

THE MEASUREMENT OF ROUND TIMBER.

This is a subject of endless controversy, and we are entering upon it with misgivings that we shall not be able to clear up the deep mystery that has so long surrounded it.

Old Hoppus of timber measuring fame says:—
"1. With a rule measure the length of the piece in feet (and quarters of a foot if necessary) and set it down in your memorandum book: then reduce it to square timber thus:

"2. With a chalk line, or pack thread, gird the piece (if parallel) in any place, then double the line twice, and you have one fourth of the girth for the side of the square, which you must exactly measure upon your rule, and set down in inches and quarters of an inch, &c."

This, it will be seen, is simply laying down the string measure quarter girth pure and simple, as the only mode of cubing round timber. It has long been known to practical measures that this common and accepted form of a quarter girth is an error of considerable magnitude; but this belief is hard to imbibe by those who have seen their fathers work upon it, who have seen it accepted as the measure for freightage of ship and sloops and for railway carriage.

Outside the radius of practical measures the belief is deeply rooted in the minds of timber merchants that the quarter-girth string is the only true system of measuring round timber, and it is very doubtful whether we, who are not of this belief, can convert any members of the timber trade to our views.

We propose in a short and concise way to prove by demonstration that the Hoppus system is in error, and to what extent it is so.

To do this we must be set up a correct form of measurement, a rule by which the circle can be squared, and compare the Hoppus measurement with this correct data.

For illustration we will take a tree 20 ft. long and 16 in. diameter. Now if we make a section of this tree on thin cardboard, and divide the line of the circumference into 3 in. or 4 in. spaces, and draw lines from each point to the centre, we shall have a series of wedge-like segments. When this is done, take a pair of scissors and cut them all out; next place them all side by side, alternating the broad and pointed ends. This being done we shall find the length equal to half the original circumference of the tree, and the breadth equal to half the diameter, and this to be the true sectional contents of the tree.

A tree 16 in. diameter would girth 50 in. (3 times the diameter and 4 per cent). Now as half the girth and half the diameters is the correct section, this gives 25 in. x 8 in. = 200 in., contents 27 in. 9½ x 12 cubic feet.

Now let us see what Hoppus makes of it: girth 50 in. = 12½ x 12 in., say 13 in. x 12 in. = 156 in., contents 21 8-12 in.

The actual measure is thus 26½ per cent. more than Hoppus's quarter-girth string gives the buyer fully one-fourth of the wood for nothing.

That the principle we here lay down is the true mode of measure of round timber can be proved by a moment's reflection. Viewing the section of the tree the centre is a fixed point here the circumference is nothing. Away on the outside the circumference is 50 in., half (the mean between the centre and the outside) is 25 in., the true circumference, and the width of this circular belt of wood is 8 in. To straighten out this belt of wood you might cut wedge pieces out of the outside 4 in., and insert them in the inside 4 in., when you would have a parallelogram of 25 in. x 8 in. The real truth is that the mean circumference is a fixed datum, and the wood wanted on the inner side of the circle, to make it a straight line, is the equivalent of the superfluous of wood on the outer side of the circle.

This principle can be worked upon in alternative ways:—

1st. The circumference multiplied by one-fourth of the diameter.

2nd. Half the circumference multiplied by half the diameter.

3rd. One-fourth the circumference multiplied by the diameter, i. e., the quarter girth multiplied by the diameter.

All the above three modes give the same result, the exact sectional area of the tree.

You can put it another way, which would be

4 per cent. above the correct measure, viz., the quarter-girth multiplied by one-third the girth, and work it out by Hoppus's tables of unequal-sided timber, or you can add the quarter-girth and the one third girth together, and divide them for the square of the tree, and work it out by Hoppus's tables of solid measure.

Another system is to multiply the diameter by the diameter, and divide by 183. This system brings out an over measure of 27 per cent. upon string measure quarter girth, which is within half per cent. of the actual result we obtain above, but this principle does not find favor, as the general members of the trade can not grasp a mode or system by which it can be proved.

One of the most popular modes of testing the string measure quarter girth is that of water. Take two tin vessels, each 12 in. deep and 48 in. girth, the one round and the other square. It will be found that the round one holds fully one fourth more water than the square one, and that the water in the square tin will only fill a round tin 42 5-100 in. in girth.—*Timber Trades Journal.*

A LEOPARD STORY.

The following is an amusing report from the cashier of the South Indian railway to the chief auditor, re a leopard on the line:

"Most HONORED Sir: In continuation of my telegram of the 13th instant I beg leave to bring to your notice that I had a narrow escape from the attack of a leopard by your favor, and by the grace of the Almighty. A certain leopard—I think a stray one—appeared all on a sudden to our heartrending fear while payment was being made in the 93.9 mile on the line. Mr. Bonjour, the P. W. inspector, was also with me at the time. The coolies numbered about 400. All of us were engaged. Where from and how the above said leopard managed to lie down in a fearful posture within the fencing, at a distance of only ten yards from us. The coolies, one after another, crying 'Tiger! tiger!' took to their heels, while I found picotta standing near a ditch and got up to the top of it to save my life at any risk. Fortunately for me Mr. Lloyd, the assistant engineer, on hearing this, came to the spot with three constables, armed with guns, ready loaded. The constables fired, one after another. In the meantime as a Godsend, a light engine happened to run there. The engineer, detaining the engine, got into the engine and began to shoot therefrom. Aims several times failing the leopard sprang up. Some of the coolies and constables wounded them by purring them as often. In this state of things my body shook with fear as I was witnessing the trials as well as the fierce action of the leopard. Mr. Lloyd, with the assistance of the constables, had the presence of mind to shoot at it undaunted with a gun brought by them till it was killed. Nearly 300 lives were saved, I being one of them. Now I took heart and came down to commence payment. I herewith send one claw and one whisker of the leopard for inspection. Being to be excused, I beg to remain, most honored sir, your most obedient servant,—S. Soondrawier, Cashier.—*London Truth.*

HUNTING GRIZZLY REELFOOT.

A Portland, Ore., correspondent writes:—
Four years since a monster grizzly bear commenced depredating the stock ranches, twenty miles south of Ashland. He would descend from the fastnesses of the Rogue River mountains whenever his appetite might prompt him to do so, and perpetrate wholesale slaughter on the horses, sheep and hogs of the ranchmen. During these years the ranchmen have planted half a dozen Winchester balls in his carcass, but still he refused to succumb.

About a year since, the grizzly walked off, leaving a good piece of his foot in a huge trap, cautiously prepared for him in a thicket. Since then he has had a gait peculiarly his own, and the wary hunters who have occasionally caught sight of him but could not bring him down, have given him the name of Grizzly Reelfoot.

Last week he ambled down to Howard's station on the Oregon, Idaho and California stage line, and, breaking the back of a 2 year old steer, sat upon him and ate him for lunch,

This exasperated more than ever the ranchmen who had on divers occasions been forced to beat hasty retreats when coming unexpectedly upon him. They raised a purse of \$150 for the Nimrod who would bring in the grizzly's scalp. Some noted bear hunters, including Jim Wilson, Harry Woodburn, Charley Taylor, and others, with trained dogs, are now in search of him in his mountain resorts. His tracks measure 14 inches each, and when he descends the hills through the underbrush he is said to thrash the ground like a cyclone. His bulk is gigantic. Many aver that he does not weigh an ounce less than a thousand pounds. He is an ugly, vicious brute, and unless the hunters get him, the chances are even that he will get them.

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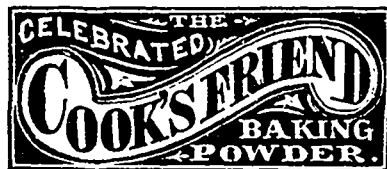
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