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THE MODERN TREATMENT OF GASTRIC DISEASE *

BY HERBERT J. PATTERSON, M.A., M.C., M.B. (CANTAB),
F.R.C.S.

MR. PRESIDENT AND GENTLEMEN,—

Will you allow me first of all to say how much I appreciate the honor conferred on me by the invitation of your President to come and address you. It is easy to accept such an invitation, but quite another matter to prepare an address worthy of such an audience as I know from experience one meets in this New World.

In the year 1876, Gussenbauer and Von Winiwarter, as the result of experiments on dogs, came to the conclusion "that the surfaces of the stomach have a real tendency towards union by first intention, just as have wounds of the skin." They little imagined what paths were opened up by this simple observation, which seems so obvious to us. Without exaggeration these pioneers may be described as the heralds of gastric surgery, which at that time was a closed book in the history of medicine.

Their work soon bore fruit. In the year 1881, Billroth performed the first pylorotomy on a human being, followed by recovery. This year, indeed, was a landmark in the progress of gastric surgery, for, in addition to Billroth's brilliant success, the operation of gastro-jejunostomy was performed for the first time by Wolfier, at the suggestion of Nicoladoni. It may be regarded as the birth year of the surgery of the stomach.

Since those early days, gastric surgery has been a child of rapid growth. It is, indeed, difficult to realize how great has been the progress, even within the short time compassed by my

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own experience. I well remember how, one night, when I was house surgeon, just under twenty years ago, the whole resident staff were assembled in consultation over an obscure case. The patient, a man aged forty years, had been seized with severe abdominal pains a few hours before admission. His face bore witness to the intensity of his sufferings. There were beads of perspiration on his forehead. His breathing was short and shallow, and his replies to questions couched in short, jerky sentences. His pulse was quickened slightly, and his temperature just above normal. He referred his pain to the whole abdomen and the lower part of the chest. There was no abdominal distension, but some rigidity in the upper part. We all examined him, and the number of different diagnoses made about corresponded to the number of those who took part in the consultation. Peritonitis was excluded by the absence of abdominal distension and by the absence of marked increase in pulse rate. One daring spirit suggested bleeding. His boldness and originality carried the day, and the patient was bled to the extent of ten or twelve ounces. At the post-mortem next day a perforated ulcer of the duodenum was discovered. It is scarcely too much to say that at the present time the man's life would have been saved by surgical treatment. To us to-day it seems almost incredible that the nature of an illness presenting such a clear-cut and well-recognized clinical picture as this should not even have been suspected. The recital sounds more like an episode in the dark ages than an occurrence in a London hospital, near the close of the nineteenth century. The thought of what posterity may think of us should ever keep us humble. This patient was a victim to the pathology of the dead-house. At that time only final stages of abdominal diseases were seen, and these end results formed the basis of pathology. Little or nothing was known of the early pathology of such cases, and consequently the corresponding symptoms were unknown. Of duodenal ulcer little was known. Gastric ulcer was supposed to be uncommon except as a disease of young womanhood.

Probably in no department of medicine has surgical activity led to greater accuracy of diagnosis than has been the case in diseases of the stomach. Twenty years ago operative treatment was undertaken only as a last resort. All our knowledge of gastric pathology was derived from the post-mortem room, or from an occasional operation undertaken when the patient had one foot in the grave. As surgical technique was improved, surgeons grew bolder and more enterprising, and so knowledge was accumulated as to the conditions present at earlier stages

of gastric disease. The pathology of the dead-house was succeeded by the pathology of the operation theatre. Operation revealed the early stages of the troubles which gave rise to the symptoms for which the patient sought relief, and so by degrees the surgeon was enabled to compose a clinical picture of the symptoms caused by the various organic lesions found.

Modern methods of gastric diagnosis are of composite growth, the clinician, the surgeon, the chemist, the physiologist, the bacteriologist and the radiographer, all have contributed their quota to the store of knowledge.

We must be satisfied no longer with such vague diagnoses as hyperchlorhydria, acid dyspepsia, nervous dyspepsia, and gastralgia, high-sounding phrases whose only use is as a cloak for lack of knowledge. These terms signify symptoms, not diseases, and as guides to successful treatment are of less value than the old labels on our baggage, for these at least are reminiscences of former trips.

The introduction of the test meal has enabled us to study the gastric functions in health and disease, and incidentally has shown us how misleading such descriptions are. I have seen many patients whose disease has been diagnosed as acid dyspepsia, analysis of whose gastric contents showed not only entire absence of free hydrochloric acid, but also diminished acidity.

A good many years ago I operated on a man who had gastric symptoms, due to chronic appendicular disease. I removed his appendix, and as he had extreme hyperchlorhydria, I performed, unwisely as I now know, a gastro-jejunosomy. Before operation, with extreme hyperacidity, he did not notice any acidity, after operation he complained bitterly of a "burning acidity," although analysis of his gastric contents showed hypoacidity and absence of free hydrochloric acid. Later, I restored the continuity of the alimentary canal, the acidity increased, the free hydrochloric acid was restored, but his symptoms of acidity disappeared.

In the vast majority of cases acid dyspepsia and the like are the symptoms of definite organic disease. It is perhaps no exaggeration to say that eighty-five per cent. of cases of persistent gastric trouble are due to obvious lesions, not necessarily in the stomach, but somewhere in the abdomen. What about the remaining fifteen per cent?

It is remarkable how, within recent years, fresh sources of persistent dyspepsia have been discovered. In the early days if ex-

ploration of the stomach and duodenum revealed no lesion, surgery was helpless. Since the discovery of the role of cholelithiasis and appendicular disease in the causation of gastric disturbances, the true nature of many cases, hitherto obscure, has been cleared up. Now the brilliant work of Sir Arbuthnot Lane has thrown further light in dark places, and it is now clear that in many cases hitherto obscure the *fons et origo mali* is intestinal toxemia. This condition accounts for a considerable proportion of the 15 per cent. of cases to which I have alluded, so that at the present day the proportion of cases is small in which there is not a definite, ascertainable cause for persistent gastric symptoms.

It is a matter for wonder why so limited a use is made of gastric analysis in the investigation of gastric disease. Is it not true that a practitioner will treat for weeks or months a patient suffering from gastric trouble without the slightest knowledge of the condition of affairs within the stomach. He does not know whether there is an increase or a decrease of the gastric acidity, whether or not there is bleeding, whether the evacuation of the stomach is hastened or delayed, whether or not the peptic activity of the gastric glands is impaired. Under such circumstances how can treatment be otherwise than purely empirical. Would any practitioner prescribe spectacles merely after listening to a recital of the patient's symptoms? Why should the stomach be treated with less courtesy than the eyes? I would say emphatically that the stomach tube should be part of the routine of gastric diagnosis. At the same time I would point out that gastric analysis has its limitations. Laboratory investigations are an aid, not a substitute, for clinical work. No diagnosis should be based solely on a chemical examination, but if the results be interpreted in the light of the clinical history, investigation of the motor activity and of the gastric secretions is a great help.

In gastric work, at any rate, the surgeon must be a clinician as well as skilled in handicraft. The surgeon is not a mere carpenter to perform a task outlined by others. He himself should make his own diagnosis and form his own judgment as to the advisability or otherwise of operative treatment. He should carry out his own laboratory investigations, for it is only by so doing that he can gain the knowledge to enable him to make the best use of what chemical pathology can teach. The surgeon should be a physician who has developed his brain so that it reaches to his finger tips. It is impossible to lay down hard and fast rules as to the relation of the different lesions found to the chemical alteration of the gastric contents. With

experience, however, one can "read" the analyses, and so use them in coming to a conclusion as to the nature of the patient's trouble. Here, for instance, is an analysis from a case of duodenal ulcer:—

GASTRIC ANALYSIS.

Duodenal Ulcer.

Total acidity	80.
Total Chlorides	0.405
Free HCl	0.055
Protein HCl	0.275
Mineral Chlorides	0.075

You will observe the high total acidity, the high total chlorides, the great excess of free hydrochloric acid, the high protein hydrochloric acid, with a normal or lessened amount of mineral chlorides. Such an analysis is typical of duodenal ulcer. I know of no condition likely to be associated with such an analysis, with the exception that occasionally in gastric ulcer close to the pylorus, a somewhat similar analysis may be found. In a case of this sort, with a clinical history of pain coming on two or three hours after food, one would be able to assert with confidence the existence of a duodenal ulcer.

In less typical analyses the diagnosis may be less easy. Take such an analysis as the following:—

GASTRIC ANALYSIS.

D. U. Pyloric obstruc. Cholelithiasis.

Total acidity	78.
Total Chlorides	0.355
Free HCl	0.000
Protein HCl	0.235
Mineral Chlorides	0.120

In this case you will observe that there is no free hydrochloric acid. The total acidity, however, is high, as are the total chlorides, and the protein hydrochloric acid is not diminished. If the absence of free hydrochloric acid were due to chronic gastritis or carcinoma, we should expect a marked diminution both in the total acidity and in the total chlorides, as well as in the protein hydrochloric acid.

Carcinoma, therefore, was excluded. In duodenal ulcer free hydrochloric acid may be diminished or absent:—(1) In between

the attacks, (2) when the ulcer is healed, (3) if the ulcer has produced partial obstruction, (4) if there be marked intestinal stasis or appendicular disease. As the patient gave a history of typical attacks of duodenal ulcer pain, it was surmised that she had a duodenal ulcer, but that either the ulcer was becoming cicatrized and so producing partial obstruction, or that she had appendicular disease. At the operation it was found that she had a gall-stone, a puckered ulcer of the duodenum producing partial obstruction.

I give these two analyses as illustrations of the conditions under which gastric analyses must be interpreted.

Here is an analysis from a case of gastric ulcer close to the pylorus.

GASTRIC ANALYSIS.

Gastric Ulcer close to Pylorus.

Total acidity	75.
Total Chlorides	0.325
Free HCl	0.040
Protein HCl	0.205
Mineral Chlorides	0.080

This analysis is very similar to that which I have shown you from a case of duodenal ulcer. My experience is that it is often impossible, either by the clinical history or by gastric analysis, to differentiate a gastric ulcer, close to the pylorus, from a duodenal ulcer.

In gastric ulcers of the lesser curvature, or of the body of the stomach, the free hydrochloric acid is rarely so high as in ulcer near the pylorus. The following is an illustration:—

GASTRIC ANALYSIS.

G. U. about middle of Stomach.

Total acidity	78.
Total Chlorides	0.308
Free HCl	0.025
Protein HCl	0.206
Mineral Chlorides	0.077

Here you see that there is a slight increase of free hydrochloric acid, while both the total chlorides and protein hydrochloric acid are less than in the cases of duodenal ulcer and gastric ulcer near to the pylorus.

Probably the free hydrochloric acid always is increased in the early stage of gastric ulcer. Later there is a progressive diminution, so that when marked pyloric stenosis is present, free hydrochloric acid may be absent entirely.

Here is an analysis from a case of hour-glass stomach:—

GASTRIC ANALYSIS.

Hour-glass Stomach.

Total acidity	70.
Total Chlorides	0.332
Free HCl	0.000
Protein HCl	0.230
Mineral Chlorides	0.098

You will notice the absence of free hydrochloric acid. I have never found any free hydrochloric acid present in the gastric contents in a case of hour-glass stomach. This is an important truth, as the absence of free hydrochloric acid leads frequently to a diagnosis of malignant disease. At first sight the absence of free hydrochloric acid is difficult to explain. The oxyntic cells are in the cardiac end of the stomach, and therefore we should expect that free hydrochloric acid would be secreted as usual. Possibly the explanation is that the gastric hormone which is secreted in the pyloric pouch does not reach the cardiac end of the stomach, and so the oxyntic cells are not stimulated into activity.

In this analysis, although there is no free hydrochloric acid, the total acidity is not very low, and the total chlorides and protein hydrochloric acid are not diminished. Compare the analysis with one from a case of gastric carcinoma:—

GASTRIC ANALYSIS.

Gastric Carcinoma.

Total acidity	28.
Total Chlorides	0.178
Free HCl	0.000
Protein HCl	0.051
Mineral Chlorides	0.124

Here you see not only the absence of free hydrochloric acid, but a marked fall in the total acidity and diminution of the total chlorides and a very marked and characteristic lowering of

the protein hydrochloric acid. The mineral chlorides are increased.

With the gastric symptoms of appendicular disease or of intestinal toxemia, there is usually a marked diminution, or absence, of free hydrochloric acid with a diminution of all the constituents of the gastric contents.

GASTRIC ANALYSIS.

Appendicular Gastralgia.

Total acidity	61.
Total Chlorides	0.288
Free HCl	0.007
Protein HCl	0.201
Mineral Chlorides	0.080

Radiography affords much help in diagnosis, and is destined to be of even greater service. At first only such gross lesions as pyloric stenosis and hour-glass stomach were demonstrated, but recently, with refinements of technique, some experts can detect a single ulcer and the early beginnings of gastric carcinoma.

GASTRIC ULCER.

Not one of the least interesting results of gastric surgery is the extent to which our views as to the frequency and sex incidence of gastric ulcer have been modified. Formerly it was believed that gastric ulcer was a very common affection in young women. Twenty years ago, for every man diagnosed as suffering from gastric ulcer, nine women were similarly classified. When in later years such cases came to be investigated on the operation table, it was soon found that there was a great discrepancy between clinical diagnosis and the operation findings.

It is of interest to note that in later years, as shown in the accompanying chart, physicians appear to have been less ready to diagnose gastric ulcer in women, at any rate the ratio has fallen until in 1911 the ratio of men to women was 1 to 1¼, instead of 1 to 9.

CHART.

This is more in accordance with the operation findings. From cases verified by operation I have found 117 men to 114 women. How did this error in diagnosis arise? How are the symptoms, so suggestive of gastric ulcer, produced? In many instances the appendix is at fault. The symptoms are gastric, but the lesion

is in the appendix, a condition for which I have suggested the term appendicular gastralgia.

When I was at Rochester for the first time, I saw Dr. W. J. Mayo remove an appendix which he believed to be the cause of the gastric symptoms from which the patient was suffering. I confess that at the time I was very sceptical as to the causal relation of the appendix to the gastric symptoms. My scepticism has long been silenced. I can give you an interesting proof of the influence which removal of the appendix has on the gastric functions. As I have pointed out before, there is often complete absence of free hydrochloric acid in the gastric contents. Now after appendicectomy frequently there is an immediate restoration of free hydrochloric acid in the gastric contents, as is shown in the following analysis:—

GASTRIC ANALYSIS.

Appendicular Gastralgia.
(intest. stasis.)

Total acidity	52.
Total Chlorides	0.250
Free HCl	0.000
Protein HCl	0.167
Mineral Chlorides	0.083

After Appendicectomy.

Total acidity	72.
Total Chlorides	0.368
Free HCl	0.014
Protein HCl	0.270
Mineral Chlorides	0.083

The absence of free hydrochloric acid has been attributed to inflammatory changes in the gastric mucosa as a consequence of delay and stagnation of the food in the stomach. This explanation does not seem to be satisfactory. If the absence of free hydrochloric acid were due to this cause it is difficult to see how, after operation, there could be an immediate restoration of the secretion of free hydrochloric acid. This observation is a very striking one and puzzled me for several years. I used to think that the absence of free hydrochloric acid might be the result of spasmodic stenosis of the pylorus, secondary to irritation of the diseased appendix, and that the removal of the appendix led

to the cessation of the spasm and renewal of the secretion of free hydrochloric acid.

This view is disproved by the absence of pyloric spasm on X-ray examination and also to some extent by the observation that electrical stimulation of the appendix has no visible effect on the pylorus. I believe that the diminution or absence of free hydrochloric acid is due to the presence of some toxin in the blood. Where does the toxin come from? Possibly from the appendix, but more probably from the intestine.

Apart from appendicular disease we may see the same absence of free hydrochloric acid in the gastric contents in cases of intestinal stasis and the same restoration of free hydrochloric acid after ileo-colostomy. This suggests that the absorption of toxins is the result of intestinal stasis. The intestinal stasis may be secondary to definite kinks or bands at the terminal portion of the ileum, which cause mechanical obstruction. Bands are met with also at the hepatic and splenic flexures of the colon, and in the sigmoid. In other cases there is no obvious lesion but the diseased appendix, sometimes there seems little wrong with this vestigial organ, except that it harbors a concretion. How can we explain the stasis in these cases? In some of them, as pointed out by Sir Arbuthnot Lane, the appendix forms a kind of ligament controlling the effluent to the cecum. In many cases I believe stasis is due to spasm of the appendix spreading to the outlet of the ileum.

It is noteworthy that in many of the cases the appendix contains a concretion, or some putrid feces. I believe the spasm is due to the efforts of the appendix to empty itself. While operating on such cases I have many times observed the appendix writhe vigorously when touched.

The hypothesis that diminution or absence of free hydrochloric acid in the gastric contents is due to absorption of toxins from the alimentary canal, explains in a reasonable manner the immediate restoration of the secretion of free hydrochloric acid by the gastric mucosa after appendicectomy or ileo-colostomy.

We may go still further, the absorption of toxins leads to hyper-secretion in the stomach, and in time may cause a toxic gastritis. The gastric mucosa becomes inflamed and bleeds easily, a condition known as gastrotaxis. I have many times examined the interior of a stomach of a patient suffering from appendicular disease and have seen numerous bleeding points in the mucosa. In several instances on examining a piece of the mucosa microscopically I have been able to see the blood corpuscles escaping between the epithelial cells.

Thus we get hematemesis in patients who are suffering, not from gastric ulcer, but from a diseased appendix. It is quite possible that this condition of the mucosa is the prelude to definite ulceration.

Many years ago I pointed out the frequent association of appendicular disease with duodenal ulcer, and suggested that the relation was one of cause and effect. Now, thanks to the suggestive work of Sir Arbuthnot Lane, we can explain why the appendix leads to ulceration. There is much ground for the belief that all gastric and duodenal ulcers are due to absorption of toxins from the alimentary canal.

Now we can understand why in former times gastric ulcer was diagnosed so frequently. The majority of the women who have symptoms of gastric ulcer are really suffering from a toxemia secondary to intestinal stasis. The gastric symptoms are due to interference with the gastric secretions. Gastric ulcer is not nearly as common a disease as was supposed. I find that I operate on two duodenal ulcers for one gastric ulcer.

All are agreed as to the advisability of prolonged medical treatment before any operation for gastric ulcer is undertaken. By prolonged medical treatment I mean at least six weeks in bed on a milk diet, and six weeks with comparative rest on a milk diet. Under such treatment I have had a number of private patients completely relieved, but with hospital patients such treatment is almost impossible to carry out, as it is so difficult to make the patients realize the importance of careful diet, that relapse ensues in something like 75 per cent. of hospital patients.

As regarding surgical treatment there are at present two opposing schools, those who advocate gastro-jejunostomy and those who advise excision. This is an instance of the swing of the pendulum, for the first operation for the cure of a gastric ulcer was a resection performed by Rydygier in 1881. Twelve years later Doyen substituted gastro-jejunostomy for excision. At first the results of gastro-jejunostomy were brilliantly successful, but later it was found that the results, when there was no pyloric stenosis, proved less satisfactory than operation in cases in which stenosis existed. It was thought that in cases of patent pylorus, the food continued to pass through the pylorus, so the anastomotic opening, being functionless, closed up. Some surgeons, therefore, advocated deliberate occlusion of the pylorus, so as to keep the gastro-jejunostomy opening patent. It is more than probable that the failures were due, not to closure of the anastomotic opening, but because gastro-jejunostomy was performed without proper in-

dication. If a patient requires a gastro-jejunos-tomy, benefit will ensue whether the pylorus be excluded or not. If gastro-jejunos-tomy be not indicated, the additional closure of the pylorus will not make an unnecessary operation a good one.

Within the last few years treatment by excision has been revived. Those who advocate it argue that gastro-jejunos-tomy is a drainage operation, and then unless there be pyloric stenosis, it is useless, as the food continues to pass through the patent pylorus, and not through the new opening. In other words the drain does not act. I believe this teaching to be erroneous.

Gastro-jejunos-tomy is a physiological, not a mechanical, oper-ation. Its beneficial effects are due to its influence on the gastric contents and not to drainage. Let me indicate very briefly my reasons for this belief.

In the first place if gastro-jejunos-tomy is a drainage opera-tion, then, unless it hastens the evacuation of the stomach, it will not have a beneficial effect. This is not the case, as the result of operation may be to retard evacuation and yet the patient is completely relieved. How then does gastro-jejunos-tomy act? I believe the important factor is the regurgitation, into the stomach, of small quantities of bile and pancreatic juice, which diminish the acidity, and may also have other effects. I believe this re-gurgitation is constant, even though bile cannot be demonstrated in the gastric contents by ordinary tests, and put very briefly the proof of this is as follows:

(1) There is a constant increase of mineral chlorides after gastro-jejunos-tomy.

(2) This increase is not due to increased activity of the gas-tric mucosa, because there is usually a diminution of the total chlorides.

Therefore the increase in mineral chlorides must be due to some addition to the gastric contents from without, i.e., to bile and pancreatic juice which regurgitate through the anastomosis. If this is so, then the increase in mineral chlorides after gastro-jejunos-tomy should disappear if the gastro-jejunos-tomy be un-done. That this is so is shown in the following case:

GASTRIC ANALYSIS.

Before Gastro-jejunos-tomy.

Total Chlorides	0.420
Free HCl	0.051
Protein HCl	0.289
Mineral Chlorides	0.080

After Gastro-jejunostomy.

Total Chlorides	0.365
Free HCl	0.000
Protein HCl	0.153
Mineral Chlorides	0.211

After Undoing Gastro-jejunostomy.

Total Chlorides	0.343
Free HCl	0.018
Protein HCl	0.270
Mineral Chlorides	0.055

If an entero-anastomosis be performed as well as gastro-jejunostomy, then this increase does not occur.

GASTRIC ANALYSIS.

Before Gastro-jejunostomy.

Total Chlorides	0.335
Free HCl	0.003
Protein HCl	0.175
Mineral Chlorides	0.156

After Gastro-jejunostomy and Entero-anastomosis.

Total Chlorides	0.350
Free HCl	0.000
Protein HCl	0.226
Mineral Chlorides	0.124

This increase in mineral chlorides is more marked if there is excess of bile in the gastric contents.

This increase in mineral chlorides does not occur as a rule after operations other than gastro-jejunostomy.

Therefore gastro-jejunostomy is indicated in any case of chronic ulcer which resists medical treatment, whatever the situation of the ulcer. Latterly, the advocates of excision have shifted their ground. Now they allege that a large proportion of gastric carcinomata have their origin in simple ulcer, and that therefore excision should be performed to prevent occurrence of cancer. I do not think the grounds on which this teaching is based are very convincing. If this hypothesis be correct, gastro-jejunostomy must be performed frequently for ulcers which are already malignant. Why, then, is it so rare an event for a patient to die from cancer

after gastro-jejunostomy for supposed simple ulcer? When a mistake is made it is more likely to be a mistake in the opposite direction. It is the supposed malignant case which proves to be innocent.

My experience coincides with that of Professor Kocher and Dr. Gressot that malignant degeneration of simple ulcer after gastro-jejunostomy is a rare event.

Gastro-jejunostomy is the safer operation, and relapse is less common than after excision. The chief objection to excision is, that it removes the ulcer, but does not influence the causal factors of ulceration. Gastro-jejunostomy, therefore, should be the operation of choice, because it is a physiological operation and so alters the gastric contents as to promote healing of the ulcer.

Hour-glass stomach is a condition which is often mistaken for cancer, owing to the absence of free hydrochloric acid in the gastric contents, and to the extreme degree of emaciation to which the patients are reduced. Even after opening the abdomen the condition may be unrecognized, as in the exterior of the stomach there might be little indication of the serious constriction which exists within.

Gastro-jejunostomy in the proximal pouch is the most satisfactory treatment. Gastroplasty and gastrostomy, unless performed in combination with gastro-jejunostomy, are followed by relapse in a large proportion of the cases. A gastro-jejunostomy alone is sufficient.

If there be pyloric stenosis or a double hour-glass stomach, it may be necessary to anastomose the jejunum to the stomach, on both sides of the constriction, so that both pouches may be drained efficiently.

DUODENAL ULCER.

In the vast majority of cases the diagnosis of duodenal ulcer can be made from the history given by the patient. There are, however, a few cases in which the history is typical, but no duodenal ulcer is discovered. Usually in such cases there is a diseased appendix, and possibly a duodenal ulcer, not sufficiently indurated to be palpable without opening the duodenum. I have met with one such case.

In duodenal ulcer hyperchlorhydria is the rule, and when this condition is present, coupled with the typical history, we may be confident as to the diagnosis.

In duodenal ulcer the indication for surgical treatment is much more definite than in gastric ulcer. We know that a gas-

tric ulcer may cicatrize and give rise to no further trouble. In duodenal ulcer such a favorable issue is rare, if indeed it occur at all. My experience is that when once a patient has marked symptoms of duodenal ulcer, recurrent attacks of pain coming on two hours or more after food, and accompanied by hyperchlorhydria, he will be subjected to periodic returns of symptoms until surgical treatment be adopted. Dieting, medical treatment and gastric lavage will give relief, but will not bring about a cure. Gastro-jejunostomy is the operation of choice.

Severe pain radiating to the back is a strong indication for operation, as generally it means that the ulcer has become adherent to the liver or pancreas, and that the ulceration is progressive.

With regard to the treatment of hemorrhage from gastric and duodenal ulcers, I doubt whether it is ever expedient to operate during the progress of the hemorrhage.

So far as I can gather from hospital statistics, operation during hemorrhage is attended with a mortality of at least 50 or 60 per cent., while of all gastric or duodenal ulcers which bleed, the mortality is not greater than 5 per cent. It appears, therefore, that of those patients who have gastric or duodenal ulcers which cause recognizable hemorrhage, one in twenty dies, whereas of those submitted to operation one out of every two dies. In other words, if a patient is operated on for gastric hemorrhage during the attack, the chances are two to one that the result will be fatal; whereas, if no operation be done, the chances are twenty to one in his favor. And even as regards those patients who are operated on and recover, I think we are entitled to ask in the words of Sir James Paget, "What would have happened if this operation had not been done?" Some of the patients recover, not because of, but in spite of, operation. I know how difficult it is to stay one's hand in the face of serious hemorrhage. The surgeon is apt to argue, "The patient is bleeding; I think that probably he will die; I must do something." The conclusion that "something" must be done because the patient is going to die is illogical. We must remember that it is not unlikely that the "something" will make the patient's life shorter still.

The physician, accustomed to see patients recover after severe hemorrhage from the lungs, or from cirrhosis of the liver, appreciates perhaps, more than the surgeon, the *vis medicatrix naturalis*. It is extraordinary how patients will recover after very severe hemorrhage, if only nature is allowed to do her work. In this connection, I must refer to the brilliant work of Dr. Crile in the

treatment of anemia resulting from hemorrhage, by means of direct transfusion. This seems to me to make the case against operation during hemorrhage stronger than it was before.

The rules I have formulated for my own guidance are as follows: In hemorrhage from an acute ulcer, that is, when the onset of bleeding is sudden and a history of previous gastric trouble is absent, first give a thorough trial to absolute rest in bed, ice applied to the abdomen, very hot water injections by the rectum, and the avoidance of food by the mouth for at least four or five days. If a second profuse hemorrhage occur operate, provided it is quite clear that the second hemorrhage has not been brought on by want of absolute rest or by too early administration of food. In hemorrhage from a chronic ulcer, that is, in cases with a definite history of pain after food, and vomiting, operate after one severe attack, or after several lighter attacks of hemorrhage, especially if the hemorrhage is increasing in quantity and recurring at decreasing intervals. As to the method of operating, I believe that gastro-jejunosomy, without any attempt to deal with the bleeding point, is the most satisfactory method of surgical treatment. I believe that in the majority of cases the hemorrhage comes, not from the ulcer, as is commonly taught, but from the inflamed gastric mucosa. Gastro-jejunosomy, by diminishing acidity, and doing away with hypersecretion allows the gastric mucosa to resume a normal condition and so stops the tendency to bleed.

CANCER OF THE STOMACH.

Although the stomach is more frequently affected with carcinoma than any other organ of the body, partial gastrectomy is one of the uncommon operations of surgery. This ought not to be the case, and that it is so is a reproach to our profession. Granting that it is difficult in many cases to make a diagnosis of gastric carcinoma at an early stage of the disease, it is equally true that all means available are not made use of as they might be. Were the use of the stomach tube and the X-rays more general, a much larger proportion of cases would be recognized. It seems to me that the reason of the failure to recognize gastric carcinoma is, that many of the so-called symptoms of this disease enumerated in the text books are really late complications. When such are present the opportunity for successful surgical treatment is gone. In the early diagnosis of gastric carcinoma the important points are:

1. The impairment of the motor functions of the stomach. Gastric carcinoma begins at, or near, the pylorus in 65 per cent.

of the cases. It follows, therefore, that one of the earliest signs of cancer of the stomach is impairment of its motility.

2. The total chlorides of the gastric contents are diminished, the amount being usually less than 0.200.

3. The absence of free hydrochloric acid is the rule, its presence the rare exception.

4. Diminution of the protein hydrochloric acid is an early and very important sign of gastric carcinoma.

5. Examination by the X-rays may show irregularities at the pylorus, giving the appearance of finger-prints.

6. The persistent presence of blood in the feces, so small in amount that it cannot be recognized microscopically (occult blood), is very suggestive of gastric carcinoma.

Marked impairment of gastric motility or marked diminution of the protein hydrochloric acid in a patient over middle age, raises a suspicion of malignancy, and the shorter the history and the greater the degree of gastritis, as shown by analysis, the greater the probability of cancer. Let me illustrate this by the analysis of the gastric contents of two patients, neither of whom had a palpable tumor.

GASTRIC ANALYSIS.

Chronic Gastritis.

Total acidity	44.
Total Chlorides	0.206
Free HCl	0.000
Protein HCl	0.082
Mineral Chlorides	0.124

This analysis was obtained from the gastric contents of a man just over forty years of age, who had suffered from gastric symptoms for a year. The chemical findings are those of chronic gastritis, with very marked decrease of the protein hydrochloric acid; this may be due to inflammatory disease or to cancer. The comparatively long history, the good condition of the patient, and the absence of any degree of anemia, were against malignant disease. Cancer of such long standing should have resulted in a much lower total acidity, an even greater decrease in the protein hydrochloric acid, and probably more marked anemia.

At the operation a gumma of the liver was found which had become adherent to and implicated the pylorus.

GASTRIC ANALYSIS.

Gastric Carcinoma.

Total acidity	29.
Total Chlorides	0.183
Free HCl	0.000
Protein HCl	0.070
Mineral Chlorides	0.113

Here is an analysis from a man who had suffered for four months from symptoms referable to the stomach. You will observe that although the history is much shorter than in the case I have just mentioned, the total acidity is much lower and the protein hydrochloric acid much more diminished. This, coupled with the fact that the patient evidently had lost weight and was anemic, led to a diagnosis of cancer, which was confirmed by operation and the growth successfully removed.

Careful consideration of the points alluded to will enable us to come to a correct conclusion in many instances, but our only certain means of diagnosis lies in abdominal exploration.

The presence of these signs points to cancer, but our only certain means of diagnosis lies in abdominal exploration.

The practical question then is, under what circumstances is this justifiable? Are we to open the abdomen on suspicion, on probability or only on certainty of diagnosis? We must remember this, that if we wait for certainty, in most cases we have allowed the opportunity for radical treatment to pass.

Many cases of gastric carcinoma are treated medically for long periods, in the hope that they may prove innocent. Such hope rarely is justified. In most of the cases the condition found is such that even if it be inflammatory and not malignant, relief can be obtained only by surgical means.

How many cases of pyloric stenosis, both innocent and malignant, are treated for many weeks by gastric lavage, and yet the futility of such treatment as a curative measure is well known.

In an elderly person the probability that even a slight degree of gastric stasis is due to carcinoma is so great that its persistence, in spite of careful dieting, renders exploration justifiable. When once we are satisfied as to the probability of cancer, the risk of abdominal exploration is less than the risk of delay. We cannot, in all cases, diagnose cancer with certainty, but in the majority of cases we can say, from the diagnostic methods available, that surgical treatment is indicated. We must not be deterred by the fear

that we may be wrong. It is far less culpable to make an occasional mistake in the direction of suspecting cancer which does not exist, than, when cancer is present, to delay surgical treatment until a radical operation is impracticable. In suspected gastric cancer our policy should be to look and see rather than to "wait and see."

*WHAT CAN BE DONE FOR CANCER OF THE STOMACH?

It is not, perhaps, realized sufficiently that gastric carcinoma is markedly a local disease, dissemination is a late manifestation, and in the early stages the growth can be removed with favorable results, both immediate and remote; whereas no other form of treatment can hold out the slightest prospect of any lasting benefit. Gastric carcinoma in its early stages lends itself to wide removal even more favorable than cancer of the breast or rectum. It is a lamentable truth that many patients are allowed to die who might have been relieved, if not indeed cured, by a timely excision. I believe that in 20 per cent. of the fatal cases there is no dissemination at the time of death. In other words, twenty of those who die from carcinoma without operation, go to their graves with a growth which might have been completely removed. Such a state of things should not be possible.

* Occasionally the stomach is the seat of a diffuse fibroid infiltration aptly termed fibromatosis by Prof. Alexis Thompson, which may be very difficult to differentiate from cancer. In the museum of the Royal College of Surgeons there is a stomach which has been preserved and catalogued as a leather-bottle stomach, due to diffuse carcinoma.

THE VALUE OF THE LODGE

By A. C. E.

On the opposite side of the editorial desk, the click-click of the typewriter halted, one hand of the operator poised above whilst the other rested on the keys. The clear blue eyes and parted lips awaited an explanation.

For fully a minute Ethel Earle gazed at the crouching figure of her employer, his pale worried expression, the sprinkling gray at the temple base—the aspect of a man of fifty instead of forty; but there was no response to her suspended rattle. She was at that moment to him no more than the mere machine.

Her work had almost ceased automatically when Harry Rowland with a hunted look had burst through the door of the little newspaper office and had dropped into his swivel chair. She had known that creditors were pressing him hard. Being thoroughly familiar with his financial affairs, she now knew that the bank had just refused a further advance. In another moment she would realize that the bank had given him to the end of the month to cover his overdraft—two weeks to get together two thousand dollars.

A heaving sigh broke the silence and then the heart of the agreeable and sympathetic girl plunged to her employer's aid.

"Worry is dangerous in this hustling age, Mr. Rowland," was the philosophical opening remark by way of eliciting information upon the cause of this outburst. It had not been the first by any means she had experienced.

He raised his head slowly and planting his elbows on the desk rested his wracking brain in both hands:

"And it is a heartless one," he returned. "Men keep their hearts in the ice-box these days."

"Is it the bank?"

"Yes—and the creditors—but at present the bank in particular,"—and he told her of the ultimatum.

"Well, we have held the fort to the last extremity. Now we *must draw*," and she fetched the ledger to his side.

"No, 'Twould ruin our advertising patronage. What accounts are overdue?"

Ethel Earle turned the folios hurriedly, calling out the amounts which he pencilled on a pad—\$3,000.

“That would tide us over,” Ethel soliloquized rather than suggested.

“Miss Earle—Ethel,”—as his left hand descended and closed over the slim, white member resting on the book, and the hungry eyes sought the soft, sympathetic blue ones, “will it be ‘us’ forever? I need you now so badly and so do my two little girls at home. I haven’t much to offer and—”

Both turned quickly at the sound of the door opening from the composing-room, to behold the foreman, Tom Maitland, bearing in one hand the mailing sheets for the week. Maitland stopped abruptly, over-looking the frowning brow of Mr. Rowland, but detecting a rosy blush on Ethel’s cheek. He gave Ethel a swift, annoyed glance as he laid the sheets before his chief, withdrawing without a word.

“Those will save you, Mr. Rowland!” excitedly exclaimed Ethel, deftly returning his attention to business affairs.

“How?”

“You have been publishing this paper now for ten years,”—Ethel quickened her tone to distract his thoughts from the previous conversation—“and there are over one thousand subscribers right in this small town who have been ‘taking’ the paper all these years and you have never rendered them a bill or collected a cent from any one of them. You say they are all ‘complimentaries,’ that they are friends, ‘brothers’ as you call them, all in some lodge or society you belong to, Masons, Oddfellows, Knights of Pythias, Woodmen, Royal Arcanians—surely, now is the time, when you are in trouble and in need, for them to prove their fraternalism!”

He shook his head as he replied: “I would be simply ostracised.”

“Then you have not much faith in fraternity and the boasted ‘protection to the home’ of these organizations,” flicked the stenographer as she returned to her seat.

“Yes, I have. But I’ll tell you what I’m going to do. I’ll run down to New York for ten days to see if I can write up some pay-in-advance contracts. Perhaps I can again turn the tide in that way. You can run the office and Maitland can get out the paper, and you can send out those circulars through the county for new subscribers. That plated-spoon-premium offer will get the farmers’ wives,” and he arose and reached across the desk: “Good-bye! I’ll ask for your answer when I return.”

Ethel remained for a half-hour examining the mailing lists and thought if he wanted her for his wife, he would not object to his prospective bride making the paper a better paying proposition. She had just resolved to put fraternalism to the proof when the composing-room door opened cautiously and Tom Maitland stuck in his head.

"Where's the boss?"

"I'm the boss!" replied Ethel without raising her head.

Tom advanced two steps.

"Is he gone for the day?"

"He's gone for ten days," still attentively studying the mailing sheets, and not knowing what Tom had seen, probably heard, and felt.

Thus re-assured, Tom came quickly over to her side.

"I don't like this business," he began.

"The newspaper business is as respectable as any other," Ethel rejoined from the sheets.

"You know what I mean—he was making love to you."

Ethel broke into a merry laugh, and looked up at the dark eyes and set brow of her curly-headed lover as she replied: "Look here, Tom! Mr. Rowland is in great trouble financially and I hadn't the heart to stop him then. I feel sorry for him. You know his wife died two years ago, and he has no one to confide his business cares to but me, and he has rushed off to New York to see if he can get some cash advertising to meet an overdraft of a couple of thousand. If he can raise that amount now he can get a new line of credit to appease his other creditors. Now, I have a plan to help him, and you must help, too. If the paper goes smash, you lose your job, and we don't get married just yet—see!"

"I call you," as he took a seat on the desk.

"You are an Oddfellow, are you not? Give me the grip!"

He did, but Ethel always declared it was more like a bear's hug.

When she had adjusted her hair, she resumed:

"Here are over one thousand subscribers," pointing to the mailing sheets, "right here in this town, and Mr. Rowland has never collected a single dollar from any one of them in ten years; and I am going to ask them all in H. B. and C., or V. R. C., or something like that—write personal letters to every one of them to stand by their 'brother' in this emergency. Will they do it?"

"Ethel, if you put it to them like that, every mother's son of them will pay up at once, and it will be additional income hereafter."

"Well, then, hurry away to your work, Tom! This is my busy day."

For one whole week, Ethel 'typewrited' and 'typewroted,' as Tom expressed it when folding the letters at night for her, placing them in their envelopes, and tongueing them for the stamps. The six days had been busy days for Ethel and so were the next three. The postman complained of the letters he had to carry to the little newspaper office; and Ethel was just as busy signing receipts in the office as she was with writing "received payment with thanks" on those she re-mailed. The brotherhood had responded nobly.

On the morning of the tenth day as Ethel was at the desk preparing to take up the silver-spoon-premium offer, Mr. Rowland came back to the office a more depressed man than ever. He explained to her, he had been moderately successful in New York, but in a weak moment he had cashed some of the checks one day and gone to the races. Of course he won. It was so easy to persuade himself he could raise the balance of the required amount in this way that he went again. Then he commenced to lose, cashed the balance of the checks, and lost steadily until he was stripped of all the pre-paid advertising money. In one respect, however, she considered he was a brave man. He had returned to face an assignment.

When Ethel had heard all this, she suffered chagrin, especially after having worked so faithfully in her employer's interest, but while she sympathized with him in his folly, she felt overjoyed at her own success. The experience, even at his age, might prove a lesson to him.

"There, Mr. Rowland," she said as she placed the pass-book in his hand, "that ought to cheer you up. Hereafter, you should put more trust in your brotherhood—and they were all glad and happy to pay."

"And you?" he whispered.

"I—I'm going to marry your 'brother,' Tom Maitland."

**THE MANAGEMENT OF DISTURBED MENTAL CASES
PRIOR TO COMMITMENT**

(*Therapeutic Gazette.*)

BY GEORGE T. FARIS, M.D.

Assistant Physician, Pennsylvania Hospital for the Insane.

Advancing civilization has done away with whipping, torturing, chaining in cellars, jails, or dungeons, and occasionally burning, in the treatment of persons afflicted with mental diseases. Progressive scientific knowledge has produced a gradual process of evolution. There are now well-equipped hospitals, well-lighted and well-ventilated, cheerful rooms, corridors and sun-parlors, good food, and expert medical care and competent, intelligent, trained nursing.

A medical man on being called to a patient suffering from some form of mental disease, or insanity, must first consider whether that patient should be admitted to a hospital. This will depend on the character of the mental disease encountered. If the patient is quiet, co-operative, the actions not dominated by delusions and hallucinations, it is often possible and practical to care for the patient at home. On the other hand, if delusions and hallucinations are in control, there is no alternative, especially if exhaustion is impending.

For the management of the patient in the intervening time, there are three important questions confronting the physician:

1. The administration of narcotics.
2. The use of hydrotherapy.
3. The frequency and kind of food the patient should receive.

The patient should be practically isolated near a bathroom, under constant most vigilant supervision, preferably by experienced nurses. Sharp instruments should be removed from the room, and everything which might be used to harm the patient or others. Windows should be so fixed that they could not be opened more than six or eight inches at the top or bottom.

Rest in bed, possibly through sedatives or narcotics. Hyoscine hydrobromate 1-100 to 1-50 of a grain hypodermically is one of the best. Where there is intense motor excitement 1-6 to 1-4 of a grain of morphia sulphate may be added. By this means quiet is secured until a hot pack can be made ready. The physician

should exercise his judgment in spite of family protestations for more quietness. The secretions must not be suppressed. Do not abuse the bromides, trional, veronal, chloral, etc.

Hydrotherapy has its limitations in the average home, but the physician can always get sheets and blankets. The hot wet pack has a greater sedative action than the cold pack, but a cold one may be used, provided there are no contra-indications. With a dry blanket spread on the mattress, and the patient placed thereon, a sheet wrung out of hot water so it does not drip is wrapped around one leg to the pelvis; a second for the other leg; a third around the trunk. Then a snug blanket, a second and a third if necessary. This method provides quick and easy access to the rectum in case an enema is deemed necessary. An ice-cap or Turkish towel dipped in ice water should be applied to the head, and frequently changed. Cold water may be given freely to drink. The pulse and temperature should be watched. The patient may remain in the pack from one to six hours. On removal wrap in warm, dry blankets. The pack may be repeated as often as necessary.

Most of these cases take nourishment fairly well. Milk, raw eggs, animal broths, and plenty of water, besides the regular meals, are strongly recommended. The mouth and teeth should be kept clean; laxatives and an occasional enema; stimulants and tonics if necessary. Never give medicines in food. Before artificial feeding, if the patient refuses food, give ample time. Hunger may induce eating. Artificial feeding should always be given by the doctor, best by nasal tube. The patient may be either seated or reclining. Sufficient help should be at hand should the patient struggle. A convenient time to feed a patient is when in the pack. Offer food from time to time, as they frequently learn to depend upon the tube. Two forced feedings a day are, as a rule, adequate. Enforced feeding, laxatives and cathartics may be added, if required.

PUERPERAL PHLEBITIS: ITS PROPHYLAXIS AND MEDICAL TREATMENT*(Medical Press and Circular.)*

BY PROFESSOR G. KEIM, M.D., PARIS, FRANCE.

Cruveilhier insisted on the existence of an endovenous lesion, since associated with a particular micro-organism. Bouchut explained the supervention of phlebitis in the cachectic as a result of blood coagulation. The coagulation is stated to be primary, mechanical by slowing of the circulation—chemical, by the conditions governing coagulation of the blood within the vessels. This second cause has hitherto not been viewed with favor in France. It appears to explain the occurrence of phlebitis independently of any primary infection. Recent researches seem to support the view that chemical, toxic and mechanical causes play a more important part than has been thought in the pathogenesis of phlebitis.

The liver in pregnancy undergoes more or less fatty degeneration, and auto-intoxication may culminate in eclampsia. The liver is more affected the less normal the pregnancy, and this is also the case in intestinal intoxication; and the functions of the liver, especially the anti-coagulating function, may be more or less suspended. During pregnancy and the puerperium the circulation is slowed and the composition of the blood is altered.

How does the blood plasma promote the production of phlebitis? There is spontaneous thrombosis in the uterine veins after delivery, setting in before delivery for preventing hemorrhage. This is true, aseptic, physiological thrombo-phlebitis. If this is propagated into the deeper veins there is pathological uterine thrombo-phlebitis, which may give rise to phlegmasia in the lower limbs.

No sign reveals the existence of localized uterine phlebitis, it often escapes observation. It may be suspected from rapid pulse out of proportion to the temperature, or pain on one side of the womb. When it becomes infected, there is suppurating thrombo-phlebitis, with local and constitutional symptoms of supuration, or it may cause embolism through sudden movement, early rising, usually fatal pulmonary embolism.

This explains the first series of events, explains phlebitis during the puerperium, apart from infection.

The writer has been struck by the coincidence of phlebitis and signs of intestinal toxemia. The intestinal toxins injure the

liver—and there is the part the liver plays in promoting coagulation. Intestinal fermentation is common in eclampsia and in thrombosis and embolism in gravidic intoxication.

Constipation in the pregnant woman favors the over-production of toxins; and thromboses are met with in other cases of intestinal intoxication other than in pregnancy. The remark applies to the phlegmasia of appendicular origin.

Infective phlebitis makes its appearance between the tenth and fifteenth day, the toxic and mechanical form of phlebitis under consideration may supervene at any part of the puerperal period. It is met with on the first or second day as well as up to the twentieth or twenty-fifth. It may manifest itself by local signs or suddenly by embolism.

The variable onset may be thus explained. It often coincides with the probable date of the missing menstrual period. The organism is no longer immunized by pregnancy against menstrual intoxication; the latter returning may intensify the toxic symptoms; not sure; but the coincidence is worthy of note.

What ought the accoucheur to do in prophylaxis? His prophylaxis is quite different to practising antisepsis and maintaining asepsis.

He must treat the constipation and the enteritis during gestation, all the more so if there have been cases of phlebitis in the family, or unduly rapid pulse, lateral uterine pain. If there be a history of liver disease or gall-stones, colic, or former eclampsia, this should be all the more imperative.

Gentle laxatives, enemata; hamamelis and strychnine for its tonic action on non-striated muscle fibres of vessels, uterus and intestines; calomel; urotropine. Locally overcome uterine inertia and hemorrhages, emptying the uterus of blood clots, membranes and blood serum, all which make for thrombosis. Avoid saline or sublimate solutions in the uterine cavity, since they exert a coagulating action.

The blood can be rendered incoagulable by an enema of an emulsion of 100 grammes of fresh calf's liver in 250 grammes of water, to which 10 grammes of pure peptone is added. The object of this is to provoke an anti-coagulation secretion, and it seems to yield a good result in preventing thrombosis in cases where it is apprehended and in improving the symptoms when present. The writer's point is this: Side by side with the classical microbial infective thrombosis and phlebitis there is a form of thrombosis and phlegmasia of toxic and mechanical origin. Uterine antisepsis may be the direct cause of the coagulation in some instances.

THERAPEUTIC NOTES

Tuberculous Laryngitis. — Hinman (*Albany Medical Annals*) employs the following ointment: The base is equal parts of sesame oil and petrolatum with a dye strength of 10 per cent. of scarlet red. This is applied twice daily to the larynx. There is prompt relief of pain, the applications are not distressing and not irritating.

Atropine in Stomach Diseases. — Pletnew (*Ther. Monat.*) wonders at the little use of atropine in treating stomach conditions resulting from abnormal excitability and overaction of the vagi. He states it can be relied on when secretion or motor functioning or both are deranged, or if there are anatomic lesions in the stomach wall. Atropine checks secretion, reduces acidity, corrects pylorospasm and hour-glass spasm. It relieves the pains, the spastic effects being due to the excessive secretion. Its action is symptomatic.

Gastric and Intestinal Hemorrhages. — Nottebaum (*Deut. Med. Wochen.*) controls persistent diarrheas and intestinal hemorrhages with tincture of iodine. For acute cases, tincture of iodine, one c.c., sodii iodidi 0.1, aquae menthol piperitae, syrupi simplisis, a.a. 20.0, aquam ad. 200.0. For chronic cases, tincture iodi, 2.0, tincture amara, 13.0; ten to fifteen drops before meals.

Sore Nipples. — Neubauer (*Deut. Med. Wochen.*) has found that for a rapid cure of sore nipples a ten per cent. salve of euguforn (a condensation product of guaiacol and formaldehyde) is the most satisfactory.

Chronic Obstipation. — H. Ehrlich (*Deut. Med. Wochen.*) says that peristaltin (a glucoside of cascara sagrada) is an exceptionally good mild cathartic. It is also effective in overcoming post-operative intestinal paresis.

Post-partum Hemorrhage. — Gräf (*Mün Med. Wochen.*) recalls the procedure of compression of the abdominal aorta in atony of the uterus and resulting severe post-partum hemorrhage. It should be done from ten to fifteen minutes, when the hemorrhage stops spontaneously.

Chronic Nephritis. — R. Hills (*N.Y.M.J.*) recommends for the anemia of chronic nephritis, fresh air in abundance and good food, and that various preparations of iron, quinine and strychnine are of much service as tonics. Altogether, after reviewing the many modes of treatment for this condition, there is much vagueness as regards the proper treatment of chronic nephritis.

Venereal Disease. — R. Connell (*B.M.J.*) writes on the treatment and reports cases of primary syphilis, secondary syphilitic ulcerations, gummata, soft sores, septic buboes after operation, and gonorrhoeal rheumatism, by ionic medication. In those cases of syphilis with no evidence of mixed infection, the best results were obtained. At the Royal Naval Hospital, Plymouth, anti-syphilitic treatment is given as soon as a diagnosis is made. Two grains of grey powder is given thrice daily; and to a majority of cases, three injections of neo-salvarsan.

Fractures of Elbow and Knee-joint. — Hughes (*B.M.J.*) says that treatment by full flexion (Jones' method) applies to all fractures in the neighborhood of the elbow joint, except of the olecranon, and most cases of the head of the radius. Open operation is preferable in the two latter, wiring of the former, and often excision of the latter. In fractures of the knee-joint involving separation of the lower epiphysis of the femur and fracture of the shaft in the neighborhood of the condyle root involving the joint, the displacement is reduced under an anesthetic. Then the knee is put in full flexion and held so for ten days or two weeks. Then it is brought down to full extension and put up on a Liston's long splint with extension below the knee.

Pulmonary Tuberculosis. — Boudreau (*Jour de Med. de Bordeaux*), considers iodine the direct, specific and heroic procedure for tuberculosis. He declares it transforms the system as to bring about complete immunization. For the last ten years, Boudreau has given this treatment systematically, pushing it to the limit of tolerance. It is taken by the patient in his beverages. He prefers the tincture, commencing with small doses and carefully tests the tolerance. From 20, 60 or 100 drops a day, the patients pushed the treatment themselves to 200 or 300 drops a day, and one took 400. Signs of iodism were extremely rare. He has also found it of advantage in renal tuberculosis.

Lavage of the Peritoneum. — Jeanneret (*Revue Med. de la Suisse Romande*), states that the recovery of a child of seven years can be credited to the use of ether in a late stage of acute peritonitis from appendicitis. The method, according to numerous observers, marks a great improvement in the prognosis of infection of the peritoneum.

Exophthalmic Goitre. — Klose (*Berliner Klin. Wochen.*) writes on the increasing safety and benefit from operative treatment in this disease since resecting the thymus along with the thyroid has been adopted, or removing the entire thymus. It is now considered that the danger after thyroidectomy is due to acute intoxication from the thymus after the thyroid is removed. It is interesting to note that at Rehn's clinic there were eight deaths from this cause alone in 130 operative cases up to 1911. Since that time there have been 200 operations where the thymus has been resected along with the thyroid, with no deaths. Local anesthesia is always used, which with the resection of the thymus has placed the treatment of exophthalmic goitre on a new plane.

Boils. — (*J.A.M.A.*) a warm alcohol poultice, consisting of one part of alcohol and four parts of warm water, applied by means of a mass of gauze covered with oiled silk and bound firmly to the part, is very satisfactory treatment. This dressing need be changed twice a day.

Cancer.—Lunckenbein (*Mün. Med. Wochen.*) reports favorable results in fifteen cases of inoperable cancer. He used an intravenous injection of an autolysate from the patient's own tumor. These autolysates he puts up in fused tubes. They keep three or four weeks on ice. The relief of pain is prompt and effectual.

Abortion.—Trangott (*Zeits. für Geburt. and Gynäk.*) leaves the emptying of the uterus to nature where there are streptococci in the vagina or blood. The infection is combatted by rest in bed and ice, leaving the uterus entirely alone. The fever abates, the cocci do not grow more virulent and they gradually disappear. Then, when this is realized, he cures the uterus, finding that at this stage it is harmless. Out of forty cases managed in this way, the patients recovered without complications. In only nine of the forty cases was the uterine cavity found empty upon curettement. There was no morbidity or mortality in the entire series. This is from the women's department of the public hospital at Frankfurt.

Reviews

Preventive Medicine and Hygiene. By MILTON J. ROSENAU, Professor of Preventive Medicine and Hygiene, Harvard; formerly Director of the Hygienic Laboratory, U. S. Public Health Service. New York and London: D. Appleton and Company.

There is a pleasure in reading and writing about this new applicant for professional favor within the ranks of medicine, sanitary science and public health. No book within recent years has appealed with more knowledge of its comprehensive scope in the domain of public health work. It has many new features not to be found in the ordinary books on preventive medicine and hygiene. For instance there is a chapter on the prevention of mental diseases, a subject as yet almost in its embryological state. There are articles on venereal prophylaxis and sex hygiene, work-room disease, standardization of antitoxic sera, phagocytosis, opsonins, lysins, cytotoxins, fixation and deviation of complement, precipitins, agglutinins, anaphylaxis, heredity and eugenics, industrial poisoning, occupational diseases, medical inspection of school children, humidity and temperature, water filtration (slow sand and mechanical), in fact more things in a work of this character than possibly ever before attempted.

The illustrations and charts come out well and they are numerous, new, and add decidedly to the value of the entire work.

The chapter on sewage and garbage comes from the distinguished sanitary engineer, George C. Whipple; that upon vital statistics, from Cressy L. Wilbur, chief statistician of the U.S. Bureau of the Census; that upon prevention of mental diseases, from Thos. W. Salmon.

It was to be expected that a man with the varied experience of Dr. Rosenau would produce a book which would stand in the front rank if, indeed, it does not lead among similar works of this class.

For a comprehensive work on all matters in which officers of public health and medical men are interested, this book can certainly be heartily recommended.

The style is easy, the subject matter well arranged, perspicuity being a dominant characteristic of every article.

In these days, no medical man can afford to be without this first-class book.

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EDITED BY

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Ross, Wm. D. Young.

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Hendry.

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Anesthetics: Samuel Johnston.

GEORGE ELLIOTT, MANAGING EDITOR.

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COMMENT FROM MONTH TO MONTH

Radium, more than any other therapeutic agent, has lately been receiving a great measure of attention from the medical press, lay magazines, scientific journals and periodicals, as well as the newspapers.

There have been articles of value, and others of doubtful value, even in some of the medical press. It is a wonderful product and the most precious substance in the world. It is because of its reported curative properties, especially in superficial cancers, that it is being given such special prominence.

It is obtained from three minerals, carnotite, pitchblende and autunite, its most important source being carnotite ore. The greatest known field of this ore is now said to be in the Paradox Valley of Colorado and Utah.

Until recently the manufacture of radium from carnotite ore was almost wholly confined to France and Germany. To these places American ores have in the past been shipped in large quantities; but the enterprise of American citizenship will probably soon see that the product will be produced in America.

The medical men who are using radium as a therapeutic agent in Canada, as well as scientists all over the civilized world, may be set down as being as honest and earnest in this department of medical science as in any other department.

A medical writer to this journal says: "That radium has accomplished much that has been expected of it will be admitted by any fair-minded man. Has the X-rays, quinine or mercury accomplished all that was expected of them? Yet who will deny their utility in properly selected cases."

He points to the men engaged in this line of work: "Professors Bumm and His, of Berlin; Professor Kronig, of Freiburg; Professor Doderlein, Munich; Professor Richl, Vienna; Professor Bayet, Brussels; Drs. Wickham (late), Degrais, Barcat, Dominici, Pasteau and Foveau de Courmelles, Paris; Finch, of the London Radium Institute; Knox, of the London Cancer Hospital; Sir Alfred Pearce-Gould and Sir F. Treves, London; Dr. Dawson Turner, Edinburgh; Dr. Abbe, New York, as well as other acknowledged authorities."

Truly, as the writer states, times have changed in medicine. The ubiquitous reporter is everywhere. The public demand information—but sometimes to their sorrow: Instance the Freidmann serum. If the medical profession is to be held responsible for newspaper medicine, then that profession should educate the public to require the information to be authentic. From what source will this information be obtained if not from the specialist? The corrective is the medical man attached to the prominent daily press to filter or sift out the exact and quarantine the inexact.

Editorial Notes

THREAD-TEST FOR GASTRIC ACIDITY

Schwarz uses a solid gelatine capsule containing a heavy powder giving a neutral reaction. The capsule is pierced and a thread drawn through it which has been soaked for half an hour in a 0.25 per cent. aqueous solution of congo red. The thread is 120 cm. long and after passing through the capsule, is tied over it and the capsule is then swallowed half an hour after a test breakfast. The free end of the thread is held in the hand. After fifteen minutes the thread is drawn out, the capsule having dissolved in the stomach in the meanwhile. The end of the thread which has been in the stomach is now dark blue or violet proportional to the amount of hydrochloric acid in the stomach content; if the thread is still red, this shows anaacidity or that the capsule has stuck somewhere on its way. By this simple means the condition in regard to acidity in the stomach can be determined without inconveniencing the patient.—*J.A.M.A.*

CANADIAN ARMY MEDICAL SERVICES

Colonel the Hon. Sam Hughes, Minister of Militia, at the seventh annual banquet of the Association of the Officers of the Medical Services of Canada on February 24th at Ottawa, attended by members of the Army Medical Corps from all over the Dominion, held in the Chateau Laurier to-night, frankly declared that he had no apology to make for the money he is spending on the Canadian militia. He said that he is spending less money on his department than any other Minister of Militia has done since Confederation, and avowed that no money spent by the Government reaches the pockets of the people so quickly again as that spent by the Militia Department.

In commenting on war, he maintained that he is inclined to think sometimes that more wars are caused by clergymen than by any other class of men. Wars, he said, are seldom caused by soldiers, yet soldiers are always called upon to settle them. Referring to the proposal to celebrate the one hundred years of peace between Great Britain and the United States, Col. Hughes

claimed that since the beginning of the twentieth century there had been more bloodshed than in any other fourteen consecutive years in comparatively modern times.

His Royal Highness the Duke of Connaught, who was the chief guest, said, in replying to a toast drunk to his honor, that he was a great believer in discipline, and held that everyone is better for a little of it.

Lieut.-Colonel Fotheringham of Toronto, presided. Major D. B. Benton of Sarnia, Commander of the Fourteenth Field Ambulance, was presented by his Royal Highness with the silver cup given by Colonel G. S. Ryerson, Toronto, for the best field ambulance work done during 1913.

OFFICERS ELECTED.

The following officers for the ensuing year were elected: President, Lieut.-Col. R. T. Macdonald, Sutton, Que.; First Vice-President, Major G. M. Campbell, Halifax; Second Vice-President, Lieut.-Col. H. R. Casgrain, Windsor; Third Vice-President, Lieut.-Col. Murray McLaren, St. John, N.B.; Secretary, Major T. H. Leggett, Ottawa; Assistant Secretary, Captain Neill McLeod, Ottawa; Treasurer, Major F. McKelvey Bell, Ottawa; Executive Committee, Lieut.-Col. Shillington, Ottawa; Major Lorne Gardner, Ottawa; Major David Donald, Victoria, B.C.; Major W. Watt, Winnipeg; Major Wallace Scott, Toronto, and Major Wyld, Montreal.

Col. G. C. Jones, Director-General of the military forces in Canada, announced that the Minister of Militia had agreed to increase the annual Government grant to the association from \$500 to \$1,000. Reports from officers of the various committees showed that the association is flourishing.

News Items

Dr. A. S. Gorrell, Regina, has been visiting in Toronto.

The Hon. Dr. Lanctot, Montreal, is dead, aged 68 years.

Dr. R. E. Webster, Ottawa, has been visiting in New York.

Dr. Francis J. Shepherd, Montreal, has gone on a trip to Panama.

Cobourg, Ontario, has opened a new hospital at a cost of \$50,000.

Dr. Geddes has been appointed a Governor's Fellow of McGill University.

Dr. Ernest Hall, Vancouver, B.C., has returned from a trip round the world.

The Western Medical News is now the official organ of the Saskatchewan Medical Association.

Sir William Macdonald has been elected Chancellor of McGill University, Montreal, in succession to the late Lord Strathcona.

The Vancouver General Hospital proposes to build a maternity hospital, an infectious diseases building and new administration quarters at a cost of \$700,000.

St. Paul's and Alexandra Contagious Diseases Hospitals, Montreal, admitted during the past year 2,265 patients. There were 2,001 discharges and 204 deaths.

Many villages surrounding Montreal are said to have several cases of typhoid fever. The secretary of the Quebec Board of Health states that the number is seventy-seven.

Dr. Arthur Wilson, secretary of the Saskatchewan Medical Association, and sometime assistant to the Commissioner of Health, has been appointed medical officer of health for Saskatoon.

Lachine General Hospital has received a donation of \$10,000 from the Dominion Bridge Company. During 1913 118 private patients and 35 public patients were treated in this hospital. The revenue was \$10,000 and the expenditure \$11,122.

In Montreal the Friedmann serum is announced to have produced no benefit in the fifty-six tuberculosis patients treated by Dr. Friedmann in the Royal Edward Institute. The few deaths which have occurred were probably neither hastened nor delayed.

Dr. Abbe, of New York, addressed the Academy of Medicine, Toronto, at its regular monthly meeting the evening of March 3rd.

The subject was radium. Dr. Abbe, whilst in Toronto, was the guest of Dr. W. H. B. Aikins, who gave a luncheon in his honor at the York Club.

Owing to the increase of liquor and tobacco consumption in Canada, the Federal Parliament will wrestle with the increase of liquor manufacturing. One prominent member will also introduce legislation to prohibit the manufacture, sale and importation of cigarettes in Canada.

Dr. T. J. Moher, superintendent of the Provincial Hospital for the Insane at Cobourg, Ontario, died February 24th. He was fifty-two years of age and had gone through a long illness. The late Dr. Moher formerly practised at Peterborough and was sometime superintendent of the Hospital for the Insane at Brockville, Ontario.

Twenty nurses, known as Public Health Nurses, are now engaged in tuberculosis work by the Toronto Health Department. They visit tuberculosis clinics at the Toronto General, St. Michael's and the Hospital for Sick Children and the University Settlement, as well as the baby consultations established by seven social agencies throughout the city.

Dr. George Harrison, Clifford, Ont., died on the evening of the 7th of March, in his fifty-sixth year. He was a son of Dr. Thos. Harrison, of Selkirk, Haldimand County, Ontario, who has been a well-known figure at medical society meetings for many years. The late Dr. Harrison was graduated in 1890, and spent a year in the Toronto General Hospital. He practised in Clifford eighteen years.

The General Hospital, Stratford, Ontario, faces a deficit of \$879.69 for the past hospital year. The per diem cost per patient is reported at 41.58, while the bulk of the 627 patients treated paid \$6.00 or less per week, forty-four being free patients. The hospital has a floating debt of \$5,309.61. Increased city and county grants will be sought as well as donations from citizens to liquidate this debt.

Colonel Sir William Boog Leishman addressed members of the medical profession while in Canada recently in Montreal, Ottawa and Toronto. On March 2nd he lectured before the Academy of Medicine, Toronto, in special session on "Typhoid Inoculation." He was accompanied from Ottawa by Colonel Carleton Jones, Director-General of the Army Medical Services. Dr. H. J. Hamilton, president of the Academy of Medicine, gave a dinner at the York Club, in Sir William's honor.