pathogenesis of those "diseases of adaptation" which respond favourably to therapy with gluco-corticoids or ACTH.

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PROGRESS OF GASTRIC SURGERY IN THE LAST HALF-CENTURY*

BY

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I chose this subject for my address because I have had the rather unusual experience of having operated upon nearly 4,000 gastric lesions and because I have lived through practically the whole period of the growth of this surgical specialty. It was indeed an astonishment to me to find, when looking up the history for the first edition of my book, that the first gastro-enterostomy performed by Wolfer, the first excision of gastric ulcer by Rydygier, the first successful gastrectomy by Billroth, as well as the first cholecyst-enterostomy by von Winwarer were all carried out in the year of my birth, and I felt that I had indeed been born under the upper abdominal star. Since 1900, when I first started as a medical student, I have seen great changes in the selection of cases for operation, in the methods of performing the operation, and in the choice of operation for the individual lesion.

I have been singularly fortunate in that I have worked under many of the pioneers of gastric surgery, as a dresser under Sir Frederick Eve, who was one of the earliest to perform many gastro-enterostomies. In his day, so serious an operation was this considered that he had all his hospital patients nursed in a separate room with day and night special nurses, and they were kept on rectal feeds with nothing whatever by mouth for two weeks. Later I served under Mr. Roxburghe, the ophthalmic surgeon, who performed the first partial gastrectomy in this country; and for a short time was house-surgeon to that brilliant young surgeon Mr. Harold Barnard, who even in his short life did so much to advance abdominal surgery. I was then appointed house-surgeon to Mr. Mansell-Moullin, who in his day was regarded as one of the greatest gastric surgeons in this country and who

obtained very successful results, although he operated without gloves and while wearing three rings. Later I became registrar under those great abdominal surgeons Sir Hugh Rigby and Mr. James Sherren. To the latter especially I owe the greater part of my training, for not only was I his registrar at hospital but for several years was his private assistant, and after his retirement inherited from him the greater part of the upper abdominal surgery at the London Hospital.

Changes in Custom

During my student days it was the custom to treat all cases of peptic ulcer medically and to call in the aid of the surgeon only in the case of some complication. It was my old chief, Dr. J. F. Smith, who introduced the powder which later became so popular as MacLean's powder, although, unfortunately for him, he did not advertise it. Many physicians even claimed that pyloric obstruction could be cured by repeated gastric lavage, a belief that died very hard, so that in my early days as a surgeon I had to treat many cases of carcinomatous obstruction which had become completely inoperable while undergoing prolonged courses of lavage, and with other surgeons had a great fight to establish the dictum that all cases of pyloric obstruction should be treated surgically, for the obstruction might be carcinomatous, and in any case was mechanical in nature and must be treated mechanically.

Even up to several years later many surgeons stated that they had never seen the characteristic pathological picture of duodenal ulcer which Lord Moynihan had described so graphically, and they denied its existence. Great controversy raged then, and has done so up to times within the memory of you all, whether severe haematemesis should be treated with complete rest, with a restricted diet, with a high protein diet, or by immediate operation. In the same period many if not most physicians were opposed to the surgical treatment of carcinoma of the stomach, for they believed that a cure could never be obtained and that it only subjected the patient to much discomfort in the remaining short period of his life.

About 1910 opinion had entirely changed and had reached the other extreme, the tendency being to advise operation as soon as a peptic ulcer was diagnosed, no attempt being made by the physician to carry out medical treatment or indeed to make a detailed investigation. In fact, at that period nearly all such cases were admitted to hospital direct to the surgeon and the full investigation was performed by him, so that the greater part of our modern knowledge of the symptomatology and means of diagnosis of peptic ulceration and carcinoma of the stomach is due to the surgeons. It is very regrettable that the modern student is being taught to pay so little attention to a carefully taken clinical history, which at that time was shown to be the most valuable method of investigation. There is no doubt, however, that in treatment the pendulum had swung much too far, and many cases that were unsuitable for surgery or that could have been cured medically were subjected to an operation, which in most cases was a gastro-enterostomy.

As a result a reaction set in, and, following the writings of MacLean, of Izod Bennett, and more especially of Sir Arthur Hurst, surgical treatment in the mid-1920's fell into a certain amount of disrepute. The last-named physician claimed that all cases of peptic ulcer could be cured with adequate medical treatment and that if not so cured the treatment was inadequate; nevertheless he

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insisted that after the symptoms had disappeared the patient must conform to a most onerous life and a diet which was quite incompatible with a working man's life and which he called his post-ulcer regime. At about the same time there came into fashion the apparently unphysiological treatment of ulceration by duodenal intubation and by hypodermic medication, one form of which gained great popularity.

Indications for Surgery

It is indeed only in recent years that physicians and surgeons have reached a measure of agreement on the indications for surgery. For my own part it has long been my custom to teach that there is only one real indication for surgery in a case of peptic ulceration, and that is the failure of medical treatment. It may be said that this surely does not apply to obstruction and perforation, to which I reply that if medical treatment had been successful neither of these complications would have occurred. A warning must, however, be sounded: before starting medical treatment one must be certain that the case is not early carcinoma. This is frequently said to be a matter of great difficulty, but I firmly believe and have always taught that a carefully taken history, so often grossly neglected to-day, will always give at least a suspicion of carcinoma. This is specially so with severe haematemesis. It is still not uncommon to find that such cases are regarded, in spite of a very short history, as due to ulcer and are treated medically.

It is curious to note that the one condition which in the first decade of the century was regarded as an essential indication for operation—namely, perforation—has of late years been treated by Hermon Taylor and others with complete rest, constant aspiration of the stomach and duodenum, and intravenous fluid. Good results have been claimed, but from observations of the intraperitoneal conditions in many perforations I still feel that if I had a perforation myself I should demand operation by a skilled surgeon at the earliest opportunity.

Another most interesting change that has occurred in this country of recent years is in the nature of peptic ulceration itself. This aspect has been fully discussed by Sir Henry Tidy on several occasions. It is sufficient to say here that chronic ulceration is becoming more common in young people, that females are becoming more addicted to it, and that it shows a greater tendency to recur after operation. My own figures up to 1938 always showed an incidence of 2 to 3% of gastro-jejunal ulcers after gastro-enterostomy for duodenal ulceration, and it is interesting to note that although Mr. Sherren performed this operation as a routine, yet after I succeeded him at the London Hospital only two of his cases came to me with marginal ulceration. Since 1938 my own experience has been that its frequency is increasing. I still believe, however, that the modern young surgeons are going too far in their belief that every duodenal ulcer should be treated with partial gastrectomy.

It is universally agreed to-day that carcinoma of the stomach should be treated by early operation, which holds out the only hope of cure, and that the only contraindication is the manifest evidence of widespread secondary deposits.

Surgical Technique

In the operative technique there have been even greater changes. As most of you know, the earlier anastomoses were performed with that ingenious instrument Murphy's button. Probably very few of you have ever seen it, but

there is no doubt that it was the first step in the development of end-to-end and lateral anastomosis. It has been discarded so long that I was astonished when I went to the United States in 1913 to find that the first three operations I saw in New York were gastro-enterostomies performed with the button; but it is only fair to state that the surgeon was not an American born, and when I told Charles Mayo about it he had some biting comments to make. Even in 1943 I operated upon a patient for a gastro-jejunal ulcer with a Murphy's button *in situ*, which had been inserted two years before in Italy. The button was soon afterwards replaced by decalcified bone plates and later by sutures. In the early days of suture the great fear of surgeons was leakage at the angles, a danger which disappeared with the change from interrupted to continuous sutures.

I wonder how many are conversant with the term "vicious-circle vomiting," yet an enormous amount of literature was once written upon it and many different forms of gastro-enterostomy were suggested as a means of preventing it. No loops, short loops, and long loops were advocated; some advised the opening should be isoperistaltic, others retroperistaltic; some that it should be close to the pylorus, and others that it should be remote from it; and many valvular openings were devised. Perhaps the most unsatisfactory methods were those in which a lateral union was made between the afferent and efferent loops, and the so-called Roux operation of an end-to-side anastomosis, for such methods were almost certain to be followed by gastro-jejunal ulceration. In fact, they are the very methods which to-day are used to produce experimental ulceration in animals. In 1912 Mayo showed that the vicious-circle vomiting was obstructive and due to constriction of the efferent loop by the mesocolon. He advocated that this structure should be sutured to the stomach and its edges turned in so as to reduce the possibility of scarring. Since then this complication has almost entirely ceased and the majority of young surgeons have never heard the term.

Gastro-enterostomy

Although to-day gastro-enterostomy has come to be regarded as a straightforward and easy operation there are certain technical points upon which I would lay great stress. As with all abdominal operations, the other viscera should first be examined. If the expected lesion be first sought for and found attention may become so fixed upon it that an examination of the other viscera is forgotten. I have met with cases in which a gastro-enterostomy has been performed for carcinoma of the colon, for congenital cystic dilatation of the bile duct, for cardiospasm, and even for gallstones.

The general law that no attention be paid to the pathology until the anatomy has been clearly demonstrated must be observed. This is especially so when the anatomy has been distorted by a previous operation. A further extension of this law is that no structure whatever should be divided until it and the surrounding structures have been clearly defined. The peptic ulcer must be visible and palpable, and when clearly demonstrated a decision must be made whether it is best treated by gastro-enterostomy.

Generally speaking, a posterior anastomosis is more satisfactory than an anterior one. The fold of the posterior wall which is clamped lies more easily if it is vertical, but its inclination is of little importance. The duodeno-jejunal flexure can be found lying on the left

of the second lumbar vertebra and the first loop of the jejunum drawn down. That it is this loop should be confirmed by drawing it down enough to see that its upper end is attached at the flexure. It would not seem possible that a mistake could arise in this respect, but I have had to operate upon two cases in which the stomach had been united to the lower ileum and upon one in which it had been joined to the transverse colon.

When identified a loop which lies in comfortable apposition with that of the stomach should be clamped. It should not be drawn down too tightly from the flexure to give a no-loop junction or be placed so far from it that small intestine can pass round it. It will generally be about 4 in. (10 cm.) from the flexure. The two loops are approximated with the afferent end of the jejunum at the upper end of the gastric loop if vertical or at the proximal end if it be oblique or transverse. Continuous sutures of chromic gut should be used and the inner layer should pass through all three coats, thereby firmly controlling haemorrhage. When the anastomosis is completed the mesocolon should be fixed to the stomach about $\frac{1}{4}$ in. (0.6 cm.) from the anastomosis with two or three catgut sutures.

Soon after Rydygier advocated wedge resection of a gastric ulcer it fell into disrepute, for in a considerable percentage of cases it was found to be followed by recurrences. This was rather to be expected, for if an ulcer could occur in a normal stomach how much more likely would it be to arise in a healing wound or operative scar? This drawback, however, seemed to be removed by combining the resection with a gastro-enterostomy, and for small indurated ulcers it became a very favourite operation. In the hands of different surgeons it was modified in several ways. Mayo excised the ulcer by the transgastric route, while Donald Balfour destroyed it with the cautery—a method which was very useful for ulcers high up.

It is my own practice to ligate the coronary artery on either side of the ulcer, to clamp the stomach right across by passing one blade through the gastro-colic omentum, up behind the stomach, and out through the gastro-hepatic omentum. This is done on either side of the ulcer; a wedge with its base at the lesser curve and containing the ulcer is excised, the posterior walls are first united with two layers of catgut suture, and then the anterior. The clamps having been removed, a posterior gastro-enterostomy is performed, running through the portion of stomach below the resection and lying parallel with the greater curvature.

Partial Gastrectomy

Of great interest has been the growth and development of the universally popular partial gastrectomy. The operation introduced by Billroth in 1881 consisted of removal of the affected pyloric portion of the stomach and the restoration of continuity by an end-to-end anastomosis, the duodenum being united to the lower end of the gastric opening, the upper end of which was closed. In the earlier cases there was a mortality of 64%, which was in large part due to leakage at the junction, for with interrupted sutures the closure of an angle is associated with considerable difficulty. Although in the earlier operations the amount removed was very inadequate, the method was based on sound physiological principles, and it was unfortunate that the failure to use continuous sutures so altered the course of the development of gastrectomy.

As a result of this danger Billroth introduced his second method whereby the openings of both the stomach and the duodenum were closed and a posterior gastro-enterostomy was performed to the proximal stump of the stomach. For many years this was the almost universal operation, and in 1910, when I was surgical registrar, the method was used by all the leading gastric surgeons. Later it was realized that in order to prevent recurrences in cases of carcinoma a larger portion of the stomach should be removed, and if this were done the stump of the stomach which was left was insufficient to allow a posterior gastro-enterostomy, or the making of such an opening in some cases endangered the vitality of the sutured edges of the stomach.

In 1910 my chief, James Sherren, evolved and performed the method of uniting the cut end of the stomach to the side of the jejunum. Unfortunately for British surgery, while he was collecting a sufficient number of cases for publication the method was independently published by Polya in 1911, and by his name the operation has since been known. It has been modified in the hands of many surgeons, but in some form or other is the operation usually performed to-day. In the original method a loop of jejunum was brought up through an opening in the mesocolon, and the afferent loop was united to the lesser curve of the stomach. Balfour brought the loop up in front of the colon but also joined the afferent loop to the lesser curvature, while Moynihan, also making it anticollic, united the afferent loop to the greater curve; others partly close the upper part of the gastric opening before making the junction.

For many years I performed the original Polya operation with satisfactory results, but was then persuaded by Lord Moynihan to try his method, as it was more rapid and avoided the opening in the mesocolon. At first I was very pleased with it and performed it in some 200 cases; but as my resections became larger, either because of higher-up ulcers or to get further, beyond the edge of a carcinomatous lesion, I found there was a tendency for the jejunum to kink at the upper end of the junction and to cause troublesome post-operative vomiting. I therefore abandoned it and returned to the original Polya operation.

Billroth's First Method

I had, however, always been enamoured of the first Billroth method, for I felt that the final condition was a much closer approximation to the normal stomach; but I had rather feared to perform it lest after removal of a large portion of the stomach there should be undue tension on the line of suture. It soon became evident, however, that the mobility of the greater curve is limited by a tight band which may be regarded as the left margin of the gastro-colic omentum or the lower portion of the gastro-splenic omentum; when this is divided the mobility is so greatly increased that it would be feasible to unite even the lower end of the oesophagus with the duodenum. There was the apparent paradox that the greater the amount of stomach that was removed the easier was the anastomosis. Since then I have used this method wherever possible, now performing it in nearly all cases, the chief exceptions being large adherent or scarred duodenal ulcers, and I have spent many a happy day in the operating theatre demonstrating the ease of its performance and the satisfactory technical result. I was much fortified in my choice, which was contrary to that of most surgeons, by finding that it was also the method preferred by that great master surgeon Professor Grey

Turner. It may be noted that the operation of Schoemaker, performed with his special clamp, is also a return to Billroth's first method, although in my opinion it does not remove enough of the greater curve.

On the many technical details which have made partial gastrectomy so successful and in the last 50 years have reduced the mortality from 50–60% to 1–2% I cannot enter here. It is sufficient to say that a large portion, in my opinion about seven-eighths, of the stomach should be removed so as to take away the greater portion of the acid-secreting area or to be as far beyond the edge of a growth as possible. In the general technique the biggest change has perhaps been that, with the introduction of the newer anaesthetics and careful pre-operative preparation, the danger of operative shock has almost disappeared, so that the time taken over the operation has become much less important. Nevertheless, when I see surgeons take three to four hours over a partial gastrectomy I feel that they have carried their leisurely methods too far. It should be the aim of a surgeon to perform no unnecessary actions, and the nearer he approaches this ideal the shorter time he will take. On the other hand, I would like to see every clock removed from the theatre and in its place inserted on the wall the short verse from the Book of Ecclesiastes, "Make no haste in time of trouble."

Even as late as 1930 total gastrectomy and removal of the cardiac end of the stomach by the abdominal, the abdomino-thoracic, or the pure thoracic approach were such rare operations that nearly every one was reported. In 1929 Finney and Reinhoff were able to collect only 67 reported cases. To-day they are being more and more frequently performed, some surgeons preferring one method of approach and others another. That so serious and extensive an operation for an otherwise fatal condition can give most satisfactory results in the hands of a skilled surgeon has been most ably demonstrated by Allison.

Choice of Operation

Of late years so universal has become the custom of treating all surgical lesions of the stomach and duodenum by a partial gastrectomy that any discussion on the choice of operation for an individual lesion may seem out of place. Nevertheless I cannot help but feel that this belief has gone too far and that to remove some seven-eighths of the stomach for an indurated simple ulcer of the lesser curve no larger than a sixpenny-piece is an unnecessary mutilation, although there is no question that it is one of the most satisfactory of all modern operations. One is, however, left in some doubt whether a sufficiently large number of cases have been followed up long enough and whether future experience may not reveal a large number of late complications.

Before, however, discussing the choice of operation for a given lesion I want to make it clear that in my opinion it is foolishness to state that there is only one operation for a given condition. Just as two mechanics or two carpenters may reach the same result by using different methods, each choosing that in which he is most skilled, so should a surgeon employ that method in which he is most experienced and which in his hands gives the best results, even if some other surgeon condemns it. The only acid test is a good follow-up department and a frequent analysis of end-results, which are compared with those of other surgeons. Therefore I can only give you my own decisions about the choice of operation and the

results I have obtained thereby. Others may think they are bad and extol different methods, but I shall not quarrel with them.

What, then, is the choice of operation for a chronic duodenal ulcer? Whereas in the earlier days a gastro-enterostomy was always employed, to-day the majority of surgeons advocate a partial gastrectomy, because of their fear of subsequent gastro-jejunal ulceration. With a long history and marked pyloric obstruction there is usually a diminution of the free hydrochloric acid. For such cases many still advocate posterior gastro-enterostomy, which is my usual choice. Of course, if there is the slightest suggestion of pyloric carcinoma, which I believe is mainly evidenced by rapid onset of the obstruction, marked loss of appetite, and complete absence of free HCl, a partial gastrectomy should always be performed.

Is there, however, any place for gastro-enterostomy in simple cases of chronic duodenal ulcer? I believe there is; for my own figures, based upon most careful and complete follow-up observations, have shown a very constant incidence of gastro-jejunal ulcer of only 2%. It is my custom to combine the gastro-enterostomy with embedding of the ulcer with a running mattress silk suture—the so-called Kelling-Mayo suture—to limit the possibility of post-operative haemorrhage. Many cases that I have so treated have remained in perfect health, taking a full diet and performing full work, for 20 to 25 years. Nevertheless I am convinced that there are certain people who have a much greater tendency to develop gastro-jejunal ulceration, probably because they have a larger area of acid-secreting mucosa than normal. Such patients tend to develop duodenal ulcer symptoms early in life; the test meal shows a very high free acid. The radiograph reveals hypertrophy of the mucosal folds, and this is even more evident on gastroscopy.

With such patients it is always my custom to perform a partial gastrectomy. If the ulcer is small and mobile the duodenum is divided beyond it and a Billroth I operation performed. If it is large and adherent I would most emphatically protest against the modern tendency to free it from the pancreas and remove it entirely, a step which is often very prolonged and associated with an increased risk. It is always quite simple even to cut the ulcer across. With a double layer of catgut sutures the duodenum can always be closed and the end then embedded with a silk purse-string or mattress suture. In the blind end of the duodenum any ulcerated area will heal rapidly. A Polya type of gastro-enterostomy is then performed.

Much the same question will arise with a chronic gastric ulcer. Is there any place for the more local procedures, or should a partial gastrectomy always be performed? Many surgeons have told me that they find a wedge resection of an ulcer more difficult, tedious, and prolonged than a partial gastrectomy. If this is so and they are skilled in performing the latter operation, then there is no question that it should be the operation of their choice. I have, however, already stated that in my mind the removal of the greater part of the stomach for a small indurated ulcer in the middle of the lesser curvature seems an unnecessarily extensive procedure and that in my hands a wedge resection, followed by a gastro-enterostomy, has been a most successful operation, my follow-up department showing 92% of five-year cures. It should not, however, be performed for a large ulcer, as it may then cause considerable deformity of the stomach. In recent years, when surgical treatment has not been sought so early, the ulcers are usually larger and

the opportunities for resection have been fewer. In such cases a partial gastrectomy should be performed.

Carcinoma of the Stomach

The remaining indications for gastrectomy are, I think, clear. First and foremost, of course, is carcinoma of the stomach. It must be remembered that without operation this disease is inevitably fatal, for at present deep x-ray therapy holds out little if any hope. Every patient should therefore be given the chance, even if the hope of success appears to be a small one, the only real contraindication being the presence of definite metastases. The size of the tumour is no contraindication. Many years ago I described as a special type of carcinoma a very large tumour situated on the greater curvature in which glandular secondaries arise late and the tumour remains mobile.

This variety, which I have designated massive carcinoma of the greater curvature, arises, I believe, in an adenoma, and in spite of its size is usually easily removable. Apparent fixation of the tumour of course lessens the chance of removal, but some such cases turn out to be operable. If the growth be irremovable but associated with pyloric obstruction a gastro-enterostomy gives a very slight measure of relief. In 1914 W. J. Mayo advocated a partial gastrectomy in such cases, for he pointed out that even with multiple secondaries the relief that might be obtained was very considerable. With this view I am in entire accord. It must be remembered also that even if nothing can be done the patient's relatives will always feel that at least he was given a chance, and their minds will thereby be relieved.

One of the greatest improvements of recent years has been the steady increase in the percentage of operable cases. In 1906 Mr. Mansell Moullin used to say that the only hope of meeting a curable case was to get it before a tumour could be felt, and so far he had failed to do this. My own experience has been of interest: in my first five-year series 74.1% were inoperable, in the second 56.1%, but in the last only 40%. An interesting point in view of Mr. Mansell Moullin's remark is that a slightly higher percentage were operable with a palpable tumour than without. The percentage of cases free of recurrence for five years has also steadily risen until it is now 20 to 30%.

In performing the operation a very wide removal of the stomach must be carried out. It is usually called a subtotal gastrectomy, at least seven-eighths of the viscus being removed, but I am often astonished to see that many surgeons of repute perform a gastrectomy which in my opinion is far too small. It is also essential to remove the glands around the coeliac axis. For this purpose the stomach is turned over to the left, after the duodenum has been divided and the coronary artery ligated and divided as it arises from the coeliac axis, instead of in the left margin of the lesser omentum as is done with a chronic ulcer. It is my custom not to remove the great omentum as a routine, as was recommended by Hey Groves, but to reserve this step for those cases in which there is evidence of lymphatic infiltration of this structure. Whenever possible I restore continuity by end-to-end gastro-duodenostomy (Billroth I). In cases of leather-bottle stomach, wide infiltration, or carcinoma of the cardiac end a complete gastrectomy should be performed, the end of the oesophagus being implanted into the side of a loop of jejunum; but to-day all such cases will be diagnosed before operation and a decision made whether the approach should be abdominal, abdomino-thoracic, or thoracic.

Gastro-duodenal Ulcer

In my experience a gastro-jejunal ulcer ultimately requires operation. I have watched many cases which have had the benefit of long and careful medical treatment by the most skilled physicians, but they have always relapsed. It used to be the custom in such cases to excise the gastro-enterostomy and restore the normal relationships. Such an operation is useless, for it is always followed by a fresh duodenal ulcer. Nor is the local resection of the ulcer or the performance of a new anastomosis in Y, which has often been advocated, of any value, for the ulcer always recurs. The only satisfactory method is to perform an extensive partial gastrectomy, so that the acid-secreting area is much reduced.

The operation is often regarded as one of great difficulty, but if methodically performed it becomes relatively easy. The first essential is to free the mesocolon. With the colon turned up this is started from below, great care being taken to preserve the middle colic artery. The separation may sometimes be aided by dividing the gastrocolic omentum and working from above. When once the mesocolon is free the rest of the gastrocolic omentum is divided and the loop of jejunum can then be drawn up and the lesser omentum and duodenum divided in the usual way. The stomach and jejunal loop are clamped on either side of the anastomosis and divided, and since there is already a lateral opening in the jejunum it is wiser to perform the new anastomosis after the Polya method.

Conclusion

It is evident from the above summary that in the last half-century there has been enormous progress in gastric surgery, in the indications for operation, in the technique of the various operations, and in the choice of operation for the individual lesions. With this progress there have been almost unbelievable improvements in the immediate mortality and in the end-results, so that operations which in 1900 would have been regarded as impossible or so dangerous as to be unjustifiable are now easily and safely performed, and with their aid many cases of gastric carcinoma have been given hope of a permanent cure; but practically the whole progress has been in operative technique, and it almost seems that the great skill of this technique has reached its zenith.

The medical profession, however, cannot and will not remain satisfied with the present position, in which the cure of a diseased stomach lies in its removal. It is permissible to believe that, if medicine remains free from control and regimentation, fresh observation and research will lead to knowledge of the cause of these conditions, so that they will be prevented or cured at their very inception and in a relatively short time: perhaps in the lifetime of many of you these marvellously skilled operations will cease to be performed and will be regarded as curiosities of the past.

The Royal College of Nursing has issued some leaflets on agreements and standing orders relating to the conditions of service of nurses. It recommends that the principles embodied in them should be used by hospitals in a form most appropriate to the particular circumstances. They are obtainable from the General Secretary, the Royal College of Nursing, 1A, Henrietta Place, Cavendish Square, London, W.1, price 2s. 6d. the complete set. The leaflets for matrons, sister tutors, ward and departmental sisters, and staff and senior staff nurses may be bought separately.