

**Early Pharmacy Education in Alberta and the Obstacles Facing the Educational
Program**

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Introduction

The success of pharmacy education in Alberta owes much to the persistence and determination of the forefathers who pioneered and built up the reputation of pharmacy at the University of Alberta (U of A). Their work since the inception of a pharmacy program has helped train many successful pharmacists who would later become leaders in their era. Today the demand for pharmacists to have a bigger role outside of the dispensary is high as they have been gaining the respect and trust from both the public and health care. Education has a large role in building up the status of the profession. Almost a century ago, from humble beginnings, pharmacy education faced many obstacles which may in turn have affected the future of the profession.

This paper examines the early history of pharmacy education up to 1930, the apprenticeship program in the 1920's and early influential figures in pharmacy education at the U of A. Important issues in the 1920's facing pharmacy education will be analyzed in the context of both Alberta and Canada.

Early History of Pharmacy Education

The 1920's marked a decade since the establishment of a school of pharmacy at the University of Alberta. In 1914, Pharmacy began at the U of A as a departmental program under the Faculty of Medicine. In 1917, it acquired the school designation under the Faculty of Arts & Sciences. The university also received funding for a pharmacy students- only lab from the Alberta Pharmaceutical Association (APhA) in 1916, which was the pharmacy licensing body. They also provided a \$12,000 endowment among other financial support to the School of Pharmacy in 1918. When first established in 1914, the department initially offered two programs: a 1 year diploma or a 2 year Phm B degree.

The Alberta Pharmaceutical Association Act passed on April 13, 1918 which vested “in the University of Alberta all authority in relation to pharmaceutical education within the province...except...to apprentices...the University may only fix the minimum educational standard for registration of apprentices.”¹ A few weeks later, a proposal was submitted to the U of A Senate to replace both programs with a 2 year Licentiate diploma course which was the minimum licensing course and a 4-year Bachelor of Science in Pharmacy which was the first in the British Empire. (Figure 1). The entrance requirements for entering the study of pharmacy included completion of grade 10 or the equivalent and applicants to be at least 15 years of age. The Licentiate diploma required completion of 3 years as an apprentice prior to entering or over the course of the program. However, in the 4 year Bachelor Degree an apprenticeship was not a prerequisite. Rather one year apprenticeship had to be served during or after the last 2 academic years. In 1928, this was raised to 2 years with 1 year being served before third year. The Degree program had an entrance requirement of the completion of grade 11 or the equivalent. The main content of the courses included botany, chemistry, physics, materia medica, pharmacy, physiology and toxicology, for which students in the Degree program would receive “advanced courses.”² In the Degree program, students would also receive a “cultural equivalent to the other graduation courses in Arts and Sciences.”³ This consisted of German/French, English composition, more Latin and History. Figures 2 and 3 from the 1919-1920 Calendar will detail the two programs. In 1923 at the insistence of students, an accounting course was added to the Pharmacy curriculum. Once the student

¹ School of Pharmacy, Calendar 1919-20. (Edmonton: University of Alberta, 1919), p.8

² Ibid, p.13

³ Ibid, p.8

had completed the classes, they had to pass the examinations administered by APhA's Board of Examiners prior to their registration as a practicing pharmacist in Alberta.

The Apprenticeship Program in the 1920's

The options for an apprenticeship opportunity were limited to either retail or in a hospital. Both positions were few in supply as students were willing to travel across Canada for an available position. They received a wage during their apprenticeship. Apprenticeship in hospitals was established during 1918-1919 in hospitals with 100 or more beds with an additional apprentice for each 100 beds added. The first full time hospital pharmacist in Alberta was in 1916. The guiding principle behind an apprenticeship was to prepare the prospective student of the pharmacy profession by allowing them to better understand through first hand experience alongside education at the university. The experiential learning operated outside the university's involvement and mainly assumed the responsibility of the preceptor pharmacist to prepare and mentor the apprentice. As outlined in the text *Pharmacy Apprenticeship Studies*, "the system of apprenticeship is the outcome of the apprenticeship system that in previous centuries existed in England."⁴ The apprentice would be expected to work and learn what was "done in the routine of a business day."⁵ The extent of the work activities depended on the preceptor but they included dusting, looking after inventory and purchasing, maintaining the photo shop, and compounding medications. Through such an array of activities, the apprentice would not only be proficient on the business side, but also develop some familiarity with identifying the different drugs. The original intent of the apprenticeship was to develop a skill set and knowledge in the dispensary. The apprentice

⁴ RO Hurst (editor), *Pharmacy Apprenticeship Studies*. (Toronto: University of Toronto Press, 1934), p.19

⁵ Ibid

would learn the names of drugs; how to read prescriptions, become familiar with the physical properties of different drugs in their raw form. Of the 5 years minimum prior to qualifying for registration as a licensed pharmacist, 3 of them were devoted to the apprenticeship while the other 2 were in the classroom.

Early Influential Figures in Pharmacy at the U of A

Prior to the establishment of a pharmacy program at the U of A, the sales of drugs by retail was restricted to “persons holding a diploma from a Medical Faculty in Great Britain, Ireland or Canada, and those licensed by the Lieutenant Governor.”⁶ During the first decade into the pharmacy program, H.H. Gaetz a pharmacist, president of APhA , and then a professor, provided the necessary leadership to expand the scope of the program. “Professor Gaetz persuaded the General Faculty Council of the University of Alberta to drop the Phm.B, and replace it with a four year course leading to the degree of Bachelor of Science in Pharmacy.”⁷ Dr. A.W. Matthews was an alumnus of the program in 1921 and would return to teach future pharmacists for over twenty years. Both served as Director of the pharmacy program. H.H.Gaetz also added a national presence by chairing the Committee on Pharmaceutical Education, which was part of the national group Canadian Pharmaceutical Association, until 1922.

Obstacles facing Pharmacy Education

There were issues developing in the 1920’s which affected the profession of pharmacy and led to calls for changes in pharmacy education in Canada. Developments in the manufacturing industry allowed for pure chemicals drug products to be

⁶ Arnold Raison (editor), A Brief History of Pharmacy in Canada. (Canada: Canadian Pharmaceutical Association, 1967), p.38

⁷ Donald Cameron (editor), The History of Pharmacy in Alberta: the First One Hundred Years. (Edmonton: Alberta Pharmaceutical Association, 1993), p.46

“manufactured economically on a large scale.”⁸ The wholesale houses provided these cheaper products, thus removing the public’s dependence on pharmacists to compound the prescriptions. As a result, pharmacists turned to front store merchandising to expand revenues and as a consequence, the “professional interest largely disappeared.”⁹ The entrepreneurial struggle was such that students were beginning to demand that business classes be made part of the pharmacy curriculum. The Canadian Pharmaceutical Journal (CPJ) which was published out of Toronto featured various articles throughout the 1920’s about the need for changes in pharmacy education in order for pharmacists to exist as a professional in the art of healing. Dean Burbidge of Dalhousie University addressed a 1926 convention stating that pharmacy existed as “the handmaiden of Medicine.”¹⁰ He argued that the vocation’s duty was to serve Medicine. Therefore the focus of pharmacy studies should be towards Medical Sciences such as Biology, Physiology, Bio-Chemistry and Bacteriology. Dr. Gibbs from Dalhousie wrote to CPJ in 1925 saying that “with increasingly accurate knowledge of pharmacology the question of dosage becomes more and more important.”¹¹ Mr. Gaetz, also chairman of the Committee on Pharmaceutical Education, submitted a report to the 1922 Convention organized by the national Canadian Pharmaceutical Association which “emphasized [the] need for advanced pharmaceutical education in Canada.”¹² That meant that the curriculum should “not be designed exclusively for retail [pharmacists].”¹³ The 4 year degree program at the U of A

⁸ Dr. Gibbs, The Relation of Pharmacy to Medicine. (Toronto: Canadian Pharmaceutical Journal, 1925), p.366

⁹ Ibid

¹⁰ Dean Burbidge, Pharmaceutical Education should keep pace with Modern Medicine. (Toronto: Canadian Pharmaceutical Journal, 1926), p.480

¹¹ Dr. Gibbs, The Relation of Pharmacy to Medicine. (Toronto: Canadian Pharmaceutical Journal, 1925), p.366

¹² VE Henderson *et al.*, Report of Committee on Education. (August, 1926), p.1

¹³ Ibid, p.2

pioneered the way of higher education. It shifted the focus away from apprenticeship experience to academia with the intent that the graduates can play a leadership role. Dr. A.W. Matthews was a bachelor degree recipient and he returned to the faculty to teach and eventually become the Director of Pharmacy. Throughout the 30's and 40's, he continued to implement ways of increasing the standards of pharmacy education.

Educational standards throughout Canada did not exist because each province's universities or pharmacy licensing bodies provided their own pharmacy education. As well, examinations prior to registration would be conducted by the provinces' licensing bodies. The Canadian Pharmaceutical Association had a keen interest in standardizing the education across Canada throughout the 1920s. The same report from the Committee on Pharmaceutical Education in 1922 had examined pharmacy education in the 7 colleges of pharmacy across Canada. The report set forth ways deemed "essential in standardizing the education equipment accorded to students of pharmacy in Canada and establishing [] a Dominion Board of registration."¹⁴ However, such standards would not be realized in the 1920's but dialogue between the colleges carried into the 1930's as Dr. Matthews wrote letter's to the Deans of pharmacy across Canada about exchanging ideas and how to raise the present standard.

The apprenticeship program was intended as a crucial experiential part of the pharmacy education, but with minimal involvement from universities, many students/pharmacists did not benefit professionally. Dean RO Hurst from the University of Toronto (1934) wrote in Pharmacy Apprenticeship Studies that "it [had] long been recognized that many apprentices come to the college quite inadequately prepared to take

¹⁴ Vernon Meek *et al.*, The Tenth Annual Convention at the "Twin Cities", August 14-18, 1922 (Toronto: Canadian Pharmaceutical Journal, 1922), p.62

the course.”¹⁵ In Alberta, the Licentiate diploma, which many students graduated with, required more years in apprenticeship than in academia. But too often the apprentice learned more about the business aspect of operating a pharmacy than developing their role as a professional. In 1920, the Committee on Education viewed the apprenticeship as “undoubtedly of much value in gaining a knowledge of salesmanship and store management, as well as a superficial acquaintance with drug and chemical substances, but...little dependence can be placed upon the educational advantages such a service is supposed to offer.”¹⁶ Instead the apprenticeship should be totally dependent on “the schools for the systematic education of the would-be pharmacist”¹⁷ because the responsibility to properly train cannot be assumed to be fulfilled by the preceptor pharmacist. This lack of faith in the apprenticeship system was evident in the 4 year bachelor degree program. Rather than having time served as an apprentice prior to entering pharmacy, it was shortened to 1 year served during or after the degree program. “It [was] the general view of those best qualified to judge that twelve months’ store experience under these conditions [was] of more practical value to the student than the usual three years apprenticeship.”¹⁸ A reason for this educational gap was that apprentices were paid a wage during the 3 years. As the Pharmacy Apprenticeship Studies wrote, it was then expected that they return a service to the store, where it be compounding prescriptions or maintaining the camera department. This contrasts today’s current practicum where financial enumeration is strictly prohibited. Thus the expectation

¹⁵ RO Hurst (editor), Pharmacy Apprenticeship Studies. (Toronto: University of Toronto Press, 1934), Foreword

¹⁶ The Report of the Committee on Education. (Canadian Pharmaceutical Association, 1920), p.61

¹⁷ Ibid

¹⁸ School of Pharmacy, Calendar 1919-20. (Edmonton: University of Alberta, 1919), p.8

is that the student practice developing their patient-centred care and achieving the objectives rather than working for the store.

Conclusion

Since 1914 and throughout the 1920's, pharmacy education in Alberta made many strides in creating a higher level education for pharmacists. Influential figures such as H. H. Gaetz, who chaired the Committee on Education and served as Director of Pharmacy, recognized the deficiencies in the program and envisioned the university taking the lead in providing education of high excellence. His actions led to the 4 year Bachelor of Science which was the first in the British Empire. Future pharmacy leaders such as Dr. A. W. Matthews were a beneficiary of the new program. However, during that period of time, the profession was going through an identity crisis in its role as a health professional. A combination of diminishing dependence on compounded pharmaceuticals, a lack of national educational standards and inadequate apprenticeships forced pharmacists across the country to reconsider the meaning of their profession. To combat these obstacles, visionaries and leaders were needed to redefine their profession and one route was to achieve a standardized higher level of academic education with less emphasis on the apprenticeship program.

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Figure 1.

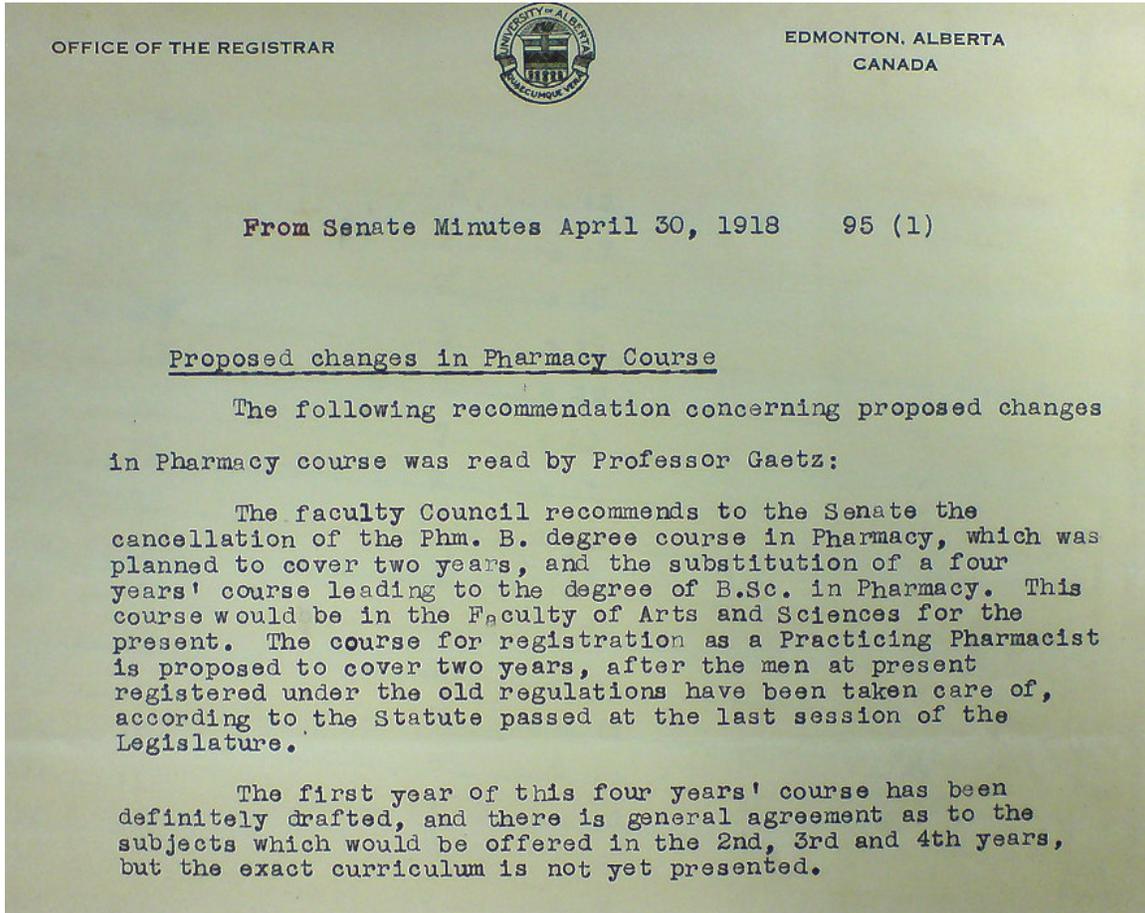


Figure 2.

FIRST YEAR					
Subject	Course No.	First Half		Sec. Half	
		Lect. Hrs.	Lab. Hrs.	Lect. Hrs.	Lab. Hrs.
Botany	Biol. 1	2	3	2	3
Chemistry	Chem. 2 & 3	6	6	6	6
History	Hist. 1 (a)	1		1	
Latin	Lat. 36	1		1	
Mathematics	Math. 36	2		1	
Physics	Phs. 1 & 2	3	3	3	3
Physical Education					

SECOND YEAR					
Subject	Course No.	First Half		Sec. Half	
		Lect. Hrs.	Lab. Hrs.	Lect. Hrs.	Lab. Hrs.
Materia Medica.....	M.M. 1	4		4	
Pharmacy	Pharm. 1, 2 & 4	4	6	4	6
Physiology	Physiol. 2	3	6	3	6
(Biochemistry)					
Toxicology	Toxic. 1	1			
Physical Education					

The extension of the course to cover two academic years instead of one has been made necessary by the practical difficulties which students in Pharmacy have encountered in endeavoring to get an adequate grasp, in the shorter period, of the various subjects which are essential to the profession.

Figure 3.

The schedules for the first three years have been fixed as follows:

FIRST YEAR

Subject	Course No.	Lect. Hrs.
English Composition	Eng. 1.	3
*French	Fr. 1 and 3 or 31 and 32	3 or 5
History	Hist.1	3
Latin	Lat. 1 and 3 or 31 and 32	3 or 5
Mathematics	Math. 1	3
Physics	Phys. 1 and 2	3
Physical Education		

*German may be substituted for French at the option of the student.

SECOND YEAR

Subject	Course No.	Lect. Hrs.	Lab. Hrs.
Botany.....	Biol. 1	2	3
Chemistry.....	Chem. 2	3	3
English.....	Eng. 2	3	
Mathematics.....	Math. 7	3	
History.....	Hist. 2	3	
Zoology.....	Zool. 1	3	3

THIRD YEAR

Subject	Course No.	Lect. Hrs.	Lab. Hrs.
Botany.....	Bot. 52	2	
Chemistry.....	Chem. 52	3	6
Materia Medica.....	M.M. 1	4	6
Pharmacy.....	Pharm. 1, 2 & 4	4	
Toxicology.....	Toxic. 1	†1	

† First half.

The subjects of the final year will be: Chemistry, Materia Medica, Bacteriology, Pharmacy and Physiology. More definite information regarding them will be published in next years' calendar.

In Pharmacy and Materia Medica, as well as in most of the other subjects mentioned, advanced courses will be included which are not available to students taking the licensing course.