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To aid in the establishment of rational forest management.

To offer an organ for the publication of technical papers of interest to professional foresters in America.

To keep the profession in touch with the current technical literature and forestry movement in the United States.

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UNPROFESSIONAL FORESTRY.

It ought to be a source of satisfaction to foresters when they find the work they have at heart going on outside the range of their knowledge and immediate assistance. When simple business interest dictates careful and conservative management on the part of forest owners, and this fact is clearly recognized, then, indeed, the cause is won. Just what the measures that embody it shall be, and just who are the best men to carry it into effect are matters that may be safely left for settlement by trial and time.

The Canadian maritime provinces afford many examples of such unprofessional forestry. In that region are numerous forest properties that have been cut over for many years and yet retain their growing power and value. A moist climate and a law-shiding population have secured considerable exemption from fire. Logging methods conservative of the forest have been employed. The temper of the owners has not been such as to force timber ruthlessly on the market. As a general thing only trees of good size have been cut, an amount of lumber frequently within the power of the lands to produce. That this policy has been a good one for all concerned would seem to be indisputable. The people and the operators have done well, and the lands, in spite of 50 years cutting, are more valuable at the present time than ever before. Some of these properties are handled today as nearly according to the principles of true forestry as is practicable.

An illustration of such methods was encountered by the senior class in forestry at Harvard University on its trip among the lumber camps last winter. The Hollingsworth and Whitney Company of Boston, whose mills are at Waterville, Me., is one of the largest paper manufacturing establishments of New England. This company, some 10 years ago, began a policy of land purchase, which it has consistently carried on until, at the present time it owns 100,000

acres of spruce land on the Kennebec River. This land they have operated carefully, intending to make it a permanent source of raw material for their mills. They tried logging by contract at first, but finding that the work was not done to suit them, bought teams and developed an organization of their own. This organization is fairly started now, and while methods of work are not yet perfected as they will be, enough has been done to demonstrate the intention of the company, and to furnish considerable insight into the best methods of controlling such work.

The principle of conservative cutting was adopted at the start, and is exemplified by the high size limit adopted as a general rule for cutting, namely 12 inches in diameter, breast high. Next the company early determined to mark the timber for cutting. This presents no obstacle in the way of cost—2 or 3 cents per M will cover that—but it does take determination on the part of the company, and it does mean thorough-going superintendence on the part of its responsible representatives to make logging bosses and choppers adhere to it. That it can be done, however, the experience of this company proves, and, as is so often the case with reforms of this kind, carried out in the face of strong opposition, former objectors, since they have got used to the new method, rather like it than otherwise. The company's lands, to be sure, were of such a character as to lend themselves to conservative cutting. It may, therefore, be safely said that, as far as the work has gone, a favorable result has been reached.

Economy in the utilization of the timber cut was, of course, the first thing looked after in the work of such practical, business-like men. Saws are used instead of the ax in cutting down and cutting off; all dead and down stuff in the territory cut over that remains sound is picked up as a matter of course; logs are run up into the tops of trees as far as the wood can be used in the mill; stumps are cut low enough to put to shame the standard of some much lauded examples of "forestry" elsewhere. A little trick used to secure economy in the latter direction is well worth noting. The trees to be cut are marked not on the trunk but at the base, at a height just above that at which the stump should be cut. The choppers then are required to take the spot off with the log, a very simple and conclusive evidence of good work.

It would be strange if in the course of only three or four years a large organization doing work of this nature should have come to the state of efficiency which could be desired, or which with time

and effort will be attained. Habitually, in Kennebec logging two horses and a sled four feet wide for yarding purposes are employed, a type of rig which necessitates a wide road and a good deal of destruction of small trees. Much of the country and timber of the H. & W. Co. appears to be adapted to the Adirondack methods of yarding with a single horse, trailing or snaking one or two logs directly on the ground. The company is aware of the saving of growth by the latter method, and as soon as it can be done under favorable conditions will give it a thorough trial. The final decision between the two will depend on ratio of saving to expense.

Another point in which the work of the company may be criticised with a show of reason is that its method of cutting is too rigidly uniform; it does not allow sufficient variation to meet the needs of the case. The territory is in general well adapted to conservative cutting, but there are directions in which the present system does not meet the full requirements of the case. A good deal of fir below size limit standing on the ground will surely go to waste if left for the next cutting. Then there are places where the land had better be cut clean, and other places where scattering trees of merchantable size had better be left to stand either on account of expense or for the sake of young growth around them. The present practice of the company is perhaps best for the present, all things considered, but there can be no doubt that in the near future it should be changed. Possibly such change will require that a better class of men shall do the marking than those now employed, though the points involved are neither many nor difficult.

Lastly there is the matter of destroying small growth in felling trees, in swamping roads and similar operations. Change in the yarding method would do much to relieve that, but outside of this measure, reform is a difficult matter involving training of the woodsmen and, if possible, more permanency in the woods force. How much can be done in this direction is uncertain.

The statements above cover the main points involved in the system of conservative cutting, but there is one other achievement of the H. & W. Company which is well worthy of note. Like every other man and corporation doing business on the Maine rivers, though not all like them have been aware of the fact, they have been sufferers from the peculiarities of construction and from the tricks in manipulation of the common board rule. With the business in their own hands from the stump to the mill, they did not have to remain subservient to the custom of the region in which they operated. They have in

fact gone back to first principles and devised a rule of their own which gives the actual contents of logs in cubic feet from measured length and middle diameter. A measure like that, discounted for bark as careful studies have shown them should be done, gives exactly the information about its logs the company requires when they are to be used in pulp and paper manufacture.

A few general reflections, which seem to be worthy of note, are suggested in this connection. The first is that work of just the nature here outlined is under the circumstances of the case, real forestry. That admitted, it is instructive for one thing to note what kind of men have been instrumental in bringing success about. William Lanigan, the head of the land business of the company, is an old Kennebec lumberman and log driver, one of those forcible and clear-headed men without much schooling, so common in all lines of American business. For a woodsman he has more than ordinary thoughtfulness and hospitality to new ideas. His time is spent mainly outside the woods directing logging operations only in a large way, keeping in touch with business both inside and outside his own concern. He is the man who devised the system of mountain watch stations, connected by telephone with the wardens below, which proved so efficient in preventing forest fires on the upper Kennebec last year.

Under him come the walking-bosses so-called, men who have general charge of a section of the company's woods operations. Lewis Oakes, who has charge of the eight or ten camps east of Moosehead Lake, is a land surveyor by training who has been familiar with timber and with logging since boyhood; and, while he may never have chopped, or run a camp himself, he knows perfectly well how it ought to be done. He looks out the location of the camps and main roads in summer, and, after logging begins, he sees to it, that the camps are stocked with tools, supplies and men, giving advice, settling disputes, and in general keeping things in smooth running order.

Camp foremen are an important item in the organization. These are men of the usual type and training, though a sifting process is constantly going on for the best and most efficient. The workmen, too, are like those found in other concerns in the region, many of them French Canadians. Nothing perhaps to secure the best work either need or can be done with them except to organize and watch their work and use them liberally in the matters of food, quarters and pay. The marking is done by bright young woodsmen who are

paid about the wages of a cook or foreman. One man in the course of three months in the fall will mark all the timber that two or three camps will cut all winter. Here, if anywhere, in the matters of marking and inspection of logging work, is the weak place in the company's system.

The work of the Hollingsworth & Whitney Co. is believed by the writer to come very close to securing true forestry, as near certainly as any logging work carried on in the spruce woods of New England; and yet it is seen that in the company's organization there is no man of technical forestry training, no man who even calls himself a forester. That suggests to the mind of the writer that perhaps we who assume the professional name may in our enthusiasm and eagerness have valued our own usefulness and efficiency too highly. While we have been theorizing about forest management and drawing up plans which may or may not have had some effect on the lands to which they applied, other men in their own territory have been going ahead without advertisement or parade actually securing the real thing. The idea is worth pondering and the question that follows it—whether it is not they rather than we who are the real foresters of the country.

The writer believes that there is much truth in this suggestion; yet further reflection will show that neither forestry educators nor technically trained men need depreciate their services in the past, nor feel discouragement over future prospects. It is true in the first place that any attempt at conservative lumbering, such for instance as that described, is not altogether self-developed or self-maintained. In a measure the way in which they have gone to work, and in still greater degree the fundamental attitude of the Hollingsworth & Whitney Co. toward the timber land tributary to their mills are very largely the fruit of the literature with which the country for the last twenty years has been thickly sown. Business permanence as dependent on the woods, the forest as a field not a mine, the time element in the production of timber crops, the essential value of reproduction, the achievements of forestry in Europe—these ideas, propagated through forestry literature, are behind every attempt at better forest management today, and nothing has been or is more necessary than their propagation.

In regard to future management and the school-trained man there is just one thing to be said, but that is full of meaning and cuts in a multitude of ways. It is that when technically trained men can do the work required better than those who are now conducting it, they will get it to do.

AUSTIN CARY.