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The NOVA SCOTIA MEDICAL BULLETIN

Editorial

The Annual Meeting*

Doctors are by nature gregarious. Extroverted, outgoing and people-loving, they are fond of togetherness. Their outer-oriented personalities enable them to survive the onslaught of teeming humanity in waiting rooms, offices, clinics and hospitals, and to thrive on lengthy telephone conversations with inquiring, complaining, pleading, threatening, and fulminating humans of all ages and in all walks of life. Above all, it makes them like and seek each other's company as attested to by their enthusiastic attendance and eager participation at medical gatherings, be these humble causeries in the surgeon's locker room, modest regional medical society meetings, clinical luncheons, ward rounds, provincial conventions, or sumptuous national and international assemblies.

Doctors are particularly fond of conventions. In this, of course, they are not motivated entirely, perhaps not even principally, by sociogenic hunger. They have other cravings as well - a cerebrogenic thirst for learning to be slaked by fresh water from local fountains of knowledge or from fancifully bottled "tonic" imports, a viscerogenic curiosity as to their future meals and the hands that shall feed them to be whetted and perhaps partly satisfied at the session on medical economics, a somatogenic need for self-expression to seek outlets in active participation in scientific discussions and business proceedings. Conventions are all things to all doctors.

To the doctors in Manitoba our Annual Meeting is THE convention of the year. This is not because of parochial loyalties and provincial self-centeredness but rather because of a growing realization that in matters pertaining to the character and pattern of medical practice the most important decisions are made on a provincial level. Events in Saskatchewan illustrate this most dramatically. Developments in Alberta and forthcoming ones in British Columbia serve as a further reminder. Momentous changes have taken place and are to be effected not within the boundaries of municipalities, townships, cities or the country at large, but within those of individual provinces. It is the province which is now pivotal to the "way of life" of the physician.

The "science" of Medicine is universal, its "art" is individual, but the "business" of Medicine at the moment is largely provincial. Let us, then, treat our Provincial meeting with due respect and come to it in imposing numbers.

May as well bring the families along. They too may like togetherness. ■

Ed.

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The History of Thoracic Surgery

J. J. Quinlan, M.D.

In the year 1896 the great Stephen Paget wrote a book on surgery of the chest. He was of the opinion that in the previous half century thoracic surgery had risen above the horizon and was now nearly at its zenith. His remarks on cardiac surgery make interesting reading: "Surgery of the heart has probably reached the limits set by nature to surgery; no new methods and no new discovery can overcome the natural difficulties that attend the wound of the heart". It is an understatement that Paget's prediction proved incorrect. If one is discussing the history of the subject, Paget must beregarded as pre-historic. When he wrote his book chest surgery was still gestating. While reports of surgical procedures on the chest can be found sporadically down throughout the ages beginning with the first rib resection recounted in the Book of Genesis, the story really begins in the present century.

It is convenient to divide the era of chest surgery into three periods: (1) 1900 to 1930. During these years, operations on the chest wall became fairly well commonplace and standardized. This is particularly true of the development of thoracoplasty for the treatment of pulmonary tuberculosis. In fact, it is probably safe to assume that the necessity for discovering effective surgical procedures to treat tuberculosis of the lungs greatly stimulated thoracic surgery in general. (2) 1930 to 1950. During these years, surgery inside the opened chest gradually became feasible and safe. Lung resection was developed. Operations on the oesophagus and diaphragm were standardized and tumours and cysts of the mediastinum became readily accessible to the surgeon. It was also during this period that congenital heart disease was first attacked by operative procedures on the great vessels inside the chest. (3) After 1950. The fourteen years just passed have seen the emergence of safe cardiac surgery, first utilizing the blind closed method but nowadays using cardiopulmonary by-pass and operating on the open heart under direct vision.

In considering the period of the development of chest wall surgery, one must of necessity talk about the evolution of the surgical treatment of pulmonary tuberculosis. The earliest chest wall operations, thoracoplasty, cavernostomy, drainage of empyema and extrapleural plombage were all devised for that purpose. The earlier operative procedures for treating tuberculosis of the lungs aimed for the most part at relaxing or collapsing the diseased organ and the first of these was artificial pneumothorax. This was first carried out and described by Forlaninni as far back as 1882. Its general adoption was slow and it was not until after X-ray examination of the chest became possible in the early 1900's that it was generally accepted. In this province, it was first carried out at the Nova Scotia Sanatorium in 1914 by Dr. A. F. Miller as an emergency procedure for the control of haemoptysis. It was soon found that many artificial pneumothoraces were ineffective because of the presence of adhesions between the lung and the chest wall. To deal with this complication, Jacobaeus of Stockholm in 1913 devised the ingenious operation of intrapleural pneumonolysis. Artificial pneumothorax and in-

*Nova Scotia Sanatorium, Kentville, Nova Scotia.

trapleural pneumonolysis enjoyed their greatest popularity between 1920 and 1940, following which this modality of therapy gradually fell into disuse and was eventually abandoned completely.

Another minor surgical procedure designed to collapse lungs partially was induced paralysis of the diaphragm. This was first done in 1913 by one who is regarded as the father of thoracic surgery, Ferdinand Sauerbruch, who divided the phrenic nerve through a short supraclavicular incision. Refinements in this procedure were made by Goetze of Germany and Felix of France. Again, this was a widely used operation in the 1920's and 1930's but today is practically never used as an independent procedure.

What proved to be the most successful chest wall operation for the treatment of pulmonary tuberculosis is thoracoplasty in which the collapse of the lung is brought about by removal of ribs. An early modified form of this was done by deCerenville of Switzerland in the late nineteenth century, but credit for the modern thoracoplasty begins with Rudolf Brauer of Germany. Brauer, an internist or "thinking doctor" was able to suggest to his cutting colleagues, Sauerbruch, Friedrich and Wilms, that to produce effective collapse of the lung a very extensive rib resection had to be carried out. By 1915, thoracoplasty was in rather common use in many parts of the world and in the following years further refinements were made by such surgeons as Noland Carter, John Alexander and Carl Semb.

A pioneer in chest surgery and in particular thoracoplasty in Canada was Dr. Edward William Archibald of Montreal who, in 1921, carried out the first thoracoplasty in Nova Scotia at the Victoria General Hospital on a patient of the Nova Scotia Sanatorium. From 1921 until 1934 when thoracoplasty was required for patients of the Sanatorium and the Halifax Tuberculosis Hospital, the surgery had to be done at the Victoria General Hospital by Drs. J. G. MacDougall and H. K. MacDonald. In 1934, Archibald's surgical resident, V. D. Schaffner, came to Kentville and was appointed surgeon to the Nova Scotia Sanatorium where an extremely active thoracic surgical program was soon in operation and has continued to the present day. In Halifax, the chest surgery continued to be done by Dr. MacDougall and Dr. MacDonald, soon to be joined by Dr. V. O. Mader and later by Dr. J. W. Merritt.

Another operation developed during the same period and, which for a time was thought to be superior to thoracoplasty, was extrapleural pneumothorax, a procedure producing selective collapse of the upper half of the lung. It was probably first done by the French surgeon, Tuffier, in 1910 and had only indifferent success until 1936 when Graf and Schmidt of Germany, Roberts of England and Overholt of Boston became quite enthusiastic about its possibilities. It was first done in Nova Scotia by Dr. V. O. Mader at the Victoria General Hospital in 1937. Over the long run, however, it proved to be far inferior to thoracoplasty and was gradually, with few exceptions, given up. Briefly, then, by 1940, we had available for the surgical treatment of pulmonary tuberculosis, artificial pneumothorax, thoracoplasty, diaphragmatic paralysis, and extrapleural pneumothorax. Also, in a few selected cases, the operation of cavernostomy was performed, persisting cavities in tuberculous lungs being opened, packed and hopefully left to heal. Cavernostomy has been done on rare occasions all throughout the era of surgical therapy for pulmonary tuberculosis and one can visualize the unusual case where it still might be carried out today.

During this period of the development of chest wall surgery for pulmonary tuberculosis, many other conditions involving the chest wall and the extrapleural portions of the thoracic cavity were treated effectively. During the First Great War, tremendous advances were made in the treatment of wounds of the chest. During the great influenza pandemic at the end of the war, many significant advances were made in the treatment of empyema which in so many cases complicated the influenza and was responsible for many of the deaths. During the years also, treatment of all types of empyema became well understood and standardized, and great strides were made in the treatment of lung abscess. In 1913, the first successful resection of the oesophagus for carcinoma was done by Franz Torek and in the following years treatment of conditions affecting the diaphragm such as hernia were worked on by such surgeons as Harrington of the Mayo Clinic.

Because of the most important operation to come out of it, the period of 1930 to 1950 might well be called the year of the evolution of pulmonary resection. There had been many attempts at removal of diseased lungs in the early part of the century, practically all of them ending disastrously. In an address to the American Association for Thoracic Surgery in 1923, Samuel Robertson gives an excellent picture of what was entailed in doing a lobectomy for bronchiectasis. "As the pleura is opened, secretions well toward the trachea and cyanosis develops. The lobe obstinately resists being delivered. The pleural adhesions are strong and widespread. Attachments to the disphragm are rope-like and tenacious. Finger dissection is inadequate. Work with the knife and scissors is blind. Cleavages are sought in vain. The pericardium is dangerously involved in the adhesions. The patient's condition is deteriorating. There is bleeding and infectious leakage in the lung and bleeding from the diaphragm. Suddenly, it is obviously necessary to return the patient to his bed. Not much has been accomplished. The greatest dangers occur after the operation. The lung on the bad side is congested following this traumatization. It is compressed by an accumulation of blood and fluid. Its better portions are incompletely filled. Then come the dangers of pleural infection, later in convalescence. There is more operating to do".

In the same year, Evarts Graham presented a paper on the surgical treatment of bronchiectasis by resection. He had found records of only forty-eight cases in the literature and there had been 20 operative deaths — a mortality of 42%. His own series of cases numbered three of which only one survived.

Archibald of Montreal in 1924 reported a case of lobectomy which he had done for bronchiectasis following thoracoplasty on a twelve-year old girl. The patient fully recovered and went home three months after her operation.

In 1925, Graham began doing what he called cautery pneumonectomies and lobectomies in which, in stages, he literally burned the diseased lung out with the actual cautery and, strangely enough, his results were not too bad.

A real accomplishment in the evolution of lobectomy for bronchiectasis was that of Harold Brunn of San Francisco in 1929. He reported six cases with only one death. He separated the root of the lobe and tied it off. The lobe was then cut off with the actual cautery beyond the line of ligature. A tube was placed in the closed chest and connected with a suction apparatus, thereby bringing about reexpansion of the remainder of the lung. He was beginning to approach modern lobectomy.

In 1930, Churchill of Boston operated on a patient with carcinoma. He planned to take out the lung by the usual mass ligation technique of the hilus. However, because of the position of the tumour, he had to dissect out individually the various structures of the root. Churchill was a pupil of Sauerbruch and Sauerbruch's teaching was that following resection the bronchus should never be closed. So on this occasion Churchill placed a rubber tube in it and led it to the outside. The patient died of bronchopneumonia three days later. Had he not been influenced by Sauerbruch's teaching, he would have been the first person to remove successfully a lung containing carcinoma; in fact, the first person to remove a lung successfully for any condition. The following year he removed a lobe by individual ligation and his was the first patient to survive lobectomy by the individual treatment of vessels and bronchus. For some reason, he did not again use this technique until 1938.

The first successful pneumonectomy was carried out in 1931 by Rudolf Nissen of Germany, an assistant of Sauerbruch. The operation was done for bronchiectasis. The patient got into difficulties during the dissection and the operation had to be terminated. It was completed 14 days later. He used a rather primitive technique in that the root of the lung was ligated, gauze packed around the lung, and the wound left open. The necrotic organ sloughed off on the fourteenth day and the residual cavity decreased markedly in size very rapidly. The fistulous tract remained about three months but the patient was alive and well six years later.

In 1932, Haight of Michigan again did a pneumonectomy in two stages for bronchiectasis by the technique employed by Nissen and again with an eventual good result. In 1932, Shenstone and Janes of Toronto introduced the tourniquet. They reported 15 lobectomies with quite acceptable results. In April 1933, the most dramatic contribution to pulmonary resection came with Evarts Graham's pneumonectomy for carcinoma of the lung. This patient died only last year, at which time he was well into his 80's. Also in 1933, Reinhoff of Baltimore and Archibald of Montreal both carried out pneumonectomies for malignancy of the lung, as did Alexander. All the first four resections for carcinoma were done on the left side. In May 1934, Overholt of Boston reported the first successful right pneumonectomy. Further contributions were made by Overholt of Boston and Crafoord of Sweden. A boon to successful pulmonary resection was the introduction in 1935 of sulfanilamide. This was quickly followed by a long line of relatives and these chemotherapeutic agents did much to cut down the incidence of infection following lung resection. In 1937, Churchill reported his results in lobectomy — 84 cases with a mortality of only 4.6%. From then on, progress was rapid. The tourniquet method of Shenstone and Janes was used until 1940 when Kent and Blades described the technique for lower lobectomy with individual isolation and ligation of the pulmonary vessels and separate management of the bronchus. By 1944, this was pretty well the only technique used for resection. In 1946, a group of United States army surgeons reported 196 lobectomies carried out in the United States Army Hospitals during and immediately after the Second World War with only one death.

In 1939, Belsley and Churchill showed that a portion of the left upper lobe, the so-called lingula, could be resected independently. This was followed in a few years by the development of techniques for resection of all the segments individually in both lungs, an important contribution in this field being made by Overholt in Boston and Chamberlain in New York. Simultaneous bilateral resection was first described by Overholt in 1952.

Pulmonary resection for tuberculosis had a rather difficult time of it. Very sporadic resections for tuberculosis mostly with disappointing results were done in the early 1930's. In 1938, Jones and Dolley of San Francisco reported five cases and at the American Association for Thoracic Surgery meeting in 1940 the collected cases from the literature showed that there were 19 pneumonectomies, with 8 deaths, and 31 lobectomies, with 8 deaths. In 1943, Churchill proposed that certain selected cases of pulmonary tuberculosis could be treated by lobectomy. The results, however, continued to be bad and remained so until the introduction of streptomycin in 1947. The mortality of resection for tuberculosis between 1945 and 1947 in the best of hands was as follows: Janes of Toronto, 28.8%; Overholt of Boston, 25%; Sweet of Boston, 33%; Bailey of Philadelphia, 27%; Jones of San Francisco, 29%. With the advent and use of streptomycin and later of PAS and Isoniazid, there was a dramatic change in the results of resection for tuberculosis. It was soon found that not only could these drugs do much to prevent complications in the postoperative period, but that by their judicious use for varying lengths of time before surgery the extent of operation was rendered less and that where previously a pneumonectomy and lobectomy had been necessary, segmental or wedge resection would now suffice. Over the past few years, large series of cases for resection for pulmonary tuberculosis have been reported and the mortality has been in the vicinity of only 5%.

The first successful lobectomies done in Nova Scotia for bronchiectasis were carried out in the late 1930's by Dr. Schaffner, Kentville and Dr. Mader in Halifax. In November 1944, Dr. Schaffner performed the first lobectomy for tuberculosis in the province. This was carried out at the Nova Scotia Sanatorium without the benefit of the antituberculosis drugs and the patient remains well to this date. The first segmental resection was done by Dr. J. W. Merritt at the Children's Hospital in Halifax in 1947. In the years that followed, lung resection of all types and for all diseases have become quite commonplace, both in Halifax and in Kentville. After 1952, the year of the introduction of isoniazid, the collapse therapy of pulmonary tuberculosis became practically non-existent and tuberculous lungs requiring surgery have been managed by some form of pulmonary resection.

The third period in the development of thoracic surgery has been the realization of the chest surgeon's dream. Open heart surgery is today almost commonplace. The evolution of cardiac surgery began with procedures on the pericardium for the treatment of constrictive pericarditis. The first successful pericardectomy was probably done by Rehn in Germany in 1920 and the first one on this continent was done by Churchill in 1929. Following this, the operation began to be performed with much greater frequency and with good results in the hands of first-rate surgeons.

The next milestone was the successful management of malformation of the great vessels arising from the heart and the indirect surgical attack on congenital heart disease itself by shunt operations on the same great vessels. The first successful operation was ligation of the patent ductus arteriosis carried out by Robert Gross of Boston in 1938. In 1944, Crafoord of Sweden reported the first successful case of surgical treatment of coarctation of the aorta. Two years later in 1946, it was my privilege to be present at the meeting of the American Association for Thoracic Surgery in Detroit where Helen Taussig and Alfred Blalock of Baltimore reported their experiences in the utilization of the Blalock-Taussig shunt operation for the treatment of the

tetralogy of Fallot. They showed that the most significant defect in the tetralogy was the pulmonary stenosis and that the condition of the patient was greatly ameliorated by creating an anastomosis between the pulmonary artery and subclavian artery. Shortly afterwards, Potts of Chicago reported his results in the treatment of the tetralogy by anastomosis of the pulmonary artery to the aorta.

At the same 1946 meeting, Harken of Boston reported his experiences during the Second World War in the removal of foreign bodies from the heart. He had extracted 56 such objects, 13 from within the chambers of the heart. There was no mortality whatever in this series.

From this type of surgery, it was not long before attack on diseased heart valves finally resulted in success. Much experimental work had been done over the years on the surgical treatment of mitral stenosis and the rare patient had actually been operated on but with somewhat indifferent success. In 1925, Souttar of London actually did successfully insert his finger through a stenosed mitral valve and accomplished some dilatation of the valve. The patient survived and was well for some years afterwards; and it is strange that 21 years were to elapse before this procedure was to be attempted again. A possible explanation is that Souttar's "thinking colleagues" were loathe to send him their patients. After the Second World War, attempts were made to enlarge the valve opening by the use of instruments passed through the wall of the heart and the leading worker in this field was Bailey of Philadelphia. In 1946, he performed his first mitral commissurotomy almost by accident. During the course of an operation on a patient with mitral stenosis he was attempting to pass an instrument by way of the auricular appendage through the stenosed valve but he found the stricture so severe that he could not get the instrument through the valve. The patient's condition was getting worse and he felt that unless he could do something definitive the patient would not even survive the exploratory operation. He then remembered the report of Souttar's operation many years before and inserted his finger through the auricular appendage and into the valve orifice. He was able to split the commissures and the patient recovered from the operation, only to die three days later. However, the trail had been blazed and on June 20, 1948, Bailey carried out his first truly successful mitral commissurotomy. In September of the same year, Harken of Boston, independently of Bailey, also carried out commissurotomy and about the same time, Russell Brock of London, knowing nothing of the work of Bailey and Harken was also successful in carrying out the procedure. These pioneers were followed by many others and within three years the operation became well established.

The pulmonic valve was next successfully attacked, particularly by Brock of London, and within a matter of a few short years all the heart valves, whether crippled by congenital malformation or acquired disease, were being operated on. The results of some of these procedures were good and others left much to be desired. Attempts were also made to repair defects in the septa between the chambers of the heart.

It must be remembered that all these cardiac operations were done blindly. The limitations of such surgery were quickly realized and methods to allow the surgeon to operate on the open heart were eagerly sought. The first breakthrough came through the research of W. G. Bigelow of Toronto who, in 1950, published the results of experiments to determine the effects of lowering the body temperature artificially. He found that he could lower with safety the

temperature of a dog to 20° centigrade. At this temperature, the oxygen consumption of the tissues is only 15% of normal. Under these circumstances, it was possible to cut off the blood flow from the heart for 15 minutes at a time. It was not long before these findings were being applied to the human and successes were reported in the treatment of conditions which could be dealt with in the safe 15 to 20 minutes during which the circulation could be interrupted. During the same years, the early 1950's, with the help of hypothermia DeBakey and others successfully dealt with aneurisms of the thoracic aorta, excising them and replacing them either with homografts or, as later, with plastic prostheses.

The final step was the perfecting of the extra corporeal pump oxygenator. Gibbon of Philadelphia who, for years, had been working on such an apparatus, first used one successfully on May 6, 1953, in the repair of an atrial defect on an 18 year old girl. She was connected to the apparatus and her heart excluded from the circulation for 45 minutes. In the few years since, many improvements and many new machines have been devised, and they have reached a high degree of efficiency.

In our own province, cardiovascular surgery began in 1958 when Dr. F. G. Dolan began doing such operations at the Victoria General Hospital in Halifax. In the few years since, with the help of his medical colleagues, he has developed an excellent cardiovascular surgical program.

And what does the future hold? A fascinating prediction of what lies ahead was made by Dr. Emile Holman in the foreword to Meade's History of Thoracic Surgery in which he states: "In such a review of the past, it is interesting to observe the speed with which the new procedures have been introduced, particularly in the surgery of the heart, and to note how speedily others are being discarded — both encouraging portents of future developments. Experimentally transplantation of the heart from one animal to another has been followed by survival for 21 days. As the difficulties of sensitization to foreign protein and homograft rejection are surmounted, we may even expect the establishment of heart banks for use as the need arises. Other probable developments concern the simplification of heart-lung machines leading to the eventual elimination of the respiratory element and the use of the patient's own lungs for aeration. More effective chemotherapy of pulmonary tuberculosis will probably obviate most surgical procedures for this disease. One may also anticipate the disappearance of surgical problems of acquired heart disease, such as aortic and mitral stenosis and regurgitation as the control of rheumatic fever becomes more completely effective. Hope may even be entertained that congenital cardiac defects may be lessened if not abolishd through better nutritional and improved personal hygiene against infections in the mother during the early days of pregnancy."

Recalling Stephen Paget's forecast of 1896, and how wrong he was, who can say, in view of Holman's prognostication, that the age-old love call "Dear, I give you my heart" will not have a more practical meaning. ■

Some Aspects of The History Of Auscultation

J. W. Reid

Halifax, N. S.

The history of auscultation should parallel the history of Medicine, but there has been no record of its use in ancient times except that Hippocrates described the succussion splash. It is strange that he did not report on heart sounds for he wrote extensively about the anatomy of the heart and theorized mightily upon its physiology. Indeed it is quite likely that the difficulties which the ancients experienced in understanding the anatomy and physiology of the heart and lungs in no small way explains the tardy evolution of auscultation as a major method in physical diagnosis, and a brief look at their ideas may be of interest at this time.

In any consideration of the theories of those ancient investigators whose works have come down to us, it is not only charitable but reasonable to fix your mind, not on the gross and obvious errors but on the magnificent effort they were making in those early times, the vast achievements in anatomy and the sincerity of their struggle to think out the physiology of the human body, handicapped as they were by the absence of the yet undiscovered laws of physics and chemistry.

Apparently the earliest description of the vascular system as a branching tree originating from the heart was given by Aristotle sometime in the third century B.C. He was not a physician but a philosopher and the son of a physician. He considered the right auricle and ventricle to form one chamber continuous with the great veins and the pulmonary artery, but he overlooked the valves completely. It was Hippocrates who gave, in his writing 'On The Heart', the first accurate description of the heart valves.

Anatomy was difficult enough for them and physiology was even more puzzling. They knew that the body was cold in death and warm in life and the source of this warmth puzzled them. They knew that when the heart stopped beating the body soon grew cold, so that it seemed reasonable to Hippocrates that the heart was the seat of this 'Innate Heat' as it was called, and that respiration served the purpose of controlling and cooling this heat. The auricles were thought to act as bellows to pump air from the lungs to the corresponding ventricles. There is no mention of sound accompanying these activities, although Hippocrates was aware of sound as a diagnostic method as we have seen.

The next step was the distinction between arteries and veins made by Praxagoras. He demonstrated that only the arteries pulsate and he believed that only the veins contained blood. He thought that arteries contained only 'Pneuma', because he found the arteries empty of blood in the apes he dissected. These animals were prepared for dissection by starvation almost to the point of death and then killed by strangulation. This method of preparation made the vessels much easier to demonstrate but tended to leave the veins full and the arteries empty. Herophilus, pupil of Praxagoras, further aided the distinction by remarking the thicker walls of the arteries and he described the pulse as occuring in consequence of the filling and emptying of the artery emanating from the heart.

Erasistratus, also about the third century B.C. named the tricuspid and bicuspid valves and interpreted their function as maintaining unidirectional flow, along with the semilunar valves of the pulmonary artery and aorta. He therefore considered the heart as a unidirectional pump and asked himself what it was pumping. He accepted the current concept of 'Pneuma', a highly volatile and spirituous essence derived somehow from the air. He believed that the left ventricle and arteries contained only this pneuma and explained the bleeding of an artery opened during life by saying that all the volatile pneuma immediately escaped and that blood flowed into the arteries from venous anastamoses.

Galen, some five hundred years after Erasistratus, gives us new knowledge but with much confusion remaining. The theories of Erasistratus were still strongly held by most physicians and Galen by a series of neat experiments proceeded to show that these thories were wrong. He exposed the heart of a living animal and inserted a quill into the left ventricle getting blood immediately. He did the same with a pulsing artery and showed that blood appeared immediately before any pneuma could escape. Then, he said, because he was trying to convince cultists and not reasonable men, he gilded the lily by tying off a pulsing artery at two points and showing the artery to be full of blood when it was opened.

Galen, having thus shattered the theory of Erasistratus was obliged to devise a new one to replace it. This he was unable to do and his makeshift effort was a confused medley of his own discoveries and the old pneuma theory. Whereas Erasistratus held that the heart was a unidirectional pump forcing pneuma from the lungs through arteries that had no pulse of their own, Galen thought that air was drawn into the left heart, mixed with blood he knew to be there, exerting a cooling effect and returned the way it came, together with waste products, to be exaled through the nostrils. But Galen could not give up the age old pneuma — it had been an accepted theory for centuries — so he postulated that the arteries actively dilated and contracted like the heart, drawing in air through pores in the skin and blood from the venous anastamoses. This was the best compromise he could make in a hurry, since the idea of a complete circulation did not occur to him.

It has been unjustly said that these errors of Galen dominated and retarded medicine for a thousand years. It could be more truly said that in all those years medical men failed to apply the free, reasoned, experimental methods of Galen and thereby correct and expand his theories, marked, as they were, as much by the brilliance of his investigations as by his errors.

After Galen the center of medicine shifted to Byzantium where the old teaching was kept alive thru the twilight centuries to about 700 A.D. The Arabs then kept the torch burning until about 1000 A.D. translating the old Greek texts and adding observations of their own.

Constantinus Africanus, about the year 1070 introduced Arabic medicine to Salerno. Dissections of the human body were probably begun at the University of Bologna about 1200 and a textbook of anatomy was published by Mundinus in 1316. His description of the heart was good — but it still pumped pneuma. Henri de Mondeville, teaching at the University of Montpellier at about the same time had this to say of the circulation: — To the right ventricle comes a many branched vein which carries a coarse, thick, warm blood for the nourishment of the heart — the portion of the blood not needed for this nourishment is then made more subtle by the heart, after which it is driven into the cavity that is located within the partition wall (Fossa Ovalis)?

where it is warmed and purified. It then passes through (the septum?) to the left ventricle where it gives birth to the 'spirit' which is clearer, purer, more subtle and more resplendent than any substance formed in the human body and as a consequence more nearly approaches celestial things. It forms a friendly and very appropriate connection between the body and the soul; it is the immediate instrument of the soul giving man the different faculties with which he is endowed. From the left ventricle two vessels are given off — one, the arteria venalis carries blood to nourish the lungs. The other, thicker vessel, the grand artery, which carries blood and vital spirit to nourish the whole body. (Not much progress from 300 B.C.!)

Leonardo da Vinci, the fifteenth century artist and genius, was, among his many accomplishments a keen dissector and anatomist of the human body. His attention was drawn to anatomy when he was asked by a professor of anatomy to paint illustrations for the text book he was writing. The anatomist died before his book was written but Leonardo kept on working and drawing and dissected some thirty bodies and made over seven hundred beautiful drawings which did not become generally known until about 1880. Leonardo da Vinci died in 1515 and the year before in Brussels was born Vesalius (1514 - 1564). He studied anatomy under Sylvius and became the most accurate dissector and teacher to his time. He published at the age of 29 the 'Fabrica', a text of anatomy beautifully illustrated by Jan Calcer correcting many of the age old errors of Galen. This raised a storm of opposition and Vesalius, disgusted with the narrow stupidity of the intellectuals of the time, retired from anatomy and teaching to become a court physician. For twenty years he remained at court until a text by Fallopio, one of his students, pointed to errors in his own text and stimulated him to return, to the dissection table. As a start he decided to do a post mortem examination on a nobleman who had just died and before an audience of interested nobles and friends of the deceased he opened the cadaver and exposed a still beating heart! One can imagine with what consternation Vesalius saw that heart stop beating before his eyes (and no anaesthetist to blame), and can picture the shocked and hostile murmurs of the audience. A charge of murder was laid. He was pronounced guilty and sentenced to death, but by the influence of the king had the penalty commuted to a journey of penitence to the Holy Land. While on this journey Fallopio died and Vesalius was offered his chair of anatomy at Padua. He accepted with great joy but died in a shipwreck on the way home.

Servitus a contempory of Vesalius was the first to state definitely that blood passed through the lungs, became mixed with air in the lungs and so altered, passed to the heart.

It was William Harvey (1578 - 1657) who finally conceived and described the complete circulation of the blood. He was able to confirm by demonstration all but the capillary circulation which he envisaged but could not expose. His theory also was attacked from all sides but he lived to see it fully accepted thirty years before his death, though it did not apparently lead to any great or immediate development in knowledge of cardiac disease or in methods of diagnosis, for it was another two hundred years before Laennec's great work on what he called 'mediate auscultation' made possible the modern era of accurate clinical diagnosis in the diseases of the lungs and heart. Perhaps the inspiration for the development of his stethescope came from the work of Leonardo da Vinci, who, some four hundred years earlier recorded that if one rested an oar quietly on the water with the handle applied to the ear one could

detect the noise of another boat a long way off. He found and recorded that the same thing applied to the detection of distant sound on land. Or perhaps as some say he observed children listening at either end of a see-saw plank as they tapped back and forth. Perhaps he just wanted to escape applying his ear to unclean skin but whatever his reason he tightly rolled a quire of paper and applied one end to the chest and the other to his ear and found to his amazement what he thought to be a great increase in the intensity of the sounds produced within the lung. He was essentially a morbid anatomist and greatly interested in respiratory diseases and in his hospital he studied hundreds of diseased lungs, recording the sounds he heard and subsequently correlating them with the morbid findings on the post mortem table. He published in 1819 his book on mediate auscultation which opened a new world in the field of physical diagnosis, most particularly of the lung, and enabled the practitioner, as it were, to see the post-mortem table through his ear at the bedside.

Laennec was not as successful in the physical diagnosis of the heart because he did not know what caused the normal heart sounds and therefore was never able to relate sounds or murmurs to specific areas of the heart or to particular diseases. He actually believed that the first heart sound was due to ventricular muscle sounds and the second sound to contraction of the auricles. He came to believe that all murmurs were due to irregular contraction of muscle fibres. It remained for another Frenchman, a few years younger than Laennec to clarify the origin of the heart sounds and bring specificity to the cause of changes in heart sounds as well as to the location and cause of heart murmurs, This man was Joseph Raounet of Paris and New Orleans. He was born in 1797 and devoted his Doctoral thesis in 1832 to 'A Consideration and Analysis of the Heart Sounds'. He studied the origin of the heart sounds by means of an experiment in which he fixed glass tubes above and below the pulmonary valves, substituting a bladder filled with water for the right ventricle. By holding his ear in proximity to the valves he found no sound when he compressed the bladder but a very definite sound analogous to the second sound heard in the living heart. The same experiment produced the same result on the left ventricle, but it was some time later, with a more complicated apparatus, before he was able to reproduce the first sound. Rouanet thus proved that the normal heart sounds were produced, not by an audible flow of blood, or the contraction of muscle, or the striking of the heart against the chest wall but by the sudden tensing of the valve membrane against a reflux of blood. It was this work that led to the accurate localization of heart murmurs and to some precision in the diagnosis of heart disease.

How murmurs were produced remained something of a mystery in spite of the careful work of Rouanet, for it was known that not infrequently murmurs were heard when no valve lesion was found at autopsy. It remained for an English engineer by the name of Osborne Reynolds, (1845-1912), working at the University of Manchester, to show by his studies on the flow of liquids in tubes, the various ways in which silent flow could become noisy. He found for instance that when fluid flows through a glass tube which has an area of narrowing that under conditions of rapid flow the fluid beyond the constriction bubbles (phenomenon of Cavitation or boiling without heat). This is due to freeing of gases from the fluid by change of pressure. This cavitation was accompanied by the production of sound. Further his researches lead to the evolution of an equation determining the critical point at which silent flow

becomes noisy. This point is known as the Reynold's number and it is expressed as the following;

$$\text{Reynolds Number} = \frac{\text{velocity x density x vicosity}}{\text{Diameter}}$$

Above 2000 — Turbulence

Variation of any one of these factors could change silent to noisy flow and in clinical medicine it helps to explain the presence of and variation in murmurs in the absence of valvular disease. Thus the functional murmur of anaemia occurs because the blood is thinner or that the anaemia of multiple myeloma may not be accompanied by murmur because the blood is thicker with excess protein. It explains the murmurs which occur with changes in the diameter of vessels in aneurysm and constriction; it explains the functional murmur of fevers and of thyrotoxicosis by increased velocity of flow in these and similar conditions.

So we see that the evolution of auscultation was dependent not only upon the ear and the development of the stethescope but upon an understanding of the anatomy and physiology of the human heart and of the laws of physics pertaining to the flow of blood therein and that we owe the present state of our knowledge of this method, not to physicians alone, but to philosophers and engineers as well. ■

FROM THE BULLETIN OF FORTY YEARS AGO

The Medical Society of Nova Scotia Bulletin, August 1924

The prevalence of mental deficiency, and the important part it bears in producing our social, industrial and economic problems, are apparent to every practising physician.

It is clearly in the interest of Society that every effort should be made to lessen as far as possible the prevalence of mental deficiency and mental disorder. A thorough investigation of all the factors concerned in their causation and the application of preventive measures, require the resources and the authority of the state. It is the opinion of your Committee that the Society should request the Government of Nova Scotia to give this matter its most careful attention, and should assure the Government the readiness of the Society to assist in any feasible way.

(From the report of the Special Committee on Mental Hygiene to the 71st Annual Meeting of The Medical Society of Nova Scotia.)

Dr. Ralph E. Price

An Appreciation

The communities of Amherst and Springhill and surrounding districts were saddened by the death of Dr. Ralph Price on Thursday, March 26, 1964. The prominent Amherst doctor passed away at Victoria General Hospital, Halifax, following a five weeks illness. Dr. Price had been a resident of Amherst since 1937, and had been active in the work of the local, county and provincial medical societies as well as in town affairs.

The late Dr. Price was born in Sussex, N. B., September 30, 1907, son of the late Mr. and Mrs. H. B. Price. He graduated from Moncton High School, took his pre-med studies at Acadia University, Wolfville, N. S., and graduated in Medicine from McGill University in 1934. He interned at the Montreal General Hospital for two years. He practised in Sackville, N. B., coming here from that town in 1937. He engaged in general practice prior to taking up his specialty, radiology.

At the time of his passing Dr. Price was president of the Amherst Y.M.C.A. He was a charter member of the Nova Scotia Radiology Society, a member of the American Association of Radiologists, a member of The Nova Scotia Medical Society, past president and secretary of the Cumberland Medical Association.

Dr. Price was a member of the Amherst Rotary Club and Chairman of its Crippled Children's Committee. He was a former member and president of the N.S.H. Badmington Club, a former executive member of the Amherst Skating Club, a former director of the Amherst Curling Club, a member of the Amherst Golf Club and the Marshlands Club.

Surviving him are his wife, the former Evelyn Graham of Kingston, Ontario, two daughters, Meredith (Mrs. D. T. Hashey) of Fredericton, N. B., and Carol, a student of U.N.B., Fredericton, one son Philip at home, one sister, Mrs. C. A. Mollins, of Moncton N. B. and one brother, Harold of Bucyrus, Ohio.

Dr. Price's passing has left a void in the practice of medicine in the Amherst and Springhill districts. It will be difficult to replace his specialists services in radiology. His reliable services will be missed by the medical profession and their patients, also his ready wit will be heard no more. However, his memory will live on as a result of his good work and achievements.

D. D. ■

PEDIATRIC THERAPY. C. V. Mosby Company, 1964. H. C. Shirkey, Editor, and Contributors. 1144 pages. $16.50.

This recently issued book fulfills a long-awaited need in paediatrics. The more so since all present-day paediatric textbooks are long on diagnosis and notoriously lean on detailed management of various disease states pertaining to infancy and childhood.

This text has an impressive list of expert contributors. Particularly good are the sections on fluid therapy, anaesthesia, metabolic diseases, rheumatic fever, radiation therapy, chemotherapy of malignancies, and allergic disorders. The section on poisoning is as good a quick reference as is curently available. A surprisingly large and concise section on paediatric surgery is included. The textbook includes a large table of paediatric drug dosages which should be of value to all practitioners. There are numerous illustrations.

As with most text books of therapeutics, portions of this book share the fault of not supplying sufficient information on the detailed management of complications of disease states. This is particularly noticeable here in the sections on the treatment of infectious diseases, such as meningitis.

This book recommends itself to all physicians whose practice deals in any way with infants and children.

R.L.O.

"MEDICAL PHARMACOLOGY." Second Edition, by Andres Goth, M.D. The C. V. Mosby Company, Saint Louis, 1964.

The writing of a textbook in pharmacology, as in other medical subjects, is nowadays an exercise in compromise. Clearly, pharmacology includes so many fields, such as organic chemistry, therapeutics, toxicology, to mention just a few, that the discussion of all these in a single textbook would be neither possible nor desirable. The author of a textbook has to decide before sitting down to write, as Dr. Goth did, at which group the book will be aimed and what the needs of this particular group are. In the preface, the author indicates that he decided to write for medical students and medical practitioners, "emphazing principles and concepts rather than the type of factual information which students memorize and promptly forget." He succeeded brilliantly in achieving this goal. There are many clearly presented and up-to-date chapters on both recent and older developments in pharmacology. In no other book did I see such concise and easily understandable exposés such as the chapters on drugs affecting catecholamine binding and release, on amine metabolism and the nervous system or on diuretic drugs.

However, Dr. Goth has not fully attended to the needs of practicing physicians, his book contains little else besides statements of principles of drug action. The therapeutic uses of drugs, the relative value of similar drugs, the incidence of toxic reactions are treated only superficially and only in relation to a few important drugs. These deficiencies exclude this book from being a reference for the therapeutic uses of newer drugs not included in older textbooks. Therefore, I would recommend this book to those interested in the theoretical aspects of pharmacology, to medical students and to practictioners who are anxious to see some scientific rationale behind the confusion created by the claims of drug advertising.

J.C.S. ■

A Public Relations Guide for Local Medical Societies:

The Development of Good Will means a "Planned" Program

Note: The following material appeared in the Canadian Medical Association Journal in 1956 under the caption "Public Relations Forum" — it has been edited to co-incide with present day PR problems.

The part played by the medical society in promoting and securing good public relations cannot be over-emphasized.

Good public relations depends upon the performance of the entire medical team, not just a few "stars". Every doctor must practice individual public relations — but these efforts must be integrated and supplemented by more formalized campaigns by his medical societies.

The ultimate aim of a public relations program is to win and sustain as many friends for medicine as possible. The public must learn to identify the humanitarian and public interest attitudes and actions which comprise good medical PR not just with one doctor, but with the entire medical profession. (See Reference 1)

Good public relations are achieved through sincere good works and good two-way communication. When one considers the process of public relations as applied by the medical society, the elaborated definition given by Cutlip and Center is more meaningful: (See Reference 2)

Public relations, as an organized program, includes:

1. Facilitating and evaluating a free flow of opinions, attitudes, ideas, and reactions from all persons, however far removed or remotely affected, concerned with the acts and policies of an organization.
2. Bringing these attitudes, opinions, ideas, and reactions to bear on the policies and programs of an organization to enable it to chart a course that will serve the mutual interests of all concerned.
3. Explaining and dramatizing the chosen course to all those who may be affected and whose support is essential to the success of the organization. . . . . (See Reference 3)

Our initial definition expresses desire; the elaboration introduces the principle of procedure, suggesting the existence of a conscious plan to achieve defined goals. And so it should! The public relations process to be successful, requires more than a "by-guess-and-by-God" approach. It necessitates the presence of conviction, personnel, policies, facts, and a well-defined program of prosecution.

Where does definite planning for effective public relations at the society level begin?

Conviction:

Before anything else is done the membership must be "sold" on the importance and necessity of a public relations program. This conviction may come in several ways. An undesirable public reaction to the medical profession within the constituency of the medical society may point the way to the inception of a PR program. The persuasiveness of a divisional officer may be the precipitating factor. The impetus may come from a few progressive-thinking members of the society. It may be brought about by a comparison with the activities of another society. It is to be hoped, however, that the conviction for a PR program will not come from any source that requires combative and remedial public relations — that is, a program instituted in self-defence.

Personnel

The prosecution of a public relations program is the responsibility of a Public Relations Committee. And, more than any other officers of the society, those who serve on the PR Committee must be convinced of the need and importance of public relations. They must be prepared and willing to devote time and enthusiasm to their PR tasks. Unlike membership of other committees, that of the PR Committee should continue for at least two years. By the end of their first year, members are just beginning to learn the intricacies and implications of public relations. The chairman should be appointed from among experienced committee members and with an eye to his administrative, organizing, and leadership abilities and his PR awareness. He should also have time to devote to the society's PR program. Some societies have what is, to all intents, a permanent chairman of the PR Committee. This is ideal as long as the physician's interests in PR do not wane.

If the society's public relations program is extensive, it may be advisable to divide PR responsibilities among several sub-committees. These sub-committees handle the details of press relations, health education, speakers' bureaus, and similar activities. The PR Committee proper is composed of the chairmen of these sub-groups, thereby integrating the society's PR program.

Policies:

The public relations policies of the society are, naturally, determined by the society's policy-making body. But the alert, active PR committee can and should guide this body by suggesting advisable courses. It is essential, then, that there be mechanisms which make possible periodic reporting to the policy-making committee and to the entire membership. This helps to ensure support for and confidence in the PR Committee as well as guidance in PR affairs.

Program:

The local medical society is not fighting the battle of PR alone. Its activities should be planned within the dictates of the PR program of the Division and the C.M.A. At the same time, the program prosecuted by the medical society must be tailor-made to fit the needs of its constituency.

The well-planned PR program provides the basis for continuity in public relations. Too many society PR programs function by fits and starts. This may be pointed up by the following criticism: "When hospital campaigns are on, doctors are receptive to publicity. When the campaigns are over they clam up". With a definite program the needs of the profession and the public (including those representatives of the public, the mass media) can be more readily met and such criticisms as the above are eliminated.

The first step in drawing up the PR program is to determine local needs and set them down as objectives. Obviously, some will be long-range — reflecting the ultimate aim of the program. They might be stated in this manner:

> To establish in the public mind the idea that the foremost interest of doctors, individually and collectively, is the welfare of mankind — the patient and the community — and that they will do their utmost, with complete unselfishness, to make the community a healthier, happier place in which to live.

Other objectives or goals may be intermediate and perhaps might include:

1. To promote good health.
2. To promote a strong, harmonious membership for organized medicine.
3. To influence legislative thinking so that Canadian medicine will be permitted to guide the future of medical care in Canada.

The remainder will be short-range goals which spell out those immediate PR needs which the society's program must meet. The following is a possible list:

1. To bring health education to the public.
2. To tell medicine's story.
3. To keep the name of Canadian medicine before the public as favourably as possible.
4. To take remedial action to combat criticism.
5. To take preventive action in anticipation of future trouble.
6. To combat discontent and disunity within the ranks of medicine.

The blueprint for a society's PR program, then, will depend on the objectives which it sets. That blueprint should be comprehensive and adaptable. However, the society planning a public relations program should be careful not to be too ambitious. It is wise to aim at a minimum rather than a maximum in PR programing.

There are several things that the medical society may include on its PR blueprint. These could be classified under the following headings:

Information and Education —

> The development of good press relations, health forums, speakers' bureaus.

Medical Economics —
Promotion of good business practices, publicizing medicine's stand on health insurance.

Internal Relations —
Promotion of membership, planned indoctrination of members, selling organized medicine to tomorrow's doctors.

Medical Care For All —
Emergency telephone call systems, mediation committees, promotion of the "family doctor" idea.

Working With Others —
Citizenship and public service activities.

What is included in the medical society's PR program will be determined by one thing: the local need. This is something that must be worked out by the society's PR Committee and society members. The governing principle, however, should be:

The public relations projects conducted by the medical society must be designed to win added respect and renewed confidence of the people in the community.

REFERENCES

1. County Medical Public Relations Manual: American Medical Association, Chicago, 1955, p. 3.
2. Cutlip, S. M. and Center, A. H.: Effective Public Relations, Prentice-Hall, New York, 1952, p.85.
3. Holmes, L. W.: Canad. M.A.J., 73: 484, 1955.

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Respiratory Symptoms, Lung Function, and Smoking Habits In An Adult Population

In a community-wide study undertaken in Tecumseh, Mich., an association has been demonstrated between cigarette smoking and the common symptoms of respiratory disease.

In recent years there has been much interest in chronic nonspecific respiratory disease and, particularly, in the use of epidemiological methods to identify factors of importance in the development and progress of chronic bronchitis, emphysema, and related disorders.

In an attempt to identify factors relevant to the maintenance of health and resistance to disease, Tecumseh, Mich., was selected as the site of a comprehensive, prospective epidemiological investigation of the entire community. Observations will be made over a period of years.

Tecumseh is a town of about 6,500 people. Included in the study also are some 3,000 people in the surrounding rural area. Data here reported were collected during a period beginning in March, 1959, and completed 18 months later.

Smoking Habits

Questions asked adults related to cough, production of phlegm, incidence of chest illness, and shortness of breath. A simple test of ventilatory function was included in the clinic procedures, a Collins timed vitalometer being used to record vital capacity and forced expiration volume—(F.E.V.).

Information was sought about past and present smoking habits in adults. Cigarette smokers were subdivided into three groups—those using less than a pack, a pack, and more than a pack a day. The distribution into light, moderate, and heavy categories was about equal in the 1,400 men, but very few of the 888 women said they smoked more than 20 cigarettes daily, and light smokers were about twice as common as moderate ones. Present age was not related to daily consumption of cigarettes except at both extremes of the range where the proportion of light smokers was largest. Of the men, 260 smoked pipes and cigars only.

Smokers were also divided into three groups according to the length of time they had been smoking, the divisions being at 10 and 20 years. Duration of smoking was highly correlated with present age and attempts at assessing its effect on the development of symptoms have been limited by this fact. The finding is in keeping with other reports that the majority of smokers acquire the habit early in adult life. In all, 59 per cent of men and 34 per cent of women smoked cigarettes.

Fifteen per cent of the men aged 16 or more had never smoked, the percentage being highest in the very young and very old. Of the women, 55 per cent were nonsmokers, the percentage of nonsmokers being much higher above 50 years of age than younger.

In men the proportion of ex-smokers increased with age, but in women it was slightly lower in the oldest age groups.

Millicent Payne, M.D., D.P.H., and Marcus Kjelsberg, Ph.D. American Journal Public of Health, February, 1964.

As for synptoms, persons who had both cough and phlegn, and one or both of these symptoms all day for at least three months each year, were designated as having Grade II symptoms; those with cough and phlegm to a lesser degree were designated Grade I.

The prevalence of Grade II symptoms in men who smoked cigarettes was six times that in nonsmoking men; the prevalence of Grade I symptoms was only twice as large. Among women, cigarette smokers had three times as much Grade II cough and phlegm and twice as much Grade I as nonsmokers.

Neither ex-smokers nor pipe and cigar smokers differed appreciably from the nonsmokers except in the oldest age group where the proportion with Grade II symptoms was less in nonsmokers. In the nonsmokers there was no appreciable difference between men and women in the prevalence of cough and phlegm.

The prevalence of symptoms increased with age in men who smoked cigarettes, being more marked for Grade II cough and phlegm than for Grade I. If this were an effect of age or of some experience associated with aging, a similar trend should be noted in nonsmokers. However, no trend of this type was seen in relation to Grade II symptoms among nonsmokers.

Shortness of Breath

In regard to shortness of breath, men cigarette smokers and ex-smokers were effected about equally and more often at all ages than nonsmokers. This suggests that smoking for prolonged periods of time may be related to the development of shortness of breath and that this is added to the effect of aging itself or of experiences associated with aging. Among the women, ex-smokers most commonly reported shortness of breath. Cigarette smokers had more shortness of breath than the nonsmokers below the age of 40 and less above this age.

In general, the percentage affected was largest in those smoking the most cigarettes and least in those smoking the fewest.

A comparison of the prevalence of shortness of breath by smoking class has been made in persons who did not have cough or phlegm. Ex-smokers of both sexes reported more shortness of breath than did any of the others, and among the older men cigarette smokers were more often affected than nonsmokers. Comparing cigarette smokers without cough and phlegm with all cigarette smokers, it is apparent that the excessive reporting of shortness of breath by the younger members of the group occurred in those who also had cough and phlegm.

F.E.V. Values

As for ventilatory function, men cigarette smokers had the lowest values at all ages and nonsmokers the highest, except in the youngest age group. Pipe and cigar smokers occupied an intermediate position and young ex-smokers had high values, whereas ex-smokers over 50 had low values. The mean values of F.E.V. in women hardly varied between categories.

In men the mean F.E.V. adjusted to the overall mean age of 40 years was 3.35 liters in nonsmokers and 3.12 liters in cigarette smokers; the corresponding values in women were 2.35 and 2.28 liters.

There are still unexplained differences in the relationship between cigarette smoking and respiratory symptoms; these include the higher prevalence of cough and phlegm in men than in women who smoked less than 20 cigarettes a day, and the low prevalence of cough and phlegm and shortness of breath in older women who smoked cigarettes. ■

Clinical Staff Conferences

Effective August, 1964

We list below as many regular meetings, rounds, conferences and clinics as we have knowledge of in the Halifax area. This list does not pretend to be complete, but it will be revised as necessary and will be published four times a year for the information of members.

All events listed are open to any interested physician, and a cordial welcome is promised in every case.

We hope to publish information of similar arrangements at other hospitals throughout the Province in the future. Chairmen or Secretaries of Medical Staffs are invited to send time tables for publication. Anyone spotting an inaccuracy is also begged to let us know.

Halifax Infirmary

Department of Anaesthesia

Weekly Conference	Monday	2-3 p.m.	O. R. Suite

Department of General Practice

Monthly Conference	4th Thursday	8.30 p.m.	Auditorium
Weekly Joint Conferences - attended by Department members as follows: -			
with the Department of Surgery	Saturday	9 a.m.	
with the Department of Medicine	Saturday	9.30 a.m.	
with the Department of Pediatrics	Friday	11- 1 p.m.	
with the Department of Psychiatry	Wednesday	9-10 a.m.	
with the Department of Obs-Gyn.	Thursday	11- 1 p.m.	

Department of Medicine

Joint Conference with X-ray Dept.	Wednesday	11-12 a.m.	4th Fl. Clinic Rm.
Grand Rounds	Thursday	11-12 a.m.	4th Fl. Clinic Rm.
Intern-Resident Training Conference	Saturday	9-30-11 a.m.	4th Fl. Clinic Rm.

Department of Obstetrics & Gynaecology

Weekly Rounds	Thursday	11- 1 p.m.	3rd Fl. Clinic Rm.
Monthly Meeting	3rd Thursday	11-12 a.m.	3rd Fl. Clinic Rm.
Interns Weekly Conference	Tuesday	4- 5 p.m.	3rd Fl. Clinic Rm.

Department of Ophthalmology & Otolaryngology

Weekly Conference	Tuesday	6.30 p.m.	E.E.N.T. Dept.
Monthly Meeting	2nd Thursday	7- 9 p.m.	E.E.N.T. Dept.

Department of Pathology

Clinical Pathological Conference	3rd Friday	12- 1 p.m.	Auditorium

Department of Pediatrics

Grand Rounds	Friday	11-12 a.m.	Pediatric Dept.
Pediatric Conference	Friday	12- 1 p.m.	Pediatric Dept.

Department of Psychiatry

Case Presentation	Wednesday	9 a.m.	2A Clinic Room
Weekly Conference	Wednesday	9-11 a.m.	2A Clinic Room
Monthly Conference	3rd Wednesday	9-11 a.m.	2A Clinic Room
Daily Ward Rounds		8 a.m.	Psychiatry Dept.

Department of Radiology

Weekly Conference	Thursday	at 3.30 p.m.	Radiology Dept.
House Staff Conference	Tuesday	1- 2 p.m.	Radiology Dept.

Department of Surgery

Weekly Conference	Saturday	9 a.m.	3rd Fl. Clinic Rm.

Department of Urology

Weekly Conference	Thursday	at 12 noon	Urology Dept.
Monthly Meeting	2nd Thursday	12 noon	Urology Dept.

VICTORIA GENERAL HOSPITAL

Department of Medicine			
Grand Rounds	Tuesday	8.30 a.m.	4th Floor Clinic Rm.
Rheumatology Ward Rounds	Tuesday	11.00 a.m.	1st F. West Annex
Rheumatology Out Patients Rounds	Wednesday	11.00 a.m.	3rd Floor OPD
Residents Clinical Conference	Monday	12.30 p.m.	OPD Conference Rm.
Combined Medical - Surgical Conferences			
Cardiology	Tuesday	12.30 p.m.	X-ray Conference Rm.
Neurology-Neurosurgery	Wednesday	9.00 a.m.	Pavilion Conf. Rm.
Neurosurgery - Pathology Conf.	1st Wednesday	9.00 a.m.	Path. Inst.
Haematology	Wednesday (1st and 3rd)	12.30 p.m.	X-ray Conference Rm.
Gastroenterology (2nd&4th)	Wednesday	12.30 p.m.	X-ray Conference Rm.
Cardiopulmonary	Thursday	12.30 p.m.	OPD Conference Rm.
Bacteriology - Pathology Conference	Wednesday	3.30 p.m.	
Department of Surgery			
Conference	Thursday (2nd & 4th)	5.00 p.m.	5th Floor Clinic Rm.
Ward Rounds			
Surgery A	Friday	8.00 a.m.	6 South
Surgery B	Monday	8.45 a.m.	6 North
Surgery C	Wednesday	8.30 a.m.	6 South
Surgery D	Tuesday	8.00 a.m.	6 North
Orthopaedics	Tuesday	9.00 a.m.	X-ray Conference Rm.
Out Patient Clinics			
Surgery A	Friday	9.30 a.m.	Outpatient Dept.
Surgery B	Thursday	9.30 a.m.	Outpatient Dept.
Surgery C	Wednesday	9.30 a.m.	Outpatient Dept.
Surgery D	Tuesday	9.30 a.m.	Outpatient Dept.
Department of Gynaecology			
Conference	Tuesday	5.00 p.m.	5th Floor Clinic Rm.
Ward Rounds	Daily	9.00 a.m.	5 West
Pathology Conference	Tuesday (1st)	5.00 p.m.	Pathology Institute
Department of Radiology			
Therapeutic Radiology			
Ward Rounds	Thursday	8.30 a.m.	6 South
Conference	Daily	3.00 p.m.	Radiology Dept.
Proven Case Conf.	Thursday	1.00 p.m.	Radiology Dept.
Clinical Conference	Thursday (Last)	5.30 p.m.	X-ray Conference Rm.
Department of Psychiatry			
Ward Rounds	Monday & Friday	10.00 a.m.	Pavilion
Seminar	Friday	4.00 p.m.	4th Floor Clinic Rm.
Child Guidance Clinic	Thursday	9.00 a.m.	Auditorium
Case Presentations	Monday, Tuesday, Friday Saturday	9.00 a.m.	Pavilion Conf. Rm.

Department of Urology

Conference	Daily	4.30 p.m.	6 West

Department of Anaesthesia

Conference	Friday (first)	3.30 p.m.	

Nova Scotia Tumour Clinic

Conference	Friday (Third)	12.30 p.m.	Tumour Clinic
Clinics			
Lymphomas	Monday	11.30 a.m.	
Gynaecology	Tuesday & Friday	11.30 a.m.	
Skin, Soft Tissue & Intestine	Tuesday	11.30 a.m.	
Head and Neck	Wednesday	11.00 a.m.	Tumour Clinic
Ear, Nose & Throat	Wednesday	2.30 p.m.	Outpatient Dept.
Urology	Thursday	11.00 a.m.	Outpatient Dept.
Breast	Thursday	11.00 a.m.	Tumour Clinic
Pulmonary	Friday	12.00 noon	Tumour Clinic

HALIFAX CHILDREN'S HOSPITAL

Medical Conference	Wednesday	9.30 a.m.
Surgical Conference	Friday	11.00 a.m.
Metabolic Conference	Thursday	11.00 a.m.
Ward Rounds	Daily	9.00 a.m.
	Tuesday and Thursday	4.00 p.m.

GRACE MATERNITY HOSPITAL

Staff Meeting Luncheon	Monday (Second)	12.00 noon
Obstetrical Conference	Tuesday (Third)	5.00 p.m.
Ward Rounds	Daily	9.00 a.m.
Journal Club Luncheon	Wednesday	12.15 p.m.
Prenatal Clinic	Tuesday, Thursday, Friday	2.00 p.m.
Well Baby Clinic	Tuesday and Thursday	2.00 p.m.
Postnatal Clinic	Tuesday and Thursday	2.00 p.m.

The Nova Scotia Rehabilitation Centre

A. Lloyd Caldwell, Halifax, President of the Nova Scotia Rehabilitation Council, announced that the Nova Scotia Hospital Insurance Commission has given approval in principle for a new 92-bed rehabilitation hospital, to serve Nova Scotians.

The new hospital will be constructed on Anderson Square, in Halifax's medical school and teaching hospital complex.

The Rehabilitation Council established the present Centre in a wing of the Halifax Tuberculosis Hospital in 1956. Originally intended to serve only out-patients, the Centre was expanded in 1957 to include facilities for 19 in-patients.

Mr. Caldwell declared space and facilities at the present hospital are "completely inadequate". During the past eight years the Centre has served over 15,000 disabled or handicapped Nova Scotians. "There now is a waiting list of more than 100 people and only 19 beds to accommodate them". Mr. Caldwell stated.

The present Centre is the spinal injury hospital for Nova Scotia, and operates the only comprehensive amputee rehabilitation programme in the Atlantic Provinces, yet the amputee programme is hampered by present conditions at the Centre, which lacks facilities for design and manufacture of artificial limbs.

According to Dr. Shears, the Medical Director, the hospital should provide help for the handicapped or disabled patient immediately after the injury or disease. At present this can only be done in about 10 per cent of the cases.

The present Rehabilitation Centre also lacks many modern facilities for the care and rehabilitation of the handicapped including much needed hydrotherapy units.

Plans for the new Rehabilitation Hospital call for comprehensive rehabilitation facilities for severely handicapped children.

The Nova Scotia Rehabilitation Centre not only is a treatment and research hospital but is the only teaching centre for rehabilitation medicine in the Atlantic region, where students from the Dalhousie Faculty of Medicine and the School of Physiotherapy receive their clinical training. With the expansion of the Dalhousie Medical School, expanded training facilities will be needed. ■

Personal Interest Notes

NOVA SCOTIA DOCTORS RANGE FAR AND WIDE

One feature article in the Halifax Mail-Star lately was headed "From Cairo to Camp Atlantic" and gives an interview with Dr. Hermine Pashayan, now Resident at the Childrens' Hospital, Halifax, who came here after graduation from Cairo's Ein Shams University in 1962 and has been physician during July at "Camp Atlantic" held at Tidnish near Amherst for 22 young diabetics from the Maritimes. A very successful camp was reported despite the weather.

Another headline states "Halifax Couple to Probe Easter Island". This heads an outline of the expedition organized by staff members of six Canadian Universities including Dalhousie with participation by other scientists from the United States, United Kingdom, Scandinavia and Chile. which is to set sail in the Canadian navy's HMCS "Cape Scott", captained by Commander C. A. (Tony) Law to Easter Island in the South Pacific from Halifax on November 16 of this year. Surgeon Captain Richard Roberts, Chief of Medicine at the Canadian Forces Hospital, Halifax will be in charge of medical examinations and his wife Dr. Maureen Roberts, Paediatrician on the staff of the Children's Hospital, and of Dalhousie in Paediatrics and Biophysics, who has specialized in genetics, will supervise investigation in this field.

At the 2nd Annual Scientific Assembly of the Ontario Chapter of College of General Practice, scheduled for September 29, 30, Oct. 1st, Prudhomme's Garden Centre, Vineland, there will be a one hour presentation by Dr. William A. Cochrane, Professor of Paediatrics at Dalhousie on the topic of the "floppy infant".

Dr. Lewis B. Woolner a 1942 graduate of Dalhousie, consultant in surgical pathology in the Mayo Clinic, Rochester, Minnesota, and professor of pathology in the Mayo Foundation, Graduate School, University of Minnesota is one of the authors of an exhibit, "Extrapulmonary Manifestations of Bronchogenic Tumours", which received a certificate of merit from the American Medical Association at the 113th annual meeting of that organization in San Francisco, California, June 21-25, 1964.

Dr. C. M. Bethune, administrator of the Victoria General Hospital was named President of the Phi Rho Sigma International Medical Fraternity Chapters at the Grand Chapter convention at Mainstree, Michigan. Dr. Bethune is the first Canadian to be elected to this position.

Others who attended the convention from Nova Scotia were Dr. Lea Steeves, who was named vice-president for Canada, and Dr. John Aldous besides five medical students from Dalhousie.

Dr. James H. L. Robbins, who has joined the staff of Camp Hill Hospital, Halifax, was guest of honour at the regular dinner of the Lockeport Kiwanis Club. Dr. Robbins was presented with a watch by Mayor L. M. Huskileson on behalf of those present.

Cape Breton Notes: Construction has been started on a new building for a number of the Sydney physicians. This building is located opposite St. Rita's Hospital and has a beautiful view overlooking Sydney Harbour.

The City of Sydney Hospital and St. Rita's Hospital, have carried out their hospital disaster exercises successfully demonstrating their hospital disaster plans under the Emergency Health Services.

On June 11th the annual meeting of the Cape Breton branch of The Medical Society of Nova Scotia was held in the City of Sydney Hospital. Dr. C. J. W. Beckwith and Dr. C. L. Gosse were scheduled to attend this meeting but flying conditions prevented this.

Dr. H. R. Corbett, Radiologist, has returned from Montreal where he attended a testimonial function to honour Dr. C. B. Peirce who is retiring as head of the radiology department of the Royal Victoria Hospital. While there he also attended a two-day scientific session.

Dr. A. L. Sutherland and Dr. H. J. Devereaux are two other doctors who are back after attending the C.M.A. meeting in Vancouver.

Dr. and Mrs. F. E. Kelley visited the World's Fair in New York.

Dr. G. William MacQuade has accepted a post on the Canadian Government ship, "Labrador".

Dr. C. A. D'Intino and his wife have returned from a trailer trip to New England States and Central Canada.

Hon. Dr. Thomas J. McKeough, Sydney Mines, Nova Scotia's newly appointed Minister of Municipal Affairs was honoured by a testimonial dinner in his home town recently.

Dr. M. G. Tompkins, Sr., veteran physician, appears to be leading the field on the Margaree River, Inverness Co., in salmon fishing this season. He has already landed six beauties ranging in weight from nine to eighteen pounds. Needless to say he has no intention of quitting.

Dr. and Mrs. D. Paul Cudmore and their four children have left Charlottetown where he has been engaged in general practice since his graduation from Dalhousie in 1959 and are now residing in Halifax. Dr. Cudmore has been appointed to a full time post in the Faculty of Medicine as Director of the Student Health Service and Assistant Director of the Division of Postgraduate medical education. Dr. Cudmore is a member of the College of General Practice of Canada and the Canadian Medical Association. Upon his arrival in Halifax he joined The Medical Society of Nova Scotia. In Charlottetown he was active in community affairs and musical life as he was as a medical student at Dalhousie and we welcome him back to Halifax.

Dr. Cudmore is one of five new appointments to the Dalhousie Medical Faculty.

Dr. Margaret DeWolfe is a B.A. of Acadia and an M.A. and Ph.D. in Pathological Chemistry from Toronto. She joins the Department of Paediatrics as an Assistant professor and as a Lecturer in Biochemistry. She will be taking an active part in teaching and research with special emphasis on renal disease and mental retardation.

Dr. Mark Segal has been appointed Assistant Professor of Pharmacology. Dr. Segal is a Ph.D. of McGill University with postgraduate work at the University of Michigan where in association with Dr. M. H. Seevers he worked on problems of drug addiction. He comes to Dalhousie from his position as senior pharmacologist at Ayerst, McKenna and Harrison, Montreal.

Dr. Kenneth Edward Scott has been appointed Assistant Professor of Paediatrics, and has become a member of the active staff at the Children's Hospital. His special province will deal with problems of the newborn. He is a graduate of McGill Medical School and has specialized in Paediatrics in both Toronto and various childrens' hospitals in England. Latterly he has been following a career in research and medical education in Montreal.

Dr. Douglas O. W. Waugh has been appointed Professor of Pathology at Dalhousie, Director of the Pathology Division of the Provincial Laboratory and Head of the Department of Pathology of the Victoria General Hospital. Dr. Waugh has been Professor of Pathology at Queen's University, Kingston, and Director of Laboratories, Hotel Dieu Hospital. Prior to this he was Associate Professor of Pathology at McGill. During these years he has earned an outstanding reputation in medical education and research in which fields he has published extensively. He was born in England and obtained his medical degree from McGill. He also served in the RAMC.

Births

To Dr. and Mrs. John Godden (née Jean Fullerton, R.N., Pictou, N. S.), 293 Dawlish Ave., Toronto 12, a daughter, Heather, on July 13, 1964. A sister for Ida, Barry, Barbara, John and Timothy.

To Dr. and Mrs. Dennis Johnson, (née Dr. Lalia Dauphinee), a son, Stephen Charles at the Grace Maternity Hospital, on July 26, 1964.

To Dr. and Mrs. George Jollymore (née Elva Stubbert), a son, Bruce George, at the Grace Maternity Hospital, Halifax, on July 2, 1964.

To Dr. and Mrs. David Moore, (née June Beeton), a daughter, Catherine Elan, at the Grace Maternity Hospital on July 6, 1964.

To Dr. and Mrs. Graham Pineo, a daughter at the Toronto General Hospital, on July 16, 1964.

To Dr. and Mrs. D. V. Willoughby, (née Barbara MacKeil), a son, Edward Scott, at the Halifax Infirmary on July 13, 1964.

Obituaries

During the latter part of June there died in the Yarmouth Regional Hospital, after a lengthy illness, Dr. Joseph Henri Riopel aged 74. He was born in Quebec and graduated in Medicine from McGill. After 18 years spent as general practitioner in Alberta, he became doctor in charge of the Indians at Great Slave Lake. He retired to Belliveau Cove in 1957. He was buried in St. Bernard, Digby County.

Dr. Harry S. Smith, South Brookfield, Queen's County died suddenly at

Dr. Harry S. Smith, South Brookfield, Queen's County died suddenly at his home on July 28th He graduated from Acadia and McGill Medical School and taught for a time at the School for the Blind,Halifax and Pictou Academy. He was for the past few years deeply involved in the promotion of the North Queens Cottage Hospital, a project now nearing reality. Our sympathy is extended to his wife and family.

REPORT OF MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION

The tenth Extraordinary General Assembly of the Medical Women's International Association was held in Sandefjord, Norway, June 29th to July 3rd, 1964 under the able leadership of the President, Dr. Fe Del Mundo of the Philippines. Approximately Five Hundred Medical Women from twenty different countries attended this Assembly. Twelve members went from Canada. Those attending from Nova Scotia were Doctor M. Rostocka from the N. S. Sanitorium, Kentville and Doctor Helen M. Hunter of Halifax.

The Opening Speech was given by the Director General of The Health Services of Norway, Doctor Karl Evang. He spoke on "Some Health Problems of the World Today".

The theme of the Scientific sessions was Preventive Aspects of Chronic Diseases. Some of the problems discussed were:

Prevention of Chronic Gynaecological Disease
Anaemia in Women and Children
Use of Routine Medical Examination in the Control of Obesity and Diabetes in Adults and Children
Recognition of Neurosis, Addiction and Suicidal Tendency in Women and Adolescents.

There were three meetings of the Council and General Assembly during which many problems of the International Association were discussed.

The Members were well entertained by the Norwegian Medical Women who were our hostesses. One day was spent in Oslo where we were welcomed at the City Hall by the Mayor of Oslo and then shown some of the beautiful parks and museums of the city. During the afternoon a reception was given by King Olav at the Akershus Castle. In the evening the trip back to Sandfjord was aboard M/S Holger Danske along the beautiful Oslo Fjord.

The next meeting of the Medical Womens International Association will be held in Geneva, New York in 1966 with the Medical Women of Canada and the United States as co-hostesses.

Helen M. Hunter

COMING MEETINGS

38th DALHOUSIE REFRESHER COURSE
Nurses' Residence Auditorium
Victoria General Hospital, Halifax, N. S.
November 2nd, 3rd, 4th and 5th, 1964

Mornings — Small Group Clinics in five Halifax teaching hospitals will present a wide variety of cases each morning.

Afternoons — General Sessions: -

Monday	—	Medicine
Tuesday	—	Paediatrics
Wednesday	—	Surgery
Thursday	—	Obstetrics - Gynaecology
,,	—	Medical History

A distinguished guest Faculty will participate.

DALHOUSIE REFRESHER COURSE

November 2nd, 3rd, 4th and 5th, 1964

GUEST TEACHERS:—

Dr. Lloyd G. Stevenson	Professor, Department of History of Science and Medicine, Yale University, New Haven, Connecticut, U.S.A. (John Stewart Memorial Lecturer)
Dr. Donald R. Wilson	Professor of Medicine, University of Alberta, Edmonton, Alberta, Canada.
Dr. Fraser N. Gurd	Professor of Surgery, McGill University, Montreal, Quebec, Canada.
Dr. Robert J. McKay, Jr.	Professor of Paediatrics, University of Vermont, Burlington, Vermont, U.S.A. ■

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