decalcified bone plates and an outside row of Lembert's sutures I made an anastomosis between the ileum and ascending colon, and, before replacing the intestine, drew the omentum out of the abdomen, rolled the bowel in it, and stitched it round the whole.

After-Progress.—From the date of operating till August 14th his progress was uneventful. He had no sickness, pain, or rise in temperature. On the evening of August 14th his temperature suddenly rose to 102°, and, though he made no complaint, he did not look so well. On August 15th the sutures were removed. Some foetid pus escaped when this was done. From this date he had no further trouble, and, though still weak, was discharged, at his own request, on August 21st, 1891.

For the first month after operation he had a tendency to diarrhoea, but afterwards his bowels acted regularly and naturally, his appetite returned, and he felt no abdominal trouble whatever. On October 17th, 1891, he died of bronchitis, and I am indebted to Drs. Arnison and Angus for obtaining this specimen for me.

Post-mortem Examination.—There was a firm healthy cicatrix in the abdominal wall, and some old omental adhesions in its neighbourhood. The omentum was firmly adherent to and wrapped all round the bowel, and on removing this the condition shown in the accompanying drawing was displayed. A portion of ileum about five inches from its termination is seen attached to the inner side of the ascending colon, about four inches from the caput caecum. One small silk suture firmly buried in organised lymph is all that remains of the numerous sutures used. The whole connection is secure and strong. On opening the colon the faecal fistula connecting it with the ileum admitted the end of my thumb. Its edges are smooth and round, and faeces must have passed through it with ease.

The ileum at its normal junction with the colon is completely blocked, and here and in the caecum a firm ulcerated surface exists. Dr. Drummond has kindly made a section of this for me, and finds it to be a cylindrical-celled carcinoma. The pathology of the case has been malignant stricture at the ileo-caecal valve, chronic intussusception.

A CASE OF GASTRO-ENTEROSTOMY.¹

By G. H. HUME, M.D., F.R.C.S. EDIN.,

Surgeon and Joint Lecturer on Clinical Surgery, Newcastle Royal Infirmary.

GASTRO-ENTEROSTOMY for cancer of the pylorus belongs to that class of palliative operations for malignant disease of which it is difficult to estimate the true value. Apart from its direct mortality the question always remains to be answered with reference to each case, whether the operation has given such relief of suffering and such prolongation of life as to make the undergoing of it from the patient's point of view worth while. It will be hardly possible to obtain and construct statistical data for a decision, because the natural course and duration of the disease when uninterfered with surgically are so varied and uncertain. The impression upon the minds of surgeons as to the value of the proceeding must at any rate in the meantime be formed from a careful consideration of individual cases. It is as a contribution to the formation of this impression that I report the following case.

The patient was a miner, aged 53, who was admitted into the Newcastle-on-Tyne Royal Infirmary on August 31st, 1891. He complained of pain and vomiting after food, and of progressive loss of flesh. His illness had been of eight months' duration. At the time of his admission he was much emaciated. He had pain after everything he took, and always once in twenty-four hours he vomited a very large quantity of frothy food and mucus. A hard mass was very plainly to be felt to the right of the epigastrium. As although much wasted the man's general condition was not unfavourable, an operation was advised and agreed to.

After a few days' preparation, which consisted chiefly in twice a day washing out the stomach with salicylate of soda solution, the operation was done on September 8th. The abdomen was opened by a free incision in the middle line between the ensiform cartilage and umbilicus. The pyloric mass was found to be fixed. The portion of the anterior wall of the stomach selected for opening was drawn out of the wound, and by turning up the colon and omentum to the right, and passing the fingers down to the left of the vertebral column, the first part of the jejunum was found without difficulty. The area of the operation was packed with sponges. For holding the stomach wall and intestine during the subsequent manipulations no clamps other than the fingers of a skilful assistant were used. Openings from an inch to an inch and a-half were made in the stomach wall and in the intestine opposite to the mesentery. A continuous suture of catgut was run round the margin of the opening in the stomach, attaching the mucous and peritoneal coats. Senn's plates were then adjusted and secured by silk threads, which were passed close to the margins of the respective openings. To make more secure a series of Lembert stitches was placed between the gastric and intestinal walls around the outer margins of the plates; and to make still more secure a large piece of omentum, completely detached, was wrapped round the junction of the two viscera and fixed in position by two or three stitches. Before laying it down the surfaces of the graft and of the viscera which were to be in contact were lightly scarified with a fine needle.

The patient did not suffer in any way from the operation. Feeding with milk and soda-water was begun at the end of twenty-four hours. The food in both quantity and quality was increased day by day, there being no vomiting and no pain from the first. The bowels acted regularly, but no part of the plates was found in the motions.

On October 3rd, nearly a month after the operation, the patient was discharged, having improved greatly in appearance and in weight. He was taking a carefully regulated

¹ Read in the Section of Surgery at the Annual Meeting of the British Medical Association held at Nottingham, July, 1892.

diet of solid food, and was quite free from discomfort. After his return home he continued well for ten days; there was then a gradual return of the vomiting and afterwards of the pain. His condition became steadily worse, and he died on November 10th.

Post mortem only the abdominal cavity was opened, and the parts, as now shown, removed. It was found that the cancerous mass had increased greatly from the date of the operation. The induration almost involved the margin of the artificial opening, which, however, remained patent so as to admit the forefinger. The adhesion between stomach and jejunum was quite firm, and the outline of the omental graft could still be traced. The Senn's plates had altogether disappeared, but the silk threads which had secured the plates remained in position. They were blackened, and each, where it traversed the gastric or intestinal wall, was surrounded by a sloughy ring of tissue. This persistence of silk sutures when employed in fixing Senn's plates, and when, therefore, the threads lie partly in the cavity of stomach and intestine, and cannot remain aseptic, has been already repeatedly noted, and indicates a disadvantage and possible danger in their use. Mr. Jessett appears to have shown that catgut is sufficiently durable for the purpose.

In estimating the gain and loss by interference in this case, it is fair to note that the patient did not suffer at all from the operation. He was free from pain or discomfort from the first, and was very shortly taking as much food as he had previously been doing. The month's improvement and immunity from suffering which followed were undoubtedly the direct result of the operation. I fear it cannot be claimed that life was lengthened by it. The patient at the time of his admission certainly seemed good for at least two months. Neither probably did the operation in any way shorten life. The return of symptoms and the speedy fatal ending were apparently due to natural progress of the disease.

A CASE OF CÆSAREAN SECTION.

By H. St. CLAIR GRAY, M.D., F.F.P.S.,

Assistant Obstetric Physician Glasgow Maternity Hospital, and Lecturer on Midwifery, Western Medical College, etc.

THE operation of Cæsaean section is one which has lately been much performed in Glasgow, especially by Dr. Murdoch Cameron. I have been present at all his cases, and have assisted him in quite a number, and have been astonished at the small amount of bleeding occurring at the operation. Never have I seen more hæmorrhage than what one expects at an ordinary confinement, and certainly never sufficient to warrant the application of an elastic ligature around the lower segment of the uterus. The operation in itself is simple, as the operator knows what to expect at each step, and can therefore prepare for it, which is a very different matter from operating on some obscure abdominal tumour, where adhesions and other complications may exist in any number.

On March 31st I was called in consultation by my assistant, Dr. Lindsay, to the case of Mrs. W., aged 27, in labour with her first child. She had been in labour for about twenty-four hours, with the membranes ruptured for over twelve. On examination I made out that the os was about three-fourths dilated, that the foetal head was free above the brim, and that the pelvis was flattened and generally contracted, the conjugate at the brim measuring $2\frac{1}{2}$ inches. The abdominal walls being thin, the foetal head was distinctly felt to be large and hard, and the foetal heart and movements were easily made out. The patient and her friends being Roman Catholics, I explained to them that I was unable to deliver the child alive, except by the operation of Cæsaean section, as to the dangers of which I informed them, and they at once requested me to perform it. According to I had her removed to a private hospital and operated at once.

The Operation.—The patient being well bathed in carbolic acid, and her bowels and bladder emptied, ether was administered by Dr. Brown Henderson, the patient taking it well. After the abdominal surface was well rubbed with turpentine and shaved, an incision, extending from about an inch above the pubes to a couple of inches beyond the umbilicus, was made right down to the uterus, which on being examined was found to be twisted on its own axis, with the left Fallopian tube almost immediately below the abdominal incision. This was rectified, and the uterus steadied by my assistant. Dr. Murdoch Cameron's straightened pessary was used to control the hæmorrhage, and acted admirably. A button-hole incision was made through the uterine walls, and it was then seen that the placenta was inserted anteriorly immediately below the uterine incision. On discovering this I at once increased in length the incision, and, passing my hand round the placenta, seized the child's head, and sweeping it out delivered. The uterus was immediately grasped, and the hæmorrhage controlled. After separating the child I peeled off the placenta and kneaded the uterus, until firm contraction took place. The

uterine wound was now closed with chromic acid catgut stitches, and the abdominal cavity carefully sponged out and closed with silk ligatures. Iodoform was applied to the wound, with a dressing of perchloride of mercury, and a firm flannel bandage over all. The operation lasted exactly twenty-eight minutes.

Progress of the Case.—The patient slept well for about six hours during the first night, her temperature being 101° . For the following four days all went well, the patient being and feeling extremely well, but on the fifth day she took an epileptic fit, which on inquiry I found she had been subject to. She never properly recovered consciousness, and, taking another, died at midnight.

Post-mortem Examination.—On opening the abdomen the uterine wound was found to be closed, no sign whatever of any inflammatory action being present. The pelvis was removed, and the former measurements found to be correct. The child was a large one, weighing $9\frac{1}{2}$ lbs., with a large, hard head. At present, six months after the operation, it is alive and well.

My reason for publishing this case, although unsuccessful, is that I consider all operators should publish their failures as well as their successes, so that a true estimate, for or against any given operation, may be arrived at. In my own opinion, it is a much more simple matter to perform a Cæsaean section than to perform a craniotomy on a large child through a small pelvis, and that the danger of the one operation to the mother is about the same as the other operation; and in the one case you are likely to have a living child, in the other you must have a mutilated dead one.

THE ACTION OF SOME OF THE RECENT HYPNOTICS ON PANCREATIC DIGESTION.

By JOHN GORDON, M.D.,

Assistant to the Professor of Materia Medica, Aberdeen University; Assistant-Surgeon Aberdeen Sick Children's Hospital, etc.

THE observations regarding some features of gastric disturbances that followed the exhibition of a few of the recently-introduced hypnotics, and which initiated the series of experiments which were published in the *BRITISH MEDICAL JOURNAL* of July 15th, 1891, induced me to continue further experiments on their influence on pancreatic digestion.

No attempt is made in this contribution to study more than one side of the question of pancreatic digestion, namely, that by which this digestive fluid acts on starch, converting it into maltose and dextrin. The actions which take place on fats and proteids are not entered into in the meantime. Nor does this paper propose to consider at all the action of these hypnotics on the secretory, muscular, or nervous mechanism, which no doubt are potent factors in all interferences that drugs make on the digestive processes.

METHOD OF EXPERIMENT.

The methods employed to ascertain the influence of the various hypnotics on the pancreatic digestion of starch were to prepare a standard solution of pancreatic juice, the strength of which had been observed by its action on a mucilage of starch of definite strength. The result of a large number of observations showed that the pancreatic solution employed was able to convert the whole of the starch into maltose and dextrin in ten minutes. The temperature of the fluids during the experiments was 98.6° F. A weak solution of iodine was used as the colorimetric indicator, to show when digestion was complete by the discharge of the blue colour. The strength of the mucilage of starch was 1 gramme in 100 c.c. of water. Six glass beakers were taken. No. 1 formed the control beaker, and contained 80 c.c. mucilage of starch and 0.75 c.c. of pancreatic solution. The other five beakers contained, in addition to the above, regulated quantities of the several hypnotics employed in the specific experiment.

The pancreatic solution which was used was carefully made for me by Mr. James Clark, pharmaceutical chemist, Aberdeen, and was fixed and reliable in its strength and action.

Numerous series of experiments were made with the various substances in weak and strong solutions, and, to insure brevity, the results are given in as condensed a form as possible.

SULPHONAL.

Five beakers contained, in addition to the ingredients in the control beaker, 0.75 c.c., 1.5 c.c., 3 c.c., 5 c.c., and 7 c.c. of a saturated solution of sulphonol. The result of numerous experiments indicated that the smallest quantities of the sulphonol, viz., 0.75 and 1.5 c.c., most delayed the pancreatic digestion, viz., three to five minutes. The stronger solutions had no appreciable effect.

PARALDEHYDE.

When to the mucilage of starch and the pancreatic solution