cases). In the cases which recurred, the disease reappeared in a year or less, except in one case where nearly eighteen months elapsed before internal cancer was diagnosed. Now, I do not for one moment mean to say that all of the 10 cases still free from disease after two years or longer will permanently remain so, nor that 66 per cent. is anything like the proportion of permanent recoveries that can be hoped for, but between 66 per cent. and 10 per cent. there is a great interval, and several of these cases might recur and still leave a better percentage than that got by the older methods of operating; in fact, only one need survive to give a result very much like that obtained by the old method, and I do not think I am too sanguine in thinking that more than one will remain free from disease. We know that where local recurrence takes place it usually does so within the first year, and Volkmann has formulated the following law, founded on his experience: "When, after an operation, a whole year has elapsed without recurrence one may hope for a permanent cure; after two years this cure is probable; at the end of three years it becomes almost certain." Of these 15 cases, 5 were operated on more than three years ago, and of these 3, or 60 per cent., remain well, and come under the third part of Volkmann's law which says that cure is almost certain. I would further remark, with regard to these cases, that none of them were early cases; in all the axillary glands could be felt enlarged before the operation and were found to be diseased at the time. I may, however, remark that in some of the cases the disease had been progressing slowly. As local recurrences are always due to disease left behind it is only what we should expect that the freer the operation the more likely one is to have removed all the disease. Of course, if the infection has passed beyond the axillary glands no extent of operation will remove the disease, and that, of course, brings us back again to the advisability of early operation. It seems to me that the pathological and clinical facts being as I have stated, even those who adopt the constitutional view, and who only operate with a view of prolonging life, must also adopt the more thorough operation.

The objections which are mentioned against the complete operation are mortality and interference with the freedom of movement of the arm. As regards the question of mortality, if the operation is performed aseptically the mortality will be very small, and may be neglected. In all my cases of excision of the breast, which, including extensive recurrences and some not so complete as above described, number about 50, I have only lost one case. This was a lady operated on a year ago for very extensive and immediate recurrence after excision on the old lines by another surgeon. I had not only to remove the greater part of the skin from the side of the chest, but also the pectorals, all the axillary fat and glands, and some glands from the neck; in fact, had I had any idea before I began that the disease was so extensive, I would not have operated. She developed pneumonia on the side operated on immediately after the operation, possibly as the result of the exposure in the cold weather, and died in a week. Allowing for accidents such as this, I do not believe that the mortality after the complete operation ought to be more than 2 or 3 per cent. if proper antiseptic precautions are taken. As regards the movement of the arm, there is no doubt a certain amount of restriction of movement after thoroughly clearing out the axilla, but all my patients can at least do their back hair afterwards, and I think if a patient understands that this operation gives her a much better chance of permanent recovery, and that she will be able to do her back hair, very few will think that a little restriction of movement is worth considering.

CASES NOT SUITABLE FOR OPERATION.

With our present knowledge we can no doubt operate on more extensive cases than formerly with a fair prospect of success. At the same time I doubt if those very extensive cases in which the pectorals have to be removed or the clavicle divided are really suitable, and I should not myself advise operation in cases in which enlarged glands could be felt above the clavicle, in which several nodules can be felt in the muscles, in which there are numerous scattered nodules in the skin, or in which there is oedema of the arm, with pain down the arm, implying adhesion to the struc-

tures in the axilla. As to atrophic cancer, I see no reason why it also should not be removed unless the patient is very old and feeble.

The following is an abstract of the ten cases previously referred to, which remain well after more than two years. I may say that all of these cases were undoubtedly scirrhus as confirmed by microscopical examination.

1. Aged 52, operated on in January, 1890. Nipple had been retracted for about two years; tumour size of hen's egg, close to nipple, involving the skin; numerous small, hard glands to be felt.
2. Aged 38, operation, May, 1890. Tumour noticed two months, size of small orange, only slight puckering of skin, breast moves freely on muscle, a number of small, hard glands.
3. Aged 50, operation, October, 1890. Eczema of nipple for two years, lump noticed in breast for six months, close to nipple, several enlarged glands.
4. Aged 47, operation, February, 1891. Swelling noticed for two years, size of hazel nut, involving skin, glandular enlargement slight.
5. Aged 52, operation, March, 1891. Pain and a little swelling for nearly two years; tumour size of walnut, close to nipple, skin adherent and ulcerated, only slight glandular enlargement.
6. Aged 44, operation, October, 1891. Noticed lump and retraction of nipple for six months. Tumour size of orange, several glands, one of them large.
7. Aged 63, operation, October, 1891. Retraction of nipple noticed for eighteen months; small but diffuse scirrhus; a number of small, hard glands.
8. Aged 56, operation, November, 1891. Nodule first noticed three years ago, growing rapidly for last three months, size of hen's egg, glands considerably enlarged.
9. Aged 49, operation, December, 1891. Noticed lump for ten months, size of pigeon's egg; skin puckers markedly, glands small but hard.
10. Aged 62, operation, December, 1891. Lump noticed for three years, skin adherent but not ulcerated; numerous small, hard glands.

THE TREATMENT OF OVARIAN AND EXTRA-UTERINE CYSTS COMMUNICATING WITH THE RECTUM.¹

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With an experience of over 100 cases of ovariectomy, the four recorded below are the only instances of a fistula between the cyst and the rectum that I have met with, and it would be of interest to learn from more experienced operators whether this complication is as common as it has unfortunately been in my practice.

CASE 1.—M. A., a nurse, aged 25, was invalided from the hospital in June, 1892, on account of persistent pyrexia (night temperature ranging from 101° to 102°). She complained of no pain, and the pelvis was not examined. Two months later she had considerable pain in the left iliac fossa, and soon afterwards noticed an enlargement. The pain increased, and became very severe during the first week in October. A sudden discharge of over a pint of pus then took place *per rectum*. Two days later, on examination, the abdomen was found distended and very tender over the left iliac fossa. No distinct tumour could be felt from above. *Per vaginam* the cervix was pushed over to the left. In Douglas's pouch a nodulated swelling could be felt, but not very clearly defined. *Per rectum*, at a distance of 4 inches from the anus and just within reach of the finger tip, a small opening with ragged edges could be felt in the front wall. This obviously led into the swelling mentioned. For some days the patient was much relieved, but after that time the discharge was less, and the cavity appeared to be only partly drained. Pyrexia reappeared, and the swelling could be more distinctly felt *per vaginam*. During Dr. Champneys's temporary absence the patient came under the care of Dr. Griffith. After consultation, and on grounds to be presently considered, it was determined to drain the cyst or abscess cavity by puncture through the vagina. This was accordingly done, and a glass tube inserted. The result was satisfactory, the discharge diminishing, and the pyrexia disappearing. The patient left the hospital at the end of November, with no discharge from the rectum and scarcely any from the vagina. She was readmitted two months later. She had had no pain since leaving the hospital, the temperature being normal. She had passed no pus by the rectum, but had always had a slight discharge by the vagina. Her general health had greatly improved. On examination an elastic swelling could be felt on the left side, reaching nearly to the navel. No opening could be felt by the rectum, but there was a hole admitting a probe in the posterior quarter of the vagina.

Assisted by Dr. Champneys I performed abdominal section. On the abdomen being opened a thin-walled cyst presented itself, spreading up to the left side and behind the posterior layer of the broad ligament. The cyst was tapped, and two pints of clear fluid were let out. At the bottom of the cyst, after evacuation, another cyst with very thick walls could be felt firmly embedded in the pelvis, between the uterus and rectum. This second cyst was tapped through the broad ligament cyst which had already been opened. A considerable quantity of gas and from 3 to 4 ounces of greenish pus escaped. The pus being thoroughly washed out, both cysts were removed. The removal of the lower cyst was very difficult. After some separation it was possible to drag it up from the deeper part of the pelvis. It was then found to be attached by

¹ Read before the Medical Society of London.

firm adhesions to the vaginal wall, and to the posterior part of the uterus. The knife had to be freely used in separating it from the vagina, where the communication existed. After separation the opening into the vagina would admit the finger tip. This was closed by fine sutures. The back part of the cyst was now found attached to the rectum, over an area of about 2 inches in diameter. This adhesion was carefully separated, till a portion somewhat less than an inch remained. This was obviously the site of the old communication, and its complete separation would have opened the rectum. The cyst was cut off, leaving this portion attached to the bowel. Its surface was scraped with a Volkmann spoon, and touched over with the actual cautery. The abdomen was flushed and a glass drainage tube inserted. The patient recovered.

CASE II.—C. F., aged 32, was admitted into Martha Ward, under the care of Dr. Champneys, September, 1893. Had one child two months ago. For fourteen days she was feverish and ill. She had some blood-stained discharge three weeks ago. Since that time she has had pain and difficulty in passing water, and the urine was discoloured. Two weeks ago something broke and a quantity of matter escaped from the rectum, and has since continued. There is also considerable pus in the urine. Present condition: Is much emaciated and looks ill; tongue dry and cracked. Extending nearly to the navel, $\frac{4}{5}$ inches broad, is a fixed elastic tender mass, on the left side of the upper part of the iliac fossa are some small, oval, freely movable masses.

Per Vaginum.—Cervix fixed; behind and on the right side is a fixed indurated mass occupying the whole space on the left side. The part feels oedematous, but no certain elasticity can be felt. Bimanually the tumour has a more elastic feel. The patient was kept absolutely at rest in bed for a month. After a fortnight pus was no longer passed by the rectum, and that from the bladder decreased considerably; the temperature, however, was variable, and always above normal. Operation. On opening the abdomen a cyst was found apparently in the broad ligament, but since everything was universally adherent its exact relations were difficult to make out. The cyst contained about a pint of greenish-white sweet pus; it was adherent to the bladder and rectum. On separating the rectal adhesion there was a ragged-looking spot, but no actual hole could be seen. The suspicious-looking spot on the rectum was inverted and closed with four fine sutures. The bladder was distended by injecting water, but the site of the communication could not be found. The cyst was removed entire, and there was no pedicle. The opened broad ligament was partly stitched up, and a drainage tube inserted. A glass catheter was left in the urethra. Nothing occurred till the sixth day, the discharge through the drainage tube being slight and quite sweet. On account of some irritation the wearing of the catheter was discontinued. Twenty-four hours later urine to the extent of several ounces was passed by the drainage tube. The catheter was again kept in continuously for ten days. No more urine ever passed by the wound. A fine india-rubber was substituted for the glass drainage tube. The patient convalesced without constitutional disturbance, and she was discharged from the hospital seven weeks after the operation. There was still a small sinus at the lower angle of the wound, but nothing came through it.

CASE III. *Tubal Gestation communicating with the Rectum.*—C. E., aged 30, was admitted into St. Bartholomew's Hospital in July, 1893. She had menstruated on March 27th, and continued to lose a blood-stained discharge till April 27th, when she was seized during the night with cramp-like pain in the abdomen. The pain was very severe and the abdomen tender on pressure. Three weeks later she had a similar attack, and on May 29th a third attack. On June 2nd she was examined by Dr. Champneys and the following note was made:

"Healthy looking, not anemic, breasts not enlarged, areolae pigmented, abdomen flat, some resistance below navel with tenderness. The whole pelvic excavation except the right posterior quarter is occupied by a round, smooth, tender, elastic swelling. Bimanually the swelling is nowhere more than an inch and a half in thickness."

On July 13th she had considerable pain and tenderness. The temperature was 103°, and the swelling considerably increased in size. Assisted by my colleague, Mr. Bruce Clarke, I opened the abdomen and found a portion of omentum glued to the tumour, and this was separated with comparative ease. The tumour was bright red on the surface and very vascular. Over its upper and outer surface there were 3 inches of Fallopian tube, thickened and firm, and 1 inch in diameter, looking at first like intestine. The sac was adherent to the rectum behind and at the outer side, and to the bladder and uterus to the right and in front. The adhesions were easily separated with the finger, and there was considerable hemorrhage. The chief blood vessels appeared to enter the cyst just below the frimbriated end of the tube, which was adherent to the broad ligament. The finger could be passed round the cyst on the left side, so that the thickened tube and what appeared to be a portion of the broad ligament formed a kind of pedicle 2 inches broad and $\frac{1}{2}$ -inch thick. This was transfixed, tied, and divided, when the hemorrhage to a great extent ceased. After division of the pedicle the finger tips were quickly passed round the whole of the cyst, which came away almost entire, leaving only a portion of old firmly-adherent clot at the bottom of Douglas's pouch. The cyst, on removal, was the size of a large fist. A fetus 5 inches long and $\frac{1}{2}$ oz. in weight was found lying in Douglas's pouch, probably extruded from the cyst in process of extraction. After removing the cyst the boundaries of the cavity were very clearly seen. Behind was the rectum, on the inner side the uterus, and it seemed clear that the cyst was intraperitoneal—namely, actually bounded by the structures mentioned, and that the lid of the cavity was formed by the omentum.

At this period of the operation a small speck of fecal material was discovered in one of the sponges. Upon investigation, a small circular opening, which would admit a large probe, was found in the rectum low down in Douglas's pouch. The tissue of the rectum in this neighbourhood was converted into a soft, yellow-looking material in the centre of which was the opening mentioned. The tissue was very friable, but two stitches were eventually passed across the opening, and the edges inverted and approximated. The cavity was well flushed out, and a drainage tube inserted reaching nearly to the bottom of the cavity. After the operation the patient was much collapsed, there was troublesome vomiting, and much abdominal pain and tenderness for some days, and her life was in considerable danger. The fluid which was drawn out through the tube

at frequent intervals was at first watery and blood stained. After a while it became purulent; it was never much in quantity, but from time to time had a distinct faecal odour, bubbles of gas coming through. After three weeks the discharge again became sweet, and a fine india-rubber tube was substituted. She left the hospital eight weeks after the operation, and there was still a small sinus, but nothing came through it but a drop or two of opaque serum in the twenty-four hours.

CASE IV.—Patient, a lady, aged 30, married, and with no children was sent to me by Dr. MacVicker, of Almondsbury, with the following story: Eighteen months ago she had had an attack of what was supposed to be peritonitis. On recovering from this she felt pain in the lower part of the abdomen from time to time. At this period she consulted an eminent specialist, who informed her she had a tumour the size of an apple low down in the right side of the pelvis, and an exploratory operation was recommended. This advice was disregarded. During the last six months there had been only occasionally slight pelvic pain, but the evening temperature has been persistently raised, often as high as 104° with profuse night sweats and great loss of flesh. Two months ago she had a sudden discharge of a large quantity of extremely fetid pus by the rectum, and up to the present time this has been continued to a slight extent; some days she would be free from discharge, on others there would be half an ounce of pus.

On examining the abdomen no tumour could be detected. By the vagina an elastic swelling could be felt, low down behind the uterus, chiefly on the left side. The same swelling could be felt in the rectum, but the finger could detect no communicating opening. After consultation with Dr. Champneys, an operation was decided upon. On opening the abdomen, the small intestine and omentum were found matted together over the pelvic opening. After separating these the apex of the swelling was reached. The tumour was in the broad ligament, which was expanded nearly horizontally over it. It was bounded above by the Fallopian tube, in front by the uterus, and on the outer side by the rectum. The expanded broad ligament was opened by a 3-inch incision. The tumour was situated so deeply and the parts were so rigid, that the separation had to be done almost entirely by feel. At the commencement this was very difficult, but when the fingers once got in to the right layer, the greater portion of it was shelled out with comparative ease. The tumour, however, was very rotten, and a portion which had extended behind the rectum, the size of a small egg, broke away. This portion gave great trouble, but eventually was removed. An opening which would just admit the finger tip could be distinctly felt behind the rectum, where it was uncovered by the peritoneum. It was impossible to see the opening, but a careful endeavour was made to close it by sutures with a cleft palate needle. The hole was closed in a sort of fashion, but precision and neatness were impracticable. A glass drainage tube was passed into the bottom of the cavity. The incision in the broad ligament was then accurately closed by fine sutures, with the exception of the place through which the drainage tube passed; this, however, fitted quite tightly. Owing to the depth it did not seem practicable to draw the open layers of the broad ligament to the parietal peritoneum and skin. The operation was prolonged, and the patient suffered much from shock. For three days she held her own, and nothing came through the drainage tube except a small amount of bloodstained serum. On the fourth day some fluid feculent material was drawn from the tube. By twenty-four hours the quantity had considerably increased, and it became extremely difficult to keep the patient clean, the discharge being very fluid and fetid. The repeated dressings seemed to exhaust the patient, and she gradually sank, and died on the seventh day after the operation. No post-mortem examination was obtained, so the question of leakage by the side of the tube and peritonitis was not ascertained.

Cases in which an opening has been accidentally made during the course of a complicated dissection are not here referred to, but only such as have existed by suppurative and softening prior to the operation, or where the discharge of pus from the bowel showed sufficiently clearly the nature of the case. In considering these cases two questions seem to arise—first, as to the propriety of abdominal section whilst there is still an open communication between the cyst and the rectum; and, secondly, if an operation is performed, as to the best means of dealing with the opening. In considering the propriety of abdominal section the diagnosis becomes an important factor. In a considerable number of instances the previous history and a careful examination will make the nature of the pelvic swelling, which is discharging into the rectum, nearly certain; but occasionally there must arise an uncertainty in the diagnosis as to whether the pus proceeds from a simple pelvic abscess, or whether it is due to a suppurating ovarian tumour.

The first case recorded came under this category, and the treatment adopted was partly on the hypothesis that a simple pelvic abscess had to be dealt with. If the case is known to be a suppurating cyst, the danger of ovariectomy is doubtless increased, for after the tumour has been removed there remains an open communication between the intestine and the abdominal cavity, while its exact situation and the possibility of accurate closure cannot generally be ascertained until the operation has been completed. In Case I the facts were carefully considered by Dr. Griffith and myself in consultation. From the hectic symptoms, and the manner in which the patient was going down hill, it was obvious that something had to be done to drain more effectually the suppurating cavity. Three courses were open—to enlarge the opening in the rectum and insert a drainage tube, to drain by

the vagina, or to perform abdominal section with a view either to suprapubic drainage if a simple abscess had been found, or removal of the tumour if it should prove a suppurating ovary or tube. The first course was abandoned on the grounds not only of the extreme mechanical difficulty of keeping any tube inserted through the rectum in position, but also from the uncertainty of diagnosis, for if the swelling should prove to be a cyst ultimately requiring removal, it was of great importance if possible to get the rectal opening closed. Of the two remaining alternatives, drainage by the vagina was selected for the following reasons: (1) That the swelling could be felt projecting prominently into the vagina, whereas, being so deeply situated, it could not be felt above the pubes. (2) That if the swelling should prove to be a suppurating cyst, it would be a great advantage to allow time for the recto-cystic fistula to spontaneously close, which we thought might be accomplished by temporary drainage. This hypothesis fortunately proved correct, for no sooner was the vaginal drainage established than the pus ceased to be discharged by the rectum, and when abdominal section was performed some weeks later the opening was found completely closed. The risk to the patient's life when the operation was performed was doubtless considerably less than if the rectal opening had still existed, for it was so low down that its effectual closure would have been extremely doubtful.

It is open to discussion whether in a similar case temporary drainage might not be better and more safely established by abdominal section. The propriety of such a procedure would probably be determined by the situation of the swelling. In our case it would have been very difficult to have got at the cavity from above, and if it had proved to have been an abscess, it would have been nearly impracticable to have fixed the edges of the opening to the parietal peritoneum, and anything short of this would have been highly dangerous, from the nature of the pus. On the other hand the abscess was almost pointing into the vagina. If the tumour had been situated high up in the pelvis, primary abdominal section with a view to removal or drainage would probably have been the right course.

The remaining cases recorded were simpler in their nature, inasmuch as the diagnosis was clear. There was no doubt that the tumours were suppurating cysts and not simple abscesses, and from the fact that no opening could be felt within 4 inches of the anus, there seemed a fair chance of the fistulae being sufficiently high for effectual closure after removal of the tumour. In two of the cases the openings were found in an accessible position and accurately closed by suture; but unfortunately in Case iv the position of the hole right behind the rectum made its accurate closure impracticable.

As regards the details of the procedure in the circumstances of this case, in which there was no guarantee that the opening into the rectum was effectually closed by suture, there may be some difference of opinion. The tumour, owing to the way in which it had extended beneath the broad ligament was practically extraperitoneal, and had it been possible the edges of the opening in the broad ligament through which it had been shelled out should have been raised and stitched to the lower angle of the abdominal incision, and drained. The only other feasible plan other than that which was adopted would have been to have entirely closed the opening in the broad ligament *in situ*, trusting that the cavity would have drained through the hole in the rectum, and eventually have closed up.

After carefully considering the facts in the case recorded, should I have the misfortune again to meet with a similar condition, I would, in the event of its being impracticable to raise the edges of the open broad ligament to the lower angle of the abdominal wound, prefer completely to close the broad ligament *in situ*, and trust to rectal drainage rather than run the risk of suprapubic drainage through the peritoneum.

POISONING BY MISADVENTURE.—It is understood that at a meeting of the Law Committee of Edinburgh Town Council, on January 17th, the mother of the young woman Swan, who was accidentally poisoned at the Fever Hospital some weeks ago, intimated her acceptance of £100 in satisfaction of her claim for damages, together with £25 for expenses.

ACUTE YELLOW ATROPHY OF THE LIVER.

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AND

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Cases of acute yellow atrophy are so rarely met with, that it seems desirable to give as full and explicit a report of the following one as the circumstances will admit of. Unfortunately, at the time the patient entered the hospital the burden of work was so excessive, on account of the epidemic of influenza then prevailing, that it was impossible to give the case the attention which it merited.

E. V., aged 24, admitted to the Toronto General Hospital, under Dr. McPhedran, January 31st, 1890.

History.—A domestic servant, unmarried. In infancy she had a slight attack of infantile paralysis, from which resulted some talipes varus of the right foot; since then she has been healthy. Her father, a brother, and a sister died of phthisis; her family history otherwise contained nothing of note. Her present illness began about January 1st with a cold from exposure. Two or three days later she took influenza, and the skin was noticed to be yellowish. She had some attacks of free epistaxis. She gradually grew worse, the jaundice deepening, and the stools becoming slate coloured and offensive, soon acquiring a clay colour. She complained of pain in the hepatic region. Her appetite was capricious, but that was attributed to pregnancy, which was supposed to be of about five months' duration. There was occasional vomiting of her food, with some slightly bile-stained mucus. Her mental condition was clear till near the end of January, when she began to grow apathetic and dull of comprehension. She continued to work until after the middle of the month.

Present Condition.—She is very deeply jaundiced, fairly nourished, evidently between five and six months pregnant. The only answer that can be gotten to any question is "the last three weeks." Her pupils are small but active. There is some brownish, sticky mucus adhering to the lips and teeth. She lies quietly, taking notice of nothing; takes liquid nourishment when offered. Temperature in the axilla 97.4° F., pulse 76. The abdomen is somewhat distended and tympanitic, except over the pregnant uterus. The area of hepatic dullness terminates an inch above the margin of the ribs; seems tender to pressure over it, and to pressure upward under the ribs. Area of splenic dullness extends to margin of ribs. Heart and lungs present nothing abnormal. Urine normal in quantity, dark, acid, specific gravity 1023. Tests readily give evidence of presence of bile pigments. Quantity of urea not estimated. On microscopic examination crystals of leucine and tyrosine are easily found; bowels constipated; considerable nausea, with vomiting of bile-stained mucus.

February 1st. The hebeticus has deepened to semi-coma, with muttering delirium. She vomits everything that is given, also much dark, grumous fluid. The pulse continues slow, and the temperature subnormal.

February 2nd. Comatose, with occasional muttering. Pupils small, but respond to light. Grumous vomit continues at intervals. Liver dullness still further diminished. She died at 9 P.M.

Necropsy, eighteen hours after death. Body fairly nourished; rigor mortis well marked. General surface and mucous membranes deeply jaundiced. Pupils dilated. No cutaneous hemorrhages. Pericardium bile stained, and contains one ounce of bile-stained serum. Endocardium bile-stained, also *ante-mortem* clot in right ventricle. Condition of muscles not noted. Pleurae: numerous hemorrhagic patches in right; recent adhesions in left. Lungs deeply congested. Peritoneum bile-stained. Spleen large and soft. Kidneys: capsule slightly adherent; cortex enlarged. Liver had receded under ribs; weighed 25 ounces; very flaccid, rather than friable; mostly red, but with some yellow patches; surface wrinkled. Gall bladder not noted. Stomach distended with gas, and contained much grumous fluid. Intestines contained much flatus; hardened faeces in colon. Uterus contained a five-month foetus, which had been dead some days. Unfortunately, the pathologist who conducted the necropsy only preserved the liver for examination.

PATHOLOGICAL HISTOLOGY.

A small piece only of the liver came for examination, and from what lobe this was taken could not be ascertained. It was hardened in alcohol, whereby the fixation was so complete that even the minute details of karyokinesis are readily and clearly seen in the hepatic cells. A part of the piece was stained *in toto* with hæmatoxylin and eosin, embedded, by means of the chloroform process, in paraffin, and sectioned to the thickness of 10 μ and under. These sections were fastened to the slide by means of the clove-oil-collodion mixture, and mounted in the usual way in benzole-balsam. We were forced to adopt the cementing of the sections to the slide, since without this the removal of the paraffin entails loss of many of the important elements necessary to determine the extent of the change in the tissue.

We had no opportunity of examining microscopically the liver in the fresh state, but this, we think, is a matter of regret only as regards the pigments of the areas affected with red atrophy, which have been removed, apparently, from the tissue by the alcohol.