

are many others which are pressing for immediate solution in order to prevent manufacturing losses, to eliminate wastes and to promote more efficient methods of manufacturing which would thus put Canadian industries in a position to compete more effectively with the industries in other countries where more attention has been paid to scientific developments.

Canada has no School of Pulp and Paper Making; Canada has not even a single University course in pulp and paper manufacture. McGill University and the University of Toronto include four lectures on this important industry in a series on Industrial Applications of Chemistry. This is good as far as it goes but it does not meet the situation. It is true that industrial development and the perfection of processes involving the natural sciences depends more on a thorough knowledge of fundamental scientific principles than on a superficial knowledge of some particular industry but it cannot be denied that a young man entering the pulp and paper industry as a career will give more satisfactory service and will be happier in his environment if he has had an opportunity of carrying out himself on a semi-commercial scale, the various operations of the pulp and paper mill. Such a practical laboratory work should of course, be based on an adequate course of lectures covering the entire industry. His mill work may be circumscribed. The students training should also include study and experience on the properties of cellulose. The class work and the experimental laboratory work would naturally be most efficiently done at the University but the practical operation of mill machinery and the control of manufacturing processes could not be better provided for than at the Forest Products Laboratories. The same man should be in charge of the work at both places. Such an arrangement would provide for the development of the best trained body of operating engineers who would be available anywhere during the near future. There is certainly no place on this continent where such combination of facilities is available and with the continuation of the plan of the Technical Section for placing University students in the mills for vacation work, there attaches a purposeful meaning to a University course which is of the greatest benefit to both the student and the mill.

It will be remarked that the first purpose of the Laboratories is the investigation of the problems associated with the utilization of timber and that the first duty of the University is to train the investigators who will attempt to solve these problems. What could be more logical or advantageous therefore, than to associate these two institutions and conduct the work of training and investigating in conjunction? At present we understand that the investigation of a problem as a basis for the writing of a thesis is not required for graduation in the department of Chemistry although we understand that essays are sometimes written on certain phases of industrial work. We believe

that the young graduate will be far more useful to the industry he chooses to connect himself with if he could have some training in the organization and conduct of his attack on some industrial problem under the direction of a trained research man. We hardly see how a young man can otherwise obtain an appreciation of the factors involved in industrial operation nor the means of obtaining adequate, essential data with the least interference with mill operation. The very acquaintance he would get with measuring instruments and a bit of practice in cutting and fitting pipe would put the University man on an altogether different and better status with the mill man than he enjoys at present and his services will be worth far more to his employer.

It seems a shame that for so many years this opportunity of giving students some practical mill work and in the development of a course dealing particularly with Canada's most important manufacturing industry has been neglected. Under the direction of a qualified research man the work of investigation on many important problems could be organized in such a way as to collect the necessary data and at the same time give the students experience in the organization and interpretation of research work and the operation of pulp and paper mill equipment. Such an opportunity as the present close association between the University and the Laboratories offers would be entirely lost and without any compensating gain if the Laboratories were moved elsewhere. The idea of divided services is probably a bugaboo that has tended to scare the Forestry Branch from co-ordinating the work in both institutions under one man but there was a very successful precedent for such divided services in the experience of the first Superintendent of the Laboratories who at the same time was also editor of the Pulp and Paper Magazine and secretary of the Canadian Pulp and Paper Association. The work of the Laboratories is now too big for the superintendent to hold another position at the same time but the work in the Pulp and Paper division could not only be carried on simultaneously with teaching at the University, but such a combination would be a distinct advantage to both institutions and an unqualified advantage to the student and the industry with which he would later be connected.

No, Mr. Stewart, please don't move the Forest Products Laboratories of Canada to Ottawa or anywhere else until you have an institution as good as McGill to connect it with, but rather get together with the University faculty and work out some means for closer cooperation.

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To try to make others comfortable is the only way to get comfortable ourselves, and that comes partly of not being able to think so much about ourselves when we are helping other people.

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The world does not owe any man a living but every man owes the world a life.