CJO
At what age did you consider entering optometry and what prompted the decision?

CB
I had an older brother, Tom, who was practising optometry when I came back from overseas after the war. It was while visiting him that I decided to go into optometry. It was a choice of either finish my arts degree at the University of Saskatchewan and go back to teaching school, or make a change to a new profession. I decided on optometry.

CJO
So you were a part of the established pattern — that most of our recruitment came from family connections?

CB
Yes, and I doubt very much that I would have done so, had it not been for Tom, because otherwise I wouldn't have known very much about optometry.

CJO
What was your conception of optometry at that time?

CB
I had a fairly realistic conception of what and where the profession was. I knew, for instance, that it was an emerging profession, that it had an educational program, which wasn't in a university. My brother, being a thoughtful and articulate person, had often talked to me about the advantages, as well as the problems of the profession. I think I was pretty well-informed.

CJO
At that time, the School was located in a very humble situation physically. Did that affect your attitude when the time came to decide?

CB
Oh no! I had been stationed at the University of Toronto for training in radar while I was in the R.C.A.F. It was at the time when my brother was still an undergraduate at the College. So there were many occasions when I could visit Tom and his wife, Bess, and meet their friends, most of whom were optometry students. I also saw the old buildings which had been converted, after a fashion, to house the College. Believe me, I wasn't at all impressed with the buildings, but I was with the students that I met.

CJO
At that time, Dean Thompson was the mainstay at the school. What recollection do you have of him, and what influence did he have on you?

CB
I liked Dean Thompson. He was an important figure in Canadian optometry — he was the first Dean of the College, which began in 1925 — and I enjoyed his lectures. He was, I think, the one faculty person at the time who had a reflective and philosophical approach to affairs including vision, optometrical education and the whole practice of optometry. I remember that he often
digressed from the subject matter at hand to recall some relevant experience. I used to enjoy those little excursions he took us on, always with a twinkle in his eye.

CJO

He had an M.A. in Physics and Mathematics.

CB

Yes, he was certainly competent in those areas. Surprisingly, he had developed a fair knowledge of the visual processes without any benefit of formal training in Physiological Optics, without any budget. I had a great respect for him.

CJO

Did he have any influence on your later decision to join the staff of the College?

CB

Not directly, no. Not as much as did Ted Fisher and Bob White. That decision actually came later, after Dean Thompson's death. As for Dean Thompson's plans for staff, I can't really say; but I suspect he was looking for leadership in some of the more outstanding people in our class, some of whom were obviously leaders and go-getters, but I don't recall any conversations with him on the subject.

CJO

You mentioned that Dean Fisher had a greater influence.

CB

Yes. Ted had taken over the Deanship immediately after Dean Thompson's death in 1948, and he immediately set about making plans for future staff. He knew that I had had several years of teaching experience, and he also knew that I was interested in setting up a vision training clinic at the school (They didn't have such a clinic at this time). Of course, I couldn't offer him any experience as to how such a clinic should operate and he couldn't offer me a salary. We were both gamblers, I guess, and so we took the chance with each other. I spent three mornings a week, that first summer, at the College, seeing cases of strabismus. I was also instructing in applied optics. Looking back, I believe I was very fortunate to have had that opportunity.

CJO

Since you graduated in 1948, you would have had Dean Fisher for only a short time.

CB

True, but that's as Dean. Don't forget that before Ted became Dean, he was giving courses in clinical optometry. His lectures were always well-prepared and he was enthusiastic about the subject. All of us learned a great deal from him.

CJO

Did any of the other faculty at the time leave any strong impressions?

CB

Well, Dr. Sparks was a wonderful physician and teacher. I liked the way he conducted his classes. He wasn't condescending in any way, and he demanded a lot from us. We were always well-prepared when we went into his class. We had to be. His lectures were always early morning, never later than eight o'clock — sometimes earlier! — after which he made his hospital rounds. He was a wonderful man, really. We respected him as a teacher, but he also became our friend, — and many of us became his patients. Dr. Sparks contributed a great deal to the education of optometrists in Canada.

There was also Dr. Richmond who was, for us, another beloved character. He was a bit rough in manner, a bit demanding, and a bit of a tyrant, too, I suppose. But I don't mean that in an unfriendly way. It was just that, in his class, he alone ran the show. He was never less than meticulous, which made things awkward for most of us, and yet he remained very popular with us. I don't think anyone ever graduated from his classes in geometrical and physical optics with anything less than complete respect for him, and for optics.

CJO

The course in optometry was constantly evolving during the time prior to your arrival, and even subsequent to your graduation. Of the various subjects taught, which did you consider the most important to a career in optometry at that time?

CB

I never had any difficulty realizing that there were a few core subjects that were highly relevant to the program in optometry and that, without these, you couldn't understand the nature of what optometrists do, and attempt to do, for their patients. Without these core subjects, you would have a very flimsy foundation for your professional judgements. As I recall, I never had an aversion to optics, or a feeling that mechanical optics, as we termed it then, or indeed any aspect of applied optics, wasn't essential to my education as an optometrist. The same thing applied to studies in anatomy, neurology and physiology. I always found studies in physiological systems intriguing, especially those concerning the brain's function.

I don't know quite why I'm saying this, but I guess I'm responding to a few of my experiences with former students, some of whom seemed to abominate optics and physiological optics, including studies in perception. It seemed as though they were confused on what the real worth of such subject matter was to the practice of optometry. I was fortunate in that I never experienced this problem; nor did I ever have a problem in understanding that we needed a sound basis in ocular pathology. Now, obviously, this is a very important subject for the optometrist. But I object to an overemphasis on ocular pathology at the expense of other, equally-important subject matter. It's a recent development and, fortunately, is found only in a few schools, where more and more medicine is being taught. But we certainly didn't have this problem in my day.

Another problem we didn't have was whether or not optometrists should treat some types of ocular disease. I think the question has arisen because optometric education in pharmacology has become more
sophisticated, and it is apparent to optometrists that many of these cases can be safely and simply treated by drugs. So the question arises: Why not treat these cases? I think this would be a great mistake, for several reasons, but two of which are paramount. First, the Health Disciplines Act doesn’t permit such practice and, secondly, if optometry chooses to go that route, it can only do so by sacrificing a large part of its present expertise to gain expertise in the field of medicine. What a loss this would be, particularly from the patients’ point of view! Fortunately, though, this doesn’t seem to be a problem in Ontario.

CJO

Given the curriculum at the time when you were a student, and the curriculum now, would you still place the same emphasis on the programs you have discussed, — optics and applied optics, physiological optics and ocular pathology?

CB

Yes, but to them I would add pharmacology, which wasn’t even a part of the program thirty years ago. The important thing in creating a curriculum is balance. It should be as balanced, say, as the one we established here at Waterloo in 1967. Some of it was modelled after the curricula at leading American University Schools of Optometry such as Ohio State, Indiana and Southern California. We owe a great deal to such men as Professors Fry, Hofstetter and Morgan. Much of the curriculum, however, was a continuation of that which had evolved through the years 1925 - 1967 at the College of Optometry of Ontario.

CJO

Do you subscribe to the theory that the essential difference between professions is not so much what they study, but rather what they do with their knowledge after they graduate?

CB

I would agree with that, but only in part. I think the curriculum does make a difference in what is practised. People tend to do what they have learned best. Sometimes, however, what is done in practice is dictated by factors other than the curriculum: by such forces as economic pressures, time pressures, the kind of health insurance that is in a province, and so on. The degree of sophistication in the public’s understanding of what constitutes good quality health care is another determining force. All these affect practice. My own hope is that the kind of optometric practice that exists, as a model to students, in our teaching clinics, will divorce itself from that which exists in practice and embrace something more ideal.

I think optometric curricula and programs in clinical optometry should be put together by people who understand practice and respect it, and at the same time, understand and respect vision science and the new technology now available to those providing vision care; in other words, by very wise men and women.

CJO

When you graduated in 1948, you had taken many of your courses at the University of Toronto, courses in anatomy, physiology, optics, calculus, psychology and so on. Through a student’s eyes, — what was your impression of these subjects?

CB

As a student, I thought that, for the most part, they were excellent. Prior to the war, I was enrolled at the University of Saskatchewan, so I did have some feeling for a university’s program in arts and science (at least from a student’s point of view). But, at Toronto, who wouldn’t have been impressed by people like Richmond (Optics), Cates (Anatomy), Stanton (Mathematics), Langford (Zoology), Neal (Comparative Anatomy), Mott (Psychology) and Inns (Economics) to name some of them?

Looking back as a professor of physiological optics, however, I can see some of the shortcomings of the program. While the courses were basically good in themselves, vision content per se was lacking. For instance, we had very little optics, as applied to the eye. Our calculus didn’t include derivations of optic formulae, or how to apply calculus to problems in eye kinematics. The psychology labs included some visual perception, of course, but didn’t, for example, explain or even touch on the distortion of one’s visual space that is frequently associated with ordinary spectacle corrections. Because the University of Toronto lacked a Department of Physiological Optics, the courses given to

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— Winston Churchill

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optometry students were something less than ideal.

CJO

Do you recall the circumstances surrounding the University of Toronto's decision to cease providing programs for optometry students?

CB

I certainly do have some recollections of that difficult period. At the College, we were very upset because it meant that we immediately had to make a major adjustment in our program. We had to find new staff and teaching facilities to fill the gap, and in such a way that optometrical education did not suffer as a result.

At the time, we felt that those in the University of Toronto who opposed the idea of the University's providing education for optometrists (and there were some) had been able to defeat us. However, I think now it is probably more realistic to view it as a decision taken by the University as part of its great post-war expansion, which put on tremendous pressures for additional space and facilities. Our claim on these as a College, outside the University, was definitely not as great as that of any of the departments inside. This, at least, was the reason given at the time by President Smith.

CJO

In retrospect, did the decision have a good or bad effect on optometric education?

CB

In the long term, I am certain it had a very good effect. It forced us to develop a program of our own which, in the end, proved much more effective. The fact is, you can't expect a professor of optics or anatomy or physics, who likely knows very little about the practice of optometry, to understand the special educational needs of optometry, not as well as someone in the profession.

We were suddenly in the position of having to do it ourselves. Mind you, it put great pressure on us and, at times, we were stretched pretty thin. I can remember, for example, introducing some pharmacology in a course in physiological optics and the difficulty I had in spelling, never mind pronouncing, the names of some drugs. However, a few years later, we were able to get the services of Dr. Lyle, and the hurdle in that particular area was cleared quite nicely. All in all, I think we were much better off than we would have had we retained the particular association we had with the University of Toronto.

CJO

We understand that you were the first to receive financial support from the College of Optometrists of Ontario to do graduate work in Physiological Optics.

CB

Yes. It became obvious, when Bob White resigned from the staff, that we needed someone with special knowledge in this field. White, actually, was the first member of our staff to become acutely aware of this particular deficiency in our program and he personally did a great deal to make up for it. I remember that he read and digested most, if not all, of Helmholtz's *Physiological Optics* in one summer. I'm sure that he was the first person in Canada to have a comprehensive understanding of the subject.

As you might expect, not all of his students were interested, at the time, in the perception of visual space. But Bob was an excellent teacher, a great friend, and I've always regretted that we lost him. You must remember, however, that the College's financial resources at this time were very limited. There was no government money, and optometrical education was financed by the students' tuition fees ($700.00 per year) and the licence fees of about 450 Ontario practitioners ($25.00 per year). There were no sizeable individual donations, either, such as there are now. With only that income (less than $100,000.00), the Board of the College had to carry out the regulatory functions of the College, and provide the educational program as well.

It was at this time that the great managerial skills of Irving Baker and Ted Fisher came to the fore, a fact which I didn't always appreciate fully, since their skills seemed to have a deleterious effect on my salary. No, I'm joking! I always knew that they were giving me all that was reasonably possible. Of great help was the fact that we always had a number of Toronto optometrists who came in week after week, year after year, as volunteer clinical instructors. They received no remuneration for this, and travel money was never discussed.

So when Bob White left, we faced another hurdle. Irving Baker was President of the Board at that time, as well as being the Clinic Director, and the two of us discussed the problem many times with Dean Fisher. Finally, I decided to take graduate work if I could get help in financing it. I still had a practice. I had a young family (Paul was a small baby, and I was 40 years old). I left for Ohio State on September 4, 1954.

It all seemed a bit crazy at the time. Professor Glen Fry at Ohio State got me a teaching assistantship, and the College provided much of the rest that was needed to look after the family at home.

Well, in spite of the loneliness of being away from my family and the

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very long hours of study and work that I had to put in, in order to cope with the situation, I have to say in retrospect that it was a very rewarding and stimulating experience. I count myself extremely fortunate to have had Fry as my supervisor. Not only did the man possess a formidable knowledge, but I shall never get over the great example he set for his students. He usually worked at a drafting table in a corner of the machine shop when he wasn’t making something in the shop. (He is an excellent mechanic, by the way; a good draftsman, and he was always calculating and designing optical apparatus and, of course, carrying out research.) There never seemed to be enough time for him and no matter when you left the school, Fry’s light was usually still burning at midnight or two o’clock in the morning, sometimes even later! He’s a quiet man but, in a social situation, he shows very good manners. I was absolutely awed by him, more so, I think, than by any other person alive.

In June, 1955, I returned to Toronto and prepared for the Fall and Winter courses at the College. Then, in the spring of 1956, I went back to Ohio State for the summer quarter and finished my Master’s degree.

As it turned out, our being able to provide for the first time a more or less comprehensive program in physiological optics was an important turning point. Students who graduated in optometry from the College were now, for the first time, in a position to apply for graduate work. And in a few years’ time, a string of graduates like Marvin Lunskey (M.S.), Marvin Langer (M.S.), Arnie Remole (Ph.D.), Bill Lyle (Ph.D.), Emerson Woodruff (Ph.D.), George Woo (Ph.D.) and David Williams (Ph.D.) were available to the College and, subsequently the University of Waterloo.

So, in summary, I think the action taken by the College at the time was farsighted; and that vision science in Ontario, as a result, was given its first big boost.

**CJO**

We see the new building as not just a building, but a concrete expression of optometry’s efforts. But it must have presented many problems,—its planning, its construction, its funding. As the “designer” to some extent, do you have any thoughts on the culmination of all this effort?

**CB**

As building chairman, I was in a position of advantage: right in the centre of things. It was a wonderful experience for me. The true designers were the architects, of course, especially Mr. Hadley and Mr. Freeman. They were great to work with, and they discussed their designs with us and listened to our opinions. As Chairman, I also had a great deal of support from the rest of the faculty, particularly from Drs. Fisher, Woodruff, Long, Lyle and Beau-champ. We had countless meetings concerning the building and I had to meet daily with various members of Physical Plant and Planning as it was then called, and with various contractors. It was a very busy time, but it was also a very exciting one for us. And as for the culmination of all this,—well, imagine after 50 years of “make do” housing, of inadequate and often inappropriate space, not to mention the anxiety of not knowing where we would be in the future. Imagine us having a home at last, brand new and a very beautiful one at that. We were both grateful and proud, and we remain so. I think that is why the University of Waterloo sometimes finds us exceedingly possessive and touchy about this optometry building, acting as if we as faculty, staff, students and practitioners really think we own it. I suppose we do act that way. It would be difficult for us not to, and I expect we always will. At least, I hope so.

**CJO**

We would just like to ask you, at this point, another general perception type of question. Do you consider it to have been an advantage, or a disadvantage to have been in private practice before you got into teaching?

**CB**

I’m sure it has had a very definite advantage, although I’m not sure that it has to be private practice necessarily, as your question suggests. Experience in practice and instruction in a first-rate teaching clinic would suffice as well, for example, or possibly better. In any case, I think you must practise for a significant period of time so as to understand what practice is; to know its methods, its demands, its pitfalls, disadvantages and so on. You have to get to know your patients, and only by practising can you do that.

I don’t believe, however, that one needs long years of practice to gain the knowledge that is essential for good clinical teaching and the administration of programs in optometrical education. I don’t believe, for instance, that ten years’ practise experience is twice as good as five years in practice. In fact, I think longer periods of practise can actually be disadvantageous unless, of course, good continuing education programs are available and the practitioner works conscientiously to take advantage of them.

The real challenge for both the practitioner and the professor of optometry is to learn most of what is known about vision and vision care, and how to apply it to the patient’s best interest. Fortunately, in spite of the many complexities of the visual system, it is still possible (or very nearly so) to attain such a comprehensive understanding. This is what makes the practice so challenging and, at the same time, so satisfying. With care and effort, the optometrist can be a true eye and vision specialist, unlike physical science or medicine, for example, where the subject matter is vast and where the degree of knowledge has outrun the capability of any one individual to comprehend it all. Of course, as vision science and its technology continues to unfold, this will become more and more difficult for optometrists, too.
CJO
Does the clinic here at the school give you that understanding? It is, after all, a somewhat sheltered environment and you're not out "in the world", if you like, in an actual private practice environment. Do you think the clinic is satisfactory as far as giving an optometrist practical experience?

CB
It goes a long way, but there is still much than can be accomplished. First of all, it is obvious that the kind of knowledge and skill we've been talking about cannot be obtained in any undergraduate program. There just isn't time enough. What the program can, and must, do is to set the stage and provide a solid foundation for the practitioner to build on. After that, it's up to the practitioner and the optometric educator.

To answer the second part of your question as to whether I think the clinic at the school at Waterloo is providing satisfactory practical experience, it is clear to me that it does; otherwise, our graduates would not be able to go out into private practice and succeed as they do. Now, if you are also asking, do I think the practical experience could be improved, I would answer yes to that as well.

I think it should be broadened and made more rigorous. For instance, patients could be screened for cases that show extraordinary vision care needs. The need may be in one or more of several areas; in refraction, for instance, or binocular vision, or low vision, or ocular health, or the application of spectacles or contact lenses. These patients should then be examined in depth by the most experienced and knowledgeable clinicians. Students would participate by observing, and by aiding the clinician in working up the case for formal presentation by the clinician, or a student, to the study body and faculty.

This kind of critical peer review situation would be of great benefit and would provide an opportunity for anyone who has anything worthwhile and concrete to contribute. The process of providing special care of this kind might take several weeks, or even months, but it would be most beneficial to the patient and, best of all, it would provide practical experience for most students and faculty in dealing with difficult and rare cases. This kind of experience is not available to many students at present, or to all of our clinicians, for that matter.

Of course, this takes time and effort. (That usually means money, doesn't it?) But then, we must think of the benefits to clinical practice and to education. I don't mean to say that this sort of peer review by students and, more particularly, by faculty, isn't being applied in our clinic; rather, that it can be improved and made more rigorous. There is only so much to learn about providing routine vision care and, once a student has more or less mastered this kind of practice, he or she should be made to concentrate on the other-than-routine type of vision care. After all, it is only by meeting the challenge and overcoming it that improvement in clinical care comes about.

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