incision our author thinks is due, first of all, to the antiseptic dressing of the wound.

"First, a large tube is inserted, then a piece of protective iodoform collodion is placed over the wound unoccupied by the tube; finally, numerous layers of moistened gauze, and then the mackintosh are applied, the whole being kept in position by a bandage. It is perfectly obvious that the protective, especially when it is coated with pus, must form an excellent valve."

At the same time, the tube is full of pus in all probability. The wound itself, too, soon becomes valvular, the edges become covered with granulations, and are speedily in full contact, and by further growth they bulge outwards, and assume the form of two soft projecting masses. Under these circumstances, air appears neither to enter nor to leave the chest; during forced expiration some air or fluid is expelled, but a violent inspiration has the effect not of opening, but of closing the valves. If Dr. Robertson's views are correct—and they appear to me to be very reasonable—an empyema, treated by incision and drainage according to the antiseptic method, is placed much in the same physical condition as a pleural effusion, simply tapped, with closure of the point of puncture. The air and fluid are gradually pumped out of the pleura, and no air enters the chest to replace them. The lungs, answering to this gradually increasing extra pulmonary or pleural minus pressure, expand gradually, whilst their expansion is accelerated and rendered permanent by the gradual growing together of the pleural surfaces.

It appears, as already stated, a very plausible explanation of certain cases of good results after free incision. I am inclined, however, to believe that it is not the only explanation. For example, it appears very likely that we have to deal very often with loculated empyemata, or with cases in which previous adhesions here and there prevent the complete collapse of the lung, which is usually assumed in operation cases. I cannot, however, devote any more time to this point.

As a result of certain cases of empyema we have great deformity of the chest and spine, and with a persistent opening constantly discharging pus. If regular and prolonged washing out of the cavity, which will not fill up with granulations, does not succeed—there are few such cases I fully believe—and when the health is obviously giving way, suggesting the possibility of amyloid disease, resection of several ribs may be done. The operation is done in the axillary line and one to two inches of the ribs chosen are removed with the bone forceps. The fifth and sixth ribs are the important ones to resect. By means of this operation the ribs can fall in more completely, and the cavity discharging pus in the pleura is put in a condition to become obliterated. I am glad to say that my experience of cases in which this operation has become necessary is small.

Before concluding this very cursory glance at the treatment of pleural effusions, I would desire to emphasise two details in the post-operative treatment:—

1. The first is the necessity of getting the patient out of bed as soon as possible, and, further, of getting him into the open air without delay. By attention to these points one is likely to cut short the long period of convalescence, and, in cases where there is an open wound, to diminish the discharge.

2. The second is this: As soon as ever it is possible, that is to say, early in cases of the "close" operation, and as soon as the discharge is small (say 3ss per diem), when there has been incision, make the patient expand his chest by regular and frequent but moderate dumbbell exercise or by drilling.

The best results I have obtained have occurred in cases in which I have insisted upon this regular muscular exercise. The extraordinary muscles of inspiration are thus brought into play, the lung expands more completely, and the chest cavity, which always has a tendency to diminish in pleural effusions after operation, has a chance of returning to its normal capacity.

A BEQUEST OF £1,003 14s., after the deduction of income tax, which it is thought will be refunded, has been made to the Hospital Sunday Fund by the late Mr. Thomas Crouch, of New Union Street, Cripplegate.

INFLUENZA IN GUATEMALA.—The first case of influenza in the Republic of Guatemala appeared in January among the artillerymen stationed in the city of New Guatemala, which is 300 miles from the nearest seaport on the Pacific. There was no case of the disease in any of the towns between Guatemala and the coast. If the facts are as stated, this would appear to be a *crux* for the contagionists.

CASE OF GASTRO-COLIC FISTULA, WITH REMARKS.

By HENRY F. A. GOODRIDGE, M.D., F.R.C.P.,
Senior Physician to the Royal United Hospital, Bath.

History.—W. W., aged 46, a commercial traveller, first came under observation six years ago. He was then suffering from acute gastric disturbance, the result of a drinking bout, in which he was wont at that period every now and then to indulge, and which always left him in much the same condition. During the intervals he had tolerably good health. On two different occasions later on, when away on his business engagements, he was attacked with severe illness, marked by acute pain in the abdomen, vomiting, and constipation; and he stated that after both of these attacks he passed blood by stool. For the six months preceding his present illness he said he never enjoyed better health in his life; and four months prior to the same event he married, and had since been living very steadily and as almost a teetotaler. Dr. Douglas Kerr, who had attended him from time to time, and who has kindly furnished me with these particulars, and permitted me to record the case, was summoned to him on November 1st, 1889. The patient stated that he had been taken suddenly ill on a journey, that he had had violent vomiting, the vomited matters being of vile smell and taste, and that nothing had passed from his bowels for four days, not even flatus, but that much of the latter came up by his mouth. He was considerably prostrate; his pulse was very weak; his tongue was foul; he had slight tenderness on pressure in the epigastric region, and there was some feeling of solid resistance there, but otherwise his abdomen presented nothing remarkable. Feeding by mouth was at once discontinued, and rectal feeding substituted, and the next day he was more comfortable and stronger; the same night, however, there was a return of vomiting, and the matters ejected were found to be decidedly faecal.

On November 5th Dr. Kerr requested me to see the patient in consultation. He was on his back, semi-recumbent, his expression was tranquil, his complexion somewhat pale, and his nutrition good, though it was stated that he had wasted. He had had no severe paroxysms of pain, nor any pain at all except occasionally a little in the left hypochondrium. He was said to go for periods of about twenty-four hours without vomiting, and then to bring up a quantity of most offensive matter. Some that was brought up the previous evening was of unmistakably faecal odour, but the light was not sufficient to be sure of its colour. His bowels had not been properly relieved for several days. His pulse was 100, small, and weak. His tongue was coated; he had at times a faecal taste in his mouth, and his breath was observed to have more or less of that odour. He had complete anorexia. There was no distension of his abdomen, the walls of which were quite flaccid; no distinct splashing sound could be produced by succussion; there was some firmness and slight tenderness on pressure in the epigastrium, otherwise he bore free manipulation of his abdomen without inconvenience. It was not known that he had passed undigested food or anything extraordinary from his bowels at any time during his illness; he had not passed much flatus. Feeling satisfied that the patient was not suffering from intestinal obstruction, I expressed the opinion that he had a gastro-colic fistula, but could not speak so confidently as to the previous disease.

November 7th. I saw him with Dr. Kerr again. He then had had a vomit of such markedly faecal character that it might have been said that he had literally vomited faeces. He was now manifestly weaker; his pulse was 120, very small, and feeble. On attempting to examine again his abdomen, although no pain was produced, he said it made him feel sick; the attempt, therefore, had to be abandoned. The next day he had a very free and natural action of the bowels, and was reported to be better; but the vomiting soon after returned, the matters continuing to be faecal, and he gradually got into an exhausted condition, and died on November 13th.

Necropsy Twenty Hours after Death.—On opening the abdomen there were no appearances of recent peritonitis, and there was no considerable distension of the intestines, which were generally of a light slate colour. The great omentum was retracted, and the arch of the colon was high up in the epigastrium, and under cover of the false ribs. The stomach was out of sight. On moving aside the small intestines, it was soon manifest that

the colon in its transverse portion was adherent to the stomach. On further inspection it was found that at a spot rather nearer to the splenic than to the hepatic flexure, at the spot, indeed, where this adhesion existed, there was considerable condensation of tissue, so that the two hollow viscera here were quite inseparable from one another. On laying open their cavities respectively, deep ulceration was found to have taken place at the corresponding spot in the interior of the colon, whereby a somewhat funnel-shaped passage had been tunnelled, as it were, through the condensed tissue, the apex reaching the interior of the stomach, and appearing distinctly on its mucous surface as a somewhat valvular opening of about the size of a goosequill, and situated between two and three inches from the pyloric orifice. The latter was rather contracted, admitting only the point of the index finger, and there was some fibroid thickening of the pyloric ring. There was no ulceration elsewhere in the stomach, but in the depending parts of it intense vascular injection with patches of bistre pigmentation. Moreover, there was no ulceration in other parts of the colon, nor any alteration of its lumen or other morbid change. Liquid faecal matter, much coloured with bile, was found here and there in the small intestine. There were no enlarged mesenteric glands, and no secondary deposits on the surface of the liver; but at this stage the examination of the body had to be brought to a close. Sections of the condensed tissue, microscopically examined, revealed the presence of a neoplasm, which exhibited the histological characters of cylindrical epithelioma.

REMARKS.—The rarity of the lesion present in the foregoing case is amply attested by the scant notice of it to be found in the ordinary textbooks of medicine; in some of which, indeed, there is no notice of it at all. More than thirty years ago the late Dr. Murchison, after ransacking English, American, and Continental medical journals, and all anatomical museums within reach, succeeded in collecting thirty-three cases of gastro-colic fistula. In searching medical records since, an isolated case is to be met with now and then. Two or three cases may be found in the *Pathological Transactions* (and only two or three in the now forty volumes). Albeit, Murchison's Memoir, based upon his collection, and published in the *Edinburgh Medical Journal*, July and August, 1857, must be recognised as still the best source of information on the subject.

Finding, then, as we do on reference to the same, that of these thirty-three cases, the great majority, namely, twenty-eight, arose from disease commencing in the stomach, and only two from disease commencing in the colon; only one, indeed, from cancerous disease of the colon; we see that in the case before us we have not merely a rare lesion, but a rare form of that lesion.

The prominent clinical feature of the case was the faecal vomiting. The overwhelming frequency with which this symptom is dependent upon intestinal obstruction raises a very strong presumption in any given case that this condition is present as the cause of it. Once satisfied, however, to the contrary, the diagnosis in the main is arrived at. Fistulous communication between the colon and the upper part of the small intestine is so surpassingly rare that it can hardly be taken into account; while if diffuse peritonitis ever gives rise to faecal vomiting, as maintained by some writers, intestinal obstruction, as shown by Mr. Treves, must be the proximate cause of it.

But, the existence of gastro-colic fistula assumed, it was not so apparent where and what was the disease which had led up to it. The acute gastric disturbances the patient had formerly suffered from, and the firm resisting feeling with some tenderness observed in his epigastrium, taken in connection with the relative frequency, as shown above, of the gastric origin of the lesion, rather suggested the presence of some latent, and possibly malignant, ulceration of the stomach; while the two acute abdominal attacks which he stated he had experienced, followed by hæmorrhage from the bowel, however significant when regarded in the light of the *post-mortem* disclosures, seemed of too transient a character, and too remote from the advent of the fistula, to draw attention to the colon as the seat of disease. That for six months preceding his fatal illness, that is to say, up to within three weeks of his death, the patient should assert that he never enjoyed better health in his life is not a little remarkable.

It is interesting to note that while faecal vomiting is so characteristic of gastro-colic fistula, when intestinal obstruction can be excluded, this same lesion may exist without it. As Murchison pointed out, in cases of gastric cancer, which are just those in which the lesion is most apt to occur, if the pylorus is much obstructed no faeces are formed. The food taken into the

stomach passes by the "short cut" into the colon, and is voided *per anum* in a crude and more or less undigested form, giving rise, indeed, to the condition described under the name of "lientery." Normal faeces not being formed, of course there is no faecal vomiting. In this case, however, not only was the faecal character of the vomit unmistakable, but the stool when voided was of quite natural appearance, and no crude or undigested matters had at any time been noticed in it. Indeed, the opening from the stomach side, it will have been observed, was somewhat valvular, admitting pretty free passage into the interior of the organ, but not so readily a passage out of it. There was no evidence of any of the matters used for rectal feeding reaching the stomach.

As to treatment, the question of surgical relief was discussed, and Mr. F. K. Green, F.R.C.S., was consulted; but the general condition of the patient was deemed to contraindicate operation. In a somewhat similar case recorded by Mr. Walter Edmunds in the *St. Thomas's Hospital Reports* for 1883, colotomy on the right side was performed with a view to intercept the contents of the colon before they arrived at the fistula, but the operation was attended with no very encouraging result.

HÆMORRHAGES OCCURRING DURING PREGNANCY.¹

By A. E. AUST-LAWRENCE, M.D.,

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THE object of this paper is to put before the profession those cases where a woman is pregnant yet loses blood *per vaginam* either at regular intervals or irregularly. My purpose will be best served by giving cases illustrative of the subject, which will help to elucidate some of the problems placed before us when we are consulted by women who are pregnant and yet are in doubt about it, owing to seeing blood discharges come from the vagina.

To begin with, we will assume that the woman is pregnant, that under perfectly normal conditions she ought not see any discharge of blood from the date of conception to the advent of labour, but we have to look at one form of hæmorrhage, which is, to a certain extent, natural, namely:—

Persistence of Menstruation.—It is not impossible that a woman may be pregnant and yet have a discharge of blood from the uterine cavity before the two deciduæ have come in contact, which will in no wise interfere with the progress of development. Whether this is to be regarded as a menstrual period after conception, and whether an ovum has escaped after the fecundation of a previously escaped one, I shall not enter upon. My subject is essentially a practical one, and I am willing to admit that one real period may take place after conception, but not more than one; the seeming menstrual acts which do take place can be explained by some of the various causes of hæmorrhage which I shall relate further on. I cannot enter upon the question of ovulation, either with or without uterine hæmorrhage. One point there can be no doubt about, and that is, that when once the uterus has acquired the habit of bleeding periodically we see this habit kept up in the various diseased conditions of the uterus long after ovulation must have ceased. We often find that greatly increased hæmorrhages, at certain definite intervals, do occur. Of course it is exceedingly puzzling for a woman who thinks she is pregnant to find that her periods recur, and it often makes her think she is not pregnant, and very often medical men are deceived, because they overlook facts which I shall give in detail in this paper. One can quite understand that, if conception occurs just prior to the advent of a menstrual period, that period will come on, but most likely modified in its duration and amount of discharge lost, and I also admit the possibility of one period subsequent to the impregnation; but, as a rule, these are not the cases that we are consulted about. In these cases the error that happens, as a rule, is only that of miscalculating the date of confinement, the amount of blood lost not being more than an ordinary period, and very often much less. We must dismiss, then, in my opinion, persistence of menstruation as a cause of bleeding in pregnant women, except in very rare cases, such as in double uteri and extrauterine gestations. The probability of one period may be admitted, but other causes, to be mentioned as we go on, will explain the majority of cases, only one must not lose

¹ Read before the Bath and Bristol Branch of the British Medical Association