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Presidential Address

Adventures in surgery

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The greatest compliment to my professional career is this honor, to serve as president of The American Association for Thoracic Surgery. I recognize, with sincere humility, that this appointment is in large part a tribute to the success and influence realized by our Toronto General Hospital Division of General Thoracic Surgery. Reasons for these favorable circumstances are the product of many things: geography, opportunities of circumstance, timing, and above all, the coming together and interaction of many people. It is neither my talent nor my intent to prophesy the needs and nature of the future. I can, however, look back on the people and events that were influential in shaping my pursuits and values and in creating the current stature of this division. I will begin with acknowledgement of those personalities who served as role models during the early years, review the evolution of thoracic surgery in Toronto, and close with some personal reflections on fulfilment in a surgical career. I welcome the opportunity to share with you the joy and excitment of this personal adventure in thoracic surgery.

People and personalities

When I entered medical school in Toronto 45 years ago, the world about appeared infinitely simpler. Travel was limited. For one born and bred in Toronto, other Canadian provinces were remote places, encountered in books and magazines, newsreels, and radio. It took a week to traverse Canada by train or to cross the Atlantic by boat. Europe, the cradle of Canadian culture and tradition, was known only to a fortunate few. Asia, the Orient, and Japan were utterly exotic—the stuff of fairytale travel and adventure. World War II was at an end, and the spirit of youth in North America was one of innocence and optimism. My own choice of medicine reflects the innocence, trust, and optimism of those days. Throughout high school I was greatly stimulated by my science teacher, A. J. Croal, PhD. Dr. Croal's enthusiasm for his subjects of botany and zoology was infectious. His teaching alchemy brought science alive in the classroom. Sundry plants and animals that students brought to him were always welcome, and he possessed that marvelous gift of communicating his exuberant enthusiasm and sense of wonder and discovery. A. J. Croal was a role model who appeared to savor every day of his professional life, and in my final year I sought his advice, stating that I had decided to become a science teacher. "That's fine," he responded, "but I recommend you go into medicine. The opportunities in medicine are infinitely greater for a would-be scientist and teacher than in my position." I believe his advice is as appropriate today as it was 50 years ago. The opportunities conferred on us by the degree doctor of medicine still open the doors of an almost unlimited variety of options and endeavors.

Read at the Seventieth Annual Meeting of The American Association for Thoracic Surgery, Toronto, Ontario, Canada, May 7-9, 1990.

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Fig. 1. Dr. Robert M. Janes: Chairman, University of Toronto, Department of Surgery, 1947 to 1957.

Many of Toronto's most prominent surgeons and teachers were still active and influential during my postgraduate years at Toronto General Hospital: William Edward Gallie was a great pioneer who established one of the first formalized training programs for surgeons in the world—in 1931.[1] Gordon Murray, a remarkable intellect, introduced heparin into clinical practice[2] and was the first surgeon to successfully insert a homograft aortic valve in 1956.[3,4] Three members of the surgical department of that time became presidents of this Association: Robert Janes in 1957, Frederick Kergin in 1967, and Wilfred Bigelow in 1978. All three of these men significantly influenced my values and career.

Robert Janes (Fig. 1) was professor and chairman of surgery and surgeon-in-chief of Toronto General Hospital when I was a "rotating junior intern." The interns of that time (1949 to 1950) were provided with white uniforms, a bed, all they could eat, and 50 Canadian dollars for the year. The more resourceful managed to donate their blood about once a month, at $25.00 a pint! Professor Janes was the surgeon's surgeon—a tall, distinguished presence, confident and imperturbable in the operating room, gentle in his skilled handling of tissue, and a master of sharp dissection with scalpel and scissors.

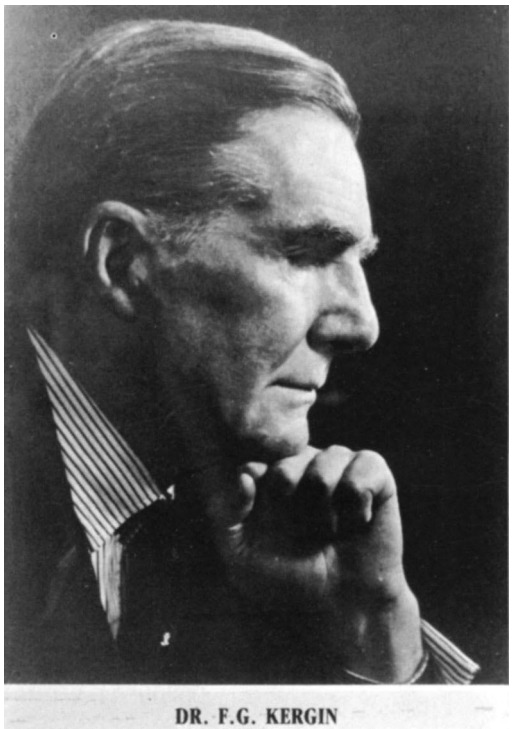

Fig. 2. Dr. Frederick G. Kergin: Chairman, University of Toronto, Department of Surgery, 1957 to 1966.

He was known to many international pioneers in thoracic surgery of that day, particularly in the United Kingdom and Scandinavia. These contacts offered training opportunities for many of his young students of surgery. Shenstone and Janes devised the lung tourniquet for pneumonectomy in those early days when surgeons held their breath during dissection of the hilum.

Frederick Kergin (Fig. 2) succeeded Janes as university professor of surgery in 1957. When I first knew him he was spending two days of every week in the operating rooms of the Weston Sanatorium, wrestling with some of the most tedious and difficult cases in thoracic surgery: thoracoplasty, decortication, and pleural pneumonectomy. The Kergin thoracoplasty, which spares the intercostal muscle bundles, is among his original contributions. To residents, he was perceived as a stern authority, spare with smiles and chuckles, and an unforgiving taskmaster for the tardy or careless. He possessed, however, several qualities that distinguished him, for me, as an outstanding teacher: His expectations of the student were utterly predictable. The job well done was *always* recognized.

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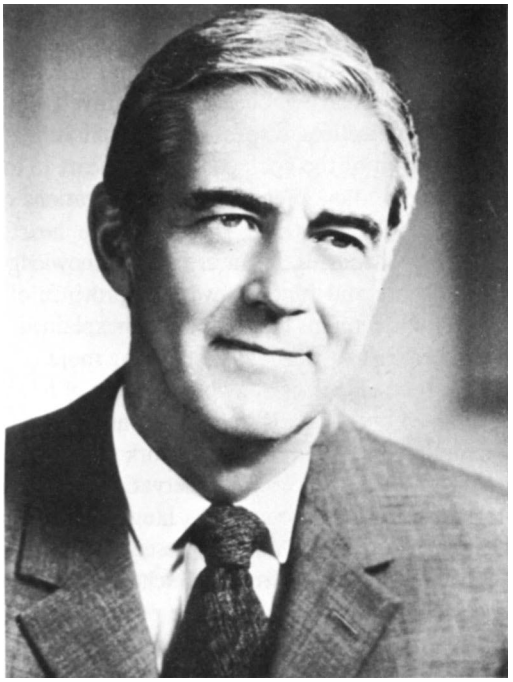

DR. W. G. BIGELOW

Fig. 3. Dr. Wilfred G. Bigelow: Head, University of Toronto, Division of Cardiovascular Surgery, 1953 to 1977.

Still more impressive was his supportive, empathetic, and constructive response when advised of some misadventure experienced by the resident. When things go wrong in the operating room, it is so easy for the staff surgeon to criticize or castigate the resident. When I was Dr. Kergin's chief resident, I experienced the haunting trauma of "losing a patient" in the operating room as a result of uncontrollable hemorrhage that I, the surgeon, had initiated. With anguish and foreboding, I informed Professor Kergin of the catastrophe later that day. His response was immediate and registered compassionate awareness of my distress. After a review of the operative events, he smiled and said, "Griff, you did the best you knew how to for this man. I have experienced every complication described in surgery, including most of the fatal ones. You will experience many more yourself before you are through. Accept that. Do your best to learn from your mistakes. Go home tonight and have a good sleep."

Wilfred "Bill" Bigelow (Fig. 3) was a generation removed from Kergin, and I first met him in 1951. He was 37 years old, a young general surgeon at Toronto General Hospital. He had returned to Canada from the European theater of World War II with interest in the new discipline of vascular surgery. He spent a period of time with Alfred Blalock at Johns Hopkins and returned to

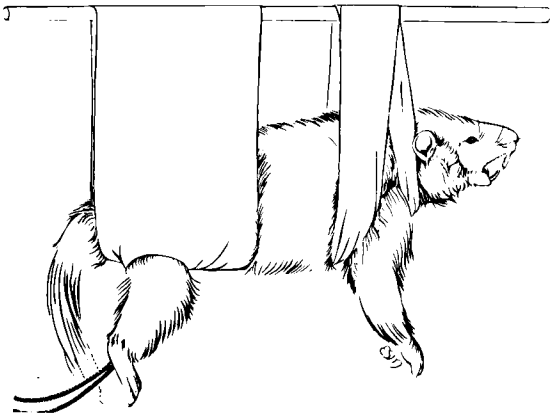

Fig. 4. Groundhog sling designed by Dr. F. G. Pearson to facilitate the taking of blood gas samples in Dr. Bigelow's laboratory.

establish one of the early physiologic research laboratories in the Department of Surgery of Toronto General Hospital. Dr. Bigelow was the first "surgical scientist" of my experience. He was conducting a broad spectrum of research, which included studies of the microcirculation, frostbite, hypothermia, and the mysteries of hibernation, cardiac pacing, and myocardial revascularization. I spent the year of 1951 to 1952 as his research fellow. At the start of this research year I was charged with augmenting the supply of one of his laboratory animals, the American groundhog. For more than a month I lived with an unusual character whom I had met during the preceding year while in general practice in the Niagara Peninsula. Earl Terryberry was a professional trapper, and his rustic home was decorated with innumerable animal pelts, which included the tanned hide of his favorite old coonhound, Spot. Earl and I spent our days in frequently futile attempts to secure goundhogs for Bill Bigelow's breeding colony on the roof of the Banting Institute. Such was the stuff of research in Toronto in 1951. After this brief experience as a wild animal collector, I returned to the laboratory, and studied the physiology of the stages of hibernation in these animals. We worked with a biochemist to evaluate various extracts of groundhog brown fat (found in the axilla and mediastinum), searching for the magic and elusive hibernating hormone. In those days, blood gas analysis was done by the old Van Slyke method, and samples were a challenge to obtain from a goundhog under physiologic conditions. These animals are fierce, untamable beasts with teeth like beavers that chatter like machine guns. Our research technician, Don, confident and capable with the fiercest of our experimental dogs, was petrified of the groundhog, particularly after a recently captured adult that had been secured in the

Fig. 5. Mr. Ronald H. R. Belsey: Head, Regional Thoracic Unit, Frenchay Hospital, Bristol, England. Photograph taken in 1959 in the outpatient endoscopy unit.

trunk of his car overnight appeared with gnashing teeth on the front seat when he opened his car door the next morning. The animal had chiseled its way through the trunk and back seat during the night. Dr. Bigelow's previous research fellow, John McBirnie, collected the arterial samples for blood gas analysis by dispensing the animal with a shot to the head from a 22-gauge rifle and then withdrawing blood by cardiac puncture as quickly as possible. My contribution to this research was the design of a sling that suspended the groundhog, under cover, permitting the surreptitious aspiration of blood from a catheter in the femoral artery. An extension of the catheter outside the tent allowed us to obtain specimens from an unaware and quiet animal (Fig. 4). I believe it was this combination of industrous spade work, digging out wild groundhogs from the country, and design of the sling that resulted in my award of a bachelor of science (medicine) at the end of this research year.

My association with Bill Bigelow began 40 years ago and continues today. He is another of the great teachers and role models that I have known and benefited from. His laboratory was an introduction to the scientific method in practical terms. He personifies imagination, persistence, and good humor—qualities that every young surgeon should aspire to. His imagination is exceptional and unfettered. He epitomizes the potential that exists in any great "dreamer," who combines fanciful travels of mind with practical objectives, dispassionate skepticism, and a persistent pursuit of the goal: cooling the heart to lower metabolism and allow precise surgical operations on a nonbeating organ; electrical pacing of the heart for arrhythmia or standstill, in an era when knowledge of cardiac anatomy and function was the province of the cardiologist. He remains fascinated by unexplained phenomena that generate little interest among more conservative colleagues. He does not close the door of his mind to unexplained mysteries: Rather, he wonders and seeks an explanation. He is fascinated by work such as that of Norman Cousins,[5] who records observations on the relationships between positive attitude, laughter, happiness, and health. Indeed, he has made representation to the two most recent deans of our medical school, encouraging them to include some study of these psycho-physiologic phenomena in the curriculum. Persistence is exemplified by his years of pursuit of the elusive mechanisms of hibernation. Even today, he anticipates the isolation and characterization of a hibernating hormone. For all of his serious purpose and protestant commitment, his sense of humor and ability to laugh at himself are a joy to all of us who know him. Without this balance, his persistence might have been less durable in the face of the inevitable frustrations and disappointments associated with his scientific pursuits.

After completing residency, I obtained a Samuel McLaughlin Travelling Fellowship—an exceptional Canadian opportunity for study in other centers—designed to broaden perspectives before returning to the surgical staff at Toronto General Hospital. This year was organized by Frederick Kergin, and the first six months was spent as a senior house officer with Mr. Ronald Belsey. During the second half of that year, I spent shorter periods in eight different centers in England and Scandinavia. The objectives of this fellowship were amply realized, and the experience profoundly influenced many future interests and directions. As every young surgeon quickly learns when he or she first ventures outside the alma mater, there are many ways to skin the same cat—some simple and efficient, others unnecessarily tedious and complex, but all concluding with the same general result. Homespun myths are dispelled, and open-mindedness is enhanced. Bowel can be anastomosed with one layer of sutures as well as three. More important, such exposure sharpens an awareness of the limited state of knowledge in areas previously perceived as gospel and taken for granted. During that year, I met J. Norden-

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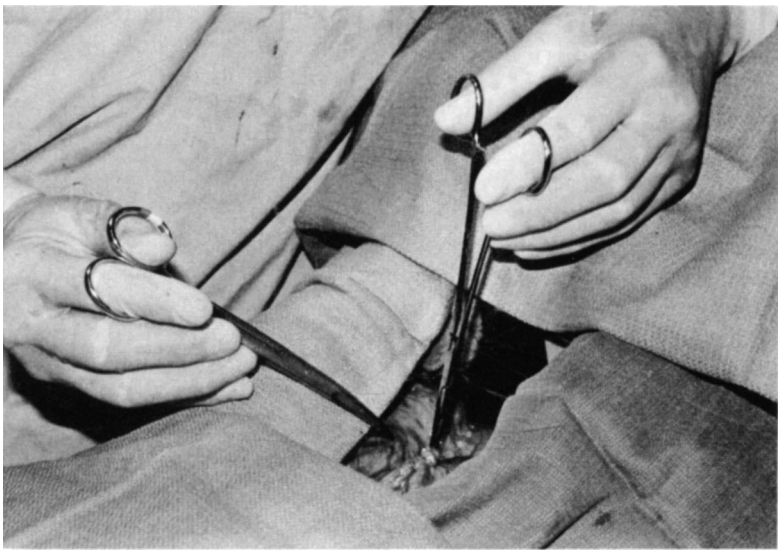

Fig. 6. Mr. R. H. R. Belsey's original technique of holding instruments, passed along to generations of his students.

ström in Stockholm and Viking Björk in Uppsala. Both were regularly using the sophisticated Engström ventilator in surgical patients requiring respiratory support, a technique still in its infancy in North America. Astrup in Copenhagen was obtaining oxygen tensions in a drop of infant blood at a time when Severinghouse was perfecting his electrode in the United States. I met Eric Carlens quite by chance during a two-week visit to the Karolinska Institute, and he introduced me to his new approach for mediastinal exploration—cervical mediastinoscopy. Tyge Sondegaard in Aarhus, Denmark, demonstrated his technique of hinging a pericardial pedicle from the ascending aorta to obtain secure flap closure of the bronchial stump after right pneumonectomy. I still use this method. Only in retrospect did I clearly appreciate the many concepts and techniques that I have applied over the years as a result of this experience.

I believe Ronald Belsey (Fig. 5) is known to every member of this Association. He was a graduate of St. Thomas' Hospital in London, England, and declined the offer of a staff position in that prestigious institution. Rather, he accepted the position as head of a regional thoracic unit in the hinterlands of England's west country. Undoubtedly, this environment accorded him the freedom to fully exercise his original mind and follow his nose with a minimum of interference. At that time, the physiopathology of many esophageal conditions, particularly benign esophageal disease, was poorly understood. There were few centers in the world with a focused interest in such problems, and the prevalence of surgical mismanagement and misadventure was, to use one of Belsey's favorite adjectives, appalling. More than any surgeon of his era (a remarkably long one—he is with us here today, still operating, teaching, and writing), Belsey has advanced our knowledge of esophageal surgery and trained a cadre of pupils who have established important centers for esophageal disease throughout North America, the United Kingdom, Europe, and the Middle East. The reasons for such singular success and influence defy full comprehension. Certain talents are clear and outstanding: He is a remarkably effective teacher, who profoundly influenced each and every young surgeon who worked on his service. I attribute this influence to an amalgam of qualities: He is an impressive role model in the operating theater—in charge, unflappable, possessing gentle precise manual skills, and always communicating with the student. His talent for critical observation, methodical documentation of early and late follow-up results, original and innovative conjecture unbound by conventional dogma, and his persistent search for the simplest solution to any problem, are obvious assets. The indefineable talent was his uncanny ability to be correct so often with his conjecture. Add to these qualities a forceful personality with a turn of phrase and command of language that imprinted his message in every student's mind. Those Belsey graduates present at this meeting will recall, as I do, expressions such as: "Young man, remember that diagnosis precedes treatment." "The battlefields of surgery are strewn with the remains of promising new operations which perished in the follow-up clinic." Like many others, my interest in esophageal surgery was profoundly influenced by those six months as a senior house

officer with Ronald Belsey in the west of England. Much of my practice is patterned after that experience: principles of management, surgical techniques, and an appreciation of the essential importance of methodical, long-term follow-up in patients operated on for benign esophageal disease. His forcefulness as a role model is illustrated by his unique method of holding scissors (Fig. 6) and certain other surgical instruments—upside down! Should you encounter anyone using the scissors in this way, you may rest assured that he or she has trained with Ronald Belsey or one of his pupils. Furthermore, I know of none of his graduates who has subsequently reverted to the conventional grip.

Thoracic surgery in Toronto

I will turn now to the history of thoracic surgery in Toronto. With few exceptions, early endeavor in cardiac surgery was taken up by thoracic surgeons, and as the specialty of cardiac surgery matured, it was logical that training programs evolved in a combined specialty of thoracic and cardiovascular surgery. This pattern emerged in most centers throughout the United States, the United Kingdom, and Europe. The evolution of training in thoracic surgery, in Toronto, however, was at variance with this pattern.

When I completed my internship at Toronto General Hospital in 1950, Norman Shenstone, Robert Janes, Frederick Kergin, and Norman Delarue were the staff members responsible for thoracic surgery in a large division of general surgery. Wilfred Bigelow was a young general surgeon with clinical and research interest in vascular and cardiac disease and was neither trained in nor directed toward the subspecialty of thoracic surgery. In 1953, Bigelow was appointed head of one of the three hospital divisions of general surgery. Thoracic surgery remained a subspecialty in the other two divisions. With the rapid development of cardiac surgery, Bigelow concluded that adequate training in this new specialty required a dedicated residency. He proposed the creation of a separate division and training program for cardiovascular surgery in 1958. Thoracic surgery remained a subspecialty in the division of general surgery. When I obtained a staff appointment in general surgery in 1960, it included the practice of thoracic surgery. At this time in Toronto, general surgery encompassed many fields, and the image of a broadly trained generalist prevailed. Drs. Janes, Kergin, Delarue, and I were responsible for pulmonary surgery, the magnitude of which appeared uncertain in the face of a dramatic reduction in the surgery of tuberculosis and pulmonary sepsis. During the next five years, however, thoracic surgery steadily increased in volume and broadened in extent. Esophagoscopy and bronchoscopy were added to our list of procedures (previously done only by the otolaryngologist). A relentless increase in the prevalence of lung cancer continued, and new approaches to surgical staging were added. My interest in esophageal disease was rewarded with an expanding number of surgical referrals and is clearly attributed to the unique stimulus provided through my training with Ronald Belsey. Despite this ample and varied work load, however, we were unable to provide satisfactory, focused training in thoracic surgery because of the diffuse organization of this subspecialty. Patients were spread between two general divisions, and the public and private patient wards of the hospital were separated functionally and geographically. Staff and residents remained responsible for the full range of general surgical activity. Like Bigelow before us, Norman Delarue and I proposed that a separate residency be created in general thoracic surgery, and we agreed to limit our clinical practice to this specialty. Professor Kergin was strongly supportive and assigned the first resident to this new service in 1967. William Drucker succeeded Kergin as university chairman and established thoracic surgery as a separate division in the University of Toronto program in 1968. As noted earlier, cardiovascular surgery was already functioning as a separate surgical division. I believe that this early, chance establishment of separate and autonomous divisions of thoracic and cardiovascular surgery created an exceptional opportunity for the development of thoracic surgery in Toronto. During those exciting years of unparalleled growth in cardiac surgery, when each new development implied a further commitment of energy and resources, thoracic surgery, understandably, held lower priority and was at risk of relative neglect in many combined divisions of thoracic and cardiovascular practice. In Toronto, a distinct division of thoracic surgery shared equal opportunity with the cardiovascular division in the inevitable competition for available resources.

Within five years of establishment, the thoracic divsion had grown to a busy service with five full-time surgeons, three residents, a laboratory research program and a productive academic output. Such growth was possible only through the allocation of significant and dedicated resources: a thirty-bed nursing unit with step-down facilities on site, an equitable share of committed operating room time, assigned laboratory space and research fellows, divisional authority at the committee level, an attractive group practice arrangement, and the good fortune to be building a new division during those long past, golden years of continuous growth in North American surgery.

Even today, these criteria are perceived as essential

Fig. 7. The late Dr. Robert D. Henderson: Surgeon-in-Chief, Women's College Hospital, 1975 to 1988.

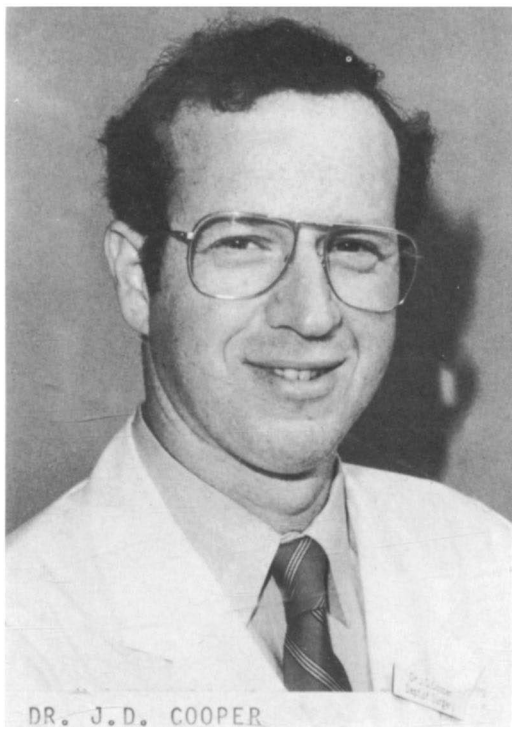

Fig. 8. Dr. Joel D. Cooper: Head, University Division of Thoracic Surgery, 1978 to 1988.

requirements for a productive academic training program in thoracic surgery. In 1984, the University of Toronto identified the need for additional training positions in thoracic surgery and proposed establishment of a second division in one of the Toronto teaching hospitals. Dr. Joel Cooper, then university chairman for thoracic surgery, circulated a proposal to the teaching hospitals listing these same resource requirements in detail. An enthusiastic response was received from four institutions, and the Mount Sinai Hospital was selected as the institution ensuring the most comprehensive commitment of resources. Robert Ginsberg was appointed head of this new division and quickly established a productive academic program that continues to flourish with strong hospital support.

In 1981, Donald Paulson,[6] in his presidential address "A Time for Assessment," focused clearly on contemporary problems of adequate training in general thoracic surgery. He stated: "Failure to correct the imbalance in training of thoracic surgeons has resulted in a vaccum which could lead to disintegration of the specialty." He recommended establishment of a Liaison Committee for Thoracic Surgery with representation from a number of appropriate associations. This committee has been active to the present time and has defined criteria necessary for the strengthening of programs in thoracic surgery, which, in many respects, closely resemble those that evolved many years ago in Toronto. The continuing need for change was recently documented by the Liasion Committee for Thoracic Surgery[7]. At the beginning of 1989, there were 32 academic programs in the United States that identified unfilled positions in general thoracic surgery.

These problems will never be adequately resolved until trainees perceive that thoracic surgery is given equal priority and commitment with cardiac surgery in surgical departments. To ensure success, the commitment must provide separate periods of residency training in thoracic surgery and equality of access to essential resources. Resources include hospital bed, intensive care facilities, dedicated operating room time, laboratory support, a focused teaching program and an appropriate level of personal economic reward.

The economic organization in any surgical practice exerts critical influence on individual motivation and the realization of objectives. I believe that the group practice arrangements, which were initiated in our new division in 1967, played a key role in establishing a cohesive and productive academic performance. An equal sharing of income virtually eliminated the counterproductive fea-

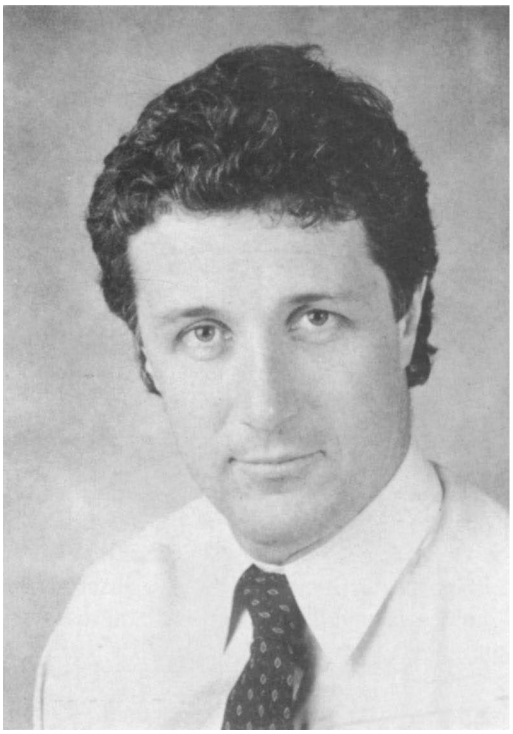

Fig. 9. Dr. G. Alexander Patterson: Thoracic Surgeon, Toronto General Hospital Divsion; Director, Toronto Lung Transplant Program.

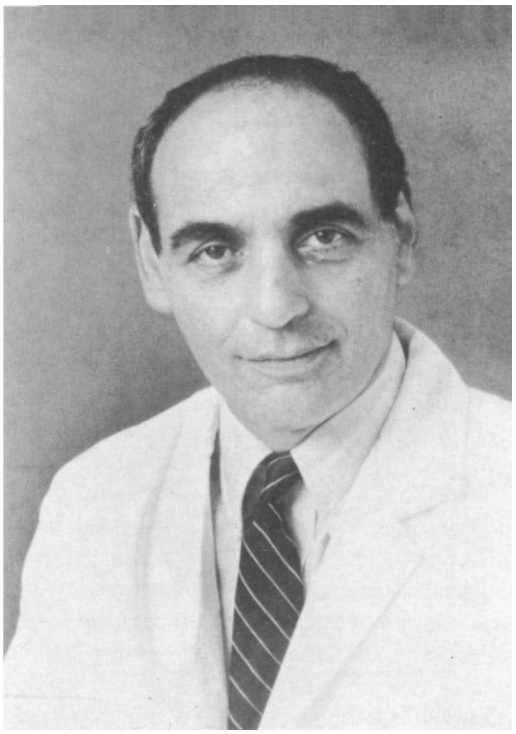

Fig. 10. Dr. Robert J. Ginsberg: Head, University of Toronto Thoracic Oncology Program; Head, Mount Sinai Hospital Division of Thoracic Surgery; Head, Division of Thoracic Surgery, Sloan-Kettering Memorial Hospital, New York.

tures of competition for clinical practice between partners. There was no individual penalty incurred for time spent in the less remunerative activities of research, teaching, and administration. The group could vigorously compete for income and resources, but not with one another. This economic structure is highly attractive to young recruits. Most important, such group practice arrangements create an environment that strongly supports a focus on new initiatives and subspecialty programs that require a pooling of individual interests and assets. The benefits of such support are evident from an appraisal of the breadth of clinical programs encompassed by this division and the recognized expertise and accomplishments of individual partners. These programs include the full range of surgery of the lungs, mediastinum, and chest wall, benign and malignant esophageal disease, and the associated endoscopy. In many of these specialty areas, original contributions have been made: trachea and bronchoplasty reconstruction, lung cancer staging, lung cancer trials (Toronto contributed almost half of the cases for the Multicenter Lung Cancer Study Group Trials conducted by the National Institutes of Health), lung transplantation, esophageal function, the surgery of complex reflux disease, tracheal and endobronchial stents, laser endoscopy, and jet ventilation. Laboratory research supports the clinical programs.

Individual accomplishments within this environment are significant: The late Robert Henderson (Fig. 7) was assigned responsibility for developing an esophageal function laboratory, and all of the appropriate patients within the partnership were directed to him. He achieved international prominence through his contributions to the evaluation and management of benign esophageal disease. Joel Cooper (Fig. 8) committed 10 years of effort to research and creation of an interdisciplinary organization that was crowned with the world's first successful human lung transplant in 1983. Dr. Cooper devoted 16 productive years to thoracic surgery in Toronto and added greatly to its luster during that time. He returned to his native United States in 1988 to set up a new section of thoracic surgery at Barnes Hospital in St. Louis. Alec Patterson (Fig. 9) accepted major responsibility for the laboratory research program in lung transplantation and was the principal investigator in developing the model for double lung transplantation. Since Joel Cooper's departure for St. Louis, Patterson has ably coordinated the

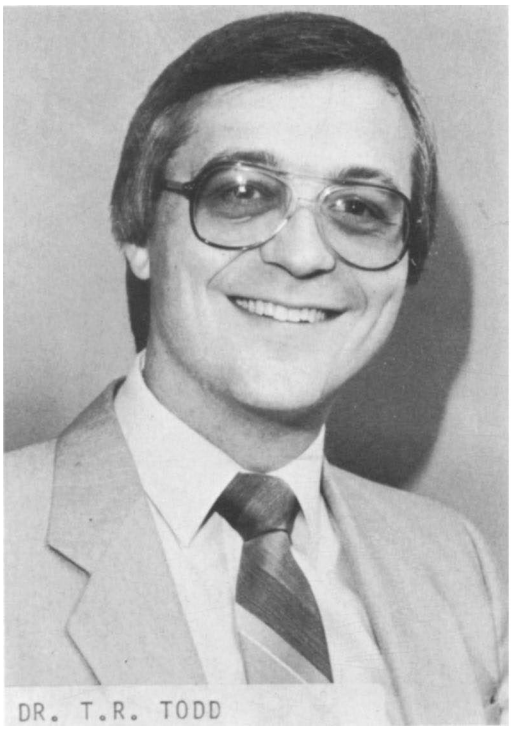

Fig. 11. Dr. Thomas J. R. Todd: Thoracic Surgeon, Toronto General Hospital Division; Head, Surgical Intensive Care Unit, Toronto General Hospital, 1978 to 1987; Surgeon-in-Chief, Ottawa Civic Hospital since April, 1990.

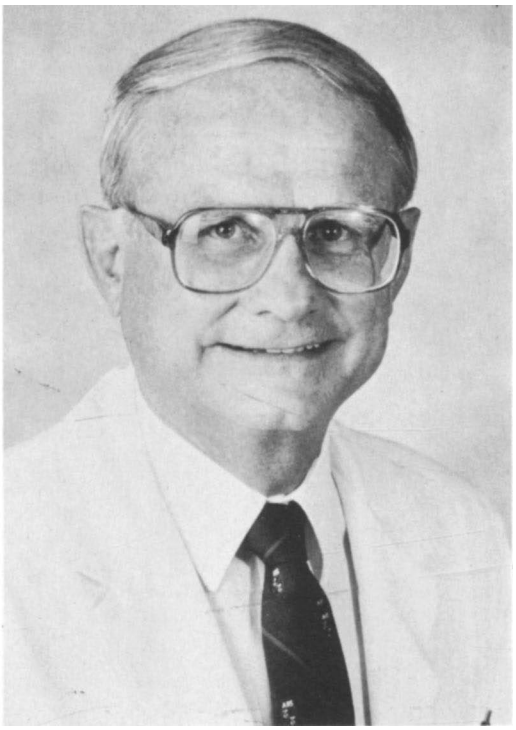

Fig. 12. Dr. Clement A. Hiebert: President, New England Surgical Society, 1987 to 1988.

transplant program and has himself achieved international recognition. Robert Ginsberg (Fig. 10) accepted responsibility for thoracic oncology at the University of Toronto and established an international presence for our division in this field, which was recognized through his recent appointment as head of the Department of Thoracic Surgery at the Sloan-Kettering Memorial Hospital in New York. Thomas Todd (Fig. 11) was encouraged to pursue his focused interest in surgical intensive care, and in 1981 he became a founding member and administrative head of the Surgical Intensive Care Unit at Toronto General Hospital. His efforts played a major role in establishing one of the most productive units in the country and have shed rich rewards within our division. Notable among these dividends is his contribution to postoperative care in the lung transplant patients. Tom Todd left our division in April of this year to become head of the Department of Surgery at the main teaching hospital at the University of Ottawa.

The environment created by a constructive group practice arrangement has, in my opinion, played a critical role in support of these individual achievements. The rewards continue. The current stature and future potential of this division has attracted our capable Association secretary, Martin McKneally, who recently accepted the position as head of our university division.

Canadian Certificate of Competence in Thoracic Surgery

Like the American Board of Surgery, The Royal College of Physicians and Surgeons of Canada is responsible for practice standards, accreditation or training programs, and licensure for surgical specialties.

In 1946, well before the development of cardiac surgery, the Council of the Canadian College recommended that thoracic surgery be approved for certification as a subspecialty of general surgery. The history of this subspecialty certificate, from its origin in 1946 until its replacement in 1962 by Certification in Cardiovascular and Thoracic Surgery, is detailed in Norman Delarue's text,[8] *The History of Thoracic Surgery in Canada.* Sixty-eight surgeons, many working primarily in sanatoria, were granted certification in this Canadian subspecialty before it was discontinued. Many years later, the Canadian College "restored" a Certificate of Competence in Thoracic Surgery as an additional pathway to certification in Cardiovascular and Thoracic Surgery for licensure of thoracic surgeons.

Fig. 13. *Left*, Dr. John E. McBirnie: General surgeon, Port Colborne, Ontario, 1955 to 1990. *Right*, Dr. George R. Walker: General and thoracic surgeon, Sudbury, Ontario, 1952 to 1990.

How did it evolve that Canada developed two routes for the training of thoracic surgeons? In contrast to developments in the United States, cardiac surgery in Canada remained limited to a relatively small number of centers, almost entirely within university hospitals. Toronto, with a referral base greater than three million, established only three adult units for cardiac surgery. This relative restriction of cardiac programs was the result of several factors: a strong level of control exercised by federal and provincial ministries of health and the influence and judgment of pioneer cardiac surgeons like Wilfred Bigelow. In this environment, it was clearly recognized that adequate requirements for the delivery of thoracic surgery could not be realized by a small number of centralized university programs responsible for all of cardiac surgery. Many Canadian communities required thoracic surgeons who would never have an opportunity to practice cardiac surgery. Furthermore, aside from a few training programs like that in Toronto, thoracic surgery was suffering the neglect of a "poor relation" in departments of cardiovascular and thoracic surgery throughout the country. The Certificate of Special Competence established by The Royal College of Physicians and Surgeons of Canada in 1978 was designed to address these problems. Without doubt, this recent certificate has focused attention on training in thoracic surgery, upgraded the quality of practice, and populated many Canadian communities with much needed and well-trained certified surgeons.

Fulfillment in a surgical career

I will leave the details of thoracic surgery and spend the remaining time on some personal reflections for fulfillment in a surgical career.

In his presidential address to the New Englnad Surgical Society, my friend Clement Hiebert[9] (Fig. 12) contributed a beautiful and sensitive analysis of the elements that formulate a joyful and rewarding life in surgery. To quote from his introduction, " . . . my subject the joy of surgery, the magic stuff, the grail which once moved every doctor in this room to become a surgeon and which even now beckons through the jading mists of tedium and time. Strip away the corrupting dullness and look afresh at our profession. I contend it to be the most splendiferous of all professions." In the closing pages of this address he eloquently describes the bonds, the spiritual bonds, that join patient and surgeon. In his words: "The exultation of pain

Fig. 14. Dr. Hermes C. Grillo: Head, Division of Thoracic Surgery, Massachusetts General Hospital.

Fig. 15. Dr. Harold C. Urschel, Jr.: Professor of Surgery, Baylor Medical College, Dallas, Tex.

relieved, life prolonged, body restored, is a celebration which goes on and on. . . . Decades later the patient may recall the very date of the event [surgery], especially if the surgeon has added caring to his curing."

Caring is the cornerstone of fulfillment for both patient and physician in surgical practice. Unfortunately, there is something in the character of large teaching hospitals that lends itself to impersonal relationships. The referring family physician is seen as a name and address. The patient appears as a disease, an interesting condition, without comprehension of an individual soul with family, friends, and fears outside the hospital. It is difficult and challenging to transmit this sense of personal caring in medical school. It is no easier during the hectic and demanding years of post graduate training. Like Clement Hiebert, my eyes were opened to the fulfilling joys of knowing the patient as a person during four years spent in family practice in a small mining community on the North Shore of Lake Superior. Throughout the years since my return to Toronto as a surgeon, I am repeatedly sensitized to the importance of this orientation through two close friends and surgical colleagues: Dr. George Walker of Sudbury, Ontario, and Dr. John McBirnie of Port Colborne, Ontario (Fig. 13). I welcome this opportunity to acknowledge their influence as role models for "patient care and caring" in their respective communities. They represent the best in comprehensive patient care, and they enrich the quality of practice in their communities by their example.

Those among us who participate in training programs have particular opportunities and rewards. For the inquisitive mind, the facility for research is greatly enhanced. Teaching institutions are among the first to address the challenge of new initiatives and therapies. We reap the benefits of communication with colleagues in other training programs who share our interests and influence our directions. I first met Hermes Grillo (Fig. 14) at the AATS meeting in Montreal in 1965. We have enjoyed a close personal and professional association ever since. We continue to learn from one another through our mutual interest in tracheal surgery, and we have participated in the development of a broader and productive collaboration between our two hospitals. Joel Cooper, who added much to the stature of our Toronto division, was Dr. Grillo's research fellow when we first met. Harold Urschel (Fig. 15) became a patron of our division when Ginsberg completed his postgraduate training as a fellow at Baylor University with Drs. Paulson and Urschel. Harold Urschel has played an exceptional role through his enthusiastic initiative and encouragement to involve the

Fig. 16. Dr. W. G. Bigelow on a fishing trip with me in northern British Columbia, 1986.

members of our division in the scientific programs and administrative committees of many of our national societies.

But the abiding pleasure, in my opinion, derives from the continous stimulation of that youthful generation of students, who constantly renew our sense of wonderment and enthusiasm for learning something new. Our medical students and residents are the most effective (and unavoidable) instruments for our personal programs in continuing medical education.

I have reached that age when, like it or not, friends, colleagues, and patients inquire about my plans for retirement. This stage in a surgeon's career merits attention. I turn to the advice and example provided by two of my teachers who are good friends and stimulating companions to this day. Ronald Belsey advises every young student, "You must start planning your retirement on the day you commence practice." He has lived this philosophy to the fullest and has enjoyed rich experience in his chosen pursuits outside of medicine—a knowledgeable naturalist, consumate fly fisherman, enthusiastic hunter, part-time farmer, and an informed enthusiast of fine art. He describes two categories of retirement style: first, complete retirement; that is, the abrupt cessation of all practice and other activity, which shortly results in a merciful death: second, palliative retirement; his preference; a gradual shift from onerous responsibilities to more pleasurable pursuits. Ronald Belsey celebrated his eightieth birthday in April of this year. He still operates in England and Sicily, travels, and combines teaching and hobbies in far-flung corners of the globe, and he continues to author medical publications.[10] Bill Bigelow sets a similar example: An avid naturalist, fisherman, and hunter, he has introduced generations of young surgeons on his service to the rewards of country living at his farm and cabin north of Toronto. Since retirement from full-time practice, he has authored two historical texts,[11, 12] served as president of the Nature Conservancy of Canada, continued to prod our department of surgery in productive directions, and he is a great companion on fishing adventures when opportunity provides (Fig. 16). These men are both resounding advertisements for the philosophy of living life to its fullest.

Ladies and gentlemen, thank you for your attention. You have traveled with me from high school days through a flight of nostalgic memories and events stretching over 45 years. I have touched down on only a few selected personalities, and I wish to pay tribute to the many others who have enriched and supported: the nursing staff on the Thoracic Unit of Toronto General Hospital, in the operating rooms and intensive care units, who are the backbone of our service and exemplify the best in patient care;

my family, who have propped me up through thick and thin; and my secretary, Jean Waters, who has been an indispensable right arm for 25 years. Thank you for this great honor and privilege.

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