

## HISTORY OF CANADIAN SURGERY

GEORGE ARMSTRONG PETERS

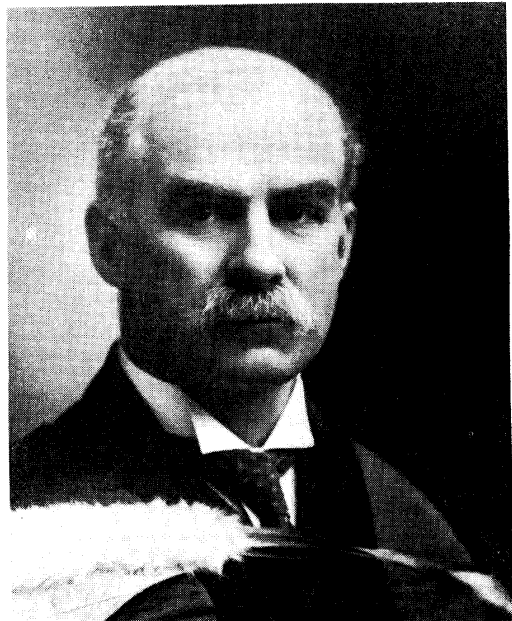
(As I Remember Him)

W. E. GALLIE, M.D., *Toronto*

THIS INVITATION to write a note on Professor Peters is a very acceptable one, for it not only enables the writer to recall the delightful experience of his association with him, but it makes it possible to link together two periods of the history of our Toronto school and hospitals which are separated by over 50 years.

In attempting to paint a picture of old Geordie Peters, as I remember him, I must try to forget the intervening half century, and transport myself back to the days when I was young and overwhelmed by the personality of this remarkable man. I was one of his last house surgeons, both at the Hospital for Sick Children and at the General Hospital, and the influence he had on me during those two years decided the type of career that I would follow. He was the best surgeon and surgical teacher that I ever knew, quite outclassing those of Toronto and New York and Great Britain with whom I came in contact. This impression is just as strong today as it was half a century ago.

One of the first things he taught us was how to sew up wounds. Graduating as he did in 1886, it is surprising that he showed no enthusiasm for antiseptics. His contacts with Lister must have come when the carbolic acid spray had been abandoned and the principle of asepsis adopted. At any rate, Peters used a technique very similar to what we have today. Because of Lister's experiments, he took every precaution to avoid bruising and tearing the tissues, to prevent the collection of blood and serum in the closed wound, and to eliminate the possibility of infection from damaged skin. Peters' subcuticular horse-hair suture, when carefully inserted, left a wound that would have pleased the modern plastic surgeon. The healing of his wounds was the pride of the hospital and has not been improved upon since.



Dr. George Armstrong Peters.

As a clinical teacher he was superb. One day he called me over to a child with a distended abdomen and asked me to put my stethoscope on the lower half of the abdomen and tell him what I heard. I listened for a while, expecting to hear intestinal gurgling, but before long became aware of the loud beating of the heart. Then he suggested that I listen for breath sounds and sure enough they were quite audible. This was "Peters' sign" for general peritonitis.

This incident illustrates his method of clinical teaching. He rarely told us anything but rather led us to make the observation ourselves. By the time I got through with that patient, I knew more about peritonitis than a library of books or a series of lectures could have taught me.

The way habits learned in youth stick to one through life is amazing. One day during an appendectomy my "resident" asked me how long I had been turning back a

sleeve at the base of the appendix before ligating and severing it. My answer was that I had learned it from George Peters, nearly 40 years before, and that I didn't know there was any other way of doing it.

While I was with Peters at the Hospital for Sick Children he was intensely interested in devising a safe treatment for that dreadful malformation of the bladder, ectopia vesicæ. His operation consisted of the transplantation of the ureters into the rectum extraperitoneally, thus avoiding the great risk of peritonitis which attended other operations such as Mady's in which the ureters are transplanted into the colon intraperitoneally. This Peters operation is an excellent one, in that it is easy to do and it eliminates completely the risk of peritonitis. What the long term results may be is uncertain, for the risk of ascending infection sooner or later must be great, but I do know that I saw some of these patients several years after their operations, completely changed from a condition of abject misery to one of comparatively happy childhood. They had gradually developed control of the rectum so that the urine could be retained for several hours, without mishap.

Peters was, above all things, a general surgeon. One could not imagine him allowing himself to be cornered into some specialty. The whole field of anatomy was so interesting to him that he could not be content with a part of it.

Following an internship at the General Hospital he joined the staff of the Department of Anatomy and quickly became one of its most brilliant teachers. In this, his skill with chalk and pencil was of great value. I have before me now a collection of his pocket case-books which are full of sketches and water colours which vitalize the written word.

After a spell in the Anatomical Department he went to England and immediately passed the primary examination for the Fellowship. Six months later he tried and passed the final. He was one of the first Canadians to become a Fellow of the Royal College of Surgeons and he did it with a flourish.

Upon his return from England he was promptly appointed to the Department of

Surgery and to the staffs of the General and the Children's Hospitals. These appointments marked the beginning of a brilliant surgical career, illuminated from time to time by studies of unusual cases and by reports of the surgical treatment of such pathological conditions as hydatid cyst of the tail of the pancreas, fusiform dilatation of the œsophagus, œsophageal foreign body, procidentia recti, ascites due to cirrhosis of the liver, ectopia vesicæ, and others.

Quite aside from his skill in the diagnosis and treatment of disease, he had a remarkable gift for designing and perfecting mechanical devices to be used in surgery and elsewhere. Of these his wrench for the correction of stubborn deformities, and his method of cutting urinary calculi, are well known. But the one that interested me most was described in his paper on "A New and Original Method of Making Casts" (*Brit. M. J.*, Sept. 3, 1898). This was a device whereby he was able to spray an object with liquefied paraffin wax which, when thickened and cooled and supported by a coating of plaster-of-Paris, could be removed in sections and subsequently fitted together again to form a mould. This mould was then filled with liquid plaster-of-Paris and allowed to solidify. It is now that the value of the method becomes apparent, for in place of the former difficult and unsatisfactory method of chipping off the mould with hammer and chisel, one simply immerses the whole mould and cast in hot water. Promptly the wax mould is melted and the cast becomes quite free.

The method as presented originally to the Surgical Section of the British Medical Association in Edinburgh in July 1898, had the disadvantage of requiring expensive apparatus. But for the making of casts that do not require the absolute perfection of show pieces, he obtained satisfactory results by applying the liquid wax with a soft brush and covering it with plaster-of-Paris which could be divided into sections by cutting out silk threads which had been laid under the wax. This method has stood us in good stead for the casting of feet along with the object on which the patient was standing.

Peters was a man who believed that a surgeon should have some other interest

aside from horses. He was a competent driver; he told me that he was a skilful cross-country driver, better than George Wells, driving a Light Horse at the Hospital on a regular basis, sitting up by the

This interest in the Government of the Light Horse

His interest in the Light Horse was not only a hobby but a serious one. He shot hit the target. This was a device which provided a target 600 yards away, with wires with a hand side which shot hit the target on the min

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aside from his work. His had to do with horses. He always kept a stable of excellent drivers and hunters, and my friends told me that there was no more daring and skilful cross-country rider at the Hunt Club than George Peters. I can remember him well, driving snappily up to the old General Hospital on Gerrard Street with his groom sitting up behind him.

This interest in horses led to his joining the Governor-General's Bodyguard and subsequently to his organizing the Toronto Light Horse, of which he was Colonel.

His interest in the army led to his inventing the Peters self-registering electric target. This was a most ingenious idea which provided that the target 200, 400 or 600 yards away was connected by electrical wires with a miniature target at the right hand side of the marksman. When the shot hit the distant target it also registered on the miniature target close at hand.

Peters' gift for invention was very materially aided by his close friendship with Philip Rensman, the chief mechanic in the machine-shop at the Children's Hospital. Rensman was a superb mechanic, who was not only able to produce equipment but was also able to make valuable suggestions towards making the ideas practical.

In reading over his papers, I have been struck once more with the excellence of his literary style. This is apparent not only in the short papers presented to the medical societies but also in the longer contributions he made to Bryant and Buck's *System of Surgery* on the "Inflammatory Affections of Bone", and the "Surgery of the Rectum and Anus" in the *International Textbook of Surgery*. He made no effort to be decorative in his style but he made perfectly sure that his audience and readers understood everything he said.

He died on March 13, 1907, at the age of 47 years, of angina pectoris. Professor Cameron has recorded that even when he knew the end was approaching he dictated to his stenographer a description of the radiating pains of this dread disease as exemplified in his own case, and pointed out where they differed from the ordinarily accepted ideas. That is the kind of man he was.

He was buried with full military honours, but the sight of his horse without its rider and with his boots in the stirrups, reversed, blotted out for me all recollection of that great funeral. I have been listening to the "Last Post" ever since.

But 50 years have rolled around since that last sad day, and it is now my happy privilege to hand on to my young colleagues an impression of one of the great founders and builders of our school. As I said before, he was the best surgeon and the best surgical teacher I have ever known. It may be thought that this is the exaggerated estimate formed by a worshipping youth, but I assure you that it was also the opinion of such men as Irving Cameron, Alexander Primrose, Clarence Starr, Fred Starr and George Bingham, who were more or less his contemporaries. He was more, indeed, than a great surgeon and a great teacher for he was also a great man. Reading over the obituary notices published in 1907 and several of the tributes paid to him at that time, one is inclined to smile at the emphasis placed on gentleness and sweetness of disposition. Certainly he was courageous, honourable, and kindly, but he was far from being gentle and sweet dispositioned. A glance at his photograph, which by the way is an excellent one, indicates at once the kind of man he was. In the operating-room, as on the parade ground, any incompetence or slothfulness on the part of his assistants would bring a roar from him that would shake the windows. At any rate his house surgeon's knees shook. Fortunately his intolerance of incompetence was the kind that stimulated in his students and assistants an intense desire to do the job well.

Peters served on the Department of Surgery from 1892 to 1907. From 1903 to 1907 he was Professor of Surgery. His memory is kept alive among the students by the George Armstrong Peters Prize, which was established in 1912 by his friends. This prize which consists of a sum of money and an engraved piece of sterling silver is awarded to that graduate of the University of Toronto, of not more than 15 years' standing, who has made a sufficiently important contribution to surgical science. The list

of the winners includes the names of many of our most brilliant graduates.

Fifty years is a long time and one's memories are inclined to grow dim. But this look back into the past has been a happy occasion for the writer, for it has

given him an opportunity to record something of importance in the history of our school and to give a final salute to one to whom we all owe so much.

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### L'ÈS DEBUTS DE L'ASEPSIE

Dans un numéro de *Médecine de France* (No. 96, 1958) le professeur Antonin Gosset rappelle que la technique de l'asepsie a été conçue dans les vieux bâtiments historiques de la Salpêtrière à Paris par un maître trop oublié: Félix Terrier.

"En arrivant à Bichat en 1882, Félix Terrier n'était pas satisfait de ce qu'il avait réalisé à la Salpêtrière, il sentait qu'il n'avait pas encore de 'méthode', et c'est alors qu'il prit la résolution si fructueuse pour la chirurgie française d'aller s'initier dans le laboratoire Pasteur, rue d'Ulm. Il m'a bien souvent raconté ses visites chez Pasteur et a bien souvent manifesté devant moi sa reconnaissance envers le docteur Roux auquel Pasteur l'avait confié. A mon sens, c'est à ce moment que se place l'événement capital de la vie de Félix Terrier.

"C'est en 1882 qu'il a fixé tout son programme: transporter l'esprit bactériologique dans les salles d'opération, c'est à dire travailler dans une salle d'opération comme on le fait dans un laboratoire de bactériologie, et pour cela n'utiliser que des objets stérilisés; mais stériliser un objet ne veut pas dire l'avoir simplement fait bouillir, car l'ébullition n'est pas un moyen suffisant, ce n'est pas un moyen mathématique. Et Félix Terrier, avec son esprit absolu, voulait que la stérilisation fût non pas un calcul de probabilité, mais une certitude.

"En 1887, un de ses élèves, Poupinel, invente une sorte de four à flamber qui peut être employé dans les salles de stérilisation, est facilement utilisable et marche à la simple chaleur du gaz d'éclairage. En 1889, à propos de la publication de sa statistique, Félix Terrier revient sur les avantages du 'Poupinel' qu'il emploie dans son service depuis le début

de 1888. Cet appareil, qui a été employé peu à peu dans tous les grands services de chirurgie en France, depuis 1887, et qui est même encore employé dans certains services aujourd'hui, avec la modification heureuse que mon collègue et ami, le docteur Wiart, chirurgien des hôpitaux, lui a fait subir en le chauffant électriquement, cet appareil de Poupinel ne fut pas accueilli par tous favorablement à ses débuts.

"A la communication de Félix Terrier disant qu'il a adopté la stérilisation à l'air sec au moyen du Poupinel, parce qu'on peut la porter, au moins pour les instruments, au-dessus de 150 degrés centigrades, un des collègues de la Société de Chirurgie lui répond: 'Je ne prétends point critiquer le procédé que M. Terrier préconise, mais celui des ébullitions successives dont je me sers (ébullition de dix minutes répétée deux fois à trois ou quatre jours d'intervalle) est peut-être plus pratique que tout en conduisant au même but (O. Terrillon).'

"Le reproche que j'adresserai au système de M. Terrier, c'est qu'il nécessite une installation et un outillage tout spéciaux (O. Terrillon).'

"Vous voyez les objections apportées à une chose nouvelle qui réalisait vraiment un énorme progrès, permettait d'atteindre sans inconvénient des températures qui n'avaient jamais été atteintes auparavant! Vous voyez, comparée à la simplicité de manœuvre du Poupinel, l'ébullition de dix minutes, répétée deux fois à trois ou quatre jours d'intervalle!

"Vous voyez aussi le reproche perpétuel que nous retrouvons toujours en chirurgie, formulé contre tout progrès: une installation et un outillage tout spéciaux! Mais sans installation et outillage tout spéciaux, que pourrions-nous faire!"

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