In 1936 I began my fellowship at the then Rockefeller Institute for Medical Research in New York, now the Rockefeller University with Dr Alexis Carrel, the experimental surgeon, and Charles Lindbergh, the aviator, to work on a system they had designed to perfuse organs under sterile conditions and with any desirable pressure and pulse rate. Working at the Rockefeller Institute were scientists of great stature such as Landsteiner, the discoverer of the blood groups, Peyton Rous (the role of viruses in cancer) and Oswald Avery, who established the role of nucleic acid as the carrier of genetic information.

Over this highly diverse group of individuals presided Simon Flexner, the director of the Rockefeller Institute. It was customary for any new fellow to present him or herself to the director. My visit with Dr Flexner was rather brief but I remember that he talked without interruption and finished his discourse without changing either pitch or rhythm. He ended abruptly but not before he had advised me to marry a rich woman.

Who was Simon Flexner and why make him the center of this discussion? Simon Flexner was an administrator, presiding over a diverse group of scientists working primarily in fundamental research related to clinical conditions. A look at Simon Flexner’s career will explain why I singled him out as an ideal administrator. He was born in 1863, the fourth son of nine children in Louisville, Kentucky. He graduated from the Louisville College of Pharmacy, worked in a drugstore, and then began the study of medicine at the University of Louisville. He obtained his medical degree in two years. Following, he studied pathology at the Johns Hopkins Hospital with William H. Welch, who became a major influence in his career and who was one of the founding members of Johns Hopkins University and of the Rockefeller Institute. As resident pathologist at Johns Hopkins Hospital, Flexner continued research in bacteriology and pathology and was promoted to Professor of Pathological Anatomy. In the Philippines, he discovered a widespread strain of the dysentery bacillus since known as the Flexner type. In 1901 he took a month leave to head a government commission investigating the outbreak of bubonic plague in San Francisco. In the same year, the Rockefeller Institute for Medical Research was founded in New York City and Flexner became its director and one of the seven members of the Institute’s Board of Scientific Directors headed by William H. Welch. Beginning in 1903 with the advice of Welch, Flexner organized the Rockefeller Institute according to specifications he had himself drawn up at the Board’s request. There were to be several laboratory departments each headed by a competent scientist. Flexner did not choose the field of science to be represented, rather he selected the scientist because of his stature. In 1906 he was instrumental in opening a new laboratory building, and in 1910 a modern research hospital. In 1907 America experienced the first large epidemic of poliomyelitis. Flexner was able to transmit the disease from monkey to monkey and therefore laid the foundation for the development of protective vaccines for polio.

Obviously Flexner was not only a competent administrator but also an outstanding and original investigator. Later in life, his energies were expended more and more upon the direction of the Rockefeller Institute and his main contributions were to stimulate and advise his juniors. He left a free hand to senior investigators but he shepherded the younger scientists until they were ready for independent work. Simon Flexner died in New York City at the age of 83.

The following features made Flexner an outstanding administrator: he was himself a first rate scientist; he appointed scientists to his staff not because he wanted a representative of a specific scientific field but because he wanted to support an individual outstanding scientist; he
did not hesitate to appoint to his staff workers who were his scientific equals; he was tolerant of the idiosyncrasies and foibles of his faculty. An example was the appointment and continued support of Alexis Carrel, the experimental surgeon and Nobelist, who was a great scientist but because of his interests in metaphysics and social sciences, was a gadfly amongst the other members of the Institute; Flexner also had excellent relations with the Board of the Rockefeller Institute, particularly with Welch and with John D. Rockefeller, Jr, who assured the Institute of continuous funding. At that time, individual grant support was not a major factor and the Director of the Institute distributed the funds amongst his faculty according to his own lights.

I have chosen Simon Flexner as an ideal medical administrator, primarily because he was tolerant, selfless in support of his faculty, and considered his main function the support of individual scientists. Because he himself was a competent scientist, he recognized talent and genius. He was no threat to the scientific ambitions of his faculty but rather supported them once he recognized their worth.

In scientific and medical institutions, administration has assumed a pivotal role. It directs the course and development of science, and it chooses personnel, both key and technical. Sometimes administrators rule by decree, and do so either openly, autocratically or diplomatically; sometimes however, they fail to consult the faculty. In most medical schools, there exists a faculty senate, or a similar body, which acts like a parliament to advise and consent. But often these advisory bodies either do not exist, or they are powerless and fulfill only a cosmetic function. Administrators of medical schools or scientific institutions should be compassionate yet firm. Firmness is indeed needed. But firmness should be combined with compassion. Foremost, the administrator should have respect for his faculty.

Boards oversee both the financial and scientific future of the establishment. Although the most important function of a board is to raise money, it should also concern itself with the interrelationship between the administration and individual scientists or physicians. Like the board of the Rockefeller Institute at the beginning of the 20th century, it should be aware of the relationship of the administration to the faculty and of the value of their scientific accomplishments. Faculty, administration and board should be balanced.

In the long run, good will, decency, respect for the individual scientist and appreciation for good science are the pillars on which scientific and medical establishments should be built.

Simon Flexner was a shining example.

Richard J. Bing, M.D.

RICHARD BING’S 91st BIRTHDAY

On October 12, 2000 Richard Bing will be 91 years old. Through his many contributions in Past Truth & Present Poetry, he actively promotes and enhances this News Bulletin. I would like to pay tribute to this outstanding investigator and renaissance human being who, in my view, planted the seed that led to the creation of the International Society for Heart Research. This Society evolved from the International Study Group for Research in Cardiac Metabolism, established in 1968, at a meeting in Dubrovnik in Yugoslavia. The year before, a group of investigators, including Richard Bing, had come together to lay out the principles and aims of this new group.

In those days cardiology was dominated by pumps and pressures. The only suitable clinical training was one based on the catheter laboratory. It was into this scene in about 1948 that Richard Bing initiated the new metabolic cardiology, via the catheter laboratory. During his studies on congenital heart disease he inserted a catheter into the coronary sinus, drew off black venous blood and his fertile mind immediately realized that he had a major tool at his command for studying the oxygenation and metabolism of the intact human heart.

Not only that, but he carried his ideas further and delineated the metabolic fuels of the human heart (fatty acids when fasting, glucose when fed). He further established that defective energy production was not the source of the problem in heart failure. It was this classic series of six articles that appeared in the American Journal of Medicine and in the Journal of Clinical Investigation, as well as his Harvey lecture that carried the message that the heart was more than just a pump. It had its own metabolic needs, governed by its own complex machinery. Metabolic pathways were the forerunners of today’s signal system. His classic series on Physiological Studies in Congenital Heart Disease covered eight outstanding articles, still classics in their own right. Thus it was that from congenital heart disease that his work evolved to metabolism of the human heart to myocardial ischemia and later to hypertrophy and failure, always one step ahead of his times.

As brilliant as his start was, much more was to come. For decades running, he and his laboratory produced a series of outstanding papers, many well ahead of his times and confirmed by later work. Few know that Richard was among the first to relate angiotensin to the blood pressure. He was also one of the first to define the contractile properties of isolated human heart muscle. He initiated studies into the metabolism and electricity of the effects of ischemia on the mammalian heart. He and Sigmundur Gudbjarnason were the first to study the metabolism of myocardial infarction and the repair process.

Today we accept these ideas without
any second thought. Aspirant academic cardiologists readily enter a career in cardiology without any major catheter laboratory training. Rather, considerable biochemical and molecular biological training is now the norm. In my view, Richard Bing was the person who started off this modern cardiological revolution. If it had not been for him, the International Study Group for Research in Cardiac Metabolism would never have existed and, if it hadn’t been for that, the International Society for Heart Research would not have been born. In turn, the vigorous contribution of the ISHR to the modern era of receptors, cell signalling and molecular cardiology would not have occurred.

As Richard is fond of saying, “we only build on the shoulders of others”. He has already in his historical writing outlined how he came to build on the shoulders of others. Let us not forget how we build on his shoulders.

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From Bench to Bedside to Bar: Heart Failure Update "Venice 2000" (June 28 - July 1, 2000)

You’ve either got or you haven’t got style. Roberto Ferrarri has it, and makes sure that everyone gets the benefit of it when he organises meetings. With a city like Venice you have a head start, and the use of the spectacular Fondazione Giorgio Cini as a conference area capitalised on this advantage. This former monastery occupies most of the island of San Giorgio Maggiore, which dominates the lagoon. The rooms were magnificent, often lined with tapestries or bookshelves bearing ancient tomes, and the gardens and cloisters were cool and inviting. Many of the speakers and delegates stayed in the Hotel Danieli, facing the island across the lagoon. Stepping out onto the 4th floor terrace of the Danieli at breakfast was like walking into a Canaletto, and it was possible to observe the stream of delegates entering the Fondazione, and time one’s own boat trip accordingly.

Against this tempting backdrop, it was necessary for the meeting programme to compete strongly for the delegates’ attention. Here some real imagination had been shown to involve the 1000 or so practicing doctors who had come to be enlightened on current thinking about the etiology and treatment of heart failure. Many meetings have had the optimistic title “Bench to Bedside” or “Molecule to Man” and usually it is nothing more than an excuse for a mixed programme. In this case, some real daring had been shown. The three day program represented the progression of the disease, with the first day as NYHA II and III, the second as NYHA III and IV and the last day as End-stage. Each morning, two young cardiologists (rapporteurs) presented to the entire meeting two real-life cases in parallel, giving information in small stages. Experienced chairmen controlled the session, and a team of invited discussants were on stage to give comments and questions. After each increment of information, the audience was asked to give its views on the possible etiology and treatment of the case. We could vote using a hand-held radio-link device, usually choosing from four options. Our answers were collated by computer and shown after a minute or so on the main screen. Supplementary questions were sometimes decided by a show of hands. This really sharpened the audiences attention. As a basic scientist, I voted out of curiosity, but was surprised to see my answers falling in with the majority of the clinicians. Some outcomes were startling, for example the audience voted unanimously to discharge a particular patient on β-blockers, when the use of these for the condition in general hospitals is 10-20%. No doubt the audience was a self-