WOOD PULP DEPARTMENT

WET AND DRY PULP.

By W. A. Harr.

In preparing mechanical pulp for export in nearly every mill in Canada and the States, the percentage of 50 per cent. pulp to 50 per cent. water seems to be considered the standard of dryness. Why this limit has been adopted is not generally known, for the simple reason that it is non-existant. By present methods this percentage is about the limit, and instead of changing the methods the owners of mills seem to have been content to lose thousands of dollars annually by exporting water. That pulp can be cheaply and easily made, containing not more than 5 to 10 per cent. water by weight, has been already proved by at least one mill in Canada, and there is no reason why nine out of every ten mills should not be equipped in this way.

When pulp is supplied to the wet machine it is less than 1 per cent. by weight of the water in which it is carried. This is as it should be, because the solution of water and pulp is easy to handle by means of centrifugal or plunger pumps When it is delivered by the ordinary wet machine in the form of a sheet, the pulp will comprise from 35 to 45 per cent. of the total weight, the remainder being water. In many mills where poper making is carried on as well, the presence of water in the pulp is practically of no consequence; in fact in many cases it is considered a decided advantage, as the pulp and water can be pumped directly to the paper mill, thereby entirely doing away with the wet machine. In other places the pulp is delivered to the paper mill in the form of a sheet with a percentage of 25 to 35 per cent. pulp. The presence of water in the pulp in this case enables the sheet to be more easily reduced to a solution again. In the case of a mill which manufactures for export, however, the conditions are entirely different. Freight is paid per hundred pounds, and is the same if you ship water or pulp. When pulp is shipped at 50 per cent. the transportation charges are double what they should be. As this item in any case would not be by any means a small one, the effect of doubling it is apparent. This will explain the reason why some United States pulp mills can import their wood sawn and barked instead of moving the mills to the forests and railing their pulp to the paper mill. Air dried spruce can be more cheaply transported than the same quantity when manufactured into pulp at 50 per cent. dry.

The usual method of increasing the percentage of pulp from 35 or 40 per cent. as deliverd by the ordinary wet machine to 50 or 55 per cent. for export, is by means of hydraulic presses. The method is briefly as follows: On the platen of the press are placed thick felts or bagging, then folded sheets of pulp, then more bags or felt, and more pulp, and so on until the press is full. On applying the pressure the water is pressed out and runs down the outside. After sufficient pressing the platen is lowered and the pulp and bags removed. In nearly every case the pulp will vary in dryness according the position it occupied in the press, that which was near the edge being very wet, while the interior is fairly uniform. By folding the sheets as is done in some mills, a great deal of water is retained. When the pulp is under pressure it is saturated with water, but as it is occupying a much smaller space some water is driven off, nevertheless there is considerable water still in the pulp and bagging and between the sheets of pulp. If the pressure be now removed the pulp will expand and soak up this water again. The result is that to produce 50 per cent. pulp we are required to produce a higher percentage when in the press which we get no return for.

It is quite evident, then, that we cannot obtain dry pulp by this method unless we greatly reduce the capacity of our presses by using higher pressures and allowing more time for pressing. In any case, the limit of the hydraulic press would probably be in the neighborhood of 70%, which, according to our new standard, is still wet pulp. The question has been raised by some paper-makers as to the advisability of making dry p... As it has to be all reduced to a solution by... the paper-maker would rather get his pulp wet... so it can be easily beaten up. The problem... then, is to produce a pulp at least 95% or... dry, and put up in such a form that there will... no difficulty experienced in reducing it again... a solution by mixing with water and beating... when it has arrived at the paper mill.

It is claimed by some makers that their machines will produce 50 pulp directly from the rolls, but in nearly every case the capacity will have to be reduced to obtain this percentage, the machine being run slower to allow the water to escape.

There are a number of mills that find their transportation charges so high that they are practically prevented from exporting. If they would put in machinery capable of producing dry pulp they would be able to market their product twice as far from the mill as at present with a correspondingly enlarged market, and with greater opportunities to avail themselves of changes in foreign prices.

One of the chief sources of difficulty with Canadian pulp in the English market is the variation in the moisture test, and therefore some ambiguity as to the exact weight of pulp shipped, leaving the way open for disagreement between purchaser and shipper. All this could be avoided if a standard of 95% or 99% were adopted—preferably the latter; but in this case great care must be taken in shipping to prevent water or moisture getting at the pulp, as it will absorb 10% to 15% from the air, reducing it to 90% or 85% dry. This does not present any great difficulty, as with the amount gained in the reduction of the freight charges, more could be expended in securing an efficient and cheap wrapper for the bundles, thereby ensuring the arrival of the pulp in a perfectly dry and clean condition, which would at once claim an advance in price over the product shipped under present methods.

There is talk of the Rathbun Company, of Deseronto, Ont., building a pulp mill at Bancroft.

William Lancaster, a prominent paper manufacturer of England, recently made a tour through the spruce districts of the Dominion. Mr. Lancaster expressed himself as being highly pleased with what he saw, particularly in the province of Quebec. Formerly the supply of pulp has been obtained from Holland and Norway, but he expected to close contracts for a considerable quantity of Canadian pulp.