FOREST EDUCATION IN QUEBEC

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HISTORICAL

Forest education in Quebec developed largely in conjunction with the development, at the turn of the century, of the pulp and paper industry.

The possibilities unveiled by this new mode of forest utilization contributed to the growing recognition of the importance of our woodlands, and of the necessity of their scientific management by trained specialists.

With this latter objective in view the Quebec Forest School was created on June 4, 1910, by an act of the provincial legislature; and was affiliated with Laval University ten days later.

The character and scope of the programme adopted was very similar to the type of instruction provided in American institutions, but was also strongly influenced by European training standards. Thus, if we refer to an early account of educational methods† we are told that "... the pupils of our School learn how to create forests as well as to preserve them, and it is with this object in view that the greater part of the forestry course of Laval University is applied (the first year, and half of the second) to outside and practical work ..."

For nine years the Quebec Forest School, following the original curriculum, turned out men whose record in administration and industry rapidly brought them to the fore in their profession thereby testifying to the excellence of the training they had received.

In 1919 another forward step was taken in order to complete the training of future forest engineers who, with their confreres of other forest schools, were gradually gaining recognition by the industry. The School of Surveying which had been established two years earlier at Laval with the collaboration of the Quebec Government had many basic subjects in common with the School of Forestry. It was therefore decided to fuse the two schools; and the resulting complete revision of the programme of studies provided a sounder basis in the engineering sciences for the forester, and a broader training in the natural and forest sciences for the surveyor. There were options after the second year and these led to either the degree of Bachelor of Surveying or that of Forest Engineer.

With staff and overhead administration expenses thus reduced the new School of Surveying and Forest Engineering was now able to apply the greater part of its revenue to the improvement of its teaching facilities.

†Bédard, A. Forestry Education in Quebec. Can. Forestry Assn. Rept. 12: 100-103. 1911.

In 1940 a new curriculum was introduced, more comprehensive and in better keeping with the ever-widening field of forest engineering activities. These high scientific standards have gained the School wide recognition abroad; and in 1945 it was raised to the rank of a fully established Faculty.

THE CURRICULUM

The above brief historical sketch of the evolution of the Laval Faculty of Forest Engineering suggests that periodic changes were effected in the programme when there was evidence of need of change. However, for the last five years the curriculum has been only very slightly modified, attention of the staff being mostly concentrated on bringing every individual subject up-to-date.

The curriculum for undergraduate studies at present is as follows:

- 1—*Mathematics*: higher algebra, analytical geometry, plane and spheric trigonometry, differential and integral calculus, Theory of Equations, least squares, mathematics of statistics, applied mathematics.
- 2.—*Botany*: general and systematic botany, physiology, forest ecology and forest geography, dendrology.
- 3—*Chemistry*: general chemistry, organic chemistry, physical chemistry, wood chemistry.
- 4—*Physics*: general physics, mechanics, hydraulics.
- 5—*Zoology*: general zoology.
- 6—*Geology and Soils*: general geology, general mineralogy, general soils, forest soils.
- 7—*Surveying*: general and geodetic surveying, photogrammetry, cartography and projections, practical astronomy.
- 8—*Drawing*: engineering drawing and descriptive geometry.
- 9—*Languages*: English and report writing.
- 10—*Economics*: introduction to forest economics, accounting, forest legislation, industrial legislation, forest policy.
- 11—*Silviculture*: seeding and planting, theoretical and applied silviculture.
- 12—*Forest Management*: dendrometry, administration, management, forest finance, working plans.
- 13—*Forest Protection*: fire protection, forest pathology, forest meteorology, forest entomology.
- 14—*Forest Utilization*: properties and identification of wood, forest products, wood preservation and seasoning.
- 15—*Forest Engineering*: construction, transportation, logging.
- 16—*Summer work*: nine months of summer work in any of the above fields of technical instruction.

The student's time during the four years of the course is about equally divided between lectures, laboratory periods and field work, adding up to a total of some 4,900 hours.

The academic year begins around the first of September with the Fall Camp, and ends with the Spring Camp held during the month of May. There is, however, a two-weeks vacation at Christmas and about one week of recess at Easter.

The degree of Bachelor of Surveying is awarded at the end of the third year, and that of Forest Engineer at the end of the fourth year. In this last instance the candidate must have passed a comprehensive examination before the Faculty Board, and produced an original Essay on some phase of Forest Engineering.

Graduate courses of studies are offered to students in only a few branches of Forestry, as cramped quarters do not actually permit of research in other fields. This difficulty, however, will be overcome when the School moves into its new \$600,000 building, the construction of which will start early next spring.

Meanwhile students are encouraged to carry on research work leading to the doctor's degree at other institutions such as Yale, Harvard, Duke or Michigan.

To sum up: no attempt is made to specialize during undergraduate years. Instead a broad training in fundamentals is thought to be preferable. On graduation it is then up to the young engineer to either pursue further studies in a selected field or to engage immediately in the practice of forestry.

STUDENT ENROLMENT

Student enrolment at Laval has always been too low to satisfy the demands of industry and of government.

However, since the early thirties when it was at its lowest enrolment has increased steadily, and it will likely increase more rapidly from now on.

The present undergraduate enrolment is as follows:

Senior Year	4 students (x)
Third Year	17 "
Second Year	23 "
First Year	31 "
Total	75 "

(x) The small number of senior men is explained by the fact that the original class was depleted by calls into the armed forces.

In view of the opportunities offered by forest industries in the Province of Quebec, and due to the fact that the importance of forestry as a career has been more widely recognized of late, considerable interest has developed among young French-Canadians hitherto largely unaware of any but the so-called liberal professions.

There is also a growing demand for trained men in specific fields of forestry such as logging engineering, management, silviculture, forest extension, forest economics, wood technology and utilization. Many factors today tend to create curiosity in young men about to make the choice of a career; and there are numerous inquiries as to entrance requirements in institutions which provide instruction in these specialties.

Any tendency to lower entrance requirements at this moment would bring disaster and would destroy more than thirty years of tireless efforts on the part of our forest educators towards bringing professional standards to the highest levels.

Laval's stand on this particular point is clear and well defined; its minimum requirements are as follows:

The programme of studies of the Faculty requires that the candidate for admission be the holder of a baccalaureate degree upon completion of his classical studies. This degree signifies that elementary work in mathematics, chemistry, physics, botany, zoology, mineralogy and geology has been completed along with that in the humanistic subjects. Holders of the Senior Maatricula-tion Certificate are also accepted.

In conclusion it is deemed of the utmost importance that the forest schools of Canada agree as to the necessity of keeping their entrance requirements at a common high level; and that they strive together towards the goal they have always sought: recognition of their graduates as broadly trained, competent and useful professional foresters.