Ainos are rare in collections at present, though some observations upon them have been published by Barnard Davis and Busk. The few skulls known are heavy, and have the muscular impressions strongly marked. The average altitudinal index of four in Dr. Barnard Davis's collection is 78; of three measured by Professor Flower, 74.3. These present none of the features characteristic of Mongolian skulls, the facial bones being more European in type, the nasi-malar angle only 129 deg. The affinities of the Ainos are at present matter for speculation. If Caucasian, it is difficult to account for their local position. The hypothesis that they are a remnant of a race from whom the aboriginal population of the Indian Peninsula and perhaps the Australians are derived is tempting, but hardly as yet supported by facts. E. S. Morse, from examination of the pottery and implements found in ancient kitchen-middens in Japan, has recently been led to the conclusion that another race inhabited the country before the Ainos; but if this were the case, we know nothing at present of their physical characters.

ANNULAR STRICTURE OF THE INTESTINE: ITS DIAGNOSIS AND TREATMENT.*

By STEPHEN MACKENZIE, M.D., F.R.C.P.,
Assistant-Physician to and Lecturer on Pathology at the London Hospital, etc.

I AM desirous of bringing under the notice of members this evening a form of chronic obstruction of the bowels, to which less attention has been directed than the practical importance of the subject demands. Owing to its non-recognition, in most cases life is brought to a premature, a rapid, and a painful conclusion; whereas, when it is timely recognised and appropriately treated, this painful death may be averted, and life (to a certain extent) indefinitely prolonged. The form of chronic obstruction of the bowels to which I allude is a growth in the intestinal wall, assuming an annular or zonular form. Its most usual seat is the colon, especially about the sigmoid flexure; its nature is that of a cancer. But owing to its position, slow growth, and little liability to cause cancerous infection of the system, its dangerous manifestations are chiefly of a mechanical nature, which lead to death before its malignancy has time to come into play.

I shall, perhaps, give the best picture of the disease by describing a few cases.

Sarah R., aged 37, a needlewoman, had always been constipated. Twelve years previous to her present illness, she had an attack similar in all respects to the present one, and it lasted three weeks. In August 1874, she had an illness lasting thirteen weeks, which she called rheumatic fever; it left her with the right knee permanently contracted, which considerably interfered with locomotion. She was employed at a workshop where access to a water-closet was difficult. From these combined circumstances, she used to let her bowels go for a week or ten days without action, and then would take strong aperients to get relief, generally choosing Sunday for the purpose. On November 6th, 1875, her bowels acted, but not very freely. She then went for six days without any evacuation. On the evening of the sixth day, she took four of Holloway's pills, and, as these produced no effect, on the following morning she took three more of the same pills. After this, she strained much at stool, and whilst doing so was seized with sudden and severe pain in the left side of the abdomen, followed by vomiting. The pain she described as sharp, just as if she were being twisted. The pain and vomiting persisted up to the time of her being admitted into the London Hospital, under my care, on November 15th, 1875.

On admission, she had great pain in the abdomen. The pain was in the left hypochondrium; she described it at this time as "a dull heaviness, like a lot of wind rolling about". She had constant vomiting, not of a stercoraceous character. Her temperature was normal. No hernia could be detected; nothing abnormal was felt *per rectum*. There was no blue line on the gums. She was given an enema of gruel, which brought away a good motion, unformed, and gave her great relief. She was ordered one grain of opium every four hours.

The next day, the pain in the abdomen was rather less; she had occasional vomiting.

The following day (November 18th), the pain had greatly increased, and the vomiting continued.

November 21st. Since yesterday at tea-time, the patient had been constantly vomiting. She had severe pain in the left hypochondrium, which she described as "a twisting"; "just as if my bowels were being ripped". This day, she had a slight motion, consisting of shreds of mucus; with this exception, her bowels had not acted since the enema on admission. She was now ordered a subcutaneous injection of morphia, one-third of a grain, every six hours. This afforded her much relief at first.

* Read before the South London District of the Metropolitan Counties Branch.

On November 22nd, she had dozed a little in consequence of the morphia, and vomited less. She described the pain as taking a semi-circular direction upwards from the left hypochondrium.

November 25th. The abdomen was considerably distended, bulging a little on each side. It was very tender, and everywhere tympanitic; no fluctuation. She had vomited more or less continuously; the vomit was watery all along, and never had a fecal odour. The bowels had not acted since admission, except on the occasion when she passed the small quantity of mucus. The pain now came on in sudden paroxysms. She at present pointed to just above the umbilicus, and to the right side of the abdomen, as the seats of the pain. Her face had a pinched expression, the cheeks were a little flushed, but the tip of the nose was cold; the extremities were slightly cold. Pulse 138, and full; respirations 20; temperature 100 deg. In the evening, the patient was placed under chloroform, and a tube passed about two feet up the rectum. A quart of warm water was injected. No solid matter was returned, and what little fluid afterwards came away was coloured by blood. Before she recovered from the anæsthetic, one-third of a grain of morphia was injected. She had a good night, and had only vomited once by the following morning (November 26th), when the pain had returned. She referred it to the left of the umbilicus, where she was most tender on pressure. Her abdomen was much distended. Tongue dry, red at tip and sides. Pulse of fair size, soft, and compressible; respirations 20; temperature 102 deg. She died at 10.30 P.M. She passed daily a fair quantity of urine. The vomiting, which continued to the last, was never stercoraceous.

I made the *necropsy* on the following day. The abdomen was distended. On opening it, it was seen that there was general peritonitis. The coils of intestine in sight were much distended, especially the large intestine in its transverse and ascending portions. By slightly moving the coils, the distensibility was seen to end abruptly in the descending colon, just above the sigmoid flexure. Below this point, the intestine was quite empty. The peritoneum was deeply injected and was covered by a layer of recent lymph, which partially united contiguous convolutions. The peritoneal covering of the cæcum was greatly discoloured, and there was a small circular aperture, about the size of a threepenny piece, through which fæces passed when the bowel was compressed. There was a small quantity of dirty sero-purulent matter in the peritoneal cavity. On the removal of the intestine, the part at which the bowel was narrowed was seen to be the seat of an annular growth. It completely surrounded the intestine for the distance of about one and a half or two inches, and narrowed its calibre so that it would admit little more than a No. 12 catheter. When exposed, by opening the intestine above and below, it was seen to consist of a solid growth, which projected above the level of the surrounding mucous membrane, and had a well-defined border. It was of a reddish-grey colour above, but was paler at its lower border. It was moderately soft when cut and pressed, and did not appear to have a fibrous structure. The mucous covering was eroded and in places destroyed.

The bowel above the stricture was extremely distended. The mucous surface was everywhere highly injected, especially in the small intestine at the summit of the valvulæ conniventes. Peyer's patches were everywhere mapped out with unnatural distinctness. In the upper part of the intestine, they were merely of increased vascularity; at a slightly lower level, they were granular and superficially eroded; and yet a little lower, they presented a considerable loss of substance: they were irregular, and looked as if small pieces had been picked off or punched out, leaving the smooth muscular coat beneath. As the cæcum was approached, the loss of structure became greater, and over a considerable area an irregular ulcerated surface was presented, having abrupt elevations and excavations. The cæcum was much distended, and its walls extremely thin and soft; on its inner aspect it was greatly discoloured, and had an ashy-grey patch about the size of a five-shilling piece, in which all the tissues appeared to be completely destroyed. This part was as thin as writing-paper, and in its centre had given way, leaving a circular aperture (alluded to above) with thin smooth edges. The agminated glands were distinctly enlarged, and were slightly ulcerated below the cæcum; but the only point where perforation had occurred was in the cæcum. There was no disease in other parts of the body. The left ventricle of the heart was contracted; the posterior basis of the lungs congested. Microscopic examination of the growth showed it to be a columnar epithelioma.

I have gone somewhat into detail in the *post mortem* description, as it illustrates very well the results of the obstruction in the intestines—the dilatation of the bowel, and the changes in the mucous membrane, which often bring about the fatal issue.

Another striking case of this affection I have strongly fixed in my memory. About ten years ago, when I was assistant medical officer at the London Hospital, a young woman, employed at the lead-works in

Bethnal Green, was admitted for supposed lead-colic. She had twice previously been in the hospital for attacks similar to the present: constipation, vomiting, and colicky pain. She had received on each previous occasion the orthodox sulphate of magnesia and sulphuric acid, which relieved her symptoms, and she left the hospital *cured*. On the third occasion, the attack was more obstinate. The usual remedies proving powerless, a castor-oil enema was ordered, which, on the following day, was found in the peritoneal cavity. The patient had an annular stricture of the descending colon, and the bowel had given way.

Dr. Pye-Smith brought the notes of a case of annular stricture of the colon before the Hunterian Society in 1874. A woman aged 38 had been apparently well until three weeks before she came under his care, when she had slight abdominal pain, which was relieved by laxatives, but returned a week later, accompanied by sickness and constipation. Obstruction followed, which was relieved temporarily by olive-oil enemata, but she died in collapse. *Post mortem* examination showed annular stricture of the ascending colon, which barely admitted the blade of the enterotome. The cæcum and small intestines were distended, and the former perforated.

M. J. Déjerine brought before la Société Anatomique in May 1878 (*Progrès Médical*, September 7th, 1878), a very characteristic example of the disease. A woman aged 57 had been troubled with her bowels for two months, attacks of constipation alternating with diarrhoea. She had had pain in the abdomen of a severe character for a month; it was increased by pressure, and was most marked in the left iliac fossa. There had been complete obstruction three weeks, succeeded by fecal vomiting. There was no fever. The obstruction proved intractable, the stercoraceous vomiting persisted, peritonitis developed, and the patient died seven days after coming under treatment. Necropsy showed annular stricture of the sigmoid flexure, with great dilatation of the small intestine and colon, the latter being quadruple its natural size. There were secondary tumours in the liver of the same nature as the primary growth in the intestine—cylindrical epithelioma.

I might cite other cases, but those I have narrated suffice to show the general characters of the malady to which I wish to draw attention. In all of these, there was *post mortem* revelation of the exact conditions. I have seen several cases in which no necropsy was obtained, but in which the symptoms were sufficiently declared to enable me to express a decided opinion as to the nature of the disease, without its further progress belying the diagnosis. I have two cases now under observation which I believe to be examples of annular stricture. One is that of a rather stout lady between fifty and sixty years of age, whom I saw in consultation about a year ago for the first time. She had been suffering from constipation for many years. Every now and then, the bowels would become more obstinately confined, and she would be in great agony until relief was obtained by strong aperients. Her motions were not properly formed, being smaller than natural, and in small pieces. Often, attacks of diarrhoea alternated with constipation, the one proving as troublesome as the other. Under appropriate treatment, she has entirely avoided the abdominal crises which caused her so much suffering, and one of which almost threatened her life.

I have another patient now under my care, whom I have been watching for about two years. The case is that of a male, aged at present 59. Two years ago, he was admitted under my care, with the following history. About six months previously, at Christmas, he noticed that there seemed to be a kind of constriction in his rectum; the feces came away in small lumps, and they were streaked with blood. This went on for about five weeks, when the hæmorrhage increased. He thinks he passed a teacupful of blood three or four times a-day. He also had crampy pains in the bowels before and after the passage of blood. He attended a metropolitan hospital, and the bleeding was arrested. He went back to work; he still had the pains at times, but no bleeding. His motions were soft and watery, and he had two or three a-day. In May, he had an attack of bleeding and pain, with diarrhoea, which lasted about a week, and was relieved by treatment. In June, he was seized with pain as before in the stomach, and he passed bloody stools. The next day, the pain was more severe, and appeared to go through to his back and to descend to the anus. He described it as a bearing down pain. On the third day, the pain was more violent, and whilst straining at stool and passing some blood, he felt the gut protrude externally for about two inches and then return. This happened three times in about half an hour, and the pain was excruciating. The pain and the bleeding continued up to admission, seven days from the outset of the attack, and a slimy discharge took place from the rectum. The last few days, he vomited three or four times daily, and had to have his urine drawn off.

On admission, he was a pale, somewhat cachectic, and wasted man. The abdomen was distended, tympanitic, and tender, especially in the hypogastric region, whence pain radiated from the rectum. No tumour

could be felt in the abdomen. On rectal examination, there was felt a rounded firm swelling about the size of a hen's egg, the surface of which was velvety, like that of the rectum. The finger could be passed all round this, and at its apex was an orifice into which the finger readily passed. Examination with the speculum showed the mucous membrane deeply congested. There could be no doubt that there was intussusception, so my colleague Mr. Rivington was asked to see the case. He agreed in the diagnosis, and reduced the prolapsed bowel very ingeniously with a Barnes's bag. With reposition of the bowel, the patient passed a quantity of wind and liquid feces, and obtained great relief. A swelling was noticed in the left inguinal region, but this disappeared in a few days. He remained in the hospital a couple of months; the hæmorrhage and slimy discharge disappeared, but his motions were nearly always liquid or semi-solid, and he suffered from flatulence and crampy pains. He has remained under my observation continuously since. He has had no attack of hæmorrhage or severe pain. He is troubled much by diarrhoea, only controlled by medicines. He still remains thin and cachectic, but is in fair general health, and in good spirits. My belief is, that he has an annular stricture of the descending colon, and that, in straining efforts to overcome the obstruction, the bowel became prolapsed.

It will be seen from the cases I have quoted with *post mortem* examinations, that the stricture has been in each case cancerous. There are other conditions which give rise to intestinal stenosis, such as cicatricial contraction following typhoid fever, dysentery, etc., but the most common cause is, as in the cases I have narrated, a growth in the wall of the intestine; and it is this form of stricture to which I confine my remarks. As pointed out long ago by Rokitsansky, cancer in this situation occurs in two forms; primary cancer, which tends to encircle and constrict the bowel; and secondary cancer, which tends rather to grow in the long axis of the gut. The former—primary cancer—it is which is almost exclusively concerned in producing stricture of the intestine. All forms of cancerous and malignant growths have been described, but the most common are the glandular carcinomata and epithelioma. Primary cancer of the intestine is very slow to infect the system; hence it is not uncommon for no secondary deposits to be encountered, and even lymphatic infection may not be detected. Whilst no part of the intestinal tract is exempt from this cancerous stricture, the disease is far more frequent in the large intestine than in the small. Thus Zöhrler found that, out of thirty-four cases he collected, in twenty-two (*i.e.*, two-thirds of the cases) the disease was in the colon; in twelve cases the small intestine was affected, and in nine of these the duodenum was the seat of the disease. Leichtenstern (Ziemssen's *Cyclopadia*, vol. vii, p. 636) gives the following table of the relative frequency with which the parts are affected.

Cancer of Colon (exclusive of Rectum):

Sigmoid flexure	42
Descending colon	11
Transverse colon	30
Ascending colon	6—89
Cancer of cæcum	20
" appendix cæci	3
" ileo-cæcal valve	9—32

Small Intestine:

Duodenum and jejunum	17
Middle portion of ileum	3
Lower " "	13—33

Total 154

It is important to remember that the duodenum and the colon are the parts most liable to be affected, because we are able to point out the symptoms typical of each, and by excluding the one, render the diagnosis of the other more probable. Of all parts of the colon, the sigmoid flexure is the part most frequently attacked. It seems to be a law that flexures and points of attrition of mucous membranes most frequently become the seats of cancer, especially epithelioma—an observation long ago made by Baillie. We see this illustrated by pyloric cancer, and by epithelioma of the œsophagus where the latter is crossed by the left bronchus. As Dr. Bristowe points out, at least three-fourths of the strictures of the large intestine are situated to the left of the mesial plane of the body.

To the fact that the growth has but little tendency to infect the system, and to its seat being most commonly the lower end of the colon, where, by the time the ingesta arrive, digestion and absorption are about completed, must be attributed the circumstance that the constitution shows little sign of degradation, and the nutrition is unimpaired in many cases. Pain, independent of constipation, is more often absent than present, or at least is so little marked as to escape the patient's attention. A dull aching pain in the abdomen or loins, and passing down to the thighs, should, if constant, be regarded suspiciously. The ill effects of the disease are, as I have said, chiefly mechanical. As the

growth advances, it constricts more and more the lumen of the intestine. This causes feces to accumulate and concrete, until their presence gives rise to pain and fulness, and induces the sufferer to seek relief by purgatives. Too often the patient has recourse to remedies which excite powerful peristaltic action. This may for the time overcome the obstruction, but it does so at the expense of the intestine above the stricture. It tends to irritate, inflame, and ulcerate the dilated bowel. In some cases, there is dilatation of the bowel, with hypertrophy of the muscular coat; and other times there is simple dilatation. In either case, the mucous membrane is atrophied, and often ulcerated. The strong purgatives taken to relieve the constipation cause or increase this ulcerated condition. Patients with annular stricture are liable to attacks of diarrhoea, which may coexist with fecal accumulation, and if the flow be checked the evil may be increased. Sometimes with this pain is experienced, usually of a colicky character; but, unless it is very severe, it is apt to be pooh-poohed. It is characteristic that the feces are deformed, flattened, smaller than natural, like those of a child, often scybalous. It must be borne in mind that these alterations of the dejecta lose their value if feces of natural size and shape be discharged at times. Sometimes the motions are streaked with blood and mucus, and distinct hæmorrhage may occur. But these signs, most valuable when present, may be absent. The time comes when Scott, Cockle, or Holloway is appealed to in vain, the bowels are obstructed, severe pain is felt in the abdomen, and vomiting soon makes its appearance. Often when straining, at stool, sudden localised pain is experienced, due to the bowel giving way. The aid of the medical attendant is now sought, sometimes for the first time. This affords a convenient opportunity of considering the *diagnosis* of annular stricture.

Too often we are only called upon to make a diagnosis when the patient has an attack of obstruction of the bowels. The patient is found with great pain in the abdomen, sometimes localised to one part, especially the left iliac fossa. The pain is described as being of a twisting or constricting character. The patient often has a desire to go to stool, but can pass nothing, and straining efforts increase the pain. Vomiting is usually present: sometimes watery fluid only is ejected; sometimes bilious matter from regurgitation in retching; sometimes the vomited matters have the odour and even the appearance of feces. The length of time elapsing between the onset of the obstruction and the occurrence of vomiting affords some aid to localising the obstruction. When the stricture is in the colon, especially at its lower part, some days may elapse before vomiting occurs; whereas, when the obstruction is in the duodenum, vomiting is an early and striking symptom. The same may be said as regards the urine: the lower down the obstruction, the less is urine altered in quantity. When the colon is the seat of the constriction, the reverse is the case to what occurs when the duodenum is the stenosed point. The effects of duodenal obstruction resemble closely those of pyloric obstruction, as might be imagined from their contiguity; the symptoms are connected with the stomach rather than with the bowel. Where the obstruction is in the colon, the abdomen is always more or less distended, and often tender. The vermicular action of the small intestines may be observed when the abdominal walls are sufficiently thin. There is tympanitic resonance over the abdomen, except perhaps at one spot, most likely the left iliac fossa. Here, or at some point in the course of the colon a tumour may be felt. When in the transverse or descending colon, it is more or less movable, and, where opportunity is given of watching the patient over some period, this tumour may be observed to gravitate or descend to a lower part of the abdomen than when first observed. This tumour is most commonly accumulated feces, and may be made to disappear by suitable treatment. A frequent change in the position of the tumour and the distinctness with which it can be felt, in consequence of the shifting of the intestinal convolutions over each other and a temporary accumulation of feces is, as Leube says, to a certain degree characteristic of intestinal cancer. The absence of tumour in no way negatives the diagnosis of annular stricture: we must remember that usually it does not extend over a length of more than two, or at most three, inches, that it grows towards the lumen of the bowel, and that it is deep down in the iliac fossa. Obstruction of the bowels with these symptoms and a history of long-continued constipation, or constipation alternating with diarrhoea, and of the feces being always unformed or deformed, point to intestinal stenosis. Excluding dysentery and typhoid fever as antecedents, the probability of annular stricture of the colon is much increased. Passage of blood or of mucus still further indicates the nature of the affection. Whilst sometimes similar attacks have been experienced and overcome, in many of the recorded cases the fatal attack has been the first warning of the danger which may have long impended. The rectum must be examined to exclude stricture of this part, and the hernial regions explored to eliminate strangulation. Febrile symptoms, where there is perforation and peritonitis, may be ill-marked or wholly

absent. With attention to these points, I think the diagnosis of annular stricture of the colon may often be made. The diagnosis is more difficult when the patient consults us for habitual constipation, abdominal pain, etc.; for absence of marasmus and cachexia may seem to contraindicate any progressive organic disease. A careful study of the history, and clear information as to the character of the stools for some months past, are the only means by which the diagnosis of intestinal stenosis can be arrived at. The fact that full-sized, properly formed feces are occasionally passed, of course shows that there can be no organic stricture. The disease mostly occurs in persons over thirty-five years of age, though younger persons are not wholly exempt. In my experience and reading, women are much more liable to the disease than men; but I cannot say whether it is more common in women who have borne children than in those who have not. I have already said that a good state of nutrition and absence of cachexia do not oppose the diagnosis of primary cancerous stricture of the intestine.

As to its exact seat, which is a matter of much importance, some information may be gained from the seat of pain and constriction, from localised pain, from absence of general tympanites, and from the position of the tumour when present, and from the vomiting and urine, as already said. It has been suggested by the late Dr. Brinton and others, that the stenosed point of the colon may be gauged by the amount of fluid which can be injected *per rectum*, and the length of time it is retained. Though some idea as to the seat of the stricture may be gained in this way, there is no doubt, as stated by Wilks and Moxon, that enemata are sometimes sent upwards past a stricture with the effect of increasing the tension above it. It must be borne in mind that annular stricture of the colon may give rise to intussusception, as in the case I have narrated.

I think I have indicated, as well as I can with brevity, the signs and symptoms of annular stricture of the intestine. The disease being recognised, how should it be treated? The *treatment* must resolve itself into that suitable to the abdominal crisis—for the obstruction—and that appropriate for the management of the case when there is no acute obstruction, or when this has been overcome.

When a patient, in whom the diagnosis of annular stricture can be arrived at, has an attack of actual obstruction of the bowels, the treatment must depend upon the length of time which has elapsed from the onset, and the gravity of his state. If the attack have lasted a few days only, if the vomiting be moderate and non-stercoraceous, the pulse of good volume, and there be tenderness on pressure over the abdomen, the patient should be quickly brought under the influence of opium, and large warm poultices sedulously applied to the belly. What we have to fear is the dilated and ulcerated bowel above the stricture giving way, and causing fatal peritonitis. It is the cæcum, as pointed out by Dr. Bristowe, which usually gives way. If we have time to allay the irritation and inflammation of the bowel, or even of the serous membrane if peritonitis have actually occurred, we can overcome the obstruction later. I think enemata should be only cautiously used, and that large quantities of fluid should not be injected. All kneading of the abdomen should be avoided. Very commonly, as is seen from the cases I have cited, rupture of the intestine, with consecutive peritonitis, has occurred when the patient first came under notice. Where, however, the obstruction has lasted longer and the vomiting is frequent and distressing, and especially if it be stercoraceous, immediate relief must be given. In such circumstances, I should recommend an operation. In choosing the position for opening the bowel, we must remember that, whilst it is the descending colon which is the seat of the stricture in two-thirds of the cases, it is often impossible to abruptly locate the obstruction nearer than to some point between the splenic and sigmoid flexures of the colon. It would be safer, in my opinion to open the cæcum in the right loin than to open the descending colon in the left loin; but I have no actual experience of the results of this operation. Its success under any considerations must depend upon a variety of circumstances; but it is, I think, the indication of treatment where the obstruction is extreme, the vomiting stercoraceous, and the strength failing.

Where the symptoms do not present the urgency of obstruction, but the patient consults us for constipation and abdominal pain, and gives the history of other attacks, and tells us that the feces have been altered and misshapen for some time, we must be guided by observing whether there is tenderness on pressure over the abdomen, and if there be any pyrexia. If these be present, we must have recourse to absolute rest in bed, warm poultices to the abdomen, and the administration of opium. When by these means we have subdued any irritation or inflammation of the bowel above the stricture, we may set about overcoming the obstruction. For this purpose, we should employ one of the various saline purgatives, which, by retaining the fluid in the intestinal canal, soften and pulpify the feces, and thus enable them to pass the constricted point. The treatment from this time becomes the same as that for the habitual condition.

Seeing that the calibre of the bowel is narrowed, often, as in the case of the woman I have narrated, to such a degree that it is not larger than an urethra, and that all the troubles arise from an accumulation of faeces behind the point of obstruction, and the secondary changes thereby induced in the bowel, the principle of treatment must be, never to allow solid faeces to form. The contents of the bowels must be kept fluid and not suffered to accumulate, but must not be hurried on to such a degree as to interfere with absorption. The saline purgative I usually employ is Carlsbad salts, which, from their uniform constitution and portability, offer the greatest advantages. The waters of Friedrichshall, Pullna, or Hunyadi János are extremely efficient for the purpose. For poorer patients, I use Glauber's salts (sulphate of soda), with almost equally satisfactory results. As regards dosage, each case requires study. Usually, a drachm or two drachms of Carlsbad or Glauber's salts given, on rising, in warm water, keeps the bowels sufficiently loose to enable the faeces to pass and to prevent accumulation. The patients must have explained to them the nature of the case and the imperative necessity of keeping the bowels loose, otherwise they will try to do without the medicine in the belief that they will gain benefit by so doing. Sometimes it is diarrhoea and not constipation which has to be treated. This is most effectually controlled by bismuth in full doses, combined with ipecacuanha and opium in small doses, which soothe the inflamed and often ulcerated condition of the bowel on which it depends. Patients must be advised to live on easily assimilable food which makes but little faeces, and cautioned to avoid food which tends to produce flatulence; and especially enjoined against the use of drastic and hydragogue cathartics. When these injunctions are scrupulously followed out, it is surprising with what little disturbance to the general health, and with what little discomfort, life may be sustained. To what length it may be prolonged, I am not in a position to say; but, seeing the slow rate of progress of the growth, the little hindrance it offers to digestion and absorption, and the degree of contraction which may exist whilst the patient is going about and performing his or her daily duties, I think I am not going beyond reasonable probabilities when I say that, I expect the patient may be spared some years of life. How this would be terminated in cases in which the diagnosis was made, and appropriate treatment carefully pursued, I cannot affirm, as the diagnosis in those cases is usually made *after death*. Death might occur eventually from complete stenosis (unless an artificial anus was made), from the cachexy or infection of the system, or precipitated by some intercurrent disease. These are mere speculations. My purpose has been to point out how the disease may be recognised, and its usual and fatal effects warded off.

TWO CASES OF INTESTINAL OBSTRUCTION TREATED BY ABDOMINAL SECTION.

Communicated by T. CLIFFORD ALLBUTT, M.D.,
Physician to the Infirmary, Leeds.

THE discussion on Obstruction of the Bowels and its Treatment in the Medical Section of the Association last year has been provocative of much useful discussion. I venture to communicate two cases of obstruction of the bowels in which abdominal section was performed. The cases were related to me by Mr. Ockley, assistant to Mr. Dowse, of Skelmanthorpe, under whose care the cases were, and who operated successfully in one of them. The narratives are as follows.

CASE 1.—John E., aged 60, a tailor, came under my (Mr. Dowse's) care on April 21st, 1877, at 4.30 P.M. On arrival, I found the patient suffering excruciating pain in the left side, and, upon inquiry, was informed he was suddenly attacked with the pain two days previously, about 2 P.M., after having eaten a hearty dinner. He described it as if something had fallen in his inside; it was accompanied with faintness and vomiting, but passed off after a short time. To-day, the pain and sickness were more severe and continued. Temperature 100; pulse 82. The bowels were evacuated on the evening of the 19th; he had no motion since, although he had taken opening medicine (castor-oil, etc.), which had all been vomited back. On examination, there was a hard knotty tumour on the left side, high up close to the short ribs, which I thought might be either intussusception of the bowel, or perhaps some undigested food which had lodged there. I ordered ice, soda-water, and milk, bismuth mixture with henbane, extract of belladonna, and powdered opium (of each half a grain); and a large linseed-meal poultice in which was belladonna liniment with plenty of lard, to be changed every three hours.

April 22nd. He was rather better, and had not so much pain. The tumour had shifted rather lower, and, as the bowels had not been relieved, I ordered an enema of warm water and soap. The other treatment was continued.

April 23rd, 9 A.M. He was worse; his face had a very anxious fretful appearance; there were more vomiting and pain, always in the same place; pulse 110, weaker; temperature 100 deg. The tongue was rather furred for the first time. He was ordered iced brandy and soda-water, and to continue the poultices, belladonna, etc. The pupils were normal. 3 P.M. At noon, stercoraceous vomiting commenced, and continued every half-hour. I gave an enema of clean water, which came away without the least sign of faeces, and no smell whatever. I gave a hypodermic injection of morphia, and advised the friends to send for Dr. Kilner Clarke of Huddersfield in consultation. 10.30 P.M. Stercoraceous vomiting continuing and coming on every few minutes, the pulse being much weaker, Dr. Clarke proposed operation as the last chance. The abdomen was tender over the part where the pain commenced, and where the lump was felt, and was less swollen on the left side than on the right. He was passing very little urine.

The patient being well under chloroform, the obstruction was found at the commencement of the jejunum, in the form of a stony concretion about the size of a pullet's egg. As it could neither be passed forwards nor backwards, it was removed through a longitudinal incision in the bowel (this substance was unfortunately lost). The bowel was so much thinned from pressure that, although it was well stitched with carbolised catgut (the glover's suture being used), it would not hold together. The patient died about 3 A.M., or four hours after the operation.

Query.—Would this case have done better if the operation had been performed sooner?

CASE II.—George W., aged 56, a sailor, came under my care on August 21st, 1877, at 8 P.M. For about a month, he had been suffering from constipation and difficulty in passing his stools; when he did so, it was in short flat pieces like tape, and always with much straining. Sixteen or seventeen years previously, he had suffered from inflammation of the bowels; since then, he had always more or less difficulty in passing his stools. For the last fortnight, he had passed two stools. The bowels were very much distended, with clear tympanitic percussion all over, occasional paroxysmal cramping all over the abdomen, dullness over the left iliac fossa; and here the patient always pointed as the continual seat of his difficulty. I ordered belladonna, opium, nux vomica, and calomel, in pills; bismuth mixture with prussic acid; ice; soda-water and milk; and belladonna poultices frequently.

August 22nd, 10 A.M. He was much worse, stercoraceous vomiting having come on during the night; and, as the patient was evidently sinking, I advised an operation. At 3 P.M., the bladder having been emptied, in which there was only a small quantity of urine, the body was opened through the linea alba, and I passed the finger in the direction indicated by the patient, and I found two bands of lymph across the bowel close to the sigmoid flexure. On dividing these, the bowels were almost instantly relieved of a large quantity of accumulated faeces.

August 23rd, 7 A.M. The patient was much better; pulse 92, temperature 100 deg. He had two loose motions during the night. He was ordered to take a good nourishing milk-diet.

This patient made a good recovery from the operation, but died some time afterwards from rupture of a blood-vessel whilst coughing.

TREATMENT OF INTESTINAL OBSTRUCTION.*

By S. MESSENGER BRADLEY, F.R.C.S.,
Surgeon to the Manchester Royal Infirmary, and Lecturer on Practical Surgery in Owens College.

THE important question, "How to deal with doubtful cases of intestinal obstruction", suggested for debate at the last meeting of the British Medical Association, by Mr. Jonathan Hutchinson, was not seriously taken up until Mr. Pridgin Teale adopted the opposite side, at a meeting of the Yorkshire Branch held in Huddersfield last November.

Mr. Hutchinson advanced the argument that exploratory incisions, in cases of doubtful diagnosis, are unjustifiable; while Mr. Teale contends that such exploratory incisions are wise and proper measures to adopt, and even looks forward to a time when "peritonitis—traumatic, ovarian, or puerperal—will be treated by opening and washing out the abdominal cavity and emptying the intestines".†

In this present paper, besides offering a general support to Mr. Hutchinson's argument, I would desire specifically to formulate the following propositions. 1. Exploratory incisions, in cases of doubtful diagnosis, are unjustifiable; 2. Acupuncture is an inefficient and even dangerous remedy; 3. Cases of intussusception should, with rare exceptions, be left to nature.

I take it for granted that, in cases where the diagnosis is not doubt-

* The substance of an address delivered before the Manchester Medical Society.
† BRITISH MEDICAL JOURNAL, Jan. 11th, 1879.