by anterior colporrhaphy, providing that the musculo-fascia is tautened by suture as well as the vaginal wall. When vault prolapse and cystocele are both present Fothergill's operation is suitable, for it tautens both the pubo-cervical fascia and the upper fibres of the cardinal ligaments. An alternative is to combine anterior colporrhaphy with ventrofixation. Which of the two is the better depends on the individual case, but both, when properly applied, give happy results. Another alternative is the interposition operation, which effects some tautening of the fibres of the cardinal ligaments and markedly strengthens the middle section of the pelvic shelf. When the whole shelf has retroverted ventrofixation is indicated, for it cannot be lifted except from above. Laxity of the pelvic floor is perfectly corrected by perineorrhaphy properly performed—that is to say, with suture both of the levatores and the fascia superficial to them. I emphasize this because the latter are sometimes missed.

For rectocele posterior colpoperineorrhaphy meets the case, but in that rare form of prolapse which is a true hernia of Douglas's pouch colporrhaphy by itself is rarely efficient, because the upper part of the posterior vaginal wall is defective, so that the vaginal operation had better be supplemented by obliterating Douglas's pouch from above by suturing the rectum to the back of the uterus.

The question of redundancy of tissue is important because, if it exists, the reparative operation must include the reducing of it by amputation of the cervix or excising large areas of vaginal wall. On the other hand, it is quite common to meet with cases of prolapse in elderly women in which there is not only no redundancy of the cervix and vagina, but actually a diminution of tissue, and in such, if the surgeon unthinkingly excises more, he will have difficulty in bringing together the cut edges of the frail vaginal wall—a most disconcerting experience. Since the ease with which the vagina can turn inside out depends in part on the relation between the thickness of its wall and the size of its lumen, any variety of prolapse can be prevented by sufficiently narrowing the canal. This is the effect of Le Fort's operation, which leaves the patient with a double vagina, each half of which is so narrow that in-falling of its wall is impossible. Great narrowing of the canal is, however, only allowable when the patient no longer has relations with her husband on account of age.

The position of the uterus is important, because if it is retroverted the reparative operation must include the rectification of that part of the displacement, for if it be left backwards the abnormality of the axis of direction of the intra-abdominal pressure remains as before, and menaces a further displacement. The size, or rather length, of the uterus should always be measured with a sound if one wishes to escape the error of opening the abdomen to ventrofix a uterus which is too small to be brought up to the abdominal wall—a state of affairs quite common in aged fat women. Finally, the position of the pelvic shelf must be ascertained by noting the direction of the axis of the vagina, and if it is retroverted steps must be taken to bring it up.

Conclusion.

The exact methods by which these various aims can be achieved I do not intend to discuss, because the object of this introductory paper is to summarize the basic facts of genital displacement, a full appreciation of which is a necessity if the operations for its relief are to constitute a science as well as an art. A surgeon who proclaims that the operation he employs for prolapse is Jones's or Smith's or Robinson's also proclaims himself as belonging to that considerable section of mankind who prefer to get someone else to think for them. Fancy a tailor who advertised that he corrected the bad fit of a pair of trousers by Jones's method! Gentlemen, in the matter in hand we are all tailors, and our aim should be not to carry out any particular preconceived set operation, but, in the words of Gilbert's immortal Lord High Executioner, "to make the punishment fit the crime" by employing just those dissections, excisions, readjustments, and suturings which will, if possible, leave the parts concerned "as good as new."

A Clinical Lecture ON GASTRO-JEJUNAL ULCER.*

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I AGREE with Balfour¹ that "recurrence of ulceration may follow any operation for peptic ulcer, including partial gastrectomy." Gastro-jejunal ulcer, of which two grave examples are recorded below, is the commonest secondary ulcer and the most serious complication of gastro-jejunostomy. It may appear at any time from a few days to twenty or more years after the primary operation. It is generally taught that a new ulcer appears sooner or later at, or near, the stoma after about 2 per cent. of gastro-jejunostomies performed for non-malignant disease. Balfour found the percentage to be 1.6 after 8,600 gastro-enterostomies at the Mayo Clinic; but many patients suffer from this complication who do not seek another operation, but do everything possible to avoid one, and I have reasons for thinking that it is far commoner than is generally believed. After seeing and treating many of these difficult cases, I have come to the conclusion that gastro-jejunostomy should never be performed either without grave consideration beforehand or without the greatest care to make the anastomosis a perfect one.

CASE I.—*Recurrent Gastro-jejunal Ulcer: Gastro-colic Fistula: Operations: Recovery.*

In 1915 I performed posterior gastro-jejunostomy for this patient (a man) at Guy's Hospital for duodenal ulcer with stenosis. In March, 1921, I excised a small anterior gastro-jejunal ulcer which had nearly pierced the colon, and at the same time I enlarged the stoma, which had contracted. He remained well until July, 1927, when he suddenly developed a gastro-colic fistula with faecal vomiting. Some of a barium enema obviously passed into the stomach, but none of another barium enema, given a few days later. However, the diarrhoea and the other symptoms continued, therefore the diagnosis of gastro-colic fistula was made with confidence, and an operation was advised. X-ray examination showed that nearly all the food leaving the stomach passed out through the pylorus and duodenum; there was no delay in the stomach.

At the operation I found two gastro-colic fistulae; one of them admitted the index finger, the other one was smaller; both opened from the front wall of the stoma, which was of good size and position. As the duodenum was now patent and apparently healthy I excised the gastro-colic fistulae and the gastro-jejunostomy, together with the engaged loop of jejunum. This proved to be extremely difficult. The gastric wound and the distal cut end of the jejunum were closed, the end of the duodenum being implanted into the jejunum, thus restoring the normal anatomy and physiology as far as possible.

About a month later the patient was readmitted for severe haematemesis and melaena. The source of the bleeding was uncertain, but it was later proved to be a posterior duodenal ulcer. Careful medical treatment, with the patient in bed at the hospital, was tried in vain for three months. Duodenal stenosis gradually developed and increased so that visible peristalsis became evident in the epigastrium, and vomiting of large quantities occurred about once every forty-eight hours. Gastric lavage only afforded partial relief.

On December 8th, 1927, another operation was performed. The stomach was very dilated, hypertrophied, and inflamed, owing to a large, deep posterior duodenal ulcer penetrating into the pancreas and stenosing the duodenum. No other ulcer could be found. A lateral gastro-duodenostomy was performed well below the duodenal ulcer. The patient made a rapid and excellent recovery from the operation, but he is to continue his extremely careful after-treatment for at least six months, and to observe all the known precautions against recurrence.

CASE II.—*Recurrent Gastro-jejunal Ulcer: Partial Gastrectomy.*

This man was referred to me for the first time early in December, 1927, with the following history. In 1908 he was explored for gall-stones; none were found, but instead a duodenal ulcer with localized peritonitis, indicating an old perforation. The appendix was removed about a year later. In 1910, the duodenal ulcer persisting in spite of medical treatment, it became necessary to perform gastro-jejunostomy. The anterior operation was performed, and the patient remained fairly well for nearly four years.

In 1914 another operation became necessary, when a large gastro-jejunal ulcer was found on the front and right side of the stoma. There was also obvious obstruction of the proximal loop of the jejunum. For these conditions entero-anastomosis was performed; this relieved the patient almost completely for nearly eleven years, then symptoms of obstruction of the stomach recurred, and a severe haematemesis with melaena developed.

* Delivered at Guy's Hospital on December 15th, 1927.

Another operation was performed; the gastro-jejunostomy had contracted so much that it was necessary to detach it and make a new anterior one somewhat to the left of the old one. After this operation the patient was never well, and a month later suffered pain, and two swellings developed above and to the left of the umbilicus. These were at first thought to be ventral herniae, but later proved to be abscesses, which subsequently discharged intermittently into the gastro-jejunostomy. In June, 1927, several sinuses were excised, and they were found to lead down to the anastomosis. Two openings, one at each end of the stoma, were closed. There was also an obstruction of a loop of jejunum about a foot below the anastomosis. For this an entero-anastomosis was performed, and gave great relief, but the pain and indigestion persisted, and abscesses recurred above and to the left of the umbilicus. The pain became almost continuous, the patient thin, anaemic, and very miserable, praying for a "kill or cure" in the way of an operation.

On December 8th, 1927, the operation was performed. A large elliptical piece of the abdominal wall, containing several abscesses, was excised, together with a little more than half the stomach, the gastro-jejunostomy, the loop of jejunum engaged in the anastomosis, and a small piece of the transverse colon around a gastro-colic fistula. The operation was extremely difficult owing to numerous adhesions and the complicated anatomical conditions. As the duodenum was hopelessly stenosed and very adherent, partial gastrectomy was the only possible radical operation. The anastomosis was made after the Polya-Balfour method. The patient was so thin, and so much of the abdominal wall had been sacrificed, that it was difficult to close the parietal wound, but by beginning at each end and gradually proceeding towards the centre, and by mobilizing the parietal peritoneum, the closure was at last successfully accomplished, and the wound healed perfectly. Three pints of normal saline were run into the axillae during the operation. The next day the patient became very restless in spite of axillary infusion, and was transfused (three-quarters of a pint); this caused no reaction, but improved the patient's condition to a remarkable extent. He is now making a slow but satisfactory recovery, although an abscess developed three weeks after the operation in the right hypochondrium near a stab wound that had been used for drainage. He is now much better than he has been for several years.

PATHOLOGY.

A gastro-jejunal ulcer is one that forms upon the margin of the gastro-jejunostomy and involves both the stomach and the jejunum at the line of union; it may encircle the stoma, and by fibrosis it tends to narrow the opening, which may finally become completely closed, as not infrequently happened after the use of the "Murphy button." Jejunal ulcers are less common; they develop in the jejunum near the anastomosis, usually just below the stoma, or in the first four inches of the efferent limb of the jejunum, very rarely in the afferent limb. The ulcer is generally small, but it may be deep and invade the pancreas, the transverse colon, or a neighbouring coil of small intestine, into any of which it may ultimately perforate. It may also perforate into the peritoneum, causing a grave form of peritonitis, or even into the abdominal wall, causing a parietal abscess or cutaneous fistula. It may ulcerate into a large artery, such as the middle colic, and cause severe, or even fatal, haemorrhage.

ETIOLOGY AND PROPHYLAXIS.

The causation and prevention of gastro-jejunal ulcer are very important; certain facts bearing on these may now be considered.

Out of 270 cases at the Mayo Clinic 248 were males and only 22 were females, a ratio of eleven to one, whereas gastro-jejunostomy was performed only three times as often in men as in women. Secondary ulceration is far more likely to follow when the primary peptic ulcer is duodenal rather than gastric. Balfour² found that

"of those cases in which gastro-enterostomy was performed at the clinic, gastro-jejunal ulcer followed an operation for duodenal ulcer in 130, and followed operation for gastric ulcer in only nine. While this ratio is 15:1, the ratio between the number of cases in which gastro-enterostomy was performed for duodenal ulcer and those in which it was performed for gastric ulcer is 7:1."

These facts are significant, and tend to show that men's habits and occupations have some relation to secondary ulceration. Men are more prone to excessive smoking and drinking, and have more laborious mental and physical occupations, and generally have less leisure, with less frequent and less regular meals.

Excess of free hydrochloric acid in the stomach and in the bowel at or near the stoma has always been considered an important cause, supported by the absence of secondary ulceration (other than rare septic instances) after gastro-jejunostomy for cancer of the stomach, and the undue frequency after an operation for duodenal ulcer in which

excess of free hydrochloric acid is constant before operation, and usually after it, as shown by A. F. Hurst³ at New Lodge Clinic, whereas hyperchlorhydria is rarely associated with gastric ulcer. Balfour⁴ found that in 40 per cent. of his series of cases of gastro-jejunal ulcer

"the free hydrochloric acid was either increased or very slightly reduced by the gastro-enterostomy; but in 40 per cent. there was a marked reduction, and in 20 per cent. the free hydrochloric acid was reduced to zero. The fact that there was no free hydrochloric acid in one-fifth of the cases of gastro-jejunal ulcer, in which repeated and fractional examinations of the gastric contents were made, disproves the assumption that achlorhydria following the primary operation affords protection against later ulceration."

The hypertonic type of stomach commonly seen in the subjects of duodenal ulcer is particularly subject to recurrent ulceration, but any of the errors of habit or of sepsis which may have contributed to the causation of the original peptic ulcer, unless they are eliminated, may cause the appearance of a secondary ulcer. Notable among these causes are imperfect mastication, irregular meals, septic teeth, tonsils, sinuses, appendix, or gall-bladder. Infection from an open duodenal or gastric ulcer left behind may be grafted upon the stoma.

Anatomical and physiological errors at the stoma are important causes of recurrent ulceration. Among these may be mentioned a wrongly placed stoma, which does not drain the stomach well or obstructs the jejunum by kinking or torsion at or near the stoma; bruising or laceration of the viscera engaged in the anastomosis is to be scrupulously avoided, as also are all unabsorbable sutures. Drugs, especially tobacco and alcohol, have much to answer for in the pathogenesis of gastro-jejunal ulcer.

Errors in the after-treatment undoubtedly contribute towards the formation of gastro-jejunal ulcer. It is important for the patient to be dieted with the greatest care, and allowed only soft and non-irritating food at regular and short intervals, and to have a long restful holiday before he returns to work and worry. The slightest return of symptoms demands rest and a return to medical treatment by dieting and administration of alkalis.

DIAGNOSIS.

As already said, I believe that gastro-jejunal ulceration is much commoner than is generally supposed, and that it should be suspected whenever abdominal pain or "indigestion" follows gastro-jejunostomy. The diagnosis is not easy, particularly as radiography rarely gives any direct evidence of this form of peptic ulceration—that is to say, it rarely displays a shadow of the ulcer. I have only once seen such a shadow confirmed by operation. But radiography gives valuable hints—generally delay in emptying through a narrow stoma and uneasy peristalsis in the upper part of the jejunum. The symptoms are more reliable. They are similar to those of duodenal ulcer, especially hunger pain perhaps relieved by food and alkalis, but coming on much earlier than the pain of duodenal ulcer, generally within an hour after food; later it becomes more severe and almost continuous; moreover, it is above and to the left of the navel instead of in the right epigastric angle. Tenderness and perhaps a tumour are noticed in the same situation. Melaena or occult blood in the stools is very significant if the patient is on a meat-free diet. Wasting and anaemia are usually very marked. Gastro-colic fistula when present is clearly indicated by diarrhoea, foul eructations, and faecal vomiting. The early passage per anum of undigested food and the x-ray shadows after a barium enema are generally conclusive.

Occasionally a new or old duodenal ulcer, or especially a gastric ulcer, or a carcinoma supervening thereon, may be mistaken for a gastro-jejunal ulcer. In one case I mistook a gastric ulcer upon the lesser curvature, which developed some fifteen years after a gastro-jejunostomy had been performed for duodenal ulcer with stenosis and had afforded complete relief for many years. Here the pain and tenderness were naturally above and to the left of the navel, as with gastro-jejunal ulcer. The ulcer was successfully excised.

Chronic cholecystitis, pancreatitis, or appendicitis may be mistaken for gastro-jejunal ulcer, but in these conditions there is no occult blood in the faeces on a meat-free diet.

MEDICAL TREATMENT.

The medical treatment of gastro-jejunal ulceration is far more difficult and less successful than that of any other form of peptic ulceration, but it is always worth trying a thorough course of dieting and alkalis, with complete rest in bed. Every possible source of sepsis must be carefully sought and removed. Sometimes medical treatment meets with success, but, even if it does not, it makes an excellent preparation for the surgical treatment that often affords the only hope of success. Sometimes blood transfusion on one or more occasions is necessary before an operation can be hopefully undertaken.

SURGICAL TREATMENT.

1. For Perforative Peritonitis.

As a rule the patient is so ill when he comes for treatment that all that can be done is to close the perforation and drain above the pubis. Medical treatment is then well tried, and if that fails a radical operation can be carried out later. Grant Massie⁵ studied thirty-six recorded cases in addition to his own. The large majority (75 per cent.) of the perforating ulcers were jejunal, these being less protected than those at the anastomosis. Twenty-two of the thirty-seven patients died, so that the mortality is very high, nearly 60 per cent.

2. Radical Operation.*

This may tax the skill, ingenuity, and resource of the best surgeon, owing to extensive adhesions, the obscure relations of the affected parts, and the poor condition of the patient. It is wise to insist on complete rest in bed and careful medical treatment for at least a week before the operation, which may be a difficult and prolonged one. The ideals are to excise the ulcer, provide free drainage of the stomach, and to restore as far as possible the normal anatomical and physiological conditions. The preliminary radiographic examination may have shown that nearly all the food leaves the stomach through the pylorus, and at the operation the pylorus and duodenum may be found to be patent, any previously existing ulceration having healed without causing obstruction. In these circumstances the gastro-jejunostomy should be abolished, the ulcer excised, and the opening in the jejunum closed without narrowing its channel. This should also be done when the primary operation was improperly performed for gastric symptoms without structural alteration of the stomach or duodenum. Any operation that adds further anatomical or physiological complications is to be avoided. The addition, for instance, of another gastro-jejunostomy in the hope that freer drainage of the stomach may induce the ulcer to heal is doomed to failure. It is far better to excise the ulcer, although this may appear more difficult and dangerous, especially when the gastro-jejunostomy is of the posterior type. A long vertical left paramedian incision is made in the epigastrium extending below the umbilicus. The operation should commence as a rapid exploration of the abdomen, and any primary source of infection which may be discovered, such as a diseased appendix or gall-bladder, should be removed. The stomach, the duodenum, and the stoma should be carefully examined for signs of ulceration and obstruction. Dense adhesions may make this preliminary step difficult, and it is easy to overlook a small ulcer, especially on the posterior surface of the stoma.

The stoma is often narrow, and sometimes very small. Occasionally it is normal in size, but the jejunum is kinked or twisted by adhesions, so that the food, which has been shown by the x rays to leave the stomach in a normal manner, does not pass freely along the jejunum. When the ulcer has been found the adhesions should be separated or divided, and the parts carefully freed, defined, and brought forward into the wound. This important step is often tedious and difficult, especially when the ulcer is posterior and invading the pancreas. Opening the lesser peritoneal sac and division of the posterior parietal peritoneum greatly facilitate the mobilization, but some of the invaded pancreas may have to be removed with the ulcer. A rubber cushion behind the back helps to bring forward the lumbar spine and makes the dissection easier.

Having separated, brought forward, and clamped the parts concerned in the anastomosis the most suitable treatment is more easily determined.

(a) Simple Excision of the Ulcer.

If the ulcer is small and not encircling the stoma it is often possible to excise it and to sew up the resulting wound in such a way as to enlarge the stoma or jejunal channel. But in some cases the ulceration may recur, as in Case 1, unless all the causes of recurrence can be eliminated.

(b) Excision of the Ulcer and Abolition of the Stoma.

If the ulcer is large or encircles the stoma, which is often contracted, it is necessary to excise the ulcerated area, thus detaching the jejunum from the stomach, and occasionally to make a new and better stoma, but if the pylorus and duodenum are healthy and patent, as often happens, it is not necessary to remake the gastro-jejunostomy; it is far better to close the openings in the stomach and jejunum, thus re-establishing the normal anatomy and physiology of the parts.

(c) Abolition of the Stoma plus Gastro-duodenostomy.

If the original gastro-jejunostomy was anterior, it is sometimes possible to perform gastro-duodenostomy, making use of the opening left in the anterior wall of the stomach after the excision of the ulcer. The opening in the jejunum is then closed without narrowing the lumen. The result in one of my cases has remained very satisfactory for ten years. After this operation recurrence of ulceration at the stoma is very unlikely, owing to the free admixture of the alkaline duodenal secretions with the gastric juice. Similarly, when the duodenum is stenosed, after disengaging a posterior gastro-jejunostomy and closing the openings in the stomach and jejunum, a low lateral gastro-duodenostomy is made well away from the scarred or possibly ulcerated part of the duodenum. I have found this method extremely satisfactory. It is easier and better than "Finney's operation" for these cases, and it saves the patient from the more formidable operation of partial gastrectomy.

(d) Partial Gastrectomy.

In bad cases, especially when the gastro-jejunal ulcer is recurrent and complicated, and when the duodenum is ulcerated, stenosed, or embedded in dense adhesions, it is usually wise to perform partial gastrectomy, which may be no more formidable than a less ambitious operation. It has the considerable merit of reducing the amount of the free and corroding hydrochloric acid. In order to avoid adhesions and other difficulties the stomach is divided to the left of the pylorus and its distal end is closed, a large cylindrical part of the stomach and the gastro-jejunostomy are isolated, clamped, and excised without sacrificing more of the jejunum than is absolutely necessary, so that the opening can be closed transversely without narrowing the lumen. The jejunum is then joined to the end of the cardiac remainder of the stomach after the Polya-Balfour-Moynihan method.

(e) Closure of Gastro-colic Fistula.

When there is a gastro-colic fistula the colon is clamped, detached, and closed in two layers without narrowing its lumen; it is then covered with omentum and the removal of the gastro-jejunal ulcer is proceeded with. In one of my cases there was an additional fistula between the stomach and the ileum; this can be treated in a similar way.

RESULTS OF OPERATIVE TREATMENT.

The formidable nature of the radical operations that are necessary for gastro-jejunal ulcer, and the thin, anaemic, and exhausted condition of many of these patients requiring it, would point to the probability of a high mortality, but as a matter of fact in good hands the mortality is not unduly high. At the Mayo Clinic⁷ the mortality was only 3.37 per cent. in eighty-nine partial gastrectomies for this condition. The ultimate results are good and more than justify the risk of this radical operation, for "complete relief of symptoms follows the operation in more than 85 per cent. of the cases." From my

own experience I can bear out these hopeful conclusions, and I firmly believe that either restoration of the normal physiology or partial gastrectomy is necessary in most cases; the former approaches the ideal, but the latter is sometimes the only practical radical method available.

REFERENCES.

¹ *Annals of Surgery*, 1926, lxxxiv, 271-283. ² Loc. cit. ³ *Guy's Hospital Reports*, 1921, lxxi, 319. ⁴ Loc. cit. ⁵ *Guy's Hospital Reports*, 1924, lxxiv, 70. ⁶ *Ibid.*, 1922, lxxi, 331; see also *Operations of Surgery*, vol. i, p. 173. ⁷ Loc. cit.

PROGNOSIS IN PULMONARY TUBERCULOSIS.*

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EVEN in the same community there are enormous differences in the resisting power of individuals attacked by the tubercle bacillus. At the one extreme are those who overcome the bacillus so easily that its presence in them is never suspected during life; at the other are the victims of "galloping consumption," who are very ill when first seen by the doctor, and grow progressively worse until death supervenes. Between these extremes are the majority of consumptives, whose resisting power can be fostered by appropriate treatment.

PATIENTS WITH SMALL RESISTING POWER.

The proportion of cases in county Down in which resistance was very small (1913 to 1924) is shown roughly by the percentage of cases in which death occurred within six months of the date on which each patient was first seen by one of the tuberculosis medical officers.

TABLE I.—Percentage Dead within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	35.0	—	25.7	—
Maximum ...	43.2	1923	40.5	1918
Minimum ...	27.0	1913	12.5	1917

If we separate these cases into febrile and afebrile, including among the latter all cases in which the temperature ceased to exceed 99° F. after a week's rest in bed, we get Tables II and III in place of Table I.

TABLE II.—Febrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	49.3	—	43.3	—
Maximum ...	61.5	1922	59.1	1922
Minimum ...	41.2	1914	25.0	1917

TABLE III.—Afebrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	12.8	—	8.1	—
Maximum ...	22.0	1915	37.0	1918
Minimum ...	0	1917	0	1915 1917 1922

Since the percentage of rapidly fatal cases found in different years varies so much, we should be chary about

* An abridgement of a paper read before the Belfast Division of the British Medical Association.

coming to a conclusion as to the efficacy of any remedy intended to reduce this percentage, until it has been tried in a large number of cases spread over a considerable number of years.

Almost without exception the patients who died within six months were considered too ill either to be sent to a sanatorium or to be treated at a tuberculosis dispensary. Arrangements were therefore made for domiciliary treatment, the patient being instructed to stay in bed as long as the temperature exceeded 99° F. at any time in the day; to have a room to himself; to admit as much fresh air and sunlight as possible into his room; and to take as much plain nourishing food of various kinds as his stomach would allow.

Where satisfactory home conditions were not available the patient was advised to go into the union infirmary. No special treatment, such as artificial pneumothorax, was tried in any of them. As there is no county sanatorium in county Down, and the sanatoriums to which we sent patients were unwilling to take bad cases, this was the best we could do.

Recent and Non-recent Cases.

In 52 per cent. of our cases (1913 to 1924) the patients had been ill for more than six months before the tuberculosis medical officer was called in, and in 48 per cent. for less. Counting the latter as recent cases, and the former as non-recent, we get the following four tables.

TABLE IV.—Recent Febrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	49.8	—	43.4	—
Maximum ...	63.2	1919	67.2	1922
Minimum ...	32.2	1916	22.2	1917

TABLE V.—Non-recent Febrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	48.6	—	43.0	—
Maximum ...	64.3	1922	68.8	1923
Minimum ...	31.2	1913	12.4	1913

TABLE VI.—Recent Afebrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	8.8	—	5.0	—
Maximum ...	27.4	1920 1915 1916 1917 1919 1924	19.8	1918 1915 1917 1919 1922
Minimum ...	0		0	

TABLE VII.—Non-recent Afebrile Cases. Died within Six Months.

	T.B. +		T.B. -	
	Percentage.	Years of Extremes.	Percentage.	Years of Extremes.
Average ...	15.8	—	10.2	—
Maximum ...	53.4	1915	50.0	1918 1915 1917 1922 1924
Minimum ...	0	1917	0	