which some pain and smarting may be felt, and does not appreciably affect the action of the intestine later. For the bowels must not be "locked up." At first it was thought that, by preventing the passage of a stool for some days, rest and freedom from infection of the line of union would be obtained, so facilitating the process of healing, but it was soon found that any advantage so gained was at the expense of the future, when hard masses which had accumulated in the upper rectum and sigmoid during this period began to descend and to be forced through the half-healed ring, tearing and splitting the tissues, and thus producing not only pain, but being followed by an inflamed condition of the connective tissue around. It was far more conducive to a smooth recovery if the stools were from the first rendered soft, and easily and frequently expelled by the use of such laxatives as confection of senna, liquorice powder, cascara, etc.

By this operation not only the more prominently enlarged veins are removed, but any at that time "embryonic" haemorrhoids are taken away, and the prospects of a permanent cure are thereby immensely increased.

In certain cases, perhaps 1 per cent. or less, during the first six months after operation, a tendency to contraction at the line of union between skin and mucous membrane has been observed. The mucosa retracts slightly, so that this line in the course of a month or two will no longer be found at the edge of the anus, but from $\frac{1}{2}$ in. to 1 in. higher up. In these cases the finger introduced into the rectum will encounter a slight contraction which gives the sensation of a thread encircling the gut at this level. This is, however, most easily dilated. If bougies of gradually increasing size are passed for a few days, the sense of constriction will rapidly disappear, and, so far as my experience goes, will not return. And this constriction is never so great or anything like so intractable as that occasionally encountered after the use of the cautery.

If an arterial pile exists below the level to be removed in this way, it will be cured by the same means, the supplying artery being drawn down and tied during the process of removal; but should it exist higher up, when the anus is fully dilated, and whilst the dilator is still *in situ*, it can be easily dealt with in full sight by the ordinary method of transfixing beneath and tying in quadrants. But arterial piles are rare, the immense majority of haemorrhoids being simply venous.

This operation has met with scant justice or appreciation amongst writers on the subject, who still in most textbooks recommend the alternative measures. It has been described as causing great loss of blood, as needlessly severe, and is said by Keen and others to be now reserved for very bad cases of prolapse with many piles; but if the principle is correct, as I have tried to show, it is applicable to all, and will be found in all to give the best ultimate results. The amount of blood lost, if the technique be carefully followed, is by no means excessive, whilst in many of such patients a little bleeding is salutary.

For fifteen years I have never practised any other method, having had the advantage of seeing Mr. Whitehead perform some of his earliest operations. I have modified the method I then saw him use, as I believe he has since done himself, by separating the entire cylinder of mucous membrane with its attached veins up to and within the sphincter before attempting any transverse cut, but the essential principle is the same, and it has always been followed by a satisfactory result. In only one case has any return been noted, and that was in an early instance in which probably sufficient care was not taken to free the cylinder completely and for the necessary height.

Some hundreds of cases have been so treated without any mortality, and in all with a speedy convalescence. In a few—possibly 2 per cent.—spasmodic urinary retention for a few hours has occurred, and, in still fewer, pain at the anus has been complained of, but both have speedily yielded to hot boric fomentations to the part. Catheterism has never been required, and, although haemorrhagic discoloration has been seen around in a few instances, suppuration or abscess has never followed. Recovery has in the great majority been singularly uneventful, and in all complete.

The following are some few of the cases which could be

found and examined years after the performance of this operation. They are taken haphazard:

Male, aged 23. Operation November 6th, 1903. Three years' pain, and appearance of piles, which do not bleed. After operation, pain immediately after return to consciousness, relieved by hot compresses and morphine. Later considerable haemorrhagic discoloration around. This disappeared by the end of the third week. Examined September, 1909: anus and rectum normal.

Male, aged 42. Operation November, 1894. Five years' intermittent pain and haemorrhage. Piles at the time of operation: the size of small plums. Examined September, 1909: anus and rectum normal.

Female, aged 39. Operation May, 1900. Fourteen months' intermittent haemorrhage, sometimes at, sometimes between, times of defaecation. Pain, at first intermittent, then becoming constant; always much worse if the bowels were constipated. After operation for twenty-four hours required hot fomentations for pain; this rapidly passed off, and further recovery was smooth. Examined August, 1909: anus and rectum normal.

Female, aged 40. Operation April, 1905. Followed in two months by constriction as of a thread half an inch up the rectum. Bougies passed daily for one week; constriction disappeared. Examined September, 1909: anus and rectum normal; no sign of recurrence of constriction.

Male, aged 49. Operation July, 1907. Piles for seven years. Operated upon elsewhere by injection of carbolic acid, followed by inflammation around, evidenced by the necessity for opening an abscess; this occurred in 1905. Very little improvement even at the time; size has steadily increased since then, and more quickly during the last six months. Great pain, especially during defaecation and at night. Examined September, 1909: anus and rectum normal: no pain or bleeding since operation.

Male, aged 59. Operation August, 1896. Five years' discomfort; twelve months' intermittent haemorrhage. Four months' gradually increasing pain. At the time of operation there was some prolapse of the rectum, with a protruding ring of haemorrhoids, four or five of which were specially large; the patient was much exhausted by pain and loss of blood, and had to be lifted on to the operating table. Examined September, 1909, thirteen years later: in good health, although 72 years old. No trace of piles; bowel functioning well and easily.

Many of the hospital patients, as usual, cannot be traced, but the fact that in no case has any one operated upon in this way ever returned with a relapse is, when taken in conjunction with what is known of those who could be found, at least presumptive evidence that the result has been, in them, equally satisfactory.

THE AFTER-RESULTS OF THE OPERATIVE TREATMENT OF HAEMORRHOIDS:

A STUDY OF THREE HUNDRED CASES.

By H. GRAEME ANDERSON, M.B.,

HOUSE SURGEON, ST. MARK'S HOSPITAL.

So many conflicting statements are made about the after-results of the operative treatment of haemorrhoids, that when I took up duties as House-Surgeon in St. Mark's Hospital I thought it might be interesting to keep a record of the after-results of all the cases of haemorrhoids treated by operation

Three Hundred Cases of Haemorrhoids Treated by Operation at St. Mark's Hospital during Eighteen Months.

150 by means of the ligature, or Salmon's operation.

100 by excision of the "pile-bearing area," or Whitehead's operation.

50 by the clamp and cautery.

Pain.

This is an extremely difficult symptom to classify, as the personal element has so much to be taken into account. The amount of pain experienced has been classified under three headings:

- Severe pain, which necessitated the giving of more than $\frac{1}{4}$ grain of morphine.
- Moderate pain, which necessitated $\frac{1}{4}$ grain of morphine.
- Little or no pain, which did not necessitate the use of morphine.

	Severe.	Moderate.	Little.
	Per Cent.	Per Cent.	Per Cent.
Clamp and cautery	0	30	70
Ligature	10	57	33
Whitehead	16	56	28

The pain was borne better by the female patients than by the males, and Jewish patients complained much more than others. The pain lasted from twelve to twenty hours after the operation, and then there was comparative comfort till the fourth day, when the bowels were moved.

Factors influencing the amount of pain were:

- (a) The extent to which the sphincters were stretched seemed to bear little relation to the amount of pain experienced.
- (b) Position of the patient after operation had little effect in minimizing pain, although most were more comfortable lying on the right side.
- (c) In the clamp and cautery operation pain was more severe if anal skin was included in the clamp and cauterized, or in the ligature operation when some fibres of the sphincter were included in the ligature, or when the sub-mucous tissues were unduly adherent to the sphincters.

The pain is best controlled by means of $\frac{1}{4}$ grain of morphine given hypodermically an hour after the operation. On the fourth day, when the bowels are moved, a little pain may be complained of, usually more severe at the second call to stool, but this pain can be obviated by the injection of 4 to 6 oz. of sterilized olive oil into the rectum at the same time as the purgative (1 oz. of castor oil) is given. This softens the motion, lubricates the passage, and ensures easy defaecation. This is well illustrated by the case of a private patient who was operated on by the Whitehead method after having been previously operated on by the ligature method some years before in another London hospital. He was a well-educated man, and stood the pain well, but when the fourth day was approaching he begged to be given something to relieve the anticipated pain of defaecation, which had been very severe after his previous operation. Olive oil was injected into the rectum, and he did not suffer in the least. This little precaution had not been carried out after his former operation.

Use of the Catheter after Operation.

Of the cases under consideration, the catheter was used as follows:

Ligature	...	10 per cent. required the catheter.
Whitehead	...	6 per cent. required the catheter.
Clamp and cautery	...	0 per cent. required the catheter.

The catheter was used equally in both sexes; it is required more often in those of a nervous temperament, and in cases in which much packing is required in the anal canal. From these figures it is obvious that the catheter is more often required after the ligature operation than in the case of the other two. Tuttle states that strangury and dysuria are almost inseparable from the ligature operation, and does not remember a single case where this method was used in which it was not necessary to catheterize the patient for some days or even weeks afterwards. This has certainly not been our experience at St. Mark's Hospital. To induce the patient to pass urine, hot fomentations are applied to the hypogastrium, and, if this is not sufficient, the patient is allowed to stand up at the side of the bed. In those cases in which the catheter was passed it was, as a rule, required once only, but in other cases it was required until the bowels were moved on the fourth day. About nine months ago I ordered Imperial drink—acid tartrate of potassium gr. 60, saccharin gr. 1, ol. limonis m. lll, aq. dest. 1 pint—to be given freely to the patients after operation, and since that time I have only twice had to use a catheter after an operation for haemorrhoids. This acts as a diuretic and a sedative to the urinary passages, and it is heartily to be recommended.

The Return of Sphincteric Control.

There is always a certain amount of loss of control after the stretching of the sphincters, and this is also accounted for by the loss, more or less, of the sensitive lining of the anal canal. In the majority of cases the sphincters regain much of their tone as soon as the patient comes round from the anaesthetic, as can be seen and felt by anyone at the completion of the operation, but it is well that the

surgeon should ascertain before operation the state of the sphincters, and not stretch all alike as a matter of routine. There are many cases of prolapsing haemorrhoids, especially in old people, in which the sphincters have been stretched daily for years from above downwards by the prolapsing piles themselves. If during operation these cases be treated very gently and the sphincters stretched as little as possible, few cases of "loss of control" follow the operation. In the 300 cases under consideration, the return of control and of the so-called "rectal sense" were ascertained in the three following ways:

- (a) By the ability of the patient to retain a one-pint enema.
- (b) By the patient getting the proper warning before defaecation.
- (c) By the ability of the patient to distinguish between the passing of flatus and motion.

In the clamp and cautery cases control returned on an average on the sixth day after the operation. In the ligature cases control returned on the tenth day; in one case control returned on the fourteenth day, which was the maximum. After the Whitehead operation, control returned about the twelfth day; the longest period before control returned after this operation was the twenty-fourth day. The age of the patient did not seem to influence much the return of control, except in a few cases between the ages of 50 and 70 submitted to the Whitehead operation, in which control was somewhat longer in returning.

Contraction of the Anal Canal.

In the series of clamp and cautery cases not one showed the least tendency to contract.

Of the ligature cases, 55 per cent. showed no tendency to contract. In 40 per cent. there was slight contraction, which was easily remedied by digital dilatation during the third and fourth weeks after the operation. In 5 per cent. there was more marked contraction, which required instrumental dilatation up to six weeks after the operation. Two cases required a general anaesthetic. They all subsequently did well and showed no further tendency to contract. These were the cases in which the piles were all ligated at the one level, or in patients who had to leave the hospital early and did not carry out efficient digital dilatation.

After the Whitehead operation, 36 per cent. showed no tendency to contract, and these were cases in which there was very little retraction of the mucous membrane. In 56 per cent. there was slight contraction, which was easily overcome by digital dilatation during the third and fourth week and showed no tendency to recur; in these cases there was retraction of the mucous membrane to the extent of $\frac{1}{2}$ in. In 8 per cent. there was decided contraction; 4 of these were due to sepsis and ulceration following the operation, these were cases of sloughing and gangrenous prolapsed piles and the mucous membrane retracted to the extent of an inch. Of these 4, 2 had secondary haemorrhage. The other 4 cases showed retraction from $\frac{1}{2}$ to $\frac{3}{4}$ in.; they either left the hospital too soon, or neglected to come back early to have further dilatation carried out. All of these 8 cases had instrumental dilatation twice a week for periods from two to three months. The stenosis in all these cases has been overcome, and though there is felt a fine fibrous ring or ridge encircling the anal canal, the finger passes in easily, and certainly none of these patients complain of any difficulty in defaecation. No case of Whitehead's operation healed by first intention, and the amount of contraction depends on the amount of retraction of the mucous membrane from the anal margin.

Development of Tags.

Tags which are of the nature of external haemorrhoids are swellings of varying size consisting of skin and connective tissue which develop around the anal margin. They are due to interference with the return of blood from the anal margin, and to the trauma and localized inflammation caused by the operation. The larger ones contain thrombi. They may arise either in the situation of already present external haemorrhoids, or in anal skin where there was little or no evidence of external haemorrhoids before operation.

In 50 per cent. of the clamp and cautery cases, in 40 per cent. of the ligature, and in 70 per cent. of the Whitehead

cases, there was practically no formation of tags after the operation, or at most a very slight swelling at the anus which subsided within ten days. In 44 per cent. clamp and cautery cases, in 45 per cent. of the ligature, and in 25 per cent. of the Whitehead cases, there was decided tag formation, which subsided in from four to twelve weeks after the operation, leaving almost a smooth anus, or at most two or three elevations around it.

In 6 per cent. of the clamp and cautery cases, in 15 per cent. of the ligature cases, and in 5 per cent. of the Whitehead cases, there developed rather large tags, which required removal under a local anaesthetic during the third week after operation. One clamp and cautery case and one ligature case required a general anaesthetic for the removal of a ring of large tags. Most tags subside if left alone, or if some astringent like strong lead lotion is applied daily; but if the tags are large, and especially if thrombi are present in them, they are better removed. The removal of two or three tags leaves the anal margin very tender for a few days, causes some pain during defaecation, and renders digital examination more trying. Thus removal of tags rather encourages contraction owing to the difficulty in carrying out digital dilatation. Tags may give rise to no symptoms, or they may cause pruritus, or become fissured and eczematous if large; they may cause difficulty in cleansing the anus after defaecation. In hypersensitive patients the occurrence of tags may lead them to suppose that the piles have not been efficiently dealt with.

Haemorrhage.

Eight cases of post-operative haemorrhage occurred in the series of 300 cases under consideration.

(a) In the clamp and cautery cases there was one case of accidental haemorrhage due to the carelessness of a nurse. This patient required an anaesthetic, and some vessels were ligated. No case of recurrent or secondary haemorrhage followed the clamp and cautery operation.

(b) After the Whitehead operation there was no case of recurrent haemorrhage, but two cases of secondary haemorrhage occurred—one on the sixth day and one on the eighth day following operation. These were two cases of gangrenous prolapsed piles in which sepsis occurred. One was treated by packing, the other required an anaesthetic and the use of the cautery. The septic condition was soon overcome, and no more haemorrhage occurred, but these were two of the cases which had marked contraction, requiring instrumental dilatation for about two months.

(c) After the ligature operation there was one case of accidental haemorrhage, caused by the patient interfering with his dressing. There were two cases of recurrent haemorrhage, both controlled by packing without an anaesthetic, and two cases of secondary haemorrhage occurred, one on the ninth day and one on the tenth day following operation. Both were given a general anaesthetic, and in neither of the cases was there any sepsis or ulceration. In one case an artery required ligation, and in the other there was venous oozing, which was arrested by packing. It is difficult to account for the haemorrhage in these cases. Though these patients lost blood to the extent of from 1 to 2 pints, it did not seem to hinder their progress towards recovery. Calcium chloride was given internally for a few days and the patients put upon a tonic containing iron, whilst the diet included iron-containing foods—for example, spinach, eggs, apples, etc.

Abscess, Fistula, and Ulceration.

None of these complications ensued after any of the clamp and cautery operations.

After one ligature case, in which six piles were ligated, there developed a perianal abscess, which was opened; this left a small fistula, which was treated by operation. Two cases treated by ligature developed a form of chronic infective ulceration. This was treated by the application of nitric acid, and for many weeks by antiseptic rectal injections. Six months from the onset zinc cataphoresis was commenced and carried out every fortnight for many months. The ulcerative process was arrested after about a year, but in healing a fibrous stenosis of the rectum followed, which is treated by instrumental dilatation every month or so.

After one Whitehead operation a small fistula developed which was easily cured by operation. Four of the White-

head cases were complicated by sepsis, and three of these occurred in cases of gangrenous prolapsed piles. Retraction occurred to the extent of 1 in.; there was some sub-mucous infiltration and thickening under the retracted edge, whilst the ulcerated area was covered with a thin greyish slough, and bled easily. In these three cases the sepsis was arrested within ten to fourteen days, as evidenced by the temperature subsiding, discharge becoming less, pain and tenderness ceasing, the slough disappearing, and the retracted area becoming covered with healthy granulations. There was marked contraction during cicatrization later on, which was subsequently remedied. Of these three, two had secondary haemorrhage. The fourth case was a female patient who had slightly more contraction than usual, and must have infected herself in carrying out digital dilatation at home, as she was quite well when she left the hospital a month after the operation. The cicatrizing area had broken down, and there was ulceration extending the whole length of the anal canal. Glands in both groins were removed, but she developed pyaemia, and in spite of all treatment seemed to be dying, when suddenly a reaction set in, and she is now doing well.

The clamp and cautery operation seems to be that least likely to be followed by sepsis. The clamp draws the edges of the mucous membrane together, and as the wound is in the long axis of the bowel, there is no tension and little retraction. The cautery effectively seals the mouths of the blood vessels and lymphatics, thus preventing absorption. The absence of all ligatures and sutures is also in favour of the operation being cleaner. In the ligation operation more or less of the ligated pile is left to slough, and this necrosed material becomes a source of sepsis, whilst the ligatures themselves become foul, and usually do not separate for nine days or so. Indeed, it is surprising to find how few cases after this operation are followed by sepsis.

After the Whitehead operation those cases that are complicated by sepsis have been in rather a septic condition before operation, due to the piles becoming prolapsed and gangrenous. In such cases more active antiseptics should be employed before, during, and after the operation. No case of tetanus followed any of these operations.

Recurrence.

All the cases have been examined up to six weeks after the operation—many have been seen months afterwards, and some a year to eighteen months after the operation, and in no case has there been any recurrence; in fact, recurrence after operation seems to be rare. During eighteen months in the out-patient department (apart from the cases under consideration) only 2 cases of recurrence were noted—one in a patient who had been operated on two years previously by local excision with suture (Earle's method), the other had been operated on by ligature eighteen years previously.

Duration of Treatment in Hospital.

The clamp and cautery cases remained in hospital on an average ten days; the ligature cases for twenty-one days; the Whitehead cases for about twenty-six days.

Healing of the Wound.

During the first week after the clamp and cautery operation three soft linear ridges can be felt in the rectum. During the second week the clamped edges of mucous membrane separate a little, and the wound becomes covered by healthy granulations which feel soft and granular; these wounds gradually close, and four to six weeks after the operation three soft linear scars are felt, and, if no tags complicate the case, it would be difficult to say that an operation had been performed. The great objection to the clamp and cautery operation is the possibility of the formation of large tags, the inner surface of which may become granular and inflamed, and cause tenderness during and after defaecation. The fact that no contraction ever occurred is greatly in favour of this operation.

During the first week after the ligature operation, three triangular wounds, with the base downwards, are felt, with the knots of the ligatures above, and more or less slough from the ligated piles lying in the anal canal. The ligatures separate from the seventh to the twelfth day, and then the triangular wounds gradually close in, though the surfaces still feel granular. During the third and

fourth weeks the wounds become smoother and more linear, and there may then be noticed more or less contraction of the anal canal, the stenosis being most marked where the ligatures have been applied—that is, at the upper part of the wound. In six to eight weeks the anal canal feels fairly smooth, but a few subsiding tags may be present at the anal margin.

The day following the Whitehead operation there may be noted more or less ecchymosis into the perianal tissues and a little oedema at the anal margin. The fact that no vessels are ligated in this operation, and that the suturing of the mucous membrane to the skin edge controls the haemorrhage, accounts for the ecchymosis and oedema. By making the patient strain down one can see that the line of the suture is intact, or by gently inserting the finger the mucous membrane can be felt in close apposition with the skin. This condition goes on until the fourth day, when in 50 per cent. of the cases the sutures give and the mucous membrane retracts before the bowels are moved; in the other 50 per cent. retraction occurs when the bowels act or on the day following. Not one of the cases healed by first intention, and, though this may seem a startling statement, nevertheless I firmly believe that primary union never occurs after the Whitehead operation.

The giving of the sutures and the retraction is due to the tension on the wound, to the action of the sphincters, and perhaps to a little sloughing at the wound edge. It makes little difference what suture material is used. In the majority of these cases continuous and interrupted iodized catgut sutures were used, whilst in some silk and in others silkworm gut were tried. That the retraction is due to tension is supported by the fact that in the perineal and ano-sacral excision of the rectum the upper cut end of the rectum or of the pelvic colon may be implanted at the anal margin, and the sutures hold quite well. This occurs when the bowel has been made sufficiently free to be brought to the anal margin under no tension. It is well that the wound after the Whitehead operation does not heal by first intention, as otherwise exstrophy of the mucous membrane might occur, giving rise to excoriation, slight haemorrhage, pruritus, and troublesome discharge of mucus. Exstrophy did not occur in any of the cases under consideration. During the second week after the operation the circular ring of granulation tissue left by the retraction of the mucous membrane is felt to be distinctly granular. During the third week this area becomes smoother and smaller, and any tendency to contraction becomes evident. During the fourth and fifth weeks the mucous and skin edges come gradually into apposition, and the annular cicatrix feels quite soft if digital dilatation has been properly carried out. This cicatricial ring, if properly stretched when the fibrous tissue is still young, shows no further tendency to contract after the sixth to eighth week. Some of these cases have been seen a year afterwards, and the seat of operation feels quite smooth, or at most a fine fibrous ring is felt at the junction of skin and mucous membrane, but in none of the cases is there any stenosis which would cause difficulty in defaecation.

Choice of Operation.

It is better not to decide on any particular method of operation until the sphincters have been stretched, and then to use the method most suitable for the pathological condition presented.

The clamp and cautery operation should be chosen when there are not more than three piles, especially if they are of the internal variety and there are no external haemorrhoids or redundant skin. As it is likely to give less pain than the other operations, it should be chosen for patients of a very nervous temperament. As it is a bloodless method it is suitable for cases of anaemia. If time is an important question, either for the patient who may want to get back to important business, or in hospital where there is usually a large waiting list, the clamp and cautery method should be chosen, as the period of convalescence is considerably shortened. As stenosis never follows this operation it should be used in cases in which the surgeon may be unable to see the patient again after the operation.

The ligature operation is a good and safe method, and is applicable to the majority of cases of haemorrhoids. It is suited for those cases of three, four, or five piles, especially

of the mixed variety, when both external and internal haemorrhoids can be removed at the one cut. Though the conditions be less aseptic after this operation than after the others, it is a well-known clinical fact that sepsis rarely follows this operation.

The Whitehead operation is indicated in the following conditions:

(a) When there is a general haemorrhoidal condition involving the whole circumference of the anal canal, and especially if there is a good deal of prolapse, and also in cases in which there is extensive thrombosis.

(b) In cases where, though the piles may not be large, there is a pathological condition which may be described as a prefissure or a prefistula state. In this condition the anal valves are enlarged, and curious little blind sub-mucous pockets may be found running for a varying length upwards. In other cases these pockets run downwards towards the anal margin. These, first described by Mr. F. C. Wallis, and lately believed to be due to developmental defects, are undoubtedly in many cases the starting point of fistula; whilst, if Ball's theory be accepted, enlarged anal valves lend themselves to the formation of fissure.

The Whitehead method should not be employed in all cases of haemorrhoids, but is well suited for the conditions mentioned above. If the after-treatment is properly carried out, stenosis should not occur.

I have to thank Mr. F. S. Edwards and Mr. F. C. Wallis for their kindness in allowing me to publish this record of cases.

ACUTE NECROSIS OF THE PANCREAS: SUDDEN DEATH.

By B. HENRY SHAW, M.B., CH.B.,

SENIOR ASSISTANT PHYSICIAN, COUNTY ASYLUM, STAFFORD.

INSTANCES of sudden death due to pancreatic haemorrhage are of such rare occurrence that the following case is worthy of record:

Mrs. J. D., a widow aged 61, was admitted to this asylum in February, 1908, suffering from melancholia of one month's duration. As far as I could ascertain, she had an excellent family history, both physically and mentally, her mother reaching the age of 80. At the birth of her first child she had an attack of melancholia, and my informant tells me that she also suffered from "milk fever" on that occasion; in 1886, at the birth of her last child, an exactly similar state of affairs occurred. Nine years ago she was suddenly taken ill during the night, complaining about her heart as though it would stop beating. Her extremities, her son says, were very cold, but as far as he can recollect there was no sickness. She has had since then three attacks of melancholia. Previous to the penultimate attack she contracted influenza.

Condition on Admission.

She was in very indifferent health, though there were no signs of any organic disease. She was put on tonics and extra diet for a time, and steadily improved in condition and health. Mentally her progress was not so rapid, but at the time of her death she was quite bright and cheerful, and it had been intended to discharge her very shortly. On August 12th, 1909, while in bed, she was suddenly taken ill at 1.30 a.m. with violent pains in the abdomen and sickness, and died within a quarter of an hour.

Necropsy.

The post-mortem examination, made the next morning, showed as follows:

External Appearances.—Cadaver in good condition; no bruises or other marks of injury present.

Head.—Calvarium normal; membranes normal; no macroscopic abnormality of the cerebral tissue; cerebro-spinal fluid scanty; arteries at base of brain very atheromatous and of small calibre, that of basilar at pons medulla junction being 3 mm. Right interior carotid, 2½ mm.; left, 2 mm. Middle cerebials each 1½ mm. Distribution regular.

Thorax.—Ribs normal; no pulmonary congestion; some emphysema present. Heart not contracted, cavities containing more or less blood; slight fatty degeneration present. Aorta very atheromatous; valves competent.

Abdomen.—Here considerable effusion of blood into the tissue around the pancreas was at once apparent, but the peritoneal covering was not broken. Kidneys, liver, and spleen were congested. The stomach showed some catarrh, and the intestines were normal. Dimensions of cardiac orifices were: Mitral, 3½ in.; tricuspid, 4; aortic, 2½; pulmonary, 2½.

Weights of Organs.—Brain, 42 oz.; heart, 11; lungs—right 15½, left 21; spleen, 5; kidneys—right 3, left 4; liver, 52; pancreas, 4.