

### UTILIZING OF WASTE.

Five hundred manufacturers of explosives, pulp wood and similar products, have been asked by the U.S.A. national conservation commission for information as to all possible uses of sawdust. From this it will be seen the commission is going into fine details in its inventory of the natural resources of the country. Seven thousand lumbermen have been asked for their opinion as to the waste of lumber in saw mills, and more than two thousand lumber dealers and cooperage, veneer, furniture, box, vehicle and implement manufacturers have been asked to point out striking features of waste in their respective lines. Yet all this is only one part of the general scheme of hunting down waste which the commission is following in making its inventory. It is going after the little wastes here and there, which, added together, and put into dollars and cents, make an astonishing total.

For instance, take the making of veneer. At first blush it may not seem worthy of consideration with the manufacture of other products mentioned. Yet, the scarcity of the more attractive finishing woods in the last few years has led to the annual production of over 1,100,000,000 square feet of veneer. This, of course, has been made possible only by the introduction of new veneer-making machinery.

The use of veneer is generally regarded as exemplifying the scarcity of the finer woods and typifying the complete utilization of various kinds of woods, yet, from one of the schedules of the national conservation commission it is evident that the commission expects to discover great waste even in veneer manufacture.

Though the word veneer carries many meanings, from a glaze applied to pottery to the "polish" of a man of the world, it is most commonly employed as the name for the thin slices of wood now extensively used in the manufacture of all sorts of articles of use, such as wood plates, baskets, and the exterior finish of furniture and woodwork. The manufacture of veneer in the last few years has advanced by leaps and bounds.

The best veneer is sawed, but a great deal is sliced and still more is rotary cut. By the last-named process logs of the desired wood are steamed until they are soft and then fixed in a lathe-like machine, in which they are turned against a wood-knife. As the log rotates against the knife, veneer of the desired thickness is peeled off in a continuous slice, as if you should pare an apple, going deeper at each complete turn, until nothing is left but the core. The centre of the log left after the veneer is cut is also called a "core."

The woods principally used for making veneer are red gum, maple, and yellow poplar, which together yield more than half of the total product. Red gum is largely used for baskets and maple for furniture. More valuable than these, however, are white oak and walnut veneer. Beech, which can be cut very thin, is used very largely for wooden plates. A number of other kinds of woods are used.

A good deal of waste occurs in the manufacture of veneer. It is always a problem, for instance, what use to make of the cores left by the rotary process. In many cases these are used for pulp wood, pillars, or panel headings, and they are largely used also for fuel, excelsior, crates, boxes and baskets.

In the schedule of inquiries which the national conservation commission, through the Forest Service, is sending out, several questions are aimed to secure information as to the amount of waste in veneer manufacture and the possibilities of fixing ways to utilize it.

Well informed veneer manufacturers are to-day taking the position that the veneer machine cannot turn out as much marketable stock from 1,000 feet of logs as can be gotten in lumber by the saw mill. This is a rather striking attitude, and is at variance with the original logic of veneering. It

has nearly always been figured that the veneer machine saves that part of the log which is wasted in sawdust by the saw mill, consequently they produce more from the same amount of logs than can be gotten by converting them into lumber with the average saw mill. Generally, as is well-known, a quarter of the log or rather, specifically speaking, one-fifth, has been allowed for sawdust in compiling hand books for the measurement of logs to be converted into lumber. Also there is another allowance for slabs, so that taken altogether, slabs and sawdust represent quite an item of waste. In promoting the use of the veneer machine, the argument frequently put forward has been that one can save the slabs and the sawdust for the veneer machine cuts with a knife and makes no sawdust, consequently there should be no waste.

Now, in the face of this, comes some of the best-posted veneer manufacturers of the country, men who have been at the work practically all their lives, and assert that the saw mill as an advantage when it comes to getting quantity out of logs. This is so upsetting to original theories about veneer cutting that it makes one turn and study the subject again to see what has been overlooked in former estimates. The rotary veneer machine, properly operated, should undoubtedly get more stuff out of 1,000 feet of logs than can be made with a saw mill, especially on large logs. In the first place, the saw mill must slab and square up. The veneer machine, of course, must round up its logs, for as the log is measured the small way anyway this rounding up is simply taking off the high spots. Then the veneer machine has no waste in the form of sawdust whatever, but it does have a core in the centre which may range from 6 to 12 inches in diameter, depending on the timber and the machine. This core is generally worked up into crating strips or something of the kind, provided it is sound material, and if not, it is burned for fuel to make steam. Usually the waste of good material through these cores is not much except in small maple logs and timber of that kind having a fine heart. At least, there is not enough waste here on the average to make up for the waste of sawdust in converting logs into lumber. Evidently, therefore, some of the waste complained of comes in the course of cutting and shaping the veneer for the market. If one is cutting clear stock for face veneer, of course, it is necessary to get out the defects, and it is probable that some of the veneer men are figuring on this kind of basis in making estimates of the output of veneer. This wouldn't be fair at all, because there is no saw mill man at all who figures his output simply from the quantity of first and second manufactured, for if he did sawmills would not get full scale out of their logs. The saw mill counts as its full product all the different grades of lumber manufactured, and if the veneer people do the same thing; that is, sort and grade their veneer, and trim it up nicely as the saw mill people do, to get out defects, and utilize every possible inch, this product of a rotary veneer machine on ordinary logs should be in excess of the product made by the saw mill. In other words, there should be less waste. It seems, therefore, that the thing that it is up to the veneer people to get busy on is this matter of how to handle the products to utilize all the stock made and not have from 20 to 30 per cent. of it going to waste. The lumber people are continually working out schemes and plans to utilize all their products, including narrow widths and short lengths, and probably if the veneer people would do the same thing they would find themselves getting more out of their logs and incidentally making more profit out of their business. This is presupposing, of course, that the means adopted to utilize what is now going to waste are of a practical and not merely a theoretical and expensive nature, costing more to carry out than the product is worth.