Profiles in Cardiology

This section edited by J. Willis Hurst, M.D., and W. Bruce Fye, M.D., M.A.

Robert S. Fraser

ROBERT E. BEAMISH, M.D.

Institute of Cardiovascular Sciences, University of Manitoba, Winnipeg, Manitoba, Canada

It is not unusual that unexpected creativity and accomplishment arise in unexpected places. When they do, it is always due to extraordinary individuals or small groups of them. This happened in Edmonton, Alberta, following World War II, when Robert Fraser, a youthful cardiologist, and John Callaghan, recently trained in cardiac surgery in Toronto, London (England), and San Francisco, found themselves at the University of Alberta. The university was recovering from the effects of the Great Depression and the restrictions imposed by the recent war. However, like some other Canadian institutions, it was poised to progress to a world-class medical center. The important contributions of Callaghan have been documented elsewhere.¹ Those of Fraser (Fig. 1) are briefly cited here—it is another story of the evolution of today's sophisticated cardiology from its primitive beginnings.

Born in Nelson, British Columbia, in 1922, Fraser graduated with an M.D. degree from the University of Alberta in 1946. As an aid in choosing a career, he spent a year in family practice, an experience that prompted him to specialize. On the advice of Dean John Scott, he elected to study biochemistry as a prelude to internal medicine. Awarded a National Research Council fellowship, he spent 1949 to 1950 conducting a clinical study of ergothionine on normal subjects and patients. This was followed by 3 years in the training program at the University of Minnesota, which determined his future career. While the distinguished Professor Cecil J. Watson offered an opportunity to participate in his important studies of the porphyrins, it was the newly opened Variety Heart Hospital that lured the young physician into the fledgling field of cardiology.

With the stimulating mentors Dr. Richard Ebert and Dr. Carleton Chapman, Fraser enjoyed an exciting entrée to cardiovascular research, and his interest in cardiac surgery was aroused by the nearby surgical work of Dr. John Lewis, Dr. Walton Lillihei, Dr. Richard Varcoe, and others who were working on ways to operate within the heart: cross circulation, hypothermia, and the pump oxygenator. It was a heady time and set the course for his professional future.

Another event further determined his destiny. Back in Edmonton on vacation in 1952, he encountered Dean John Scott outside the medical buildings. Scott had been persuaded (by Dr. Joseph Dvorkin, recently returned from working with Dr. Arthur Master in New York), that it was necessary to attract someone to start invasive studies in Edmonton. He proposed that the University of Alberta nominate Fraser for a Markle Scholarship and that Fraser return to Edmonton and establish the necessary laboratory. The "Markle" provided an income of \$6,000.00 per year for 5 years with the expectation that the recipient university have plans for a continuing full-time appointment. After interviews in New York and at the Seignery Club at Montebello, the scholarship was granted. At that time, cardiac catheterization was not part of Fraser's activities, so he arranged to participate in a catheterization team in Minneapolis; he later found that most of the essential skills were learned on the job.

Returning to Edmonton in 1953, Fraser found that the specialty of internal medicine recognized only two subspecialties: dermatology and neurology. After all, invasive studies using cardiac catheterization were less than 10 years old. Added to the original objectives of Courmand, which were to measure intracardiac pressures and cardiac output, was the need to identify left-to-right shunts by measuring oxygen saturation and right-to-left shunts by intracardiac injection of radio-opaque material or by intracardiac dye curves. Resolutely, Fraser set about securing the space, equipment, assistants, and cooperative colleagues to comprise an effective diagnostic laboratory and eventually a fully pledged Division of Cardiology in the Department of Medicine of the University of Alberta. He was the pivotal figure in bringing the "golden age of cardiology" to Alberta. He has documented the trials and triumphs of these years in an important and delightful book *Cardiology at the University of Alberta, 1922–1969*.²

Address for reprints:

R. E. Beamish, M.D.
Institute of Cardiovascular Sciences
St. Boniface Hospital Research Centre
351 Taché Avenue
Winnipeg, Manitoba R2H 2A6
Canada

Received: June 1, 1998

Accepted: June 1, 1998

FIG. 1 Robert S. Fraser, M.D.

Professional skill, commitment, and integrity brought their rewards. By 1958, nearly 250 catheterizations in children and adults had been performed and a pediatric cardiac clinic had been established. Academic promotions progressed to a full professorship awarded in 1964. Joined by cardiac surgeons John Callaghan (1956), Cecil Couves (1957), and Larry Sterns (1966), the group eventually reached approximately 1,000 open heart surgeries by June 1967. A rather unusual feature of the group was the informal but very close liaison, cooperation, and friendship of surgeons, cardiologists, anesthetists, and nurses—an ingredient of their remarkable success.

Despite heavy obligations in patient care, research, and teaching, Fraser became an expert in computer applications to data storage and to interpretation of electrocardiograms. He participated in several conferences in the United States and Canada, particularly with Dr. Cesar Caceres in Washington, D.C., and Dr. Ralph Smith at the Mayo clinic. By 1976, a computer system for ECG interpretation was operational at the University Hospital. Along the way he acquired MSc, FRCP(C), FACP, and FACC.

In the United States, the need to involve citizens and governments in the provision of money for heart research was recognized in 1947 when the American Heart Association became a voluntary health agency. Canada followed in 1956, when a meeting of leading cardiologists with the Minister of Health, the Honorable Paul Martin, was held in Ottawa. Representing Dean Scott, Fraser attended the meeting at which it was decided to form the National Heart Foundation—now the Heart and Stroke Foundation of Canada. On reporting back to Dean Scott, Fraser was asked to organize an Alberta Heart Foundation and, because of default by a lay director, Fraser found himself the first president of the new organization. He remained a director for 22 years; in recognition of his

contribution, the offices of the Foundation have been named “Fraser Centre.”

The Canadian Heart Association was founded in Winnipeg in 1947 with Dr. John Keith of Toronto as Secretary-Treasurer. Ten years later he resigned in order to assume similar responsibilities with the International Society of Cardiology. Fraser was appointed to replace him. This led to a long and fruitful role in an organization that later became the Canadian Cardiovascular Society. After four years as Secretary-Treasurer, he proceeded through offices to become the 11th president, serving from 1965 to 1966. During his years on the Council, significant decisions were made that have guided the Society ever since. Among these were the decision to hold the annual meeting along with the National Heart Foundation rather than with the Canadian Medical Association or the Royal College of Physicians and Surgeons of Canada, and also to press for recognition of cardiology by the RCP&S as a specialty, which was achieved in 1970. Through these activities, he became well known and respected across Canada and was instrumental in forging links with the Interamerican Society of Cardiology. These were times of much different expectations, and he recalls being so economically driven that he told the guest lecturer from England that the two of them would be sharing a hotel room during the annual meeting in Halifax in 1958!

Aldous Huxley wrote “There is no substitute for talent”—which is true. Fraser’s success in developing cardiology led to his appointment as Professor and Head, Department of Medicine, a position he held from 1969 to 1974. Abilities honed in cardiology stood him in good stead as his responsibilities and influence spread. His successful achievements are recorded in a book of 176 pages.³ Among its charms is the correlation of departmental activities with what was happening in the wider world. Not surprisingly, his academic career ended as Associate Dean followed by Acting Dean 1983 to 1984.

His principal hobby is genealogy which he has pursued diligently in Scotland, Utah, and Canada. He likens it to internal medicine where one works from soft and hard evidence, dealing with possibilities and probabilities. Having accumulated over 2,000 names, he has completed a draft of the Frasers. One of the frustrations has been to find that a third great grandfather, married in 1786, appears never to have been born. If he is like his father, now over 100 years of age, Fraser will have time to complete the search.

Cardiology has been successful in attracting its share of great men, combining the talents of physicians, scientists, teachers, diplomats, and humanists. It is fitting that Robert Stewart Fraser found himself in their midst.

References

1. Callaghan JC: *Thirty Years of Open Heart Surgery at the University of Alberta Hospital*. University of Alberta Hospitals, Edmonton, 1986
2. Fraser RS: *Cardiology at the University of Alberta 1922–1969*. Edmonton: University of Alberta Printing Services, 1992
3. Fraser RS: *University of Alberta, Department of Medicine, a Personal View, 1969–1974*. The University of Alberta, 1986