tion has been performed; and of course, if it entered in the early days after the operation, when the margins of the opening are swollen and congested, it would continue to do so later. On the whole the no-loop method is to be preferred, though results quite as good can be obtained by the other with practically the same degree of certainty.

Another point worth considering in connexion with gastro-enterostomy is the question of the degree of relief, and especially the permanence of relief that is to be expected from it. In no small measure this depends upon the condition of the patient at the time of the operation, and upon the care as regards the mode of living that is likely to be exercised afterwards. If, as in my first case, the operation has been preceded by years of chronic starvation, or if the patient is reduced to such a condition of neurasthenia that he is no longer capable of realizing what it is to be free from pain, the result is not likely to be perfect. Gastro-enterostomy cannot work miracles or undo the mischief that has been wrought in past years; and if the patient continues to lead the same kind of life after the operation that he led before, and to take no more care of himself, it is not to be expected that much benefit will follow. It stands to reason that if the conditions of living that led to the production of hyperacidity and ulceration when the stomach was healthy and uninjured, are allowed to continue without any check after the operation, the consequences will be the same or even worse. I have found it very difficult to make patients realize this. Time after time have I known them indulge themselves in all sorts of ways as soon as they were released from observation, and then complain of the consequences. They do not seem able to grasp the fact that gastro-enterostomy can only relieve them from the results of their previous want of care. It can never turn a naturally weak digestion into a good one.

The local condition, however, the seat and character of the lesion that renders operation necessary; the presence of adhesions; the shape and size of the stomach; the condition of its muscular coat, and similar details are of greater importance in determining this question. If, for example, there is merely mechanical obstruction at the pylorus and all else is healthy, relief ought to be complete. A new outlet is formed, and provided the stomach retains some portion of its original muscular power, or can regain it if it has been lost already, the artificial outlet will to all intents and purposes answer as well as the natural one. Moreover, the relief is permanent. It is true that in the first operation I performed the opening had contracted in the course of six weeks to the size of one's little finger; but the original incisions were far too small (they were stretched to allow the introduction of the plates used), and no portion of the mucous membrane was excised. On the other hand, I have notes of cases in which gastro-enterostomy had been performed eight and twelve years before, in which the opening was found *post mortem* to be patent and efficient. I do not attach much importance to the experiments that have been performed upon animals with the view of elucidating this question of permanence, as the conditions are not sufficiently similar to admit of comparison being made.

But when a chronic gastric or duodenal ulcer is the reason that calls for operation, and not merely the scar left by an ulcer long since healed, many other factors have to be taken into consideration. The question is no longer a mere mechanical one. What has to be done now is much more complicated. The hyperacidity of the contents of the stomach has to be lessened or neutralized. The ulcerated surface has to be protected from irritation and prevented from spreading until it causes perforation. The absorption of inflammatory products from the surface of the sore has to be stopped. Pain has to be prevented by checking the spasmodic contraction of the stomach which makes it drag and pull upon the surrounding peritoneum, hypersensitive because of the irritated sore so close to it. And above all, though it is not as yet sufficiently appreciated, the subsequent development of cancer has to be prevented. In every other part of the body it is notorious that cancer is especially prone to develop at the site of an ulcer which is prevented from healing by constant irritation. The stomach is no exception. In no less than 60 per cent. of the patients who die from cancer of the stomach is there the history of long-continued suffering, suggesting by the character and

persistence of the symptoms the pre-existence for many years of a neglected and irritated gastric ulcer.

How far all this can be accomplished in any individual case depends upon the success with which the short-circuiting is carried out. The object of gastro-enterostomy in these circumstances is not to drain the stomach, but to short-circuit the part that is involved, so that it may be left entirely on one side, at rest, until it has thoroughly recovered. Whether the patient is cured or merely relieved for the time depends upon the success with which this is done. If, for example, the ulcer is a simple one, near the pylorus, without any complications, and this part of the stomach is thoroughly excluded, so that it gets no work to do, all the symptoms will subside; the ulcer will heal, and, as I have seen on many occasions, great masses of indurated tissue, so large and so hard as to suggest the presence of scirrhus, will be completely absorbed. On the other hand, ulcers at the other end of the lesser curvature, especially saddle-shaped ones, which distort the shape of the stomach and drag upon the lesser omentum, are much more difficult. Where it is possible, these must be excised to obtain the best result, though this often involves a long operation upon the stomach before the gastro-enterostomy is begun, and the same thing is true of those ulcers, fortunately much more rare, at the cardiac end. Adhesions, again, require the closest attention. If they are left, relief from pain is rarely complete. Unfortunately, in many instances—when, for example, the liver or pancreas is deeply involved—it is impossible to remove them. Recurrence can only be prevented by dissecting them off at both ends and suturing the base from which they have been detached, so as to leave a smooth serous surface. The moral, of course, is the old and trite one that has been so often drawn—the operation should be performed while there is yet a possibility of really curing the patient, and should not be blamed if, through delay, which is now inexcusable, the state of things has become so bad that it cannot be remedied.

TETANY IN THE ADULT.

By J. A. GIBB, M.B., M.Ch.

Cases of tetany are of sufficiently rare occurrence to merit publication. I have seen three cases: two in adults, and one in a child between two and three years old. In the case of the child the tetany was no doubt due to rickets—late rickets. At the time the child was being improperly fed. I will report the cases of the two adults. They were both fatal. The child recovered and became healthy under proper treatment.

CASE I.

On May 7th I was called to see a lady aged 52 years who was said to have fainted. I found her lying on the floor with her shoulders raised. She was pale with dark rings under her partially-closed eyes. Her pulse did not suggest cardiac failure; it was of good volume, regular, and rather slower than normal.

I proceeded to remove the pillows from under her; this brought on a convulsion. The corners of her mouth were drawn up, the jaws were locked so as to prevent my putting the handle of a table-fork between her gums; she had no teeth. Her head was distinctly drawn back. Her breathing became difficult, and she groaned as one lifting a heavy weight. Her forearms were flexed. The thumbs were adducted and flexed into the palms, the fingers flexed over the thumbs. The chest and abdominal muscles were fixed and hard; the thighs, legs, and feet were extended, and the toes adducted. It was almost impossible to extend the flexion, or flex the extension. The pupils very slightly and very slowly reacted to light. The convulsions relaxed, but never completely passed off between one and another; her breathing was decidedly stertorous, her left cheek being puffed out with each expiration. She vomited, bringing up material that she had for tea at 5 p.m.—it was then 9.30.

The daughter told me that she had not been well for a few days previously, complaining of severe headache, chiefly frontal.

Having decided that it was a case of tetany, I injected hypodermically, during a convulsion, morphine and atropine. She was not conscious of the prick of the needle. She did not answer questions or show any sign of consciousness.

I waited half an hour, by which time the convulsions had almost stopped. I saw her daily for a week, and her condition improved.

I prescribed purges, and gave her liq. arsenicalis and liq. hydrarg. perchlor. internally. On May 14th, a week after my first visit, I was sent for at about 9 p.m., and found her unconscious. Pupils in the same condition as when I first saw her,

but, instead of the arms being flexed, they were extended, but could be easily flexed. I believe this was an after-condition of the flexions, and not a new condition. The daughter told me that the corners of the mouth had been again drawn up, giving her an idiotic grin. I formed an unfavourable opinion of her, and told the daughter that I did not think she would recover. She died quite quietly at 1 a.m.

CASE II.

A woman over 60, addicted to alcohol. Had marked gastric dilatation, and her convulsions were similar to those in Case I, but she was conscious during the attacks. Subsequent to the first attack there was paresis of the left side of the face and the body. The naso-labial fold on the left side was smoothed out and saliva leaked. The left arm and left leg were parietic. The knee-jerk was present, but reacted very weakly on this side. These conditions improved during the week. The muscles of the back of the neck were tender and painful, and she "was sore all over."

I had no opportunity of trying the electric reaction of the muscles, nor was I able to verify the gastric condition—that is to say, the extent of the dilatation. There was apparent dilatation by percussion; but what I intended to do was to have percutted the stomach with fluid in it. I suppose the more perfect plan would be to photograph the abdomen with bismuth in the stomach.

Treatment.—The diet consisted chiefly of small quantities of milk, custards, and concentrated essences of beef, and later fish was given. Of drugs I gave:

R̄	Liq. hydrarg. perchlor.	...	...	mxx
	Liq. arsenicalis	...	...	miii
	Glycerine	...	...	a few drops
	Aq.	...	...	ad ʒss.
R̄	Pulv. calomel	...	...	gr. 1
	Resin podoph.	...	...	gr. ½
	Ext. belladon.	...	...	q.s.

with mag. sulph. first thing in the morning.

Her bowels were obstinate, and never yielded comfortably to aperients, even in larger doses than in the above. After she had taken twelve doses of the mixture I substituted for it one containing sodium salicylate. I am inclined to think that the first mixture suited her condition better; forty-eight hours after the mixture had been changed the spasms returned.

As to the cause of tetany in adults, there can be no doubt that it is due to some toxin absorbed from the alimentary tract. The fact that tetany occurs in association with gastric dilatation suggests that some absorption may take place here. Tetany in children occurs in association with rickets, and as gastric catarrh is constant in cases of rickets, we here again have grounds for accepting intestinal intoxication as a cause of tetany. In children the nervous system is undeveloped, and thus there is lack of cerebral control. The post-tetany irritability of children is marked, and the causes required to bring on a fresh attack are very slight.

In Clifford Allbutt's *System of Medicine* tetany is very thoroughly discussed under various heads, namely, "dilatation of the stomach," "rickets," and "tetany." Experiments carried out by Bouveret and Dévic showed that the juices from a dilated stomach injected into an animal set up tetanic convulsions, but that hydrochloric acid in excess will altogether prevent the formation of these poisons. Bunge's view that the stomach should disinfect and protect ingesta emphasizes the pathological opportunities of a dilated stomach.

Prognosis.—Prognosis will depend upon the causation of tetany. Risien Russell says that in thyroidectomy prognosis is not unfavourable, as death may be prevented by administration of thyroid extract, but that in gastric dilatation treatment is of little avail. If I should have another case of tetany, I should certainly employ daily lavage of the stomach. I should imagine that in a case as severe and with the contractions as marked as in those recorded, and when there is unconsciousness, the prognosis must be grave from the very first, even if the symptoms should improve to the extent that they did in my cases.

THE report of the Council of the Nightingale Fund shows its financial position at the end of the year 1907 to have been satisfactory. The total expenditure during the year was £1,892, and a balance of some £700 on the right side was carried forward. Between the school at St. Thomas's Hospital and its branch at St. Marylebone Infirmary 196 probationers were under training during the year. Of these 55 were discharged as unsuitable for a nursing career or left from other causes; 54 completed their probationary year's work and were taken on the staff as extra nurses; and 62 remained either in the main or branch home on December 25th, 1907. The fund made a grant during the year of £300 to the Metropolitan Nursing Association towards the cost of District Training.

MUCOUS COLITIS AND ITS RELATIONSHIP TO APPENDICITIS AND PERICOLITIS,

WITH REMARKS UPON ITS TREATMENT BY IRRIGATION (PLOMBIÈRES BATH).

By ALFRED MANTLE, M.D.DURH., M.R.C.P.LOND.,
HARROGATE.

I MEAN to embrace in the term "mucous colitis" that morbid condition of the mucous membrane of the colon in which the predominating feature is the passing of mucus in the stools, most frequently the result of catarrhal inflammation. Inasmuch as the mucus is seen sometimes in viscid masses or ropy strings, and at other times quite membranous and occasionally as casts of the bowel, some have given the name of "membranous colitis" to the latter condition; but the membranous is merely an extension of the mucous form of colitis. The same may be said of ulcerative colitis, which sometimes is a further manifestation of the original catarrhal inflammation.

There is no reason why we should not look upon this catarrhal condition of the bowel as analogous to the same morbid process in the stomach, and its effects may be serious and far reaching. As a profession we have always shown considerable anxiety as to regularity in the action of the bowel, but we have not investigated the character of the ejecta so thoroughly as we are now doing, and we must admit that the surgeon, in a great measure, has assisted the physician in this investigation, for intestinal surgery has thrown much light upon morbid processes affecting the mucous membrane of the bowel of which we were formerly ignorant, and amongst other things it has shown that the mucous membrane of the colon and appendix may be simultaneously affected.

It is as well to remember that physiologically the colon is that part of the intestinal tract in which its contents move very slowly, for normally from pylorus to rectum the contents of the bowel may be reckoned as occupying about eight hours in their passage, most of the time being spent in the colon (Allchin); also, that the activity of the gut becomes less automatic and more dependent in its extrinsic innervation as we proceed from the ileo-caecal valve to anus (Starling). The myogenic contractions in a separated colon are much less frequent and complete than are those of the ileum, and peristaltic waves commencing in the first part of the large bowel seldom reach so far as the sigmoid flexure. Normally, then, the large bowel is less active than the small, and we recognize danger in the accumulation in it of undigested food and faecal matter which an atonic condition of the first part of the colon may bring about, for this portion of the bowel, as Arbuthnot Lane describes it, is the cesspool of the body, and it is particularly liable to catarrhal inflammation.

In by far the largest number of cases of chronic colitis constipation is a prominent feature, and Caley¹ says cases of chronic constipation are not uncommonly found on careful investigation to be examples of chronic colitis with constipation as the dominant symptom. But although constipation is the more common condition, yet diarrhoea occurs in some cases, when mucus and sometimes blood are seen in the stools.

Both conditions may follow upon an attack of acute colitis, and though some cases of chronic colitis are traceable to an acute attack, yet the condition is one which more often comes on insidiously. When chronic colitis is met with in children it is practically always after an acute attack. It is, however, rare in childhood, but Hale White has recorded 60 cases and Cautley and Carver have also reported cases.

There is little doubt that the bulk of those who suffer with mucous colitis are of a neurotic type, and the same may also be said of those who suffer with gastric disorders, and both conditions are frequently associated. Errors in diet, we admit, play an important part in the causation of all alimentary disturbances, but it is local irritation in a hypersensitive organism producing exaggerated reflex phenomena which is the cause, for the same error in the normal may have no bad effect, and we frequently hear the

¹ Herx's skiagraph work after a bismuth breakfast (BRITISH MEDICAL JOURNAL, vol. 1, 1908, p. 192) confirms this conclusion but gives a much longer period for sojourn in the colon.