IMMEDIATE FEEDING in GASTRIC ULCER

by

WILLIAM MARSHALL MACDONALD,
DUNEDIN,
New Zealand.
Gastric Ulcer is one of the commonest diseases and at the same time it is one of the most difficult to treat satisfactorily. There are, it is true, some cases that respond to slight treatment, to the avoidance of coarse foods and to the administration of bismuth and other drugs, while many patients learn to treat themselves by living for long periods on liquid or semi-solid foods. But this is unsatisfactory because such treatment at the best is merely palliative and, not only are patients with latent gastric ulcer disqualified from doing the best work, but they are living in imminent danger of their lives from a sudden haemorrhage or perforation.

The first essential in treatment is complete rest, and this is best achieved by confinement to bed for a period of at least four weeks. There is sometimes great difficulty in getting patients, especially vigorous male patients, to submit to prolonged rest, but any attempt to compromise by substituting drugs for rest in bed may be dismissed as a dangerous and unscientific way of treating gastric ulcer. Cruveilhier was the first to treat cases of ulcer on scientific lines and his methods were improved later by Leube and Ziemssen. Their plan of treatment consists in prolonged rest in bed with a preliminary course of rectal feeding and it still holds a large vogue. For a number of years I carried out this method strictly in all cases and achieved a large measure of success - that is to say, in a good proportion of cases the ulcer healed and the patient remained free from symptoms for a considerable time.
One frequently hears complaints of ill-success in ulcer cases but one usually finds that this is due to want of thoroughness in carrying out the treatment and to insufficient attention to details. If the Leube-Ziemssen method is strictly carried out, there is no doubt that it is an excellent way of dealing with gastric ulcer but it has its obvious limitations. Gastric ulcer is a disease in which there is not only a local lesion but there is also a constitutional weakness or dyscrasia. Whether this dyscrasia is the result of oral sepsis, faulty mastication, constipation, anaemia or other blood defect, whether it is due to these causes acting singly or in combination and whether these causes result in lessening the vitality of the gastric cells or depressing their proliferating power, or in producing a diminished circulation of alkaline blood plasma, or in causing necrosis or necrobiosis through some circulatory or neurotrophic agency - these are not questions that can be settled easily. But there is a general consensus of opinion that some dyscrasia or constitutional weakness does exist and there must therefore be something wrong in a system of treatment which in its very essence is calculated to increase that constitutional weakness. The patient is placed on a diet which, estimated in calories, falls very far short of supplying him with sufficient fuel for maintaining the metabolism in a position of equilibrium and is therefore not likely to assist in building up an already weakened constitution. Starvation for a
week or two does little harm to any one in robust health provided that the supply of water is maintained, but it is quite another matter with the debilitated possessor of a chronic gastric ulcer. The usual result is that the patient loses 9 or 12 lbs. in the first few weeks of treatment and this has to be made up during a tardy convalescence.

Another objection is that while we can prevent anything from entering the stomach by way of the mouth, we cannot be sure of preventing the secretion of gastric juice into the empty stomach after the administration of each rectal injection and probably also during the intervals. Then there is the difficulty of carrying out the treatment in private houses as it necessitates the attendance of a trained nurse, while many cases of gastric ulcer occur amongst the class which is too poor to have a nurse and too proud to go into hospital. Lastly there is the great mental as well as physical discomfort that has to be endured by the subjects of rectal alimentation. This never comes home to one so much as when the method of immediate feeding is employed in cases that have previously undergone treatment by rectal injections. Patients who were looking forward to a repetition of their former experience with dread were quite bright and happy under treatment. A sense of mental and physical well-being is not a negligible factor in the treatment of disease and must surely conduce to a swifter recovery. In one case especially, a girl who had been in hospital on no fewer than five previous occasions, the pain had always persisted for
twelve or fourteen days, while, with immediate feeding, she had no pain after the fifth day and she was well and contented from the commencement of the treatment.

In the face of all these objections to rectal feeding it is astonishing that this system should have held so long a vogue and that the method of immediate feeding should have had so halting a welcome. As long ago as 1900 Lenhartz suggested a diet of concentrated egg albumin as likely to combat hyperchlorhydria and reinforce the patient. Even after haematemesis he gives by the mouth iced milk and beaten eggs, and rapidly passes on to raw meat, rice and zwieback, the patient being placed on a mixed diet in the third week. Senator also experimented with immediate feeding but he used a diet of gelatin, fat and sugar. The gelatin is given as a nutrient and also with the object of increasing the coagulability of the blood after haemorrhage while the fat is intended to inhibit gastric secretion. He gives on the first day one ounce of butter and nine ounces of cream whipped up with sugar, thus furnishing the patient with a food value of 1000 calories as compared with 280 calories on the first day in the Lenhartz dietary.

The present series of experiments was commenced in May 1909. Senator's diet was rejected as containing too much fat and carbohydrate in view of the fact that during rest in bed the carbon output is much more profoundly affected that the nitrogen output. The Lenhartz diet appeared to suffer from the disadvantage that it included from the outset a considerable quantity of milk. Milk has long been
idealised, if not idolised, as the food par excellence in sickness. Milk has undoubtedly many dietetic virtues but it has one fault which out-weighs them all when it is considered as food for an irritated stomach. It is ingested as a liquid but it has to be digested as a solid, and a solid, at that, which may become very irritating. It is passing strange that, while all authorities are agreed that milk is an unsuitable diet for the gastritis of infants, all authorities are also in practical agreement as to its being the most suitable diet for the gastritis of peptic ulcer. This has arisen from the fact that patients who have been eating coarse and unsuitable food improve at once when fed upon milk. Griffini and Vassale shewed that experimental ulcers in animals healed more rapidly on a milk than on a flesh diet; but this only proves that milk is a better food than butcher meat for patients with gastric ulcer. It does not establish the fact that milk is the best food for patients suffering from chronic gastric ulcer. And this objection to milk can be only partly overcome by the addition of soda-water, barley water or citrate of soda while peptonised milk has the disadvantage of exciting gastric secretion without providing any work for the juice that is secreted. Acute gastric ulcers heal readily enough on a diet of milk curd in fine division as do also a considerable proportion of chronic ulcers; that is to say, they heal in spite of the milk curd. What is required in obstinate cases of chronic ulcer is a food that has no irritating particles, that has a high caloric value,
that combines readily with the hydrochloric acid in the gastric juice, that is soothing to the mucus membrane and that does not lie too long in the stomach. Previous experience had shewn me that a diet of raw egg and sugar dissolved in cold water could be employed with marked success in the gastritis of infants, often allaying the vomiting which had persisted even after the milk was peptonised. An aqueous solution of eggs and sugar fulfils all the conditions that are required in the diet for gastric ulcer and in addition it is not displeasing to the palate. The whole egg is dissolved by stirring - not beaten - in cold water and sugar of milk is added to increase the caloric value. In most of the cases, especially in dealing with anaemic girls, large doses of tincture of the perchloride of iron were added to the egg mixture. Iron given thus in the form of fresh albuminate is not irritating and in most cases four to six drachms of the tincture were administered daily without causing any nausea or discomfort. Gerhardt used tinct. ferri perchlor. in place of morphia to relieve the pain of gastric ulcer but he gave it in doses of 4 or 5 minims. The iron also acts as a tonic and relieves anaemia when present. Most patients say that the iron improves the flavour of the egg mixture and makes it pleasant to take. At the same time it was thought safer to omit the iron when any untoward symptoms presented themselves. Thus in case No. 36 the pain disappeared on the second day but returned on the thirteenth day. On
the fifteenth day the iron was discontinued and next
day the pain disappeared. Lenhartz gives iron in
the form of sulphate so that it may use up some of the
hydrochloric acid in the stomach but there is no
advantage in this, as sulphuric acid is liberated
and so the total acidity remains unaltered. In what
ever form iron is given it is converted into the
perchloride in the stomach and it is therefore just
as well to give it in the form that it will
ultimately assume. All that is necessary is to see
that the tincture used does not contain too much
free acid. It might be thought that there is some
objection to giving an acid preparation but the
recent experiments of Bolton (1) shew that food
soaked in 5% hydrochloric acid does not delay the
produced
healing of ulcers in cats by gastro-toxic serum,
By this means he produced an acidity of .3% and
found that the ulcers healed in exactly the same
time as in animals fed on the same food untreated
and more quickly than when the food was soaked in
alkali. The alkalised food has to be neutralised
before digestion begins and therefore remains longer
in the stomach, thus delaying the healing of the ulcer.
Litthauer also found that hyperacidity did not delay
healing unless he had previously tied the blood
vessels going to one-third of the mucous membrane
of the stomach. These experiments are supported
by the results obtained in the present series of
cases. It is not easy to demonstrate with
chemical exactitude what happens to iron salts in
the stomach but the cases here reported shew that a mixture of raw egg and perchloride of iron is usually well borne by the stomach of a patient suffering from gastric ulcer and does not delay healing. The eggs are not beaten up, they are simply stirred whole into cold water until thoroughly mixed and the result is a mixture which is not displeasing in appearance or in taste and is readily taken even by patients who assert that eggs have never agreed with them. In a few cases there was a little nausea for the first two days but it soon passed off. In three cases it was found necessary to stop the use of the mixture altogether for a time. Case No. 26 was a woman of 68 who had been living for several months almost solely on Benger's Food and she had made up her mind that nothing else would agree with her. On the twelfth day of treatment she was so dissatisfied that the mixture was stopped and she was given one ounce of Benger's Food hourly with the result that her pain ceased immediately. Next day two oz. of sugar and 2 eggs were added to the Benger and in a few days she was getting 6 eggs and 6 oz. of sugar in very weak Benger without any discomfort or complaint. It is noteworthy that the only other case, No. 25, which refused the mixture was an hysterical girl of 16 who was lying in the next bed. She was placed on peptonised milk, and egg mixture was gradually substituted in the same way and with the same result. In the third case No. 32, which was complicated by perigastric adhesions, the pain persisted for eleven days and disappeared only when
the mixture was stopped and peptonised milk substituted. Two days later the milk was discontinued and the mixture begun again with 3 eggs and 4 ounces of sugar without any subsequent return of the pain.

The routine in a typical case is as follows; the patient is placed in bed for 28 days and during the first fortnight, is kept strictly at rest on the back and not allowed to sit up or move about much in bed. Reading and writing are forbidden and no visitors are allowed. An icebag is kept continuously night and day on the epigastrium during the first two weeks. It should be fixed in position by shoulder straps as it tends to slip down below the umbilicus. The icebag is undoubtedly a very important factor in carrying out the treatment. For the relief of pain it is a great improvement on the fomentation or tow-poultice and it probably helps to prevent flatulent distension. This is not due, as Lenhartz suggests, to a depressive action on the gastric motility - that would do harm by prolonging the stay of the contents in the stomach. Rossbach (2) has shewn that the icebag diminished the gastric movement but it probably does so by promoting a gentle tonic contraction which does not cause stasis of the stomach contents. Small doses of senna mixture were administered to several patients who were not suffering from gastric ulcer. These doses were repeated every four hours until griping pain was well established. The abdomen was then covered with
large ice-bags and the same result was obtained in each case. The patients stated that the pain was lessened in severity but became continuous instead of spasmodic. A further experiment was performed in order to find out whether the icebag lessened the stay of food in the stomach. The stomach was washed out at bedtime and left empty. At eight O'clock in the morning a weighed quantity of fish and toast was given and the stomach contents were withdrawn three hours later, filtered and the residue weighed. This was done for several days until it was found that the residue was fairly constant. An icebag was then applied continuously to the epigastrium and it was found that there was no appreciable alteration in the weight of the residue. Bolton (3) has shewn definitely that stasis of the stomach contents tends to delay the healing of gastric ulcer. If it is true that the icebag causes stasis one would expect to find that cases treated with the icebag would be longer in healing but the reverse is the case. Not only is the duration of pain shorter when the ice bag is applied but there is a marked reduction in its severity from the moment of application. There is further a distinct advantage in its psychical effect and it helps to keep the patient strictly in the supine position. It is therefore useful as a sort of mental and physical anchor.
On admission the patient receives a cleansing enema and the bowels are then left alone for a week. After that the patient has an enema every second morning when necessary. After the fourth week a little phosphate of soda is given every morning in warm water. The toilette of the mouth is carefully attended to in order to avoid the swallowing of bacterial toxins. Before the commencement of treatment, the dental surgeon is asked to examine the mouth and the teeth are scraped and cleaned and cavities are dressed. The subsequent cleansing of the teeth is carried out by the use of a small piece of linen and a salol mouth wash. Some weeks after the patient gets out of bed all carious teeth are filled or extracted and dentures are supplied to make good any deficiencies.

Drugs are not administered as a routine practice but in some cases 30 grains of bismuth carbonate were given in suspension early in the morning, late at night and also once through the night if the patient wakened. The bismuth was given in this way so that it might have a better chance of acting on the mucous membrane but no advantage was observed from its use.

The following is the diet in a typical case, and, both in hospital and private cases, it should be carefully charted. It is very important that detailed instructions should be carefully written down for the nurse or attendant. On the first day,
one egg, an ounce of lactose and half a drachm of tincture of iron are mixed in one pint of water and given in 2 ounce doses at intervals of one hour during the day. During the night sips of water are allowed if desired. The eggs are increased by one daily until six are being taken. After the sixth day half of them are lightly boiled or rather set by being placed for seven minutes in boiling water that has just been taken off the fire. A little thin stale bread with butter is allowed with the boiled eggs. The sugar of milk is also increased by one ounce daily till six oz. are being taken. Two pints of water are given in the mixture on the second day and on and after the third day the patient takes two and a half pints in this way. One drachm of tincture of iron is given in the mixture on the second day and increased by one drachm daily till six drachms are being taken. This large dose was easily taken by most of the patients without any sign of nausea or irritation but, when any untoward symptom presented itself, it was thought safer to omit the iron for several days. On the third day one ounce of cream is given in the mixture, and, if it agrees, two ounces are given daily on and after the fourth day. On the fifth day one ounce of raw fresh meat juice is given; it can either be added to the mixture or given with water at intervals. The meat juice probably excites the secretion of hydrochloric acid but there was no clinical evidence that it did any harm except in one case when it was
swallowed undiluted, in error, and set up pain and nausea. One objection to giving meat juice is that it renders the search for occult haemorrhage useless. In the first few cases some scraped meat was given in the form of sandwiches with thin stale bread and butter. This appeared to do no harm but was omitted in the later cases as possibly unsafe. In the second week the patient gets arrowroot, custard, well cooked rice, boiled eggs and bread and butter along with the egg mixture. The cream is now given with the arrowroot and custard. As the diet is increased the bulk of the mixture is gradually diminished until in the fourth week the patient only gets a tumblerful at eleven and four as a vehicle for the tincture of iron. On the fourteenth day the ice bag is removed and the patient is allowed to move more freely in the bed. Pounded fish is added to the diet in the third week, pounded chicken in the fourth and on the twenty-eighth day the patient is allowed to get up for a few hours. When it is possible a further period of three weeks should be spent in hospital but the crowded state of the wards often prevents this and patients are allowed to go home a little earlier with strict instructions to convalesce for some weeks quietly. They are specially warned against attempting to lift anything heavy or raising the arms much above the head as this frequently causes a return of the pain. They are allowed to eat carefully prepared mince, tripe, brains, cauliflower and mashed potatoes but they are forbidden to take meats of coarse fibre such as beef and pork, the stalks and skins of fruit and
vegetables, seed jams, vinegar, condiments and spices. They are also warned against the use of new bread, pastry, scones, oily and greasy foods, strong tea and coffee. It is strongly enjoined on them that the month in bed is only a preliminary part of three months' treatment and that even after that, if they wish to avoid a return of their symptoms, they must pay strict attention to their diet, to proper mastication and to regularity of the bowels. The iron is continued in the form of Blad's pills, six of which are taken daily for one month and then three daily for a second month. The first evidence of returning trouble is usually a slight burning sensation in the epigastrium and patients are directed to report this at once or to lie up and take very light diet. There is very little doubt that the after treatment is quite as important as the Hospital regimen and it is not too much to say that the question of relapse depends largely on the way in which the patient is able or willing to carry out the after treatment. I have always found that relapses occur most frequently amongst those who look on the treatment as a hateful restriction and return to their old habits as soon as they escape from surveillance.

The following table shews how the caloric value of this diet compares with that of Lenhartz:

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<table>
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</thead>
<tbody>
<tr>
<td>1st day</td>
<td>198</td>
<td>280</td>
</tr>
<tr>
<td>2nd &quot;</td>
<td>396</td>
<td>420</td>
</tr>
<tr>
<td>3rd &quot;</td>
<td>744</td>
<td>637</td>
</tr>
<tr>
<td>4th &quot;</td>
<td>1092</td>
<td>777</td>
</tr>
<tr>
<td>5th &quot;</td>
<td>1330</td>
<td>956</td>
</tr>
<tr>
<td>6th &quot;</td>
<td>1528</td>
<td>1135</td>
</tr>
<tr>
<td>7th &quot;</td>
<td>1968</td>
<td>1588</td>
</tr>
</tbody>
</table>
After the seventh day the caloric value does not rise so rapidly. If 3,000 calories are regarded as necessary for an average man doing muscular work it is seen that both these diets afford ample sustenance for a patient lying quietly in bed and are greatly superior to rectal feeding from which a food value of 500 calories is the most that can be obtained.

This method of treatment has been carried out in more than forty cases and the results shew that it is at least as successful as rectal feeding, is much pleasanter for the patient and, as it has been employed successfully in cases of recent haemorrhage is not attended with special danger. These results shew also that it is not necessary to use milk in the treatment of gastric ulcer. The further proposition that raw egg is a very much better food than milk in gastric ulcer is one that is admittedly difficult of proof and no sound deduction can be drawn from a comparatively small number of cases.

Thirty six cases are reported here and during the same period (i.e. from May 1909 till January 1911) eleven other cases of gastric ulcer were met with and for the following reasons were not included in the report. Three of them were married women who declined to lie up. In another case, a married woman, was suffering from prolonged otorhoea and also from purulent endocervicitis and neurasthenia. It was found impossible to carry out the treatment thoroughly but she improved considerably on a diet of raw egg and sugar. Another case, a single woman, was Matron of
Salvation Army Home and she would not give up her work. She took the egg mixture for a month without lying up and made a fairly good recovery. In two other cases, both single women, it was not thought desirable to submit them to strict treatment on account of complications, discharging tubercular sinus of the hip in the one case and pulmonary tuberculosis with cavitation and haemoptysis in the other. The girl with hip disease did fairly well and got rid of her gastric symptoms under partial treatment. The other did very badly and had repeated attacks of haematemesis. She was finally discharged from hospital to undergo open air treatment, the gastric condition being not much improved. Another case, a hospital Sister, was placed under treatment by me but I had to hand her over to the Assistant Physician owing to absence from town. She met with a severe mental shock during treatment and her recovery was delayed and convalescence very tardy. In another case, a married woman of 50, who had been suffering for two weeks from haematemesis, her doctor was of opinion that she was suffering from malignant disease. She was in a very low state with a pulse of 125 when I saw her in consultation but I could find no definite evidence of carcinoma and the history pointed rather to simple ulceration. She was placed on egg mixture for 3 days but the vomiting and haematemesis persisted and the pulse became more rapid. She was then given half an ounce of peptonised milk hourly and the vomiting ceased although the stools still contained blood. The milk was gradually increased
for the next ten days but the pulse rate rose to 140 and she died suddenly on the thirteenth day after I first saw her. An operation might have been performed in this case but she was not in good condition for it. No post mortem examination was allowed and so the diagnosis could not be confirmed. This was the only fatal case in the series. The remaining cases were both males, one a farmer who came in for advice from a considerable distance but declined to undergo any treatment involving prolonged rest. The other case was a barrister with an old standing ulcer and pyloric stenosis with a considerable amount of dilatation. He has since been successfully operated on but his case is of special interest from the fact that he found that, while taking the egg mixture, he was able to carry out his work fairly well without periodic vomiting or much evidence of fermentation.

In addition to these cases there were several others where the presence of an ulcer was suspected but could not be proved. Some of these cases were treated with the raw egg diet and excellent results were obtained but they are not included in the reports. All cases in which the diagnosis seemed tolerably certain and in which it was possible to carry out the full treatment are reported here and they are thirty six in number. Two cases, those in which operation was subsequently performed, might have been omitted as they were cases which were quite unsuitable for medical treatment.

In making a diagnosis special attention was paid to the presence of severe localised pain in the epigastrium.
Cases in which there was vomiting along with vague indefinite pains in the abdomen were not admitted as cases of ulcer. In all the cases reported the patients were specially questioned with regard to the severity of the pain and its localisation. Considerable importance was also attached to the presence of definite areas of hyperaesthesia. It has not yet been clearly proved that these areas of hyperaesthesia do not occur in gastric neuroses but their absence is certainly of value in helping to eliminate cases of anaemic dyspepsia. More difficulty occurs in drawing the line between ulcer and hyperchlorhydria. Cases No 23 and No. 26 might perhaps have been classed as cases of hyperacidity but it is difficult to say exactly when simple hyperacidity ends and gastric ulcer begins. Here again the presence of definite hyperaesthesia was held to weigh in favour of ulcer. When there is any doubt it is safer to treat the case as belonging to the more serious class. No attempt has been made to distinguish cases of gastrostaxis as the exact diagnosis of that condition is still uncertain and proof of its separate existence has not been firmly established. Bolton (4) has recently reported cases of haemorrhage from a small point in the centre of an almost healed ulcer that might easily have been overlooked. In the meantime no harm is done by treating these cases as if actual ulceration existed. No attempt has been made either to draw a hard and fast line between gastric and duodenal ulcer as both conditions often co-exist.
After a diagnosis has been arrived at, it becomes necessary to decide which cases are to undergo medical treatment and which are to be recommended for operation. Cases in which there is pyloric stenosis with dilatation, cases with well-marked perigastric adhesions, and those in which proper medical treatment has failed should be advised to submit to operation. In all other cases a thorough and extended course of medical treatment should be recommended. So long as a proportion of cases, however small, recover permanently after medical treatment, so long as a proportion, however small, do not recover after operation and so long as a proportion, however small, die from the operation, the physician has no right to deny the patient the chance of recovery from medical treatment alone. Surgery is of great assistance in some cases of gastric ulcer but there is no warrant for saying that gastric ulcer is a surgical disease.

Although it is easy to say that dilatation of the stomach is an indication for operation, it is not such an easy matter to decide when a moderate degree of dilatation exists. Well marked dilatation can be readily demonstrated by succussion and other methods. But in slight degrees of dilatation which may be quite sufficient to hinder the healing of an ulcer, the lower border of the stomach can be satisfactorily mapped out only by careful palpation and percussion after distension with soda and acid and this is not a safe proceeding in recent ulceration. Where delay occurs in the
healing of an ulcer and where there is no definite evidence of perigastric adhesions, one should suspect the presence of some dilatation and stasis. This probably explains the cases reported from time to time in which the patients were doing badly on a sloppy diet and began to improve at once when solid food was given. These cases are certain to relapse and and therefore after they recover they should be carefully examined by distension with soda and acid. If ptosis of the lower border is made out, they should be operated on at once or at the first recurrence of the symptoms.

The following tables shew the incidence of the various symptoms and physical signs in the 36 reported cases:

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain after food</td>
<td>35</td>
</tr>
<tr>
<td>Vomiting</td>
<td>27</td>
</tr>
<tr>
<td>Nocturnal pain</td>
<td>18</td>
</tr>
<tr>
<td>Dorsal pain</td>
<td>16</td>
</tr>
<tr>
<td>Haematemesis</td>
<td>17</td>
</tr>
<tr>
<td>Melaena</td>
<td>14</td>
</tr>
<tr>
<td>Carious teeth</td>
<td>11</td>
</tr>
<tr>
<td>Deficient teeth</td>
<td>5</td>
</tr>
<tr>
<td>Constipation</td>
<td>18</td>
</tr>
<tr>
<td>Anaemia</td>
<td>6</td>
</tr>
<tr>
<td>Chlorosis</td>
<td>7</td>
</tr>
<tr>
<td>Tenderness in the epigastrium</td>
<td>24</td>
</tr>
<tr>
<td>&quot; &quot; dorsal region</td>
<td>7</td>
</tr>
<tr>
<td>&quot; &quot; other regions</td>
<td>4</td>
</tr>
<tr>
<td>Cutaneous hyperaesthesia</td>
<td>17</td>
</tr>
<tr>
<td>&quot; hyperaemia</td>
<td>7</td>
</tr>
<tr>
<td>Exaggerated rectus reflex</td>
<td>4</td>
</tr>
<tr>
<td>Tenderness of the rectus muscle</td>
<td>4</td>
</tr>
</tbody>
</table>

The case in which there was no pain after food was a duodenal ulcer. Pain means severe, localised pain in the epigastrium and it is obvious that this is the most important diagnostic point. Haematemesis and melaena were combined in seven cases so that haemorr-
hage was present in 24 cases. In 19 cases the haemorrhage was recent and in 2 cases it recurred after treatment was commenced. In one case bright red blood occurred in the stools and, as no local cause could be found, there was probably an erosion of the large intestine or this may have been a case of gastrostaxis with oozing of blood from the bowel also. In some of the cases the haemorrhage occurred during the menstrual period as is frequently found in cases of ulcer. If there were no connection between the two things, one would expect the haemorrhage to occur at that time in about 25% of cases. The actual percentage is higher but it is usual to find that there is an exacerbation of the pain also at that time. Probably the explanation is that the more frequent haemorrhage is due to the rise in blood pressure at the commencement of menstruation. It is curious that amenorrhoea was noted as being present in only two cases one of whom was pregnant. In one case there was hyperaesthesia over the vermiform appendix, in another over the gall bladder and in a third below the umbilicus. The last symptom has been taken as evidence of gastroptosis but it was definitely excluded in this case, No. 9. He had suffered from pain for five years and was slow in healing but 14 months later he reported that he had had absolutely no return of his symptoms whatever; a most satisfactory and rather unlooked for result. In case No. 32 there was tenderness and hyperaesthesia along the left costal margin. This usually indicates
adhesions to the abdominal wall but the patient was given the chance of medical treatment against one's better judgment. She relapsed within three weeks of leaving hospital and is coming back for operation. In most cases the tenderness and hyperaesthesia were limited to a small area in the midline half-way between the umbilicus and the base of the xiphisternum. The age incidence shews that as usual most of the cases occur between 30 and 50 years of age, the male average being later than the female. 16 of the patients were married, 20 single. The males numbered 5, the females 31, but the undue preponderance of the latter was owing to the fact that I was, during most of the time, in charge of the female ward in the hospital. During the period reported on, I saw, in private practice, 25 cases of gastric ulcer of whom 6 were males and 19 females. Of the total 47 cases seen, 22 were housewives, and 15 domestic servants. Only 2 of the latter specified their occupation as that of cook but most colonial domestics are general servants who do cooking along with other work. There were 2 shop girls, 2 tailors, and one each of the following: nurse, engineer, farmer, bookmaker, labourer and barrister. It is of special interest to note that only 13 patients were anaemic and that of these only 7 had anaemia of the chlorotic type. The anaemia was usually of a mild degree, except in three cases in which the red cells were below 3,000,000 per c.m.m. Three of the cases were distinctly neurotic. With regard to the type of ulcer, 5 were acute (one of them being
recurrent), and five others might be classified as acute ulcers with delayed healing (one of those also being recurrent). The remaining 26 were typical chronic ulcers.

In the acute ulcers the pain disappeared in an average of 48 hours after treatment was commenced, except in one case where it lasted for 22 days. In the chronic cases the pain disappeared in an average of 5 days but it is more convenient to divide the chronic ulcers into two classes in this respect. In one class we find 18 cases with an average of 1.25 days, in the other 8 cases with an average of 13 days. This does not mean that the pain lasted during the whole of that time but that the last day is taken on which pain was felt. It may have been absent for several days previously. In most of these eight cases the pain returned after having been absent for several days. Cases No. 2, 15 and 32 were cases in which operation had been recommended as they were not suitable for medical treatment. Case No. 10 was a duodenal ulcer in a young man. Case No. 28 had a slight return of pain on the 14th day after eating a potato given to her by a mistake on the nurse's part. Cases No. 11 and 14 were both neurotic cases. The other case in which pain returned was case No. 7, a man of 46, who had a slight return of pain on the 11th day. In the uncomplicated cases the pain as a rule soon disappeared and did not return. Two patients vomited on first taking the egg mixture but they afterwards took it quite well.

Of the patients who were weighed before going to bed and on getting up it was found that eight cases
gained an average of 5.1 lbs and that 13 lost an average of 3.6 lbs. This corresponds closely with Spriggs' (5) results in the Lenhartz treatment. 8 of his cases gained 4.2 lbs each and 6 lost 3.5 lbs each. But there is this difference that Spriggs took the alteration in weight noted on leaving hospital, not on getting out of bed. All gastric ulcer patients put on weight rapidly after treatment. What is required is a method of treatment that will result in little, if any, loss of weight during the prolonged rest in bed. If an average is taken over the 20 cases that were weighed, the loss of weight per patient is found to be exactly 4 oz, which is practically inappreciable.

All the patients except one were quite well and free from gastric symptoms when they left hospital and were able to take a mixed diet. The exception was one of the acute cases, No 19. Her pain continued till the 22nd day and she had a feeling of fullness and discomfort after food till the 32nd day. She was discharged from hospital on the 40th day and was quite well for a few days before that but she has suffered from indigestion off and on ever since. On the 31st March 1911 she reported that the severe pain had returned so that she may be looked on as an uncured case. Of the nine other acute cases 2 have relapsed, No. 16 almost immediately and No. 11 quite recently. Five report that they have remained quite free from symptoms and 3 could not be traced. Case No. 16, which relapsed soon after leaving hospital, had no tenderness or hyperaesthesia in the
epigastrium but had definite hyperaesthesia over the appendix and so possibly the gastric symptoms are referred from the appendix.

Of the 5 male chronic cases, 2 report that they have remained quite well and free from symptoms. The third, No. 7, has remained well except on three or four occasions when he has acute dyspepsia for a day or two after eating beef. The fourth, who was only under treatment for a fortnight, has lately been suffering from indigestion but not from severe pain. The fifth, No. 10, was a duodenal ulcer and relapsed soon after leaving hospital. These results are eminently satisfactory as chronic ulcers in males are among the most difficult cases to treat. The three who have recovered have remained well and have been fit for work for 13, 15 and 17 months respectively. It is noteworthy that the only case which relapsed was also the only case which had had the benefit of hospital treatment. None of the others even had a trained nurse but were nursed by unskilled relatives. The 21 female chronic cases have all been traced. Two were unrelieved and were operated on. Of the remaining 19, 2 have relapsed. Case No 32 relapsed almost immediately but she had been recommended for operation and was not, properly speaking, a medical case. The other, No. 11, who has relapsed quite recently, is a neurotic girl who, her mistress tells me, is very careless about her diet. Of the others 3 report that they have occasionally had a slight sensation of heat in the epigastrium,
and three that they suffer frequently from flatulence and also, if they eat beef or cabbage, from pain. Eleven report that they have had no return of their symptoms. These results may be summed up as follows: of 10 acute cases, 9 were relieved, 1 has relapsed, 5 have remained free from symptoms and three could not be traced. Of the 26 chronic cases 24 were relieved, three have relapsed, 8 suffer from dyspepsia (3 of them in a very slight form) and 12 have remained free from symptoms. Some of these cases have been so recently under treatment that the results are of little value as an indication of the permanency of the relief afforded. They are of value chiefly in giving additional evidence of the advantages of immediate feeding as a means of relieving the symptoms of gastric ulcer. If it can be shewn that the results are at least as good as those obtained by rectal feeding and prolonged starvation there is no advantage in the latter method that will compensate for its obvious disadvantages. The discomfort of the patient, the loss of weight, the occasional occurrence of parotitis and the necessity of having a trained nurse in attendance constitute serious objections to this method and can be avoided by immediate feeding. The rapid improvement in the patients' condition is evidenced at once by the disappearance of acetone from the breath and urine as soon as feeding is begun. During the first eight days, while the cells are spreading over the floor of
of the ulcer it is inadvisable to give solid food. Meat or a bulky insoluble carbohydrate would remain too long in the stomach and so delay healing. It is essential that for the first week the diet should be fluid, non irritating and easily digestible. A watery solution of raw egg fulfils these conditions better than a suspension of milk curd; and peptonised milk has the disadvantage of exciting the secretion of gastric juice without giving it any work to do. The present series of experiments may fall short of proving that raw egg is greatly superior to milk as a diet for gastric ulcer but at least they prove that it is possible to treat ulcer without the use of milk and that ulcer cases so very well on a diet of raw egg and sugar. Subjoined are the reports of 36 cases. An extensive bibliography has not been prepared but the sources of some of the more recent references are noted.
(1) Bolton, Practitioner, September 1910, p. 301.

(2) Deutsch. Archiv. f. klin. Med. 1890 XLVI p. 296

(3) Bolton, Practitioner, September 1910, p. 311.

(4) Bolton, B.M.J. May 21, 1910, p. 1222.

CASE I

H. E. 18 years, single, domestic; admitted to Miller Ward, Dunedin Hospital, on May 5th 1910; complaining of vomiting after food, sometimes immediately, sometimes after an interval of half an hour; also of pain after meals in the epigastrium and behind the sternum. The pain and vomiting began about three months ago. The pain often lasts till the next meal and is relieved by the taking of more food. The bowels are constipated, only moving once a week. Patient feels very weak and suffers from shortness of breath on exertion. Has not menstruated for four months. Suffers from giddiness at times. Appetite poor.

Examination.
Thin, anaemic; tongue clean and glazed, some of the upper teeth missing, others good; epigastrium tender 1½ inches above the umbilicus, area of cutaneous hyperaesthesia in same region; left ventricle 4 inches from mid-line; systolic murmurs in mitral and pulmonary areas; red cells 3,540,000, haemoglobin 60%; weight 7 stone.

Progress.
May 5 Peptonised milk 3 oz. every two hours, pain constant, no nausea.
" 6 Egg mixture begun, still has pain.
" 7 Slight pain at intervals, ice bag applied to epigastrium.
" 8 No pain; feels well; great relief from the ice bag.
" 9 Tinct. ferri perchlorid. one drachm added to mixture.
CASE I

Progress (Continued)

May 10 1 oz. of cream and 1 oz. of meat juice added.

11 Is now getting 5 eggs, 5 oz. of sugar and 6 drachms tinct. ferri.

12 Half the eggs boiled and given with thin bread and butter; blood count 3,790,000, haemoglobin 68%.

17 Very hungry; allowed pounded fish and potatoes and gravy.

21 Pounded chicken; red cells, 4,111,000, haemoglobin 74%.

27 Up for 3 hours to-day; weight 6 st. 13 lbs. red cells 4,340,000.

June 3 Has had no pain or discomfort since May 7th; discharged to rest at home with instructions to take Island's Pills, 6 daily for a month and then 3 daily for another month.

Remarks.

This was probably an acute ulcer with delayed healing. The localised pain, tenderness and hyperaesthesis pointed to ulcer rather than to hyperacidity. On February 28th 1911 patient reported that she had no return whatever of any gastric symptoms and could take a mixed diet quite well.
CASE II

H. H. 27 years, domestic; admitted to Miller Ward on May 26th 1910, complaining of pain after food, from which she began to suffer six years ago; used to vomit after meals and this relieved the pain; it was aggravated by walking about; it kept her awake at night or wakened her up if asleep, usually about midnight; she used to vomit dark brown stuff. She has been in hospital four times since then and was always "cured" temporarily for about one month. On one occasion she remained free from pain for three months but usually it began again as soon as she walked about much. The pain is worse now and seldom leaves her. When it is very bad the motions are dark. She does not vomit now. Bowels very constipated, act only twice a week. She had her teeth removed after the last attack and now wears false ones. She lives chiefly on milk. She has always been anaemic and at 14 she had two fits after which her right arm was paralysed for a time. Her mother was an epileptic and a sister suffers from gastric ulcer.

Examination.

Looks anaemic and exhausted and is slightly jaundiced; tongue flabby, tremulous and covered with a white fur; pain and tenderness over the stomach, worst half way between the umbilicus and base of the Xiphisternum. Area of cutaneous hyperaesthesia and hyperaemia in the same region. Epigastric reflex exaggerated on left side. Rectus muscle tender to pressure. Heart
Examination (continued)

apex in sixth interspace and left ventricle half an inch external to mammillary line; well marked carotid pulsation; pulmonary systolic murmur and bruit de diable. No acetone in the urine. Knee jerks exaggerated, no plantar or pharyngeal reflex.

Red cells 3,625,000, haemoglobin 60%.

Progress.

May 26 Rectal injection of peptonised milk 4 hourly.

27 One egg, 3 drachms sugar of milk, half a drachm tincture of iron given in ten oz. of water during the day.

28 Slept well but vomited a little after waking; slight pain; ice bag to epigastrium.

29 Feels well, no pain, better colour. Is now getting 3 eggs, 2 oz. of sugar and 2 drachms of tinct. ferri.

30 Had pain this morning from 7 to 12; the egg mixture given hourly as usual, had no effect on the pain.

31 No pain; feels well; getting 5 eggs, 4 oz. of sugar and 4 drachms of tinct. ferri, 1 oz. of cream and 1 oz. meat juice.

June 1 No pain; custard and arrowroot added to diet.

4 Bread and milk given; is feeling well and has had no pain since May 30th.

5 Eight eggs, two of them lightly boiled, thin stale bread and butter, one oz. of scraped meat. Red cells 3,872,000; haemoglobin 65%.

7 Pounded fish added; had a slight pricking sensation in the epigastrium afterwards. Slight tenderness but no hyperaesthesia.
CASE II

Progress (continued)

June 8 Patient strained herself while turning over suddenly in bed. Had a sharp pain in the region of the gall bladder and some tenderness in the epigastrium just to the right of the middle line. Fish omitted, diet otherwise the same.

" 9 No pain while lying still but on moving has pain in the region of the gall bladder.

" 11 Had a good night, no pain; ice bag discontinued.

" 14 Awakened at 4 a.m. by severe pain in the right side shooting round to the back and made worse by taking a deep breath. Patient very nervous and has developed coarse rhythmical tremor of the right arm and hand. On examination the right axillary region was found to be tender and on pressure with the stethoscope fine friction was heard in the 5th, 6th and 7th interspaces. T. 100.5  P. 86. Symptoms continued for a week.

" 21 T. normal, P. 74, pain has disappeared and no pleural friction can now be heard. Red cells 4,820,000. Haemoglobin 75%. Patient suffered from occasional attacks of pain in the right side till June 30th when she agreed to submit to operation. This had been urged on her when she entered the Hospital but she would not consent. Transferred to Surgical Ward.

July 5 Operation performed to-day. Numerous adhesions found and a healed ulcer on the posterior surface of the stomach. Posterior gastrojejunostomy performed. Patient made an uninterrupted recovery and has remained free from symptoms ever since. Now takes full diet and works as a domestic.

Remarks.

The case was from the first regarded as unsuitable for medical treatment in view of the fact that thorough treatment had been carried out so often and had given so little relief. Probably the diet was increased rather rapidly owing to the great satisfaction that the patient expressed while under treatment.
CASE III.

D. R. 22 years, female, married. Seen in consultation on June 2nd 1909 and admitted to Miller Ward June 4th; complaining of nocturnal pain in the stomach and occasional vomiting of blood. For the last four months she has had attacks of pain during the night coming on about once a fortnight and lasting all night; no pain after food. Every three weeks she vomits about a teaspoonful of bright red blood. On May 31st she vomited an ounce of blood, shivered a good deal and then fainted. Takes a light breakfast of tea and bread and butter at 11 a.m. and the attacks usually come on about half an hour afterwards. She had her first baby nine months ago, and was very bad at the time and remained weak for some months. During the last 12 months she has suffered a good deal from flatulence. She never vomits apart from the blood and has no pain after food but occasionally lies awake all night with a pain in the stomach. Appetite good, bowels regular, takes tea twice daily and always eats slowly. The back teeth are bad; menstruation regular; has never been strong and has always suffered from headaches. Her father died of alcoholism, her mother and two brothers suffer from heart disease and two sisters suffer from ulcer of the stomach.

Examination.
Patient looks healthy and plump. Back teeth decayed, gums unhealthy, tongue furred, no cutaneous or muscular tenderness or hyperaesthesia, heart normal,
CASE III  D. R.

Examination (continued)

red cells 4,200,000, haemoglobin 30%, some diacetic acid and acetone in the urine, chlorides normal, weight 8 stone, 3 lbs.

Progress.

June 4 Mixture given at hourly intervals, 1 egg, two drachms lactose, half a drachm tinct. ferri and ten oz. of water. The strength of the mixture was gradually increased until June 11th she was taking 8 eggs, 4 oz. of lactose, half an oz. of tinct. ferri and 3 pints of water daily, half the eggs being lightly boiled after the 4th day.

5 Pain through the night. Ice bag applied to epigastrium.

6 Pain less during the night, vomited a little blood this morning.

7 No pain but again vomited a little blood. Feels hungry. 1 oz. of cream and 1 oz. meat juice added.

8 Half a drachm of blood at 9 a.m. Slight pain in the afternoon. Slept well last night.

9 No pain or blood, slept well.

10 Custard, arrowroot, well baked rice and 1 oz. of craped meat in sandwich added to diet. Red.cells 4,400,000. Haemoglobin 80%.

17 No pain since June 8th; ice bag discontinued to-day. Pounded fish given, amount of fluid in mixture being gradually reduced as the diet is increased.

19 Pounded chicken.

24 Red cells 4,590,000. Haemoglobin 85%.

July 2 Up to-day. Weight 7 stone, 13 lbs.

10 Discharged from hospital to convalesce at home.
CASE III

Progress (Continued)

July 12  Had a slight attack of pain to-day after cutting up sandwiches and washing dishes without permission. Patient was ordered to rest for a fortnight and her subsequent progress was uneventful. A few weeks later her teeth were removed under an anaesthetic and since then she has remained free from symptoms.

Remarks.

A diagnosis of ulcer was probably justified in this case but might be questioned. It is noteworthy that the diet was increased even while the patient was suffering from haemorrhage and no harm resulted. On February 27th 1911 patient reported that she was well and had had no return of her symptoms.
CASE IV

J. Z. 42 years, female, married; admitted to Miller Ward on June 16th 1909, complaining of attacks of faintness accompanied by tarry stools. During the last six weeks she has had several attacks of faintness with palpitation and profuse perspiration followed by the passage of tarry motions; no pain or vomiting; had similar but slighter attacks two years ago. Six years ago she began to have pain two hours after food, chiefly after breakfast and always after taking meat. The pain was relieved by drinking hot water; no nocturnal or hunger pain; has had no pain for a year as she has lived entirely on liquids. Bowels regular; health was always good up till 6 years ago. Her father died of consumption.

Examination.
Very pale with lemon tinge which she says is her natural colour. Tongue flabby, indented and furred, teeth good, no epigastric tenderness. Chest emphysematous; left ventricle one inch outside mid-clavicular line. Red cells 3,160,000. Haemoglobin 70%. Weight 9 stone 12 lbs.

Progress.
June 16. Ice bag to epigastrium. Mixture given containing one egg, 1 oz. of sugar, and 1 drachm of tinct. ferri in 1 pint of water. This was gradually increased till 8 eggs, 4 oz. sugar and 3 pints of water were being taken on June 25th. The iron was increased to half an oz. on June 20th, 5 drachms on July 7th and 6 drachms on July 14th.
CASE IV  J. Z.

Progress (Continued)

Arrowroot, custard, scraped meat sandwiches, cream, meat juice and boiled eggs were gradually added. After July 5 fish and chicken were allowed. Patient had a little nausea for the first two days but after that took the egg mixture quite well. Blood count on June 25th was 3,420,000 with some poikilocytosis. On July 8th the count was 4,111,000. On July 11th she got up for an hour and felt quite well. Discharged, on July 21st, her weight then being 10 st. 5½ lbs. On July 11th she weighed 10 st. 1 lb.

Remarks.

This was a very satisfactory case. The ulcer was a chronic one, the patient was much reduced and very anaemic from the haemorrhage. She had been under treatment outside for six weeks with no improvement but she began to improve immediately after coming into hospital; her diet was rapidly increased and her progress was uninterrupted. On Jan 31st 1911, six months later, she reported that she had remained quite free from any symptoms of gastric trouble.
CASE V

J. C. 17 years, female, single, domestic servant; admitted to Miller Ward on June 22nd 1909, complaining of pain after food and vomiting of blood. Four months ago had a similar attack, came into hospital and was treated by rectal feeding. Remained in Hospital one month; was free from symptoms till June 15th when she was sick after breakfast and vomited a cupful of bright red blood. This happened again on June 21st. She began to have pain after food one year ago; gets short of breath on exertion; menstruation always irregular, occurring at intervals of two to three months; discharge has been scanty, thin and watery for a year past. Had a baby 12 months ago and is now two months pregnant.

Examination.
Anaemic, unhealthy looking, acne eruption on face and back. Tongue clean, teeth good; pain and tenderness in the epigastrium just below the tip of the ensiform hyperaesthesia and hyperaemia on stroking the skin in the same region; epigastric reflex exaggerated on the left side; red cells, 4,000,000. Haemoglobin 65%; weight 3 st. 10½ lbs.

Progress
June 22. Patient was placed on egg mixture, 1 egg, ½ oz. of lactose, 1 drachm of tinct. ferri and 1 pint of water. The mixture was gradually increased till 3 eggs, 6 oz. of lactose, 6 drachms of tinct. ferri and 3 pints of water were taken on June 29th. She took the mixture well and had no pain or tenderness after June 23rd.

" 25 Cream and meat juice, 1 oz. of each.
" 26 2 oz. of cream.
CASE V. J.C.

Progress (Continued)

June. 27 Arrowroot and custard.

30 Half the eggs boiled and given with thin bread and butter.

July 1 1 oz. raw meat in sandwiches.

5 Pounded fish; red cells 4,160,000, haemoglobin 75%.

12 Pounded chicken; ice bag removed.

15 Tripe.

20 Out of bed to-day for the first time; feels quite well; weight 9st. 8 lbs; red cells 4,300,000; haemoglobin 80%.

Aug. 12 Discharged; weight 9 st. 8½ lbs.

Remarks.

This patient did very well although she was fed by the mouth just after haemorrhage. She could not be traced.
CASE VI

T. J. 42 years, male, married, merchant tailor; consulted me on June 23rd 1909, complaining of pain after meals, of so severe a character as to render him unfit for work on several days in each month. Patient has suffered with his stomach for twenty years; at first chiefly flatulence, then many years ago began to get pain about two hours after meals. This has increased in frequency and severity till now it occurs after every meal. He has no nocturnal or hunger pain, no vomiting; the pain is usually situated in the pit of the stomach; sometimes also goes to the back; bowels constipated.

Examination.
Spare, nervous man, teeth fair, some missing, tongue coated; epigastrum tender at a point halfway between the base of the Xiphisternum and the umbilicus and slightly to the right of the mid line; cutaneous hyperesthesia at the same point; rectus muscle tender to pressure. As patient was unable to lie up at this time he was ordered gr.XXX of Bismuth Subnit. three times daily and placed on a diet of Banger's food, plasmon and beaten eggs. He improved considerably under this treatment but decided to go to bed on July 18th 1909.

Progress.
July 18. Ice bag applied to the epigastrium. Egg mixture, 1 egg, sugar 1 oz. water one pint. No iron was given in this case. The mixture was increased until 6 eggs, 6 oz. of sugar and 3 pints of water were
Progress (Continued)

being taken daily. Cream and meat juice were added on the fourth day and later well cooked rice, boiled eggs and scraped meat. The patient made an uninterrupted recovery, was allowed up on the 28th day and returned to his work one month later. He gained 2 lbs. in weight during treatment. He has been on full diet ever since and has never had any return of his symptoms. He is now quite bright and well and he never loses any time from his work.

Remarks.

This is an example of a very chronic ulcer which yielded completely to treatment as the patient has not had any recurrence up to the present date, January 31st 1911. The treatment was carried out by his wife from written instructions and was entirely satisfactory. The diagnosis of ulcer rather than simple hyperacidity was based on the presence of localised sharp tenderness and hyperaesthesia of the skin and rectus muscle but in such a case it is extremely difficult to be certain. He felt no pain after the treatment was commenced which further tended to confirm the diagnosis.
CASE VII

T. W. 46 years, single, engineer. Consulted me on August 26th 1909, complaining of pain after food. For seven years he had been troubled with his stomach, pain coming on about two hours after each meal; occasional acid risings but no vomiting. The pain begins about 10.30 a.m. and lasts till lunch; begins again about 3.30 and lasts till dinner, and begins again about bedtime lasting till one a.m. Often also it wakens him between 2 and 3 in the morning. The nocturnal pain is relieved by a drink of hot milk. The pain is chiefly in the pit of the stomach but also passes through between the shoulder blades. The bowels are regular.

Examination.

Tongue flabby and coated, teeth good. Patient looks worn out, pulse is weak, heart sounds feeble. No epigastric tenderness, no evidence of any dilatation of the stomach. As he could not lie up, he was ordered beaten eggs and Penger's food, lozenges of bismuth and a pill containing Atropin Gr 1/100 and extract of belladonna Gr 1/6 to be taken at bedtime. On the following night he vomited a pint of blood-stained fluid and determined to lie up at once. Weight 10 st. 4 lbs.

Progress.

Aug. 28th Ice bag to epigastrium. Egg mixture, 1 egg, 1 oz. of sugar and 1 pint of water. No iron was given in this case. The strength of the mixture was increased in the usual way.

"  29 Slight pain at intervals.
CASE VII

T. W.

Progress (Continued)

Aug. 30 Still has slight pain; 1 oz. of cream, and 1 oz. of meat juice.

" 31 No pain during day, a little through the night.

Sept. 1 Had slight pain for one hour last night. Custard and arrowroot added.

" 2 Slight pain for one hour last night. Slept from 9 p.m. to 7 a.m. Well cooked rice added.

" 3 Boil half the eggs, thin bread and butter with 1 oz. of scraped meat. Slight pain to-day.

" 7 No pain since Sept. 3rd but had a slight return of it to-day. Bowels acting naturally each day.

" 9 Pounded fish with bread and butter.

" 11 Feeling better every day. Sleeps well. Bowels rather loose.

" 16 Very hungry, sleeps well, never has any pain now - none since Sept. 7th. 1½ pints of milk added to diet.

" 23 Up to-day. On light mixed diet. Never has any pain. Weight 10 st. 6 lbs. Patient returned to work a month later.

Remarks.

This is another example of the successful treatment of a chronic ulcer. Patient returned to work feeling quite well and fit but in December 1909 he had a slight return of pain for two days. Since then he has remained free from symptoms except when he has taken beef. He is very fond of beef and on two or three occasions he has eaten heartily of it with the result that he has acute pain for two or three days after and has to live on liquids during that time. On Feb. 10th 1911 he reported that he had remained free from
Remarks (continued)

symptoms and quite fit for work except on the few occasions when he had been guilty of the above indiscretion.
CASE VIII

R. H. 33 years, female, married, entered a private hospital for treatment on November 15th 1909. On July 15th 1909 she was delivered of her second baby. A week before the birth she began to vomit blood in considerable quantities. She had had a similar experience before her first child was born some years ago. She was kept on peptonised milk for some time and the diet slowly increased. But she continued to have attacks of vomiting and also to have some pain in the stomach about an hour after food. There was found to be some tenderness of the epigastrium and cutaneous hyperaesthesia just above the umbilicus. Family history good. Patient has suffered from anaemia when a girl and has always had a delicate stomach.

Examination.
Well nourished, teeth good, tongue clean; epigastric tenderness and cutaneous hyperaesthesia; no evidence of dilatation of stomach. Red cells 3,820,000. Haemoglobin 70%. Weight 8 st. 10 lbs.

Progress.

Nov. 15 Egg mixture given in the usual way and gradually increased until patient was taking six eggs, six oz. of sugar, six drachms of tinct. ferri in 3 pints of water. The progress was uneventful, the patient being quite free from pain or nausea. An ice bag was kept on the epigastrium for two weeks. The towels were moved by injection on the 8th day. Custard, arrowroot, well cooked rice, cream and scraped meat were in succession added to the diet.

" 29 Pounded fish. Red cells 4,100,000. Haemoglobin 75%.

Dec. 7 Pounded chicken.
Dec. 13  Up today for the first time, feels well. The convalescence was somewhat tardy.

Patient went back to her home on Dec. 18th with a nurse but she was allowed to do rather much at first. The weight was then 8 st. 8 lbs. and the red cells numbered 4,300,000, haemoglobin 85%. She went away for a change after and gradually regained her strength. She remained perfectly well until December 2nd 1910 when she had an attack of vomiting but no haemorrhage. She was then four months pregnant. The vomiting and nausea passed off with a day's rest in bed and a diuretic mixture was ordered to ensure free diuresis.

Up till Jany. 31st 1911 she had had no return of her gastric symptoms.
J.E. 23 yeara journeyman cutter, consulted me on December 13th 1909, complaining of pain in the stomach. For five years he had suffered from this pain but it had become a good deal worse in the last six months. He had several times had to stay away from work for a few days at a time. The pain comes on immediately after food. It is worst in the pit of the stomach and occasionally passes through between the shoulders. The pain is always worse when he is sitting up. It used to waken him at night but has not done so lately. For four months he has lived on bread and butter. He has acid risings but never vomits. Frequently there is a pool of blood on the pillow in the morning. He suffers a good deal from flatulence. The bowels are regular, appetite poor and he has lost a good deal of weight. He now weighs 9 st. 4 lbs.

Examination.

December 13  Looks anxious and thin; tongue clean; teeth good; no cutaneous hyperaesthesia; some tenderness below the umbilicus. Lungs and heart normal, red cells 4,200,000, haemoglobin 80%; stomach percussion area normal after soda and tartaric acid. He was ordered Bismuth Carbonate, gr xx three times daily and beaten eggs.

18 The pain has been much worse and patient had to leave work on the 16th. He has now decided to lie up in his own home.

Progress.

Dec. 19th. Ice bag to epigastrium; egg mixture given and increased in the usual way till six eggs were taken daily. As the pain persisted, the iron was omitted entirely after the third day. The pain was severe at
CASE IX      J.B.

Progress  (continued)

intervals up till the ninth day but he was allowed
boiled eggs, custard, arrowroot, cream and meat juice.
The cream disagreed and had to be discontinued. He
had no pain after the ninth day. The ice bag was
discontinued on the 15th day, pounded fish was given
on the 17th day and chicken on the 24th. Patient was
very weak when he got up on January 18th and made a
slow convalescence. He afterwards went into the
country for three months. He then returned to town
and has worked, and lived on a full diet ever since
without any return of his symptoms up till January
31st 1911. On March 2nd he reported that he was still
keeping quite well.
CASE X

E. H. 22 years, labourer, single. Admitted to Dominion Ward on February 7th 1910, complaining of pain after food. In May 1909 he began to have attacks of pain which came on immediately after meals and lasted for two or three hours; sometimes continued up till the next meal which always gave relief for a little. He frequently passes tarry stools. Yesterday, after taking some pills, he vomited for the first time. He suffers from constipation and has lost a stone in weight. He is a non-smoker and teetotaller, and goes in a good deal for athletics. The teeth have been bad for years. He suffered from indigestion three years ago.

Examination.

Teeth very carious, pyorrhoea alveolaris, tongue clean; tenderness in mid-line between the umbilicus and the enesiform, hyperaesthesia of the skin in the same region; some rigidity of the recti muscles; no dilatation of stomach; red cells 5,300,000, haemoglobin 100%; weight 10 stone.

Progress.

Feb 7 Icebag to epigastrium. Egg mixture as usual.

" 8 No pain. 2 eggs etc.

" 9 Patient vomited some blood through the night and was allowed nothing but sips of water to-day.

" 10Commenced the mixture again with 1 egg.

" 11Feels well, no pain.

" 12Cream and meat juice added to mixture; also half a drachm of tinct. ferri. No pain or nausea; complains of difficulty in passing urine in the
CASE X  E.H.

Progress  (continued)

Feb. 12  recumbent position and so was catheterised until Feb. 16th when he was allowed to sit up to pass it.

Feb. 14  Cream increased to 2 oz; iron increased to 2 drachms; eggs 5.

"  17  Arrowroot and custard; two eggs boiled and given with thin stale bread and butter. Bismuth subcarbonat. gr. xxx night and morning with glycerine and water. Red cells 5,350,000.

"  18  Iron 4 drachms.

"  21  Had shooting pain in epigastrium, headache and pain in the right side, did not sleep well last night. Ordered Morph. Sulphat. gr. 1/8 hypodermically which gave immediate relief.

"  22  Slept badly, slight pain at intervals.

"  23  Continual headache, can't sleep, also complains of pains shooting down from the epigastrium; relieved by soap and water injection.

"  24  Has been quite well since the injection.

"  25  Pounded fish. Ice bag discontinued. No more pain.

March 1  Well cooked rice.

"  3  Pounded chicken.

"  10  Tripe. Got up to-day. weight 9 st. 9 lbs.

"  14  Discharged.

Remarks.

This patient was discontented and resented very much being kept in the recumbent position but he eventually did very well. The treatment was continued in spite of haemorrhage on the third day. The pain on the 13th and 15th days was evidently due to flatulent distension as it was completely removed by a soap and water
Enema. In February 1911, this patient reported that he had relapsed soon after leaving hospital and was still suffering severely from pain.
CASE XI

K. K. 35 years, single, domestic, consulted me on April 14th 1910 complaining of pain and vomiting after food. Had suffered from indigestion for one year past, pain coming on immediately after food or an hour later. During the last two months it has become more frequent and more severe. She now vomits after every meal, the vomited matter being sometimes dark brown in colour. She has been living on Benger's Food for the past fortnight, but still has pain and vomiting; the bowels are constipated. Patient has lost 3 stone in weight during the last six months and is now 7 st. 4 lbs. Ten years ago patient was sent to the country for six months as she was supposed to be suffering from phthisis. I saw her on her return. She had a chronic consolidation at the right base but there had never been any tubercle bacilli found in the sputum. A sister and two brothers died of consumption and the mother suffers from chronic pleurisy. She continued to suffer from chronic cough and expectoration until last February when she coughed up a small lime-encrusted fragment. On section this turned out to be a small piece of the alveolus of the jaw and questioning her I found that she had had all her teeth extracted under gas 13 years ago and that the cough had begun soon after.

Examination.
The tongue is covered with a brown fur. There is tenderness above the umbilicus and also an inch below and an inch to the left of it; hyperaesthesia of the epigastric skin and hyperaemia on stroking; the left
CASE XI  K. B.

Examination (continued)
epigastric reflex is exaggerated. The cardiac
impulse is in the 4th interspace; mitral and aortic
systolic murmurs; cardiac dulness normal; red cells
3,800,000, haemoglobin 70%; Weight 7 st. 4 lbs.

Progress
1910
April 16 Peptonised milk one drachm hourly, ordered
by the House Physician.
" 17 The same, one oz. hourly. Slight pain.
" 18 Egg mixture to be gradually increased;
slight pain at intervals. Ice bag to
epigastrium; this gave her a feeling of
great relief.
" 19 No pain to-day.
" 22 Slight return of the pain for half an hour
to-day.
" 23 No pain; cream 1 oz. and meat juice 1 oz.;
slight headache.
" 24 A little pain to-day, thinks the cream
disagrees in the mixture and so after this
it was given separately; still has head-
ache; arrowroot and custard given.
" 25 No pain from now on; half the eggs boiled
and given with thin bread and butter.

May 2 Flounder; Ice bag discontinued.
" 3 Well cooked rice.
" 12 Chicken.
" 19 Up to-day for the first time. Red cells
4,310,000, haemoglobin 90%; weight 8 stone
2 lbs. Discharged, on May 31st.; her
weight then being 8 st. 10 lbs.

Remarks.
This patient progressed rapidly and was very contented
and comfortable during treatment. She remained quite
well till Jany. 14th 1911 when she returned complaining
of a slight burning sensation in the epigastrium. She
Remarks (Continued)

was ordered to rest and take a light diet of eggs and milk. On January 21st she reported herself as being quite well again. On February 27th 1911 patient returned complaining that she was suffering from pain and occasionally from vomiting and the epigastrium was found to be tender and hyperaesthetic.
CASE XII

S. C. 43 years, female, married, admitted to Miller Ward on April 30th 1910, complaining of pain after food. For 18 months she has been troubled with her stomach, pain coming on immediately or about an hour after everything she ate. She has had remissions of a month's freedom from pain. The pain often caused vomiting which gave her relief. When she was very bad even fluids caused pain and vomiting. She also suffers a good deal from flatulence but there has been no constipation. During the last week she has passed motions containing dark blood every day.

Examination.

April 30th. The skin appears slightly jaundiced but she says that is her natural colour. All the teeth have been extracted but she is wearing false ones in the upper jaw only. There is slight tenderness above the umbilicus and also more marked in the region of the gall-bladder; the tongue is covered with a white fur; red cells 2,750,000, white 12,000, haemoglobin 50%.

Progress.

May 1 Egg mixture and ice bag to the epigastrium

" 2 Feels well, no pain.

" 3 Tinct. ferri one drachm added.

" 5 Has had no pain; cream and meat juice added; getting tired of the mixture.

" 6 Half the eggs boiled, bread and butter given; complains of being very hungry and of having turned against the mixture.

" 7 Arrowroot, custard, bread and butter, is now satisfied with the diet and takes the mixture quite well.
CASE XII  S. C.

Progress (Continued)

May 14  Pounded fish, getting 3 drachms of tinct. ferri since the 12th. Red cells 2,930,000, white 8,000, haemoglobin 55%.

" 19  Tinct. ferri increased to 4 drachms.

" 25  Chicken. Red cells 3,400,000, haemoglobin 65%.

" 28  Up to-day for the first time.

June 3  Red cells 3,650,000, haemoglobin 68%.
Discharged to convalesce at home, and to continue taking iron in the form of Pil. Bland 9 daily for one month and 6 daily for another month.

Remarks.

This patient had evidently lost a good deal of blood and haemorrhage was still going on when treatment was begun. She did very well but the anaemia was slow in disappearing. On January 31st 1911 she reported herself as having remained in good health since leaving hospital, except that she suffered occasionally from flatulence. She had had no return of the pain or vomiting and stated that all her life she had suffered more or less from flatulence.
CASE XIII

J. F., 38 years, female, married, has had ten children. Admitted to Miller Ward on May 6th 1910, complaining of pain and vomiting after food. Five years ago she began to suffer from pain after food. It came on 15 to 30 minutes after the ingestion of solids and has continued off and on ever since. She first vomited 16 months ago after a meal and the vomit contained blood. Since then she has vomited after almost every meal. The blood recurred six weeks ago when she vomited a quart of blood just after dinner. Next day she vomited "3 quarts" of blood and then fainted. She was kept in bed for a month by her doctor and fed on peptonised milk and liquid foods. When she got up the pain and vomiting returned. The pain occurs in the epigastrium, left hypochondrium and between the shoulders. It occasionally comes on during the night; bowels constipated.

Examination.

Patient looks very anaemic, emaciated and anxious; odour of acetone in the breath; teeth very carious; gums septic and inflamed; tongue coated with white fur; marked tenderness above the umbilicus and under the left costal margin; no tumour can be felt; red cells, 3,880,000; haemoglobin 75%; acetone and diacetic acid in the urine; weight 6 st. 8 lbs.
Progress

May 6  Ice bag to epigastrium; egg mixture.
" 7  2 eggs; no pain or nausea, no acetone.
" 9  Tinct. ferri one drachm added.
" 10 Cream and meat juice.
" 11 As it was impossible to keep the mouth clean, patient was put under chloroform and all the teeth extracted. Peptonised milk in teaspoonful doses was given afterwards.
" 12 Egg mixture begun again with 1 egg.
" 13 3 eggs, 2 oz. sugar, 1½ pints water.
" 14 5 eggs, 3 oz. sugar, 2 pints water.
" 15 6 eggs, 4 oz. sugar, 3 pints water.
" 17 Half the eggs boiled; bread and butter.
" 18 Custard and arrowroot.
" 19 Red cells 3,800,000; haemoglobin 80%.
" 22 Ice bag removed, tinct. ferri 4 drachms.
" 25 Fish.
" 31 Chicken.

June 2  Up to-day, feeling quite well.
" 6 Red cells 4,280,000; haemoglobin 90%.
  Weight 6 st. 4½ lbs.
" 8 Discharged to convalesce at home.

On March 2nd 1911 patient reported that she had remained quite well and free from symptoms since leaving hospital.
CASE XIV:

T. T. 40 years, female, married; admitted to Miller Ward on May 10th 1910, complaining of severe pains in the stomach. For 12 months past she has suffered from pain in the pit of the stomach, shooting through to the back. The attack usually begins at five p.m. and lasts for several hours. She does not suffer from pain after food. The pain is relieved by vomiting which she induces herself. The pain often wakens her up after she has been asleep for 2 or 3 hours and she then remains in agony for the rest of the night. She has severe palpitation when the pain commences and sometimes her whole body shakes for an hour when it is passing off. The bowels are not constipated but the motions have been very foul for twelve months past and during that time she has been conscious of a strong smell of paint which she attributes to the gases in the bowel. The motions are occasionally very dark. Her memory is bad for several days after a severe attack. The pain has come on very frequently lately. She has been anaemic since puberty; was better after marriage but always very nervous. Ten years ago she suffered from an hysterical affection of the throat which lasted two years. Three years later she had severe headaches which lasted off and on for two years. She also suffered from excessive flatulence at that time. She remained well till one year ago when the present trouble commenced.
Examination.

Patient is stout and well nourished; the tongue is coated, teeth good; acute tenderness is felt at a point half between the umbilicus and the base of the xiphisternum; cutaneous hyperesthesia and hyperaemia on stroking in the same region; tenderness also at a point just to the left of the tenth dorsal spine; no other tender areas in the back or in the abdomen; both knee jerks exaggerated, no plantar response in either foot; both feet very cold but no plantar region was obtained afterwards when feet had been warmed; left leg and foot slightly swollen and bluish in colour; aortic systolic murmur conveyed into the neck but no increase of the cardiac dulness; weight 10 st. 3 lbs; red cells 4,800,000.

Progress.

May 10 Patient was isolated behind screens and three pints of milk were given.

11 It was explained to patient that her condition was largely due to hysteria and therefore curable but that there was also something wrong with the stomach which required rest and careful dieting. Egg mixture was given during the day and a hyperdermic injection of water into the epigastrium in the evening; ice bag to the epigastrium.

12 Patient said the injection upset her very much; egg mixture continued.

13 Had a much better night, no injection was given, slight pains in the stomach during the day.

14 Quite well.

16 Cream and meat juice; half the eggs boiled, thin bread and butter given.

17 Had a bad night but is quite well to-day.
Progress (Continued)

May 18 Custard and arrowroot; one drachm tinct. ferri added to mixture.

22 Had two or three attacks of pain to-day; no pain at night.

23 Pain in the back all the morning; epigastrium still slightly tender.

24 Intense shooting pain in the epigastrium to-day. Patient was told that she would have a hypodermic in the evening but she never complained of pain again after this.

25 Quite bright and well; ice bag discontinued and screens removed; flounder given.

28 Pounder chicken; is now getting 3 drachms tinct. ferri; appetite good; no pain or hyperaesthesia.

June 1 Very well; appetite good.

7 Up to-day for the first time; no pain.

11 Patient felt very well and was anxious to go home. She was allowed to go on the strict understanding that she was to rest for a month at home. Unfortunately she was upset soon after returning home and on June 16th had a bad hysterical attack. I saw her soon after and insisted on her remaining in bed for a fortnight. At the end of that time she was quite well and has remained well ever since. She never has pain in the stomach but occasionally gets nervous if she is excited or upset.

Remarks.

In this case the diagnosis was perhaps open to doubt but the locality of the hyperaesthetic areas and the nocturnal onset pointed to the presence of an ulcer in addition to the neurosis. In February 1911 patient had an attack of pneumonia from which she made a good recovery. There was found to be a diastolic as well as systolic aortic murmur and the left ventricle was 4½ inches from the mid-line. The gastric symptoms had not recurred.
CASE XV

M. B., 37 years, single, domestic, admitted to Houghton Ward on May 13th 1910 complaining of indigestion. At the age of 21 she began to suffer from pain after food, and occasionally vomiting. She became very much worse six years ago, the pain began to come on through the night and also affected her when the stomach was empty; the pain was relieved by the taking of food. She began to vomit blood and to pass blood by the bowel. Four years ago she underwent the operation of gastrojejunostomy in Christchurch but the surgeon cannot remember whether the ulcer was dealt with at the operation. This gave her relief for nine months and then the pain and vomiting began again. She now has pain when hungry and is relieved for an hour after tasting food, but the pain then begins again and vomiting follows. She has lived on Benger's food and milk-and-water for some months past. The pain comes chiefly in the back. Seven years ago she had an attack of jaundice, two years ago pleurisy, and one year ago she had her round ligaments shortened.

Examination.

Teeth good, tongue clean, looks ill and worried; tenderness above the umbilicus and at the tenth dorsal spine; cutaneous hyperaesthesia in the centre of the epigastrium; weight 7 at. 6 lbs. A test breakfast was given and the total acidity found to be 30, free hydrochloric and some lactic acid being present. The stomach was distended with the two halves of a Seidlitz powder given separately and no
Examination (continued)

dilatation found. This result was corroborated on using the gastro-diaphane.

Progress:

May 15 Ice bag to epigastrium; egg mixture with iron commenced and gradually increased.

16 Slight pain, no vomiting.

17 Still has slight pain.

18 No pain after to-day; cream and meat juice added.

21 Half the eggs boiled and given with bread and butter.

24 Custard and arrowroot; now getting 4 drachms of tinct. ferri.

26 Well cooked rice.

30 Flounder; Ice bag removed.

June 2 Chicken.

14 Up to-day, weight 7 st. 12 lbs.

23 Was upset to-day after taking potato and the pain returned and lasted for some days.

30 Weight 7 st. 13 lbs. Complains of a feeling of fulness after food. Epigastrium tender.

July 8 Still has sensation of fulness in abdomen after food.

25 As patient was not improving, laparotomy was performed to-day but the whole of the upper part of the abdomen was found to be matted together with adhesions and it was impossible to examine the stomach properly. She got up on August 10th and was discharged on August 27th feeling very well and suffering no pain.

Remarks.

Patient remained well and free from pain until the end of November. During this time she worked at house duties in her own home and lived on fish, eggs,
Remarks (continued)
milk puddings and occasionally minced meat. She had no pain and never vomited; but suffered a little from flatulence and acid risings. On November 27th she began to vomit and on December 4th the pain returned. On December 8th she vomited blood and next day was admitted to hospital. She underwent a second course of treatment similar to the first and made an uninterrupted recovery, getting out of bed for the first time on Jany. 15th. She was free from pain and discomfort while lying in bed. She is still in hospital undergoing treatment by abdominal massage and injections of fibrolysin with the object of getting rid of some of the adhesions. Since this treatment was begun she can move about with greater freedom and can raise her arms above her head without causing pain.
CASE XVI

L. D. 19 years, domestic, admitted to Miller Ward on May 16th 1910, complaining of pain and vomiting after food. Patient never suffered from indigestion until 6 weeks ago when she was out of sorts for two or three days and then felt a sudden pain in her stomach. It quite doubled her up and was very severe all day. It disappeared in three days but she then began to vomit after everything she ate, at first half an hour after eating, now immediately. If she does not vomit she gets a pain between the shoulders. The motions are sometimes tarry but there is no nocturnal pain. The only time she can take food without vomiting is just before she goes to bed. She has a headache every day; the bowels were not constipated till a week ago. During the last twelve months her urine has been thick and scanty; family history good.

Examination.

Face covered with an eruption of acne vulgaris; tongue rough and covered with a white fur; teeth good; no tenderness or hyperaesthesia in the epigastrium or dorsal region; cutaneous hyperaesthesia over the appendix but no tenderness on deep pressure. Red cells 5,100,000, haemoglobin 100%. Weight 9 st. 8 lbs.
CASE XVI  L. D.

Progress

May 16 Ice bag to epigastrium; egg mixture.
17 No pain; tinct, ferri one drachm added to the mixture.
19 No pain until last night when she had pain across the back.
20 Pain across the back for an hour last night; cream and meat juice added.
21 Six eggs, six oz. of sugar and 3 drachms of tinct. ferri; no pain at all; feels very well.
22 Seven eggs, arrowroot and custard.
23 4 eggs boiled, bread and butter added.
26 Severe headache affecting the left side of head; fingers blue and nails discoloured. Systolic tension 180 mm; ordered mixture containing Sodae Salicylate Gr. X Sodae bicarbonate Gr. XV Infusion of Quassia ½ oz, fl. to be taken three times daily.
27 Much better, no headaches. Tension 140 m.m.
31 Ice bag removed, Salicylate discontinued.

June 3 Flounder; red cells 5,300,000.
9- Up to-day; weight 9 st. 6 lbs.
14 Discharged to convalesce at home.

On March 1st 1911 patient reported that she had relapsed soon after leaving hospital and had been bad ever since.
CASE XVII

E. E. 21 years, female, shop assistant, admitted to Miller Ward on May 29th 1910, complaining of pain in the stomach. Three months ago she began to get pain an hour after food. This got worse and two months ago she began to vomit. The vomit sometimes contained stuff like coffee grounds and at the same time the motions were tarry. The vomiting relieved the pain. She could not sleep for the pain which was worst between 11 p.m. and 2 a.m. It began in the pit of the stomach and shot through to the back. She used to vomit even after milk and soda water but during the last month there has been no vomiting. The bowels have been very constipated for the last two years. She had a similar attack four years ago but it was not so bad and yielded to simple treatment without rest in bed. Her mother died from cancer of the stomach.

Examination.

Tongue clean; teeth good; tenderness in the epigastrium just above the umbilicus and also to the left of the eight dorsal spine; no acetone in the urine; red cells, 4,300,000; haemoglobin 80%; weight 9 st. 4½ lbs.

Progress.

May 29 Ice bag to epigastrium and egg mixture; No pain.

30 Tinct. ferri one drachm added

June 2 No pain since the treatment began. Tinct. ferri 2 drachms, cream and meat juice.
CASE XVII  E.F.

Progress (continued)

June 3  Temperature rose to 102.2° to-day; some malaise, no nausea.

4  Temperature 99°, feeling better

5  Temp. normal; half the eggs boiled, bread and butter given.

8  Well cooked rice, red cells 4,500,000, Tinct. ferri 4 drachms.

11  Ice bag removed, tinct. ferri 5 drachms.

14  Flounder; tinct. ferri 6 drachms.

20  Chicken.

24  Up to-day; weight 9 st. 8

July 2  Weight 9 st. 11; red cells 4,600,000. Discharged.

This patient could not be traced.

March 10, 1911 reported herself as having remained quite well and free from symptoms.
CASE XVIII

L. J. 47 years, widow with 5 children, house duties. I was called to see this patient in her own home on June 2nd 1910. She complained of constant vomiting after meals and pain. For twelve years she had suffered from pain after food and it was gradually becoming more severe. A few years ago she began to vomit after meals at intervals and the attacks have been more frequent of late. The pain begins in the pit of the stomach and passes through between the shoulders. It comes on sometimes at night and keeps her awake. She has never suffered from hunger pain. Yesterday for the first time she noticed a little blood in the vomit. She still tries to take ordinary diet. She has suffered from indigestion ever since she was seventeen and the bowels have always been constipated. Has never had any illness apart from the stomach trouble; the conditions of life are good.

Examination

Teeth very bad in the lower jaw, all except the incisors are merely carious stumps; tongue coated; tenderness in the epigastrium just above the umbilicus; no cutaneous hyperaesthesia; nervous, excitable temperament; weight 10 st. 5 lbs.

Progress.

June 3 Ice bag to epigastrium; egg mixture, tinct. ferri one drachm. 30 gr. of bismuth subcarbonate in glycerine and water night and morning.

4 No pain, feels well.

5 Slight pain to-day but not of the severe character she had before lying up.
CASE XVIII  L. J.

Progress  (Continued)

June 6  Slight pain; cream and meat juice added to the diet.

7  No pain after June 6th.

9  Half the eggs (6) boiled; thin bread and butter; tinct. ferri four drachms.

10  Arrowroot and custard.

17  Ice bag removed.

19  Pounded fish.

26  Chicken.

July 1  Up to-day. Feels quite well.

Patient made a rapid convalescence and remained quite well and free from pain for six months. On July 5th, 1911 she had a slight feeling of heat in the stomach and a desire to loosen the clothing for relief. She had recently moved into a new house and immediately after one of her sons was ill and required nursing. She had been eating beef occasionally, against advice, but had no pain after it. She had also been taking Stearn's Wine which she thought upset her stomach. A few days' rest on egg diet put her quite right again and on July 31st, 1911 she was quite free from gastric symptoms. During her treatment in June 1910 she was nursed entirely by her daughter, a girl of sixteen.
CASE XIX

M. H. 33 years, cook, admitted to Miller Ward on June 4th 1910, complaining of severe pains in the stomach. The pains began four months ago, they come on about fifteen minutes after food. She also suffers from nausea every morning and has occasional attacks of vomiting. The motions are sometimes very dark in colour but she has been taking Bismuth. The pain begins in the stomach and passes round to the back. It is worst after meat or acid fruits. Lately she has lived entirely on Benger's Food. The pain becomes unbearable during the menstrual periods. The bowels have always been constipated but have been much worse during the last four months. She has also suffered a great deal from flatulence. When the pain is severe the mouth becomes very dry. She has always been a moderate eater and did not eat much meat until coming to New Zealand two years ago. She is a native of Orkney and is of a highly nervous temperament. She had two attacks of hip disease when a girl. Two brothers died of phthisis and one of pneumonia. She used to weigh 10 st. 8 lbs but is now only 7 st. 12 lbs.

Examination.

Anaemic looking, the bottom teeth are not very good, the tongue is covered with a white fur; she has a heavy feeling in the stomach and tenderness on pressure midway between the umbilicus and the Xiphisternum; cutaneous hyperaesthesia in the same region. The
CASE XIX  M.H.

Examination (continued)

upper right chest expands less fully than the left and the air entry is not so good. Marked epigastric, epigermal and carotid pulsation. The feet are cold and the left leg slightly swollen. She says this occurs when she is tired. Mitral and pulmonic systolic murmurs and a marked bruit de diable are present. The left ventricle is 4 inches from the midline; red cells 2,880,000, haemoglobin 60%.

Progress.

June 5  Ice bag to epigastrium; egg mixture, one drachm tinct. ferr.

6  Slight pain and nausea.

7  Pain less, no nausea.

9  Pain quite gone; hungry; cream and meat juice 1 oz. of each.

10  6 eggs, 6 oz. of sugar, 6 drachms tinct. ferri, 2 oz. of cream.

13  Half the eggs boiled; custard and arrowroot added.

14  Arrowroot disagreed, caused pain and vomiting; revert to diet of June 10th.

15  No pain or nausea.

16  Red cells, 3,200,000, haemoglobin 70%.

19  Half the eggs boiled and given with bread and butter.

20  Feels as if choked up to the throat; tenderness and cutaneous hyperaesthesia over the pylorus; felt sick last night.

21  Better; heavy feeling after food but not so persistent.

23  Heavy feeling soon goes now.

27  Pain between the shoulders after taking the mixture.

28  Better to-day; ice bag removed.
CASE XIX  M.H.

Progress (continued)

July 2  Discontinue the mixture altogether. Give boiled eggs, custard and bread-and-butter.

3  Better but had a little flatulence.

5  Up to-day, still has a slight feeling of heaviness after food; weight 7 st. 10 lbs.

10  Much better, red cells 4,100,000.

13  Discharged.

Remarks.

This patient was a neurotic girl with a family and personal history of tuberculosis and with deficient expansion at the left apex. She did not do well and after a month in hospital still suffered from gastric symptoms, though not from acute pain. After leaving hospital she went to stay with her parents in the country and wrote on Jan'y. 31st. 1911 to say that she had remained "fairly well" ever since but still had some heaviness and fullness after meals. The acute pain after food has never returned. On February 26th 1911 I received word that the pain and vomiting had recurred.
CASE XX

S. M. 25 years, domestic, admitted to Miller Ward on June 9th 1910, complaining of severe boring pain coming on after food. She was quite well up till 6 weeks ago when she began to get pain below the ribs on the left side after eating. The pain lasted for 3 or 4 hours and was accompanied by profuse salivation, severe headache and a feeling of distension. It was somewhat relieved when she lay down. There was never any vomiting but four days ago she had an attack of diarrhoea with very dark stools. The bowels have always been constipated, but otherwise she has enjoyed good health. Her father died of pleurisy and one brother and one sister of consumption. Another sister has suffered from ulceration of the stomach.

Examination.
She has no lower back teeth. The tongue is slightly coated with a white fur. There is some tenderness on pressure just below the right costal margin near the midline, but no cutaneous hyperaesthesia; heart and lungs normal; red cells 4,600,000; weight 9 st. 10½ lbs. Blood was found in the stools.

Progress.
June 9 Ice bag to epigastrium; egg mixture; one drachm of tinct. ferri.
10 Vomited twice after the egg mixture; no pain; Bismuth gr. xxx night and morning.
11 Vomited once after the mixture.
12 No vomiting; tinct. ferri 4 drachms.
Progress (continued)

June
13 Cream and meat juice added.

14 Six eggs and six oz. of sugar.

15 Arrowroot and custard; tinct. ferri 6 drachms.

16 Half the eggs boiled and given with bread and butter.

23 Pounded fish; ice bag removed; red cells 5,100,000.

28 Headache to-day; phenacetin gr x.; Karlsbad in the morning.

July
2 Pounded chicken; red cells 5,200,000.

4 Headache; repeat phenacetin, and discontinue the tinct. ferri.

5 Up to-day, feeling quite well; weight 10 st. 3½ lbs.

9 Discharged to convalesce with friends.

This patient could not be traced.
CASE XXI

M. R., 45 years, female, single, house duties, admitted to Miller Ward on July 14th 1910, complaining of pain immediately after food. For three years she had suffered from indigestion. Three months ago she fainted for the first time in her life. One month ago she began to vomit after meals and at the same time she noticed that the stools were very dark in colour. About that time she fainted again and since then she has remained in bed. The day after she fainted she vomited a quart of yellow material with some mucus and blood clot. Since then she has had no pain or vomiting but during the last three days the stools have again become dark in colour and she has had some pain under the angle of the left scapula. The bowels have always been constipated but otherwise her health has been good. Weight 9 st. 6 lbs.

Examination.

Teeth good, tongue clean, very nervous but looks well nourished; tenderness on pressure just to the right of the umbilicus, at the angle of the left scapula and just internal to the impulse beat which is in the normal position.

Progress.

July 14 Ice bag to epigastrium, bismuth gr.xxx night and morning; egg mixture with one drachm of tinct. ferri. Increased gradually till July 18th when cream and meat juice were added. Slight pain occasionally.

21 Pain very slight and only once or twice daily. Getting 6 eggs, six oz. of sugar and three drachms of tinct. ferri.
CASE XXI

M. R.

Progress (Continued)

July 22 Arrowroot and custard; had some epigastric pain and flatulence after the arrowroot.

23 Mixture only given; much better.

24 Half the eggs boiled and given with bread and butter; no pain.

26 Arrowroot and custard; no pain.

29 Epigastrium a little tender today.

Aug. 1 Ice bag discontinued.

13 Going on well; pounded fish given; up today for first time; weight 9 st. 4½ lbs Bismuth discontinued.

22 Pounded chicken; progressing well.

Sept. 1 Discharged.

On March 1st 1911 patient reported herself as having remained quite well since leaving hospital.
CASE XXII

M. M. female, married, 59 years, admitted to Miller Ward on July 23rd 1910, complaining of abdominal pain and vomiting. Three days ago she was suddenly seized with a severe, colicky pain in the pit of the stomach; vomiting began 5 hours later and continued steadily for 20 hours. The abdomen became distended especially in the right iliac region. An injection of morphia was given by her medical attendant. This eased the pain but the bowels have not acted since. Yesterday she vomited a quart of blood. She has suffered from indigestion all her life but it has become much worse in the last three years. She has frequent attacks of pain coming on soon after the ingestion of food. She also suffers frequently from vomiting which begins sometimes immediately after a meal. She also has eructations of foul gas but the vomit is never very offensive. She sometimes suffers from acute pain when the stomach is empty. The bowels have always been constipated. Thirty years ago the abdomen was crushed in an accident and she had two operations afterwards. She was 13 weeks in hospital at the time and thinks the operations were performed per rectum. Ten years ago she underwent an operation for haemorrhoids and curettage. Nineteen months ago she was under my care in hospital for gastric ulcer. She was treated by rectal feeding and required an injection of morphia on the 8th day for pain in the stomach. She remained in hospital for six weeks. She was at that time suffering from attacks of pain and vomiting every few weeks. Sometimes she remained free for as long as
three months and then another attack would be precipitated by some indiscretion in diet. The menopause occurred seven years ago.

Examination.
July 23rd. Teeth very bad, pyorrhoea alveolaris and sponginess of the gums; tongue covered with white fur. The pain is easier to-day; the abdomen is generally tender on pressure, especially so at McBurney's point, and in the left lumbar region. It is distended and tympanitic on percussion. She is having foul eructations but is passing no flatus per anum. On examination the rectum was found to be full of scybalas, were cleaned out by enemata.

Progress.
July 23 One oz. of peptonised milk given hourly; severe pain at intervals.
24 Ice bag to the epigastrium; egg mixture; no pain or nausea.
25 2 eggs; feeling well.
28 Has had no pain; cream and meat juice added; tint, ferri 1 drachm.
31 Six eggs, six oz. of sugar, 3 drachms of tint, ferri

Aug. 1 Half the eggs boiled and given with thin bread and butter; tint, ferri ½ oz.
4 Did not sleep well last night; dose of mist, chloral et bromid. given at bedtime (ten gr. of each).
5 Slept well; feeling quite well to-day.
Progress (Continued)
Aug. 7 Ice bag removed.
9 Pounded fish.
16 Pounded chicken.
21 Up to-day, feels quite well.
24 Discharged to rest at home.

Remarks.
This patient had had an experience of treatment by rectal feeding and was very much happier during her present stay in hospital. The pain which before had persisted for eight days after the commencement of the treatment and had been very severe disappeared on this occasion as soon as the ice bag was applied. On February 15th 1911 she reported that she suffered occasionally from flatulent distension after indiscretions in diet. She eats fish, lamb, eggs, bread and butter, potatoes, scarlet runners, milk puddings, biscuits and buttermilk. As long as she adheres to this diet she feels no inconvenience but if she takes beef or cabbage, she suffers from flatulence, pain, and occasionally from vomiting. Her family is of unusual interest. In addition to the patient, one sister, her mother, her grandmother and two grandaunts have suffered from gastric ulcer, the grandmother and one grandaunt having died from haematemesis.
CASE XXIII

A. M. C. 35 years, female, married, consulted me on August 12th 1910, complaining of pain after food.

Patient has always suffered from indigestion. She has attacks of pain coming on soon after eating, especially if she takes meat. This pain has been so severe that for two years she has lived chiefly on Benger's food. She had to leave school at the age of eleven on account of acidity after meals and it has come on at intervals ever since. She also suffers from a feeling of distension after food, and from occasional attacks of vomiting. The vomiting always relieves the pain. Otherwise she has been free from illness and her social surroundings are good but she does not take much exercise.

Examination.

August 12. Teeth good, tongue clean; spare and of nervous temperament; tenderness in the epigastrium just above the umbilicus. Cutaneous hyperaesthesia in the same region and hyperaemia on stroking; slight rigidity of the recti muscles; tenderness over the ninth dorsal spine and to the left of it. Weight 3 st. 6 lbs. Patient decided to lie up at home.

Progress

Aug. 13 Ice bag to the epigastrium; egg mixture; Tinct. ferri one drachm.

14 No pain, feels well; tinct. ferri 2 drachms; bismuth gr. xxx night and morning.

17 No pain, going on well; cream and meat juice added.

20 Six eggs, six oz. of sugar, 5 drachms of tinct. ferri
Progress (continued)

Aug. 22 Half the eggs boiled and given with bread and butter.

24 Custard and arrowroot; tinct. ferri 6 drachms.

27 Ice bag removed, keeping well.

29 Pounded fish.

Sept. 5 Pounded chicken; bismuth discontinued.

10 Up to-day; weight 8 st. 4 lbs; she made a rapid convalescence.

Oct. 24 Reported herself as feeling perfectly well until two days ago when she had a slight recurrence of pain which she attributed to having done some work for a bazaar. Was ordered to rest for a few days and has remained quite well ever since. On January 30th 1911 she reported herself as having remained free from symptoms and feeling quite well.
CASE XXIV

M. R. 60, married, house duties. I saw this patient in consultation on August 13th 1910, when she complained of severe pains in the chest and upper abdomen. She had been for some time under treatment for cardiac trouble. The pains began about six months before, usually coming on at 11 a.m. and at 4 p.m. and lasting for several hours. The pain was relieved by the taking of food but recently she has had heartburn after everything she eats. Since her illness began she has lost about two stone in weight. She began to vomit after food about six weeks ago and now she vomits nearly every day but the vomit is never foul. She has never vomited blood. Her appetite is good but she is afraid to eat much. The bowels have always been very constipated and she suffers a good deal from flatulence.

Examination. August 13th.

Teeth bad, covered with tartar and some are carious; tongue coated; tenderness in the centre of the epigastrium and hyperaesthesia of the skin in the same region; pain in the upper part of the epigastrium and behind the lower end of the sternum; tenderness to the left of the tenth dorsal spine; mitral incompetence with some enlargement of the left ventricle.

Progress.

The usual treatment was carried out under the direction of Dr. O'Neill, an ice bag being applied for a fortnight but no iron was given. The pain ceased
immediately and progress was uninterrupted. On February 20th 1911 I saw the patient again. She no longer suffered from severe pain but she had a good deal of discomfort after food from flatulence. This had begun a month or two after she got up and had continued off and on ever since. No localised tenderness or hyperaesthesia was elicited but the lower border of the stomach was found to be just an inch above the umbilicus. Patient declined to have the stomach tube passed and so a dry diet was ordered with a large glass of hot water on waking and at bedtime.

Remarks.

The rapid improvement under treatment favored the diagnosis of gastric ulcer but, although no tumour could be felt, there is a considerable likelihood of malignant disease being present.
CASE XXV

J. M. 16 years, domestic, admitted to Miller Ward on August 15th 1910, complaining of pain and vomiting after food. She was quite well till ten months ago when she began to suffer from pains in the stomach about ten minutes after taking food, especially after solids. Later she began to vomit about an hour after eating solid food. The pain and vomiting gradually became more frequent and she began to waken with pain about mid-night and lie awake till morning. Her periods occurred every fortnight and the pain was much worse at these times. She lay up for three months in the summer and was better for a few weeks after getting up but she gradually got worse again. Three weeks she vomited material streaked with blood. For a few days before admission the stools were very dark and the day before the vomit contained stuff like coffee grounds. The bowels have always been constipated.

Examination

Aug. 15 The tongue is covered with a white fur and three of the teeth are decayed. She has a feeling of weight in the epigastrium and sharp pain at times. She also has pain across the lower dorsal region, below the manubrium and under the left clavicle on taking a deep breath. There is a tender area about one inch square just above and to the left of the umbilicus but no cutaneous hyperaesthesia. There is also a tender spot below the angle of the left scapula. The pain in the stomach is relieved when
Examination (Continued)
she lies on the left side. Heart and lungs normal; red cells 3,000,000, haemoglobin 55%; knee jerks increased, no plantar reflex. Weight 7 st. 13½ lbs.

Progress.

Aug. 15 Ice bag to epigastrium; egg mixture with one drachm of tinct. ferri.
16 Still has pain, but not so severe.
18 Has had a little pain every day; tinct. ferri increased to two drachms.
20 Still has some pain; iron discontinued; getting six eggs and six oz. of sugar.
22 Pain still present but lessening in severity; arrowroot and custard added.
23 Pain worse to-day and so patient was put back on the egg mixture only.
24 Wakened at 5 a.m. by pain; heavy feeling in the stomach all day.
25 Wakened again at five a.m. with pain which lasted all day.
26 Egg mixture discontinued, peptonized milk given 1 oz. hourly.
27 Less pain to-day; peptonized milk 2 oz. hourly.
29 Pain gone entirely; peptonized milk 3 oz. hourly, and 1 pint of beef tea.
29 No pain, 2 eggs and 2 oz. of sugar given in 2 pints of peptonized milk.
30 3 eggs, 3 oz. of sugar, 2½ pints of peptonized milk.
31 Same diet, no pain.

Sept. 2 4 eggs, 4 oz. sugar, 2 drachms tinct. ferri and 3 pints peptonized milk.
3 5 eggs, 5 oz. of sugar; going on well; ice bag removed.
CASE XXV  E.M.

Progress  (Continued)

Sept. 4  Bread and butter.

6   Half the eggs boiled: no pain but has very slight tenderness on pressure in the epigastrium. Feels very hungry in spite of the increased diet.

8   Improving in every way; red cells 3,200,000 haemoglobin 65%.

9   Arrowroot and custard added.

14  Pounded fish; tinct. ferri increased to 4 drachms.

16  Red cells 3,400,000, haemoglobin 70%.

17  Pain under left clavicle and in left shoulder.

19  Pain in upper chest returned to-day. The vocal resonance was found to be increased below the outer end of the left clavicle and the expiration prolonged. Some sputum was obtained and examined but no tubercle were found. Von Pirquet's test was also applied and proved negative.

20  No pain; feeling well. Up to-day for the first time.

23  Progressing well; no pain; signs in lung remain the same. weight 8 st. 2½ lbs.

28  Discharged.

Remarks,

Patient remained well until December 1910 when she developed a small superficial swelling in front of each elbow. She was re-admitted to hospital and the swellings were opened and pus was let out which was found to contain staphylococcus albus. No sign of mischief was found in the lungs and she had gained several pounds in weight. While in hospital she developed a slight burning sensation in the epigastrium. She was placed on peptonized milk for a day or two and had no return of the burning sensation. She was discharged from hospital quite well on Jan. 7th 1911.
S. S. 68 years, widow, house duties; consulted me on Sept. 15th 1910, complaining of severe pain after food. The pain came on about 2 hours after meals, beginning in the pit of the stomach and passing through between the shoulders. The pain usually lasted about an hour and was always worst after solid food. She has never vomited but often feels sick. The attacks began 8 or 9 years ago and have persisted at intervals ever since. Eight months ago she was in Lawrence Hospital for a month and has been much better since but the pain is still there though not so severe. During the last few months she has lived chiefly on Benger's food and peptonized milk. The bowels have always been constipated, but, apart from indigestion, her general health has been good. Her mother suffered from asthma and her sister recently underwent treatment for gastric ulcer (Case XXII M.M.).

Examination.
Sept. 15. Patient is very thin, looks ill and is of nervous temperament. The tongue is furred and the teeth are bad. There is tenderness on pressure in the centre of the epigastrium and also to the left of the tenth dorsal spine. In both areas there is marked cutaneous hyperaesthesia. There is a mitral murmur accompanying the first sound, the pulmonary second sound accentuated and the left ventricle is slightly enlarged. The red cells number 4,500,000 per c.m.m.; weight 7 st. 6 lbs.
Aug. 16  Admitted to Miller Ward. Test breakfast was given and the total acidity found to be 45; free hydrochloric acid present, no lactic acid.

17 Ice bag to epigastrium and egg mixture.

18 Slight pain at intervals, does not like the mixture; bismuth gr.xxx night and morning.

21 Has had slight pain each day, getting 5 eggs, 5 oz. sugar, 1 oz. of cream and 1 oz of meat juice.

25 Still has pain; arrowroot and custard added.

29 Pain still persists, patient very dissatisfied with the mixture; she says that Benger's food has always suited her better; mixture discontinued and Benger's given 1 oz. hourly.

30 2 eggs and 2 oz. of sugar added to the Benger's food; no pain to-day.

31 Pain quite gone; the Benger's was gradually weakened and eggs and sugar added until on September 5th patient was taking 6 eggs and 6 oz. of sugar in weak Benger's; arrowroot and custard.

Sept. 6  2 boiled eggs, bread and butter; no pain; ice bag removed.

8 Flounder added.

13 Up to-day, feeling well; has been getting soap and water enema every 2nd day since August 23rd but not with very good results. Pill ordered for to-night containing 3 gr. of mass. hydrargyi and 2 gr. of mass. colocynth co. to be followed by 1 drachm of phosphate of soda in the morning in warm water.

14 Bowels acted well; feels well; no pain; weight 7 st. 9 lbs.

17 Discharged to rest at home.
CASE XXVI  S.S.

Remarks.
This patient made up her mind from the first that she could not take the mixture and case No. XXV J.M., who was lying in the next bed came to the same conclusion. These were the only two cases in which the mixture had to be discontinued because the patients declared themselves unable to take it and it seems reasonable to suppose that they arrived at that conclusion after consultation. In both cases the mixture was quietly substituted again and both patients then took it quite readily. On March 2nd 1911 patient reported that she had remained quite well and free from symptoms but was living on a very light diet, eggs, milk puddings, biscuits and occasionally a little fish.
CASE XXVII

P. G., 46 years, bookmaker, married, consulted me on November 10th 1909, complaining of severe pain in the stomach after food. For seventeen years he had suffered from indigestion, chiefly in the form of epigastric pain. The pain is gnawing in character and is worst between the hours of 11 and 12 am and 4 and 6 p.m. Sometimes it comes on between 1 and 2 a.m. and keeps him awake but this does not happen often. Occasionally the pain comes when he is hungry. The pain is relieved by taking a cup of warm beef tea. He has vomited on several occasions and this also gives some relief from the pain. He has had no other illness and lives in good circumstances but he used to eat his meals very hastily. The bowels were always regular.

Examination.

November 10th 1909. Tongue clean, teeth good; patient has a sallow complexion and is of spare physique. There is tenderness on pressure just below the tip of the Xiphisternum but no hyperaesthesia of the skin. After a test breakfast the total acidity was found to be 55 with free hydrochloric acid present. As a diagnosis of ulcer could not be made with certainty, the case was treated as one of hyperacidity and an acid-binding diet was ordered with ham, bacon, eggs and cheese. A pill containing atropin gr. 1/100 and green extract of belladonna gr. 1/6 was ordered to be taken each night at bedtime and antacid lozenges
to be sucked for the relief of pain. Patient returned to his home in Christchurch and reported by letter that he improved rapidly. He remained free from pain till Jan'y. 10th 1910 (two months) when he began to suffer again and the pain continued off and on for a month. Then he remained free till August 16th (six months) when it began again. As it continued to trouble him he came to Dunedin again and consulted me on Sept. 7th 1910. The pain was then very severe and came on even after beef tea and milk and lasted for several hours. It is now accompanied by nausea and on several occasions he has vomited, thus getting relief. It comes on more frequently now during the night. On examination the epigastrium was found to be excessively tender and there was marked hyperaesthesia of the skin over the tender area. He was recommended to go into a private hospital for a month but his home was several hundred miles away and he had made arrangements only for a brief absence. He therefore decided on a middle course, namely to lie up at his hotel for a fortnight. It was found difficult to carry out the treatment as he did not make a good patient and his wife had great difficulty in nursing him.

**Progress.**

<table>
<thead>
<tr>
<th>Sept. 8</th>
<th>Ice bag to the epigastrium; egg mixture; weight 9 st. 8 lbs.</th>
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<td>9</td>
<td>No pain, feeling well.</td>
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CASE XXVII P.G.

Progress (continued)

Sept. 10 Complains of a pain behind the sternum caused by the ice bag; states that the pain disappears if the ice bag is left off.

11 Patient querulous but has no pain except that caused by the ice.

12 5 eggs, 5 oz. of sugar; patient does not always finish his mixture. Cream and meat juice added.

13 The meat juice was taken by itself without water or mixture and caused a good deal of pain. After this patient remained on mixture for 8 days as he would not increase his diet from a dread of bringing back the pain.

21 Arrowroot and custard; has had no pain since Sept. 13

22 2 lightly boiled eggs, bread and butter.

23 3 boiled eggs, getting on well; ice bag removed.

24 Up to-day, feels well but is very weak.

25 Getting stronger.

26 Pounded flounder.

28 Much better; left for his home in the morning. He rested for 3 weeks after reaching home and gradually got on to full diet. On Oct. 20th he wrote to say that he was quite well and able to eat a grilled chop with comfort. Later he wrote again to say that he was working and was quite free from pain or inconvenience.

Remarks.

This case did very well on a modified course of treatment but with probably rehapse. His medical adviser had recommended operation but he will try an extended course of medical treatment before submitting to operation. On February 28th 1911 I heard that patient was again suffering from dyspepsia.
CASE XXVIII

M. H., 44 years, female, married, house duties, consulted me on August 21st 1910 on account of pain and vomiting which came on after food. She had had indigestion for about four years; pain began in the stomach immediately after meals, passing through between the shoulder blades. A year ago she began to vomit after eating meat and this relieved the pain. The vomit was occasionally streaked with blood. The vomiting ceased when she discontinued the use of meat. She lived then on milk and cream but still had pain and it began to come on at one in the morning and keep her awake till five o'clock. This happened two or three times a week. During the last year she lost two stone in weight. The bowels have always been constipated. Eighteen months ago she had an attack of endometritis and metrorrhagia which yielded to rest in bed and hot douching. Otherwise she has always enjoyed good health. Three months ago the vomiting began again and occasionally contained some blood. Patient declined to lie up and was treated with large doses of bismuth and a diet of eggs, milk and milk puddings. She still suffered a good deal from pain and at last consented to go into hospital, being admitted to Miller Ward on Sept. 23rd 1910.

Examination.

Sept. 23 Teeth good, tongue clean; tender spot just to the right of the umbilicus and cutaneous hyperaesthesia in same region; complains of pain in the
CASE XXVIII  M.H.

Progress.

Sept. 23 Ice bag to the epigastrium; egg mixture with one drachm of tinct. ferri.

24 No pain; patient progressed favourably till October 5th when she was getting 6 eggs, 6 oz. of sugar, 4 drachms of tinct. ferri, cream, meat juice, custard, arrowroot and bread and butter.

Oct. 6 Some potato was given by inadvertence and patient had some epigastric pain afterwards.

7 Ice bag removed; no pain since Oct. 6th.

17 Pounded fish, which caused slight pain and was therefore discontinued.

24 Pounded fish, no pain. Up to-day for first time.

29 Pounded chicken; Karlsbad salts now given every morning. Weight 10 st. 1 lb.

Nov. 10 Discharged.

Remarks

On January 29th 1911 patient reported that she has been keeping well and had had no return of the pain, but occasionally she has a slight sensation of heat in the epigastrium which soon passes off.
CASE XXIX

M. M. 27 years, single, domestic, admitted to Miller Ward on September 26th 1910, complaining of pain in the stomach coming on after meals and during the night. Patient was treated for Gastric Ulcer six years ago. She has always been anaemic. The present illness began a week ago when she felt pain immediately after her dinner and an hour later she vomited up a pint of bright red blood. She has had pain since after everything she has eaten and it also comes on about 2 a.m. and lasts till daylight. She sometimes vomits and this relieves the pain. She has had no other illness and her family history is unimportant. The bowels have always been regular.

Examination.

Sept. 26 Looks anaemic; the mucous membrane of the mouth is pale, the teeth are good and the tongue clean; tenderness in the centre of the epigastrium and marked cutaneous hyperesthesia; also hyperaemia on stroking the skin in the same region; heart slightly dilated; mitral systolic murmur and bruit de diable in the neck; red cells 3,500,000; haemoglobin 65%; weight 9 st. 4 lbs.

Progress.

Sept. 26 Ice bag to the epigastrium; egg mixture with one drachm of tinct. ferri.

27 No pain after the commencement of treatment; the ice bag gave immediate relief from the pain.

30 5 eggs, 5 oz. of sugar, 5 drachms of tinct. ferri; going on well.
CASE XXIX M. M.

Progress (continued)

Oct. 1 Cream and meat juice added. Bowels acted naturally to-day. An enema was given every second day afterwards; six drachms of tinct. ferri.

2 Arrowroot and custard.

3 Half the eggs boiled; bread and butter.

9 Ice bag removed; red cells 3,800,000. haemoglobin 75%.

13 Pounded fish.

20 Up to-day for the first time; red cells 4,000,000; weight 9 st. 6 lbs.

25 Discharged to rest at home.

On February 24th 1911 patient reported that she had remained quite well and free from symptoms.
CASE XXX

L. M. 21 years, single, housemaid, admitted to Miller Ward on November 30th 1910, complaining of pain in the stomach. She has had this pain for the last fortnight and it has prevented her from working. It comes on ten minutes after taking food and frequently causes vomiting but there has never been any blood in the vomit. She wakened this morning at 3 o'clock with severe pain in the stomach. She tires easily and gets out of breath going upstairs. Menstruation is regular but scanty. Two years ago she had an attack of acute inflammation of the kidneys and was ill for several weeks. Two months ago she had an attack of vomiting.

Examination.
November 30th. Tongue clean, teeth good, tenderness in the epigastrium to the right of the mid-line; cutaneous hyperaesthesia in the centre of the epigastrium; rigidity of the recti muscles; heart slightly dilated; bruit de diable and pulmonary systolic murmur; red cells 3,200,000, haemoglobin 60%; weight 9 st. 6 lbs.; urine normal.

Progress.
November 30 Ice bag to the epigastrium; egg mixture, tinct. ferri one drachm; had a little pain to-day.
December 1 No pain; tinct. ferri 2 drachms.
5 Going on well; is now getting 6 eggs, 6 oz. of sugar, 6 drachms of tinct. ferri, cream and meat juice.
CASE XXX
L. M.

Progress (continued)

December 6  Custard and arrowroot with 2 oz. of cream.

8  Half the eggs boiled and given with thin bread and butter.

10 Red cells 3,500,000, haemoglobin 75%.

13 Ice bag removed; pounded fish given.

25 Pounded chicken; red cells 4,000,000, haemoglobin 80%.

28 Up to-day; weight 9 st.

January 3  Tripe and mince.

13 Red cells 4,200,000, haemoglobin 85%; discharged.

Remarks.

In this case the localised tenderness and hyperaesthesia pointed to ulcer rather than to anaemic dyspepsia and this diagnosis was confirmed by the immediate success of the treatment. On March 1st 1911 patient reported herself as keeping quite well.
CASE XXXI  E. R. female, single, aged 41, house duties, admitted to Miller Ward on December 2nd 1910, complaining of pain after food. Patient had suffered from indigestion for some 3 years, pain coming on about an hour after food. A fortnight ago the pain became very severe and has practically never left her since. It is relieved a little by lying on the back but it usually wakens her at 2 a.m. and keeps her awake for some hours. A year ago she began to vomit occasionally and sometimes the vomit contained dark blood. The night before admission she vomited a good deal of dark stuff and then became unconscious.

The bowels are always regular but lately the motions have been black and tarry looking. When she was a girl she suffered from suppurating glands in the neck; otherwise her health has been good; menstruation regular.

Examination.

December 2nd. Temperature normal, pulse 100, respirations 25; tongue clean and moist; teeth carious and gums unhealthy; pain across the epigastrium but no localised tenderness; well marked rigidity of the upper recti muscles; weight 8 st. 2 lbs; heart and lungs normal; red cells 4,100,000, haemoglobin 80%.

Progress

Dec. 2nd Ice, bag to the epigastrium; egg mixture; soap and water enema brought away some melaena; pulse 100.

3 Had slight throbbing pain in the epigastrium; tinct. ferri one drachm added to mixture; pulse 85.
Dec. 4  Tinct. ferri 2 drachms; headache in the afternoon; pulse 100.

5  Had some nausea to-day and therefore tinct. ferri was discontinued; pulse 100.

6  Throbbing pain and headache; pulse 100, temperature 99.4.

7  Still has pain; temperature rose to 100.8 this evening.

8  Cream and meat juice added; no pain; temperature 100, pulse 95; no cause could be found for the temperature except a little harsh breathing under the left clavicle. A Vcn Pirquet test was applied and gave a positive reaction but it was decided to continue the treatment as that would give the patient the best chance of ultimate recovery. Very little sputum could be obtained and no tubercle bacilli were found in it even after centrifugalising.

9  No pain; feeling well; temperature 101.5.

10  Half the eggs boiled and given with thin bread and butter; temp. 100.5, pulse 90.

11  Temperature rose to 102.5, pulse to 118, and patient had a little malaise but no pain.

13  Temperature 101; custard and arrowroot; tinct. ferri recommenced.

15  Temperature 100.4; ice bag removed; tinct. ferri four drachms; feeling quite well.

16  Pounded fish; temperature 100, pulse 80. On December 23rd the temperature came down to normal and remained down afterwards.

27  Pounded chicken; red cells 4,200,000, haemoglobin 80.

30  Up to-day for the first time; weight 7st. 11 lbs; feels very well; still has harsh breathing under the left clavicle. On January 7th the dental surgeon was called in to attend to the teeth and on Jan. 19th patient was discharged and recommended to undergo the open air treatment for tuberculosis. Her weight was then 7 st 9 lbs.
Remarks.

This was a puzzling case but the persistent pain after food leading up to haemorrhage from the bowel and the history of haematemesis made it fairly certain that an ulcer of the stomach was present, possibly of a tubercular nature. It was therefore felt that the first step in treatment was to get the ulcer healed and the teeth attended to. The fever was preceded for five days by a quickened pulse (100) and it lasted for 18 days. After that the pulse and temperature remained quite normal so that the fever was probably due not to a tubercular infection but to oral sepsis. As, however, the von Pirquet test gave a positive reaction and there was distinct harshness of the vesicular murmur under the left clavicle, it was considered safer to treat the case after leaving the Hospital as one of pulmonary tuberculosis. If this was correct the apparent healing of the ulcer was very satisfactory as the patient had no pain after the sixth day and was taking tripe, mince and chicken for some days before leaving hospital.
CASE XXXII

M. M., female, married, 40 years of age, admitted to Miller Ward on December 14th, 1910, complaining of pain in the stomach and vomiting. On two previous occasions, nine and three years ago, patient was treated in hospital for gastric ulcer by rectal feeding and prolonged rest but she was not entirely relieved of her symptoms on either occasion. A year ago the pain began to be more severe and lately has been practically continuous but is made worse by the taking of food. The pain is relieved by lying down and also by vomiting which takes place about three hours after meals. The bowels have always been constipated and lately there has been some dark blood in the motions. During the past year she has lived chiefly on milk puddings and milk.

Examination

The tongue is coated and flabby; some of the back teeth are missing; the epigastrium is tender one and a half inches above the umbilicus and under the left costal margin; the skin is hyperaesthetic in the same regions and there is some rigidity of the recti muscles; there is an area of tenderness in the lower dorsal region on the left side. Heart normal, red cells 4,300,000, haemoglobin 85%; weight 8 st. 3 lbs.

Progress

Dec. 14 Ice bag to epigastrium; egg mixture commenced with 1 drachm of tinct. ferri perchlor.

15 Patient had a good deal of pain to-day and some nausea; iron discontinued.
Progress (Continued.)

December 16  Pain not so bad to-day.

17  Pain severe; morphia gr. 1/6 injected; the bowels moved naturally to-day.

18  Is getting 4 eggs, 4 oz. of sugar; no pain to-day.

19  Had pain to-day under the left costal margin and between the shoulders; it passed off in the afternoon.

20  Pain very slight to-day.

21  Bowels acted again to-day and afterwards there was severe pain in the lower abdomen but no epigastric pain. The epigastrium is still tender to pressure.

22  No pain; one oz. of cream, one oz. of meat juice added.

23  Acute pain this morning in the epigastrium.

24  Pain again severe; morphia gr. 1/6 injected; egg mixture discontinued and 1/2 oz. of peptonised milk given hourly.

25  No pain; peptonised milk continued.

26  Milk discontinued and egg mixture begun again. 3 eggs, 4 oz. of sugar of milk and 2 1/2 pints of water; no pain.

27  No pain to-day; 4 eggs given; ice bag discontinued; had some headache to-day.

30  Has had no pain since Dec. 24th; is now getting 6 eggs, three of them lightly boiled, and some bread and butter.

Jany. 3  Still going on well; custard and arrowroot added and given with cream; has had some supraorbital neuralgia to-day on the left side.

4  Patient is not able to take so many eggs now gets two in the mixture and two boiled; neuralgia is still bad; begins about mid-day and lasts till she falls asleep at night.

5  Neuralgia severe; ordered phenacetin gr. xvi which gave relief; jelly and well cooked rice added.
CASE XXXII M.M. - 3 -

Progress (continued)

Jany. 7 Neuralgia returned to-day but not so severe.

10 Neuralgia returned again slightly yesterday and is severe to-day; phenacetin gr.XV gave relief.

12 Feels quite well now: flounder added.

14 Up to-day for the first time, weight 7st. 7 lbs; patient got on well after this and left the hospital quite well and free from symptoms on January 28th 1911.

Remarks.

In this case the prolonged history with ineffective medical treatment and the hyperaesthesia over the left costal margin pointed to perigastric adhesions probably to the abdominal wall. Operation was recommended but patient declined to submit to it and was therefore treated medically. Pain persisted longer than usual and did not disappear until the mixture was discontinued and the patient placed on peptonised milk for 48 hours. After that the mixture was given again and rapidly increased in strength. She then made a good recovery except for the neuralgia. On the two previous occasions on which she was treated in hospital by rectal feeding the pain never entirely left her during the whole course of her stay in hospital. The recovery however was only temporary as the pain returned as soon as she began to move about and she is returning to hospital for operation.
CASE XXXIII

L. E. 23, female, cook, admitted to Miller Ward on December 15th 1910, complaining of pain and vomiting after meals. Three years ago patient began to suffer from pain just after eating and also during the night. Later she began to vomit and the vomit sometimes contained blood. After vomiting she got relief from the pain. She was treated for gastric ulcer in hospital two years ago but the pain soon recurred and has lasted ever since. Two months ago and again one week ago she vomited about half a pint of bright red blood and during the last week she has felt very giddy. The bowels have always been regular and the patient has had no other illness. During the last three years she has lived chiefly on milk puddings.

Examination.

December 15. Patient is nervous and rather anaemic; the tongue is clean and the teeth good; the epigastrium is tender just above the umbilicus and the skin is hyperaesthetic in the same region; there is also cutaneous hyperaemia on stroking the epigastrium; there is no dorsal tenderness; the heart is normal, red cells 3,400,000, haemoglobin 60%, weight 7st. 1 lb.

Progress.

Dec. 15 Ice bag to the epigastrium; egg mixture; had pain all day.
    16 Pain easier, tinct. ferri one drachm.
    17 A little pain this morning.
    18 No pain, feels quite well.
CASE XXXIII  L. H.

Progress (continued)

December 19  Cream and meat juice.

22 Is now getting 6 eggs, 6 oz. of sugar and 6 drachms of tinct. ferri; red cells 3,600,000, haemoglobin 70%.

23 Half the eggs boiled, bread and butter.

25 Jelly and arrowroot.

26 Custard.

28 Well cooked rice; ice bag discontinued.

29 Patient very hungry and feels well; raw meat sandwiches given.

Jan.  3 Pounded fish; red cells 4,000,000, haemoglobin 80%.

9 Pounded chicken.

10 Up to-day for first time; feels very well; weight 6 st. 9½ lbs.

17 Discharged to convalesce at home.

On March 1st patient was still going on well.
CASE XXXIV.

C. E. 16, single, domestic, admitted to Houghton Ward on December 30th 1910 as an acute abdominal case for operation. She was treated with hot fomentations and transferred to Miller Ward on January 1st 1911. She gave a history of pain in the stomach just after eating which began some four months ago. The pain usually lasted for about half an hour and then passed off. Three days ago she had an attack of very severe pain just after dinner and she had been in pain ever since with very short intervals of rest. She has never vomited until three days ago but several times during the last fortnight there has been blood in the stools. The bowels have always been regular; menstruation has also been regular but lately has been very free.

Examination.

December 30  Patient looks very pale and anaemic; temperature 99.4, pulse 100, tongue coated with a white fur, teeth good, abdomen moderately distended and slightly rigid; tenderness and pain in the epigastrium; more marked tenderness with cutaneous hyperaesthesia in the left iliac region; hot fomentations applied to the abdomen and a turpentine enema administered.
CASE XXXIV C.P.

Progress.

December 31 Temperature 99, pulse 90, feels easier; allowed to drink a little barley water but vomited afterwards.

January 1 Transferred to the Medical Ward; ice bag applied to the epigastrium; egg mixture given but caused vomiting; red cells 2,600,000; haemoglobin 85%.

2 Peptonised milk half an ounce hourly; patient vomited after the milk; still has pain and tenderness in the abdomen; temperature and pulse normal.

3 Albumin water given at intervals and caused vomiting; pain easier.

4 No pain to-day; egg mixture began again and taken readily.

5 Tinct. ferrum one drachm added.

9 Going on well; is now getting 6 eggs; 6 oz. of sugar and 4 drachms of tinct. ferrum.

11 Cream and meat juice; 6 drachms of tinct. ferrum.

12 Red cells 3,000,000; haemoglobin 60%.

13 Arrowroot and custard.

14 Half the eggs boiled; bread and butter; ice bag removed.

17 Pounded fish.

21 Pounded chicken.

24 Patient got up to-day for the first time=

26 Red cells 4,000,000; haemoglobin 85%.

27 Tripe and mince added.

February 5 Patient is now a much better colour; takes her food without any discomfort and feels well; tongue clean and moist; discharged from hospital.

On March 1st patient was still going on well.
CASE XXXV

M. H. 47, married, house duties; I was called to see this patient on January 2nd 1911, when she complained of intense pain in the stomach, passing through between the shoulders. Her stomach trouble began at the age of 18 when she suffered from pain after food and vomiting, the vomit being often streaked with blood. Ever since then she has had to be careful in her diet, avoiding beef, pastry and rich dishes. Eleven years later she had an attack of vomiting, pain, haematemesis and melena and was kept in bed for one month and treated by rectal feeding. The menopause occurred two years ago and since then the pain has got gradually worse. It usually comes on two or three hours after food and is relieved by the taking of food. For a time she suffered from severe nocturnal pain from which she got relief by drinking cocoa. She only vomits occasionally now. She has suffered during the last two years from rheumatic pains in the chest and arms but, apart from the gastric condition, she has enjoyed fairly good general health. Two months ago she underwent a starvation cure but did not stay in bed; since then she has lost two stone in weight and has become very constipated.

Examination.

Jany. 3. Teeth good; tongue coated with a white fur; tenderness in the epigastrium very marked just above the umbilicus and to the right of it; no hyperaesthesia; pain in the back but no tenderness or hyperaesthesia; heart and lungs normal; both kidneys very much
prolapsed; the stomach, after distension with soda and acid, found to be somewhat prolapsed but not dilated; weight 7 st. 11 lbs; red cells 4,100,000.

Progress.

Jany. 3 Ice bag to the epigastrium; egg mixture; no iron was given in this case.

4 Pain entirely gone but still has slight tenderness.

7 Going on well; no pain; bowels acted to-day; cream and meat added.

9 Six eggs given; half of them boiled; bread and butter; has had no pain since Jany. 3rd and the tenderness has now quite disappeared.

10 Custard and arrowroot added.

13 Rhema administered to-day and repeated every second day afterwards.

17 Ice bag removed; pounded flounder given.

20 Jelly added to diet.

27 Pounded chicken.

30 grape.

31 Up to-day, feeling very well.

Remarks.

This was probably a duodenal ulcer. Patient took the mixture with great relish and gave very little trouble during the treatment. Patient was still keeping well on March 2nd.
CASE XXXVI

M. C. 26, female, single, machinist, admitted to Miller Ward on January 10th 1911, complaining of pain after food. For seven years patient has been anaemic and sixteen months ago she began to suffer from pain after food. A year ago she had an attack of haematemesis and malaena and was kept in bed for a month. Three months ago the pain began again and has lasted on and off ever since, frequently preventing her from doing her work. The pain occurs both before and after food and sometimes wakens her up through the night. It is relieved for a little by the ingestion of food. She suffers from nausea but has not vomited during this attack. She passed some bright blood in the stools 6 or 7 days ago. She suffers from shortness of breath on exertion; the bowels are always regular; menstruation normal.

Examination.

Tongue clean, teeth good; pain in the epigastrium and between the shoulders; tenderness in the epigastrium to the right of the mid-line and hyperaesthesia of the skin in the same region; tenderness over the left twelfth rib near the spine; heart normal, red cells 4,700,000, haemoglobin nearly 100%; weight 7 st. 12 lbs.
CASE XXXVI  M. C.

Progress.

Jany. 10 Cleansing enema; ice bag to epigastrium; egg mixture.

11 Had a little pain to-day; tinct. ferri, one drachm added.

12 No pain but epigastrium still tender; tinct. ferri 2 drachms.

15 6 eggs, 6 oz. of sugar, 4 drachms of tinct. ferri; is going on well.

16 Cream and meat juice added.

17 Arrowroot.

18 Custard.

19 Half the eggs boiled; bread and butter given.

22 Some uneasiness in the stomach to-day.

23 Slight pain in the epigastrium.

24 Still has pain and some tenderness; iron discontinued.

25 Pain easier.

26 Pain gone; pounded fish given; ice bag removed.

28 Has had no more pain; is getting very tired of the eggs which, she says, never agreed with her in health; rice, tapioca and sago substituted for some of the eggs.

Feby. 1 Had some pain in the left side last night which kept her awake for a few hours.

Feby. 2 Quite well; no pain from now on.

8 Up to-day for the first time; weight 7 st. 13 lbs.

22 Discharged, weight now being 8 st. 2 lbs.

On March 2nd patient was still going on well.