Ranger School Education in Quebec.

By
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Pioneer days in the establishment of the forestry profession in this province are rapidly passing away. There are now many signs to indicate that the task of handling our forests, which we so long claimed as ours, will not only be thrown upon our responsibility sooner than many of us may have expected, but will also prove, after all, a much more complex affair than we may have thought in our university days.

Of necessity, to get a footing in the forest organizations of this country, we have busied ourselves with so many secondary and trivial duties, that we have been led to believe in forestry practice as an art that requires looking too far into the future. While winding round to get at the goal, we may have lost sight of the real ideals of the profession and may have partly surrendered to the fatalistic dogma of the "nothing to do against economic conditions".

Yet progress has been made, here very conspicuously, there less so, because economic conditions are in reality barriers very ill defined, which yield very differently, under scrutiny with time, locality and men. Progress has been defined as made up of the successive retreats from positions taken as inexpugnable by the many. The last fifteen years have undoubtedly been those of the paper mill, which, wonderful though it may be, is but a tool and not in any way the basis of the pulp and paper industry. Consequently, it seems to us that there can be no rest for this industry which has spent so much on steel and concrete in its search for a solid foundation, until it goes deeper for permanence, that is to true forestry. The great corporate bodies, which are our pulp and paper companies, are opened at this time to the idea of practising some kind of forestry and they are relying more and more upon foresters for ways, means and results. It is the duty of the foresters who have gained positions of strategic importance in the forest organizations of this country, be they state or private, to lead towards the practical significance of forest management and silviculture. Theirs is the duty of building up an army of workers which, to be effective, must include, not only high grade officers and unskilled workers, but also officers of subordinate character. In every country of the world where forestry practice exists, there are schools of some kind to provide not only for the training of professional foresters but for rangers as well. Indeed, one would think naturally that there should be more rangers' schools than

high grade ones, unless the profession were so weak and ill-defined that there would not be recognized functions of a higher and lower order.

The higher forestry education is pretty well standardized to-day in nearly all parts of the world, but the secondary or vocational, as it is also called, is very much less so, on account of the fact that to perform its true function, it must be more local and practical in its scope. There are schools maintained by the state for the training of forest service officers, others by the lumber and wood-working industries to train men as foremen or skilled operators, of which last some are more or less conducted along the lines of technical schools. In the western United States rangers' schools have sprung up to educate men in handling logging machinery and construction work, others to fill the needs of fire-protection organizations or to prepare for the marking operations in the national forests. There are short courses of a few days or weeks duration in kiln work, portable saw-milling, tree-pruning, lumber-grading, log-scaling, fish and game conservation, grazing and what not. There are courses for field men who never had the opportunity of acquiring technical knowledge, others to fit young men without previous experience.

The rangers' school of Quebec which was established in 1922 had been demanded by the Forest Service officials and the representatives of the lumber and pulp and paper industries as well; some of those who most earnestly desired its foundation had in mind different views regarding the specific manner in which its courses of study ought to be organized to attain specific object. Some thought of inspectors better equipped to supervise logging operations, others thought of better educated cutters or fire-rangers, while foresters expected from such a school the training of assistants for technical work. To sum up, it is probably right to say that the school came out of the realization by all parties interested in the organization, protection and administration of our forests, that there could be no materialization of a forestry policy commensurate to the needs of the province, if there were not to be more men provided with a certain amount of forestry knowledge to carry on duties which, though of a subordinate character, nevertheless, require for satisfactory results, more than the experience acquired along with the practice of the actual rangers' duties.

In the lack of a more definite field to which the school should confine its activities we have decided on a programme of a broad and general character, leaving to the future the care of improvements and specialization towards more specific objects. We consequently have chosen an eight months course of attendance at school, divided into four terms of two months each, extended over a

period of two years. Field practice under remunerative employment outside the school activities come in between the terms. This arrangement permits the student to be self-supporting during the whole length of his course, a consideration which we could not ignore on account of the fact that most of our boys could not have afforded the cost of a full continuous year course. Besides, a good many of the students are rangers who already hold positions of some kind and can only attend a course if it is of short duration. We have a fall term, September and October, and a spring term, April and May, which must be attended twice to complete the course. This combination of actual field practice with school attendance also facilitates to those who have not already done so, the opportunity to get acquainted with the actual conditions of woods life and duties, which are to be their lot in the future, or to quit it before completing their course, if they perceive they are on the wrong track. During this part of their training they are familiarized with a greater range of forest conditions and duties, meet employers and generally speaking are better equipped to choose or be offered employment.

Amongst them, we find scalers, fire-rangers, forest-rangers, assistants to foresters or surveyors, logging contractors, and even ordinary woodsmen or axe-men. Others are coming apparently with no other definite purpose than to acquire a better general education and will still continue in the particular line they were interested in, while others want to improve themselves within certain definite fields and widen the range of their opportunities. We have also those who, though generally of the better educated and the youngest class, have had little or no knowledge of woods life and work. Whatever was the particular object our students had in view before entering the school, we have found them all eager to follow the complete course and this feature of our programme which combines school terms with outside field employment has in no way deterred them from assiduity.

Our requirements for admission are that the applicant must be between eighteen and thirty years of age, be physically fit for woods life, and have a good common school education. If we had been too drastic in regard to previous education we would have missed most of the men already possessed with a certain amount of experience but eager to learn because they knew how much it could benefit them. Besides, these men are the most easily disposed of, because certain classes of employers are particularly insistent to the point of not even giving a trial to the applicant unprovided with experience.

On the other hand, we have not thought it advisable to disregard young men, on the mere ground of their inexperience,

though we have realized that employers are few who are ready to try school-trained apprentices. It has been suggested that inexperienced men ought to spend a preliminary period in the woods before entering the school; well and good, but we have not as yet found the patrons to put this scheme into effect. Struggle for life is not keen enough in this country to induce a young man, fresh from college to do chopping work as probation for admission to rangers' school, and yet there are some of these boys who will be very good foresters and the forests would be better off to have more of them as servants. We have partly obviated this, first, as already said, by combining actual field practice outside the school with school attendance, and also by the arrangement of our curriculum at school, which is one-half devoted to field practice on school grounds. We sincerely believe, and experience is already showing us, that these better educated men, when properly broken to the functions they are called to perform, will be, in the long run, the best assistants that can be had for foresters and to many other employers who need men able to grasp the real point of view of forestry and want to make of it a life career. These men, as a rule, will be worth the extra trouble the employers may have in completing their training because more adaptable to improvements and technical works.

It should be expected that classes of students of so many different elements as regards previous preparation, age and woods experience, would prove difficult units to handle and that is exactly what the professors had to contend with. A ranger school curriculum should be arranged to cope with every condition brought up by its requirements to admission, but very few can do it properly, unless very local and specialized in their objects. We have tried to avoid this by rearranging the programme from time to time, according to what would be called the mean level of a class, in reducing the gap which exists between the less and the more educated by refusing admission to the more poorly equipped ones. Our progress in the future in this respect depends upon the class of men which will be more in demand; up to now it is impossible to set a definite standard. There are compensations, however, arising from this situation which work to offset its disadvantages. The students are lodged and boarded at the school and so are the professors, an arrangement which facilitates, at all hours, communications between students and professors and students between themselves. We have found that the better educated were generally willing to help the less fortunate ones in this respect, and vice-versa, that the older boys were glad to give, in exchange, whatever they may have learned in the woods. We have encouraged this to the utmost, by way of problems, the solution of which required such mutual assistance, and it is only due to this after-day work that many of our students have succeeded in going through the entire course.

Our curriculum, in a general way, covers the field of forestry, but in an elementary and applied manner, confined as much as possible to the more immediate needs of the student. We usually give lectures in the morning, leaving the afternoon for field practice when weather permits, or to drawing and miscellaneous exercises, so as to divide class and field work on an equal basis. This order is easily altered to suit weather, opportunities, students and professors, as already said, being on hand all day. We use very few text-books, but mimeograph instructions freely; notes are dictated when necessary.

The three subjects which are particularly emphasized are forest mensuration, forest surveying and silviculture, not only for their direct use but also for training. Forest mensuration and surveying are most useful for all kinds of rangers, woodsmen, scalers, supervisors of logging operations, timberland cruisers, assistants to men engaged in technical work and research, contractors, managers of small estates. Silviculture is the main part of forestry and we consider it a most essential course if we are ever going to have some kind of forestry in this province. It is in this course that we strive to impress upon the mind of our students what is the real meaning of forestry, and we believe that a ranger school which would fail in this respect, perhaps not now, but surely inside of ten years, would deprive its students of their greatest opportunity. Silviculture in a ranger school does not deal with fine technical points but should aim to train a student to be fit for the marking of trees under the guidance of a forester and in a general way to open his eyes to the lessons of tree life and development. Forest mensuration deals with practical problems met with in log scaling and timberlands estimation; it is one of the best understood courses and one which may be developed at length and still remain in the field of immediate utility to the ranger. The log scaling instructions are precisely followed with the greatest interest by the scalers themselves, who thought they knew all about it. Surveying will interest even those with the poorest education on the day when they are able to lay out on a plan their findings on the ground. Both courses, that is, mensuration and surveying, call for a fairly good foundation in mathematics, and consequently arithmetic is given a special attention, while geometry is covered mainly for its use in connection with drawing and calculation of areas. In trigonometry we do not go much further, except with a few advanced students, then the use of latitudes and departure tables as found in elementary treatises like Austin Carey's "Manual for Northern Woodsmen".

It is in the matter of language that we have found the greatest difficulties in handling the classes as units, because in the short time allowed, it was found impossible to improve very

perceptibly the performance of the less educated ones. On the completion of their course, some will always be of the woodsmen type, handy in jobs requiring more experience than ability to make reports and maps, while others will be more of the forester's type, that is more immediately fit to give technical assistance.

Clerical and office work training is acquired with exercises in report and letter writing, tabulation, sorting and calculation of dates and are developed along with forest mensuration, surveying and mapping courses. Logging and wood utilization are mostly taught by way of problems in which the students are called to bring in the results of the observations in a familiar manner and to the solution of which the professors supply the outline, adjustments and principles. No attempt is made to initiate the students into the problems of construction and transportation which require engineering skill or highly developed machinery.

Botany, dendrology, entomology and mycology are largely taught during excursions in the neighbouring woods; it is a matter of identifying common plants, trees, most common insects, and diseases attacking seedlings and trees. Wood technology is also a matter of identification of the indigenous woods together with a review of their main mechanical properties and uses in the industry. We have a good library at the disposal of the students who can afford to go in for more complete knowledge on these subjects.

Practice in nursery-work, seed-collecting and extracting, tree-planting are given in connection with the provincial tree nursery on whose grounds the school is located.

There are also lessons given in physiography, soils, meteorology, forest laws, forest economics which are of more or less immediate usefulness to the students, but which will widen their training and induce them to read forestry literature, reviews and articles.

Since we have opened the school, we have not improved much, except in details, on the curriculum as first drafted, not that it is perfect, but because it contains the essentials of a ranger school, from the type of which we do not see now why we should deviate. I must say, however, that a ranger school class is far different from a university audience, and men who have had no previous knowledge of woods operations have in a general way a receptive mind very different from that of the boy just out of school. They will accept what you are telling them, even become the most interested students, but to succeed you have to win them first by your sympathy and understanding of their concerns. For your reward you will enjoy the pleasure of imparting to them facts

and principles which, though very simple, will be accepted as wonderful things.

If the success of a school can be gauged in a certain way by the number of its students and the employment these have found, I think that we can state that this initiative of the government of the Province of Quebec has been timely. We have had since its opening as many students as we could accommodate at a time in our quarters, that is about forty, divided into two classes. The annual entry is limited to thirty, but after a few days this number falls to twenty-five or so by elimination of the less fitted elements; of these, fifteen to twenty can go through the complete course and graduate. As a rule those who are permitted to pass to the next term come back and there are very few who leave the school of their own accord. Up to date we have relied on the appreciation of the course by our students for recruiting purposes and have had practically no recourse to public advertising. We have not yet felt this necessity as we have had regularly a number of applicants varying between seventy-five and a hundred every year. In this connection I may state that it is my belief that any ranger school which might be opened in any other part of Canada would find any number of applicants if I can judge by the demands I have received from every province, from British Columbia to Nova Scotia.

Recruiting, however, is only a part of the success of a school and can be maintained only if students can find remunerative employment. Though I must admit that this means some hard work from the direction of the school, I also take pleasure in stating that through the co-operation of the officials of the Forest Service and of the Board of Advisors to the school composed of representatives of the lumber and the pulp and paper industries, we have fairly well succeeded in securing employment for all our deserving graduates and students. Of the forty-four students we had in attendance last fall, twenty-two went to private employers and companies, twenty to the Forest Service, while only two having not found assistance from the school were left to themselves.

Fields of employment are varied according to opportunities, previous experience and ability. This winter we find the students scattered all over the province, from the Abitibi district to Matane, acting as scalers or scalers' assistants, forest rangers' assistants, compass men on cruising parties, assistants to foresters in logging operations and in marking cuttings, assistants to surveyors and to foremen; in the summer time we will see them in land classification parties, reconnaissance and survey work, fire-ranging, and so on, according to seasons.

At first, we have to turn mostly to the government officials

for help in behalf of our students but now pulp and paper companies are giving them an increasing share of encouragement. At no time, however, was it an easy job to go after prospective positions; need of better educated men and good will exists to employ them but not always to the point of realization if one does not go after it.

As I have come now to the end of my lengthy remarks I wish to state that it has been far from my mind to represent our school as a model, but rather to give you an idea of the many problems which confronts the establishment of similar schools under present conditions, yet ranger schools are a necessity and forestry cannot wait for the training of its secondary personnel until perfection in its schools is attained. They must manage with the means at their disposal for immediate results. Our school will not make super men, but just better trained men, we sincerely believe, other things being equal, than the non-educated practitioner and this because we have striven to impress upon them for a time our faith in forestry, pride in the profession and desire to learn more and do better work.