appearance of the young trees as they first come up out of the ground, so that they will not mistake them for weeds. Make them keep the ground free from all weeds, mellow it, and follow up, step by step, the growth of the seedlings, until they remove them to the nursery beds, where they will require new care and attention, till ready for final transplanting.

Their attention will be fixed, not only for days, but for seasons and years, on their young trees, thereby insuring a continuity of action. Prizes ought to be awarded from time to time, to those whose trees are in the best condition. When there is no more room on the school grounds, for transplanting those trees, the children, on Arbor Day, will have the privilege of ornamenting the streets, squares, and walks of their towns and villages with trees raised and grown with their own hands.

It will be, all through, a healthy recreation, and, at the same time, it will call into play every quality of mind which is indispensable for success in life. More than that, the best feeling of the human heart will be nurtured and grow along with those young trees; the love of nature, deep reverence for the power of God, in watching the growth of the tree from its seed, in noticing the development of its life. The child's heart will be enlarged as the range of his sympathies widens; he will see life everywhere—all around him. He will take pleasure in beautifying his school grounds, and by and by, his father's homestead; he will get attached to it, and, as he grows older, every tree planted by his hands will become a friend to him; and when the thought enters his mind that he may not live to reap any benefit from his work in growing those trees, he will, at least, learn the greatest of all lessons, that we have not been created by God to work only for ourselves.—*Hon. H. G. Joly, Quebec, in Educational Weekly.*

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### THE TIMBER TRADE AND WAR WITH RUSSIA.

How would war with Russia affect the lumber trade? is a question which has been asked frequently since the probability of war between England and Russia began to be entertained. We find the subject discussed in the *London Times* and *Trades Journal*, published in London, as follows:

"It has been asked, supposing the present crisis culminates in a war between this country and Russia, what will be the effect on the Atlantic trade? There are many things bearing on this question, though, perhaps, not immediately connected with it, that have to be considered before forming any decided opinion. There can be no doubt but that Russia, should war happen, intends making, or endeavoring to make, a formidable attack on the commerce of Great Britain, through the means of privateers specially fitted out for that purpose, and it is the likelihood of success that will attend their efforts that we have to consider in endeavoring to sum up its effects on the Canadian timber trade.

"The pitch pine trade, of course, could not be interfered with, the cargo as well as the ship being in all probability neutral property. Where a cargo of spruce or pine was a neutral vessel, but bound from a Colonial to an English port, it would be a moot point whether a Russian warship could lawfully intercept it. Some laugh at the idea of Russia privateering, and maintain that a fleet of such vessels could not possibly be kept at sea through the difficulty attending their coaling and refitting, Russia having no possessions presenting a seaboard on the Atlantic or Pacific to which such craft could resort for that purpose, and neutral harbors would, of course, be closed to them. But supposing that such privateers did scour the ocean in search of prey, it is unlikely that they would care to waste their time over a wood laden ship, the cargo being of no use to them, and, if a sailing ship, the vessel either. Perhaps they might seize a steamer, if they could catch her, and throw her cargo overboard, retaining the ship for subsequent use; in fact, it would be more than likely that wood laden steamers would be interfered with, as the privateers might, in the ordinary course, be expected to refill their bunkers from those of such traders as they could overtake, and, robbed of her coal, the trading steamer would hardly be able to continue her voyage, fully laden, even if permitted to do so. The swarm of steamers that now cover the surface of the globe, flying the British flag, would thus be the special aim of the privateer, who by their capture would be able to provision and coal at one and the same time.

"The sailing ship in the timber trade, on the other hand, would present no attractions for the rover of the seas, who might, perchance, if she were English, board her and take all the grog and provisions out of her, and with a parting shot as a remembrance, possibly carry away a spar or two, let her continue her voyage. Hence, in the event of war, there would be considerable danger in loading deals in steam bottoms, and we anticipate war risks on such cargoes would be very high. Sailing ships, as mentioned, might be interrupted, and perhaps roughly handled, but that they would be sunk we can hardly believe, their destruction answering no purpose, and would betray a state of wilful barbarism that we certainly do not believe the Russians capable of.

"Confined to sailing ships, we believe that little or no interruption would be experienced in the timber trade between Great Britain and her Canadian Colonies. If needful these latter might sail under convoy as in old times.

"The effect on prices, leaving privateers out of the question, of a conflict with the great north of Europe power could not be otherwise than upward; freights would be high, and the shutting out of the market of such a large competitor in the whitewood trade as Riga alone could hardly fail to stimulate the demand for spruce, though possibly that would not be any serious advance in yellow pine at the loading ports. Still the enhanced freight would add to the cost here, of which stock holders on this side would not be slow to take advantage of.

"The same may be said of Southern pine, mahogany, etc., which also in the case of war would become of additional value over here, consequent on the difficulties attending its shipment."