

Clinical illustrations of the diseases of the fallopian tubes and of tubal gestation : a series of drawings with descriptive text and histories of the cases / by Charles J. Cullingworth.

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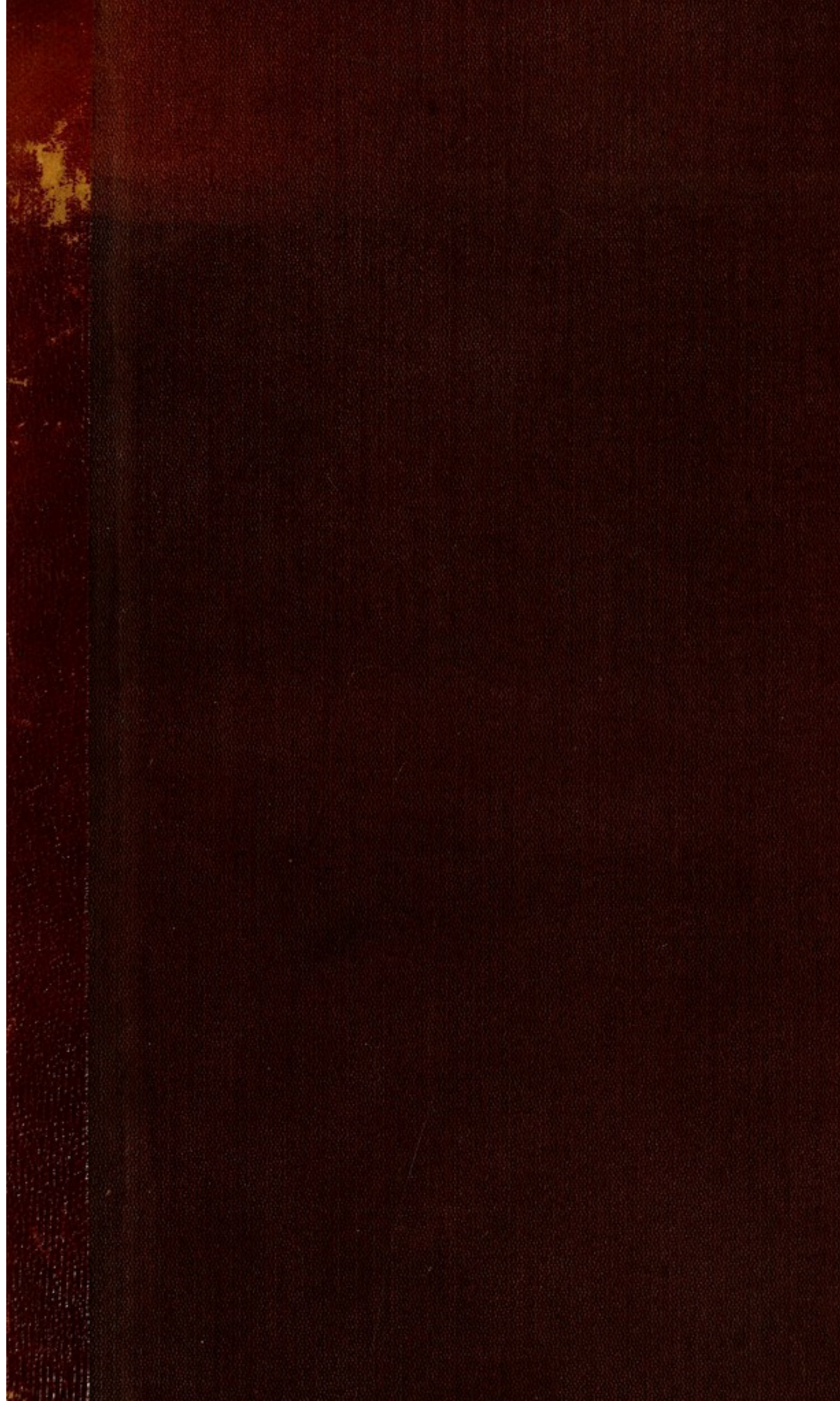
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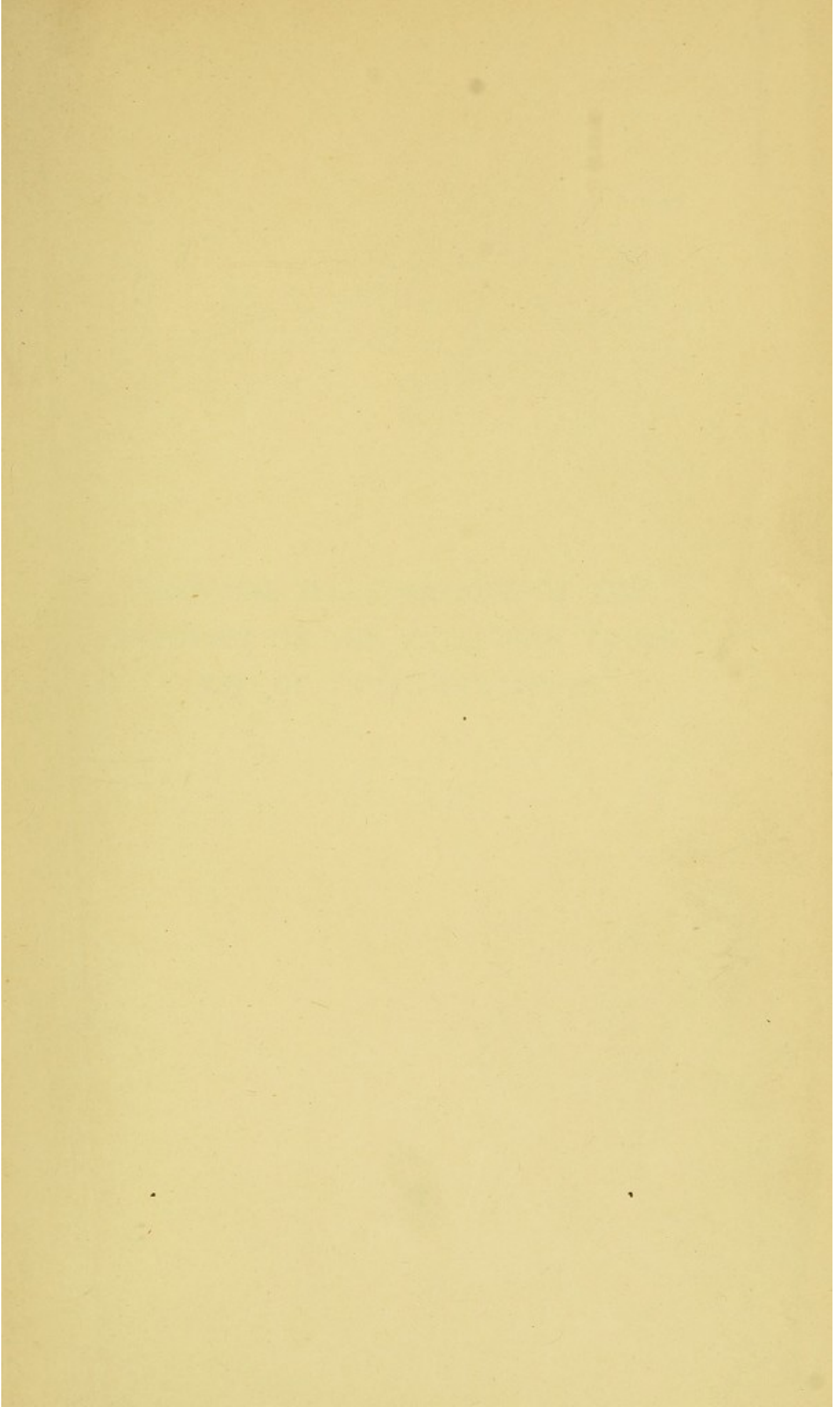
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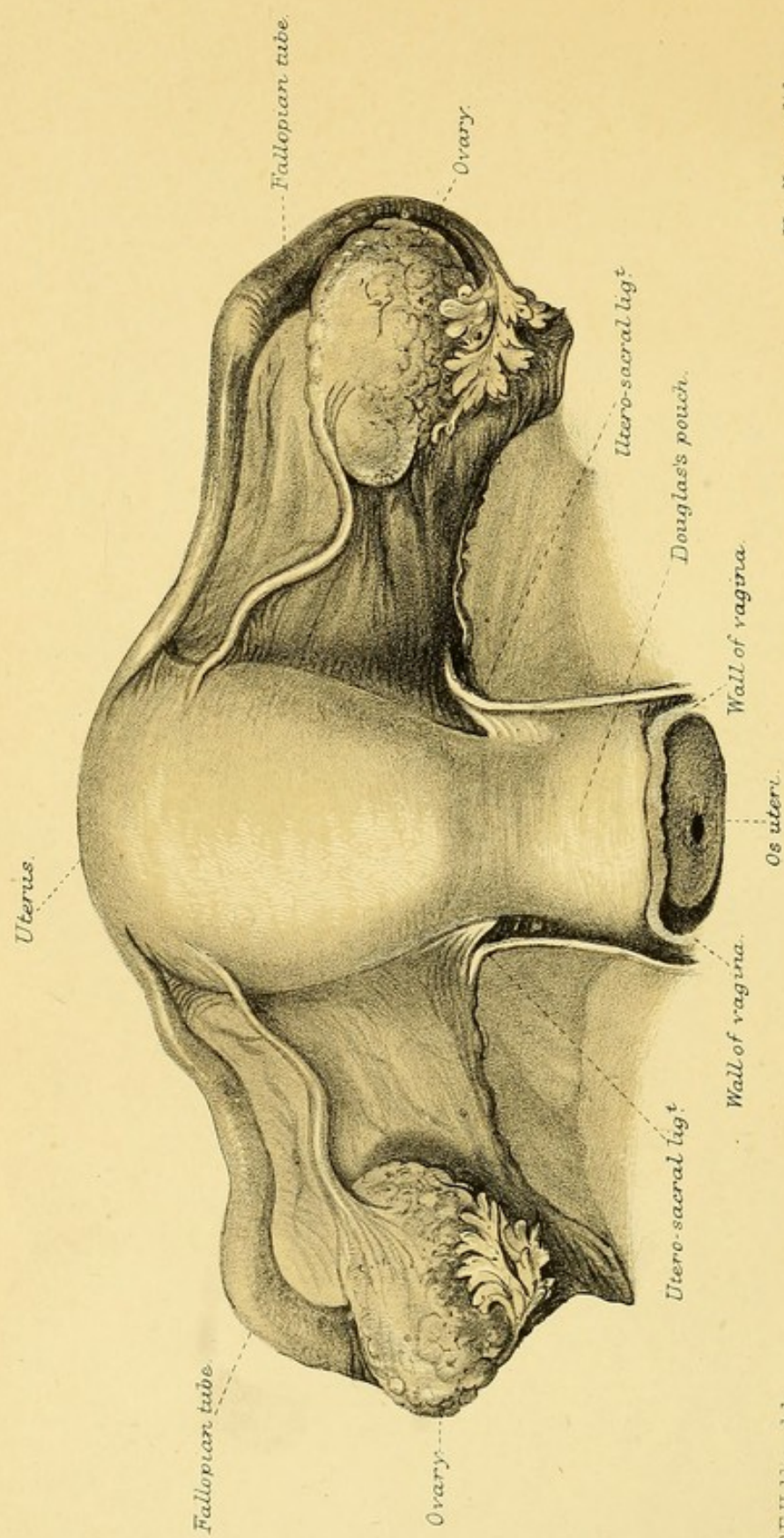




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CLINICAL ILLUSTRATIONS OF THE
DISEASES OF THE FALLOPIAN TUBES
AND OF TUBAL GESTATION





RE Holding del.

Uterus, broad ligaments, Fallopian tubes and ovaries,
as seen from behind.

West Newman lith.

CLINICAL ILLUSTRATIONS OF
THE DISEASES OF THE
FALLOPIAN TUBES
AND OF
TUBAL GESTATION

A SERIES OF DRAWINGS

WITH DESCRIPTIVE TEXT
AND HISTORIES OF THE CASES

BY

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SOCIETY, ETC. ETC.

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1895



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P R E F A C E

It has for some years been my intention to publish a series of illustrations of the diseases of the Fallopian tubes. Whilst the diseases themselves are within the experience of every medical practitioner, opportunities of seeing the diseased parts after their removal from the body occur to comparatively few. Hence it appeared to me that a selected series of drawings taken from actual specimens, and accompanied with a clinical history of each case, would be useful to the profession, as furnishing them with clearer ideas respecting tubal disease and enabling them more fully to realise the processes actually taking place in cases they are constantly being called upon to treat.

All the drawings are from specimens removed in the course of my own operative work. Whilst this has narrowed within certain definite limits my choice of subjects for illustration, it has had advantages which to my mind outweigh any objections to such a restriction. It has enabled

me to vouch for the accuracy of the delineations, and to furnish from my own knowledge a history of every case.

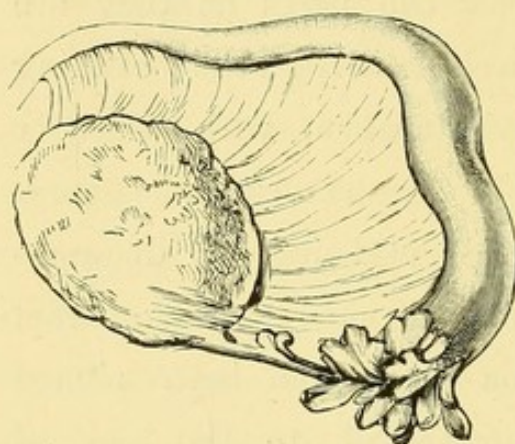
The coloured drawings have been made while the parts were still fresh. Indeed, in most instances, the specimens were handed over to the artist immediately after their removal. No one who has had practical experience of the changes that occur in the appearance of a preparation within even a day or two can fail to appreciate the greater truthfulness to nature that has thus been secured. Even here, however, all is not clear gain. For the artist, in giving the colours of the fresh specimen exactly as he saw them, has given here and there touches of red which represent mere adventitious congestions and extravasations, incident to every operation. A few days' maceration would have removed these accidental appearances, but it would have done so at the expense of considerable deterioration in other and more important directions.

The uncoloured drawings are chiefly from specimens hardened in spirit and then mounted so as to display the interior portions. Others are drawings of fresh specimens in which colour did not seem necessary for the production of a faithful picture.

A word remains to be said with regard to the frontispiece. It seemed to me that it would be useful, and not inappropriate, to preface a series of drawings of diseased Fallopian tubes with a drawing of the normal tubes. An attempt has here been made to depict the parts as they are found in the living subject. All the existing drawings of this anatomical region with which I am acquainted are more or less unsatisfactory. They either err on the side of being too diagrammatic, or they are too obviously drawn from dissecting-room specimens that have been pinned out for display without regard to the natural relations of the various adjacent parts. A good drawing of the uterus, Fallopian tubes, ovaries, and broad ligaments as seen from behind in the healthy adult has long been a desideratum. I must leave my readers to say how far this want has been met by the drawing here presented.

It would be out of place to give in this work a detailed account of the anatomy of the Fallopian tubes. But there are one or two points to which it may nevertheless be well to call attention. The Fallopian tubes vary a good deal in length in different individuals, the average length being from $3\frac{1}{2}$ to 4

inches. The right tube is said to be generally rather longer than the left. Running along the upper border of the broad ligaments from the superior angles of the uterus almost to the pelvic brim, they then dip downwards behind the broad ligament and embrace the



ovary near its outer end. Their direction is thus, first, outwards and slightly backwards, then downwards, backwards, and inwards, the fimbriæ finally turning upwards on

the outer and posterior surface of the ovary. One of the fimbriæ (the ovarian fimbria) is firmly attached to the ovary, not along its whole length, but by its distal extremity. This fimbria is longer than its fellows. (See annexed woodcut.)

Between the outer end of the Fallopian tube and the lateral wall of the pelvis is a short band or fold of peritoneum, the infundibulo-pelvic ligament, which derives importance from the fact of its containing the ovarian artery.

As a portion of Douglas's pouch is included in the drawing, I may call attention to the common mistake

that is made of speaking of that pouch as though it embraced the whole retro-uterine space with more or less of the lateral fossæ behind the broad ligaments. Douglas's pouch has in reality no relation with the posterior surface either of the *body* of the uterus or of the broad ligaments. Its anterior wall is formed by the peritoneal covering of the supra-vaginal portion of the *neck* of the uterus and that of the upper fourth of the posterior vaginal wall. Its lateral boundaries are the two utero-sacral ligaments, which are represented in the drawing as cut off, close to their cervical attachment, whilst the posterior wall is formed by the peritoneal covering of the anterior wall of the middle portion of the rectum.

With but one or two exceptions, all the drawings in the series have been executed by Mr. R. E. Holding, to whom I feel myself greatly indebted for the artistic skill and patient care with which he has so successfully carried out my wishes. If it were not almost invidious to single out one drawing for special praise when all are so good, I should like to point to the drawing of Plate XII. as being of exceptional excellence. For the exquisitely fine pencil drawing of the two tubes figured in Plate VII. I am under obligation to Mr. W. E. Roth, formerly one of my

clinical clerks at St. Thomas's Hospital, and now practising in Queensland.

I desire to express my thanks to Mr. Shattock, the curator of the Museum of St. Thomas's Hospital, for the interest he has taken in this work, and for much valuable advice during its preparation, as well as for the great care he has bestowed upon the mounting of my specimens and the courtesy with which he has permitted me to make extracts from the descriptions of them given in the Museum catalogue.

Finally, I have to acknowledge the kindness of the Council of the Obstetrical Society of London in giving me leave to reproduce two plates (XIII. and XIV.) that have already appeared in the Society's *Transactions*. The only other plates that have been published before are those illustrating the condition known as Hæmato-salpinx (Plates IX. X. and XII.), which, though intended for this collection, were used to illustrate a paper in the *St. Thomas's Hospital Reports* (vol. xxi.).

46 BROOK STREET,
LONDON, W., October 1895.

CONTENTS

Frontispiece. Uterus, Fallopian tubes, ovaries, and broad ligaments,
as seen from behind in the healthy adult.

PLATE	PAGE
I.—Hydrosalpinx	1
II.—Figs. 1, 2, 3. Purulent salpingitis	4
Fig. 4. Tubercular disease of Fallopian tube and peritoneum	7
III.—Purulent salpingitis	9
IV.—Fig. 1. Hydrosalpinx	12
Figs. 2 and 3. Tubercular disease of Fallopian tube	13
V.—Figs. 1 and 2. Purulent salpingitis, with abscesses of ovary	16
Fig. 3. Purulent salpingitis	18
VI.—Purulent salpingitis	21
VII.—Purulent salpingitis—gonorrhoeal	25
VIII.—Pyosalpinx simulating tubo-ovarian abscess	28
IX.—Hæmatosalpinx	32
X.—Hæmatosalpinx	38
XI.—Fig. 1. Sacculated hæmatosalpinx	42
Fig. 2. Unruptured tubal gestation with apoplectic ovum	45
Fig. 3. Tubal abortion	47
XII.—Unruptured tubal gestation with apoplexy of ovum	52
XIII.—Ruptured tubal gestation	54
XIV.—Primary carcinoma of Fallopian tube	58
Summary—I. Salpingitis	65
II. Tubal gestation	70

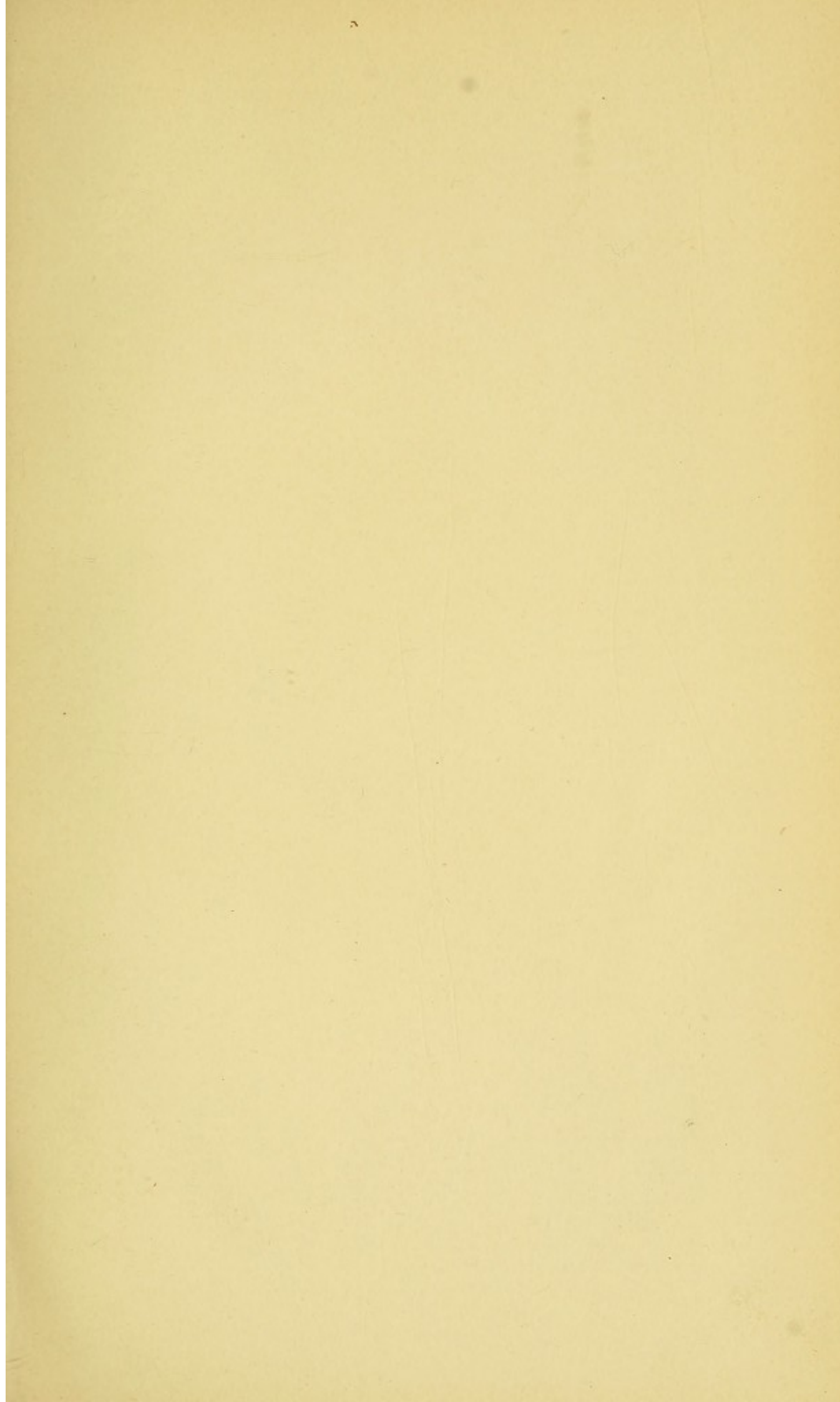


Fig. 1

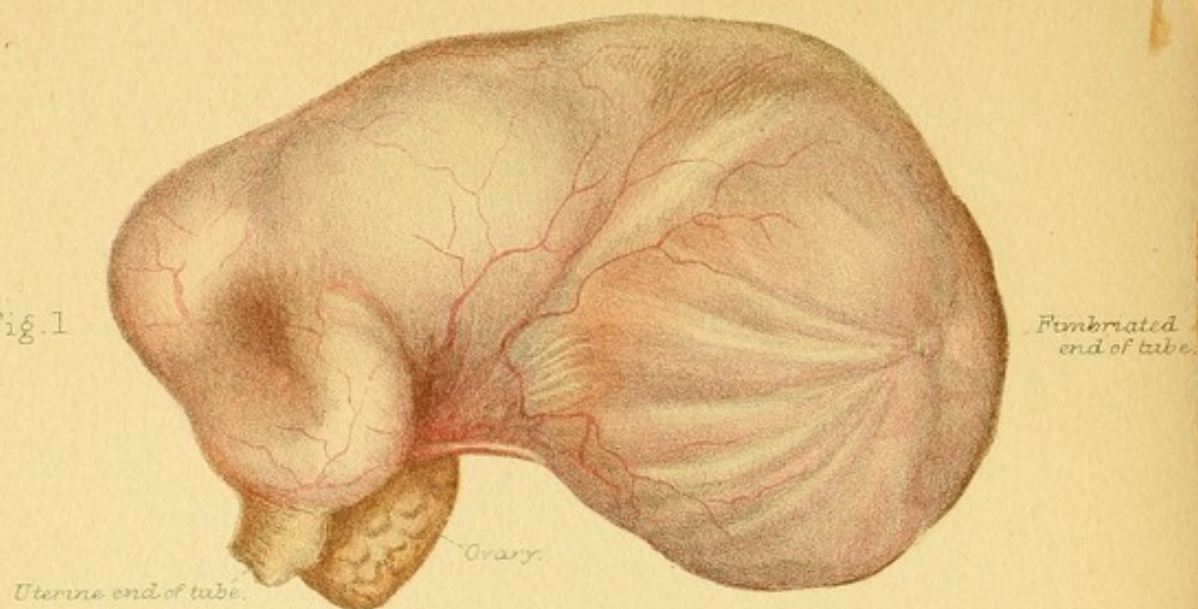


Fig. 3.

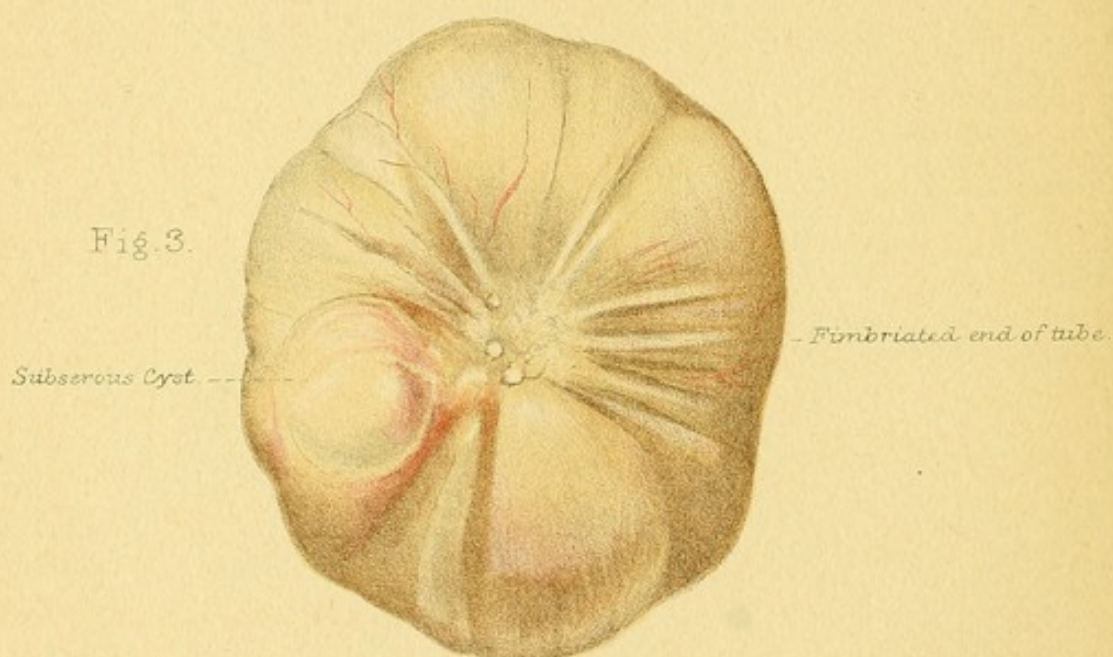
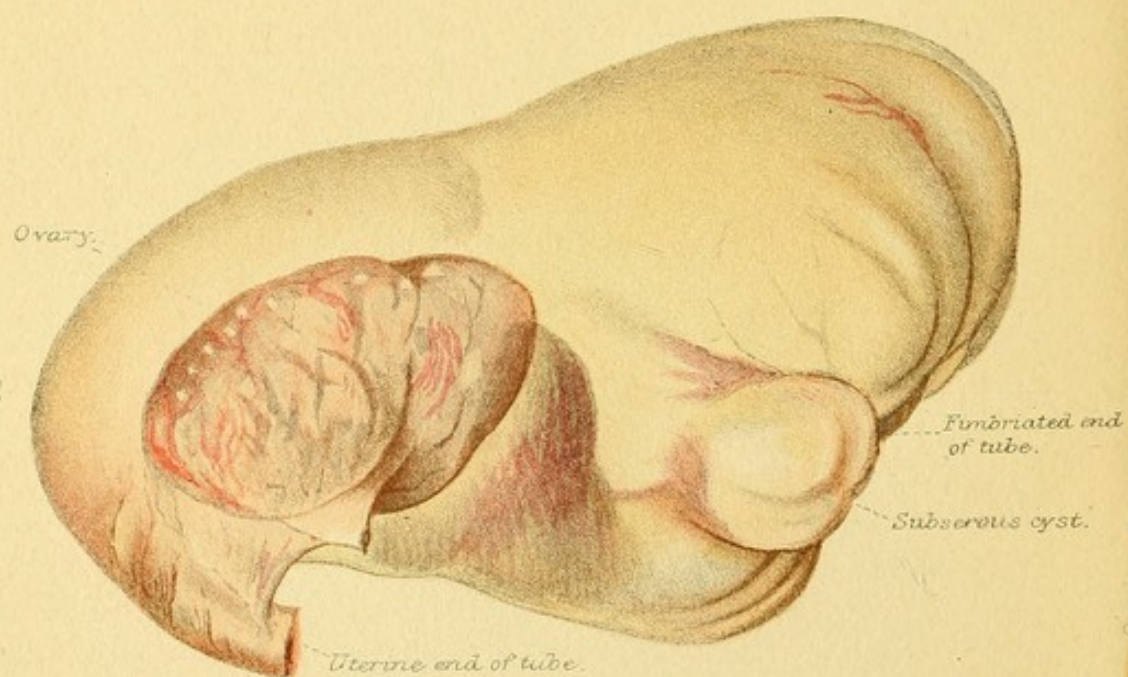


Fig. 2



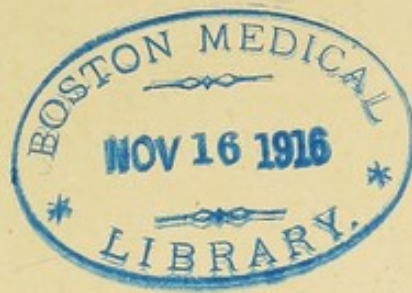


PLATE I

HYDROSALPINX

THE Fallopian tube, in this affection, becomes occluded at its fimbriated end, usually from a localised peritonitis originating in disease of some other part of the pelvis, not unfrequently in purulent inflammation of the tube on the opposite side. The closed tube subsequently becomes distended with serum, thus forming a retention cyst. The tube itself being, as a rule, otherwise free from disease, its walls become stretched and attenuated, the folds of the mucous membrane more or less obliterated and the muscular coat atrophied. The distended tube may reach an enormous size, as in a specimen of my own preserved in the St. Thomas's Hospital Museum, but it has been thought better to illustrate the condition by drawings of specimens of more moderate dimensions, as being of more frequent occurrence, and therefore more typical.

Figure 1 shows the right Fallopian tube, distended and much convoluted, removed, January 25, 1895, from a patient aged 49, who had had an attack of pelvic peritonitis two years previously, and several

less serious attacks subsequently. There was a smooth, tense, elastic fluctuating swelling in the lower part of the abdomen, situated centrally, with the uterus to the left of it and behind. A smaller cystic swelling was felt in Douglas's pouch. The larger tumour proved to be a large hydrosalpinx of the left tube containing 32 fluid ounces of clear watery fluid of sp. gr. 1008, alkaline, and containing a trace of albumen. The smaller tumour, a hydrosalpinx of the right tube, is represented in the drawing. It shows the retort-shaped expansion usually seen at the outer end of the tube and the complicated convolutions often met with in the median and inner portions. The origin of the peritonitis in this case is not known.

Figure 2 shows the right Fallopian tube, removed by abdominal section, in October 1888, from a girl, aged 19, who was transferred from the Magdalen ward, where she had been for three months under treatment for gonorrhœa. There was, behind and to the right of the uterus, a smooth, not very tense, oblong cystic swelling, which was diagnosed as a hydrosalpinx. As this swelling showed no sign of diminution at the end of two months, and as there had been in the meantime acute attacks of pain, accompanied with a high temperature and followed by considerable collapse, abdominal section was performed and the swollen tube removed.

The dilated tube was of the usual retort shape, $3\frac{3}{4}$ inches long, $2\frac{1}{4}$ inches broad at its outer

extremity, and $1\frac{1}{4}$ at its narrowest part, and contained clear serum.

Figure 3 shows the expanded fimbriated end of the same tube.

A different and less usual form of hydrosalpinx is shown in Plate IV. Fig. 1.

PLATE II

PURULENT SALPINGITIS—GONORRHOÆAL TUBERCULAR DISEASE OF THE FALLOPIAN TUBE

Figure 1 shows the right Fallopian tube, removed, March 5, 1894, from a mantle saleswoman, aged 31. The patient had borne two children and had had one miscarriage, the latter in consequence of the shock occasioned by the sudden death of her husband in July 1892. In October 1893 she contracted gonorrhœa, and from that time there had been a continuous purulent discharge from the vagina, menorrhagia, pain on micturition, and pain in the lower part of the abdomen. The pain had been increasingly severe and disabling, and before Christmas she had to give up her work. The right tube could be felt thickened, fixed, bent upon itself, and adherent to the anterior wall of Douglas's pouch. After the patient had been three weeks in the hospital the pain had greatly diminished, but the physical signs remained without change. At the operation, the right tube was found normal in size and consistence for the first inch and a half; it then made a sharp turn backwards, became thickened and hard, and dipped behind the uterus into Douglas's pouch, where its unclosed fimbriated end

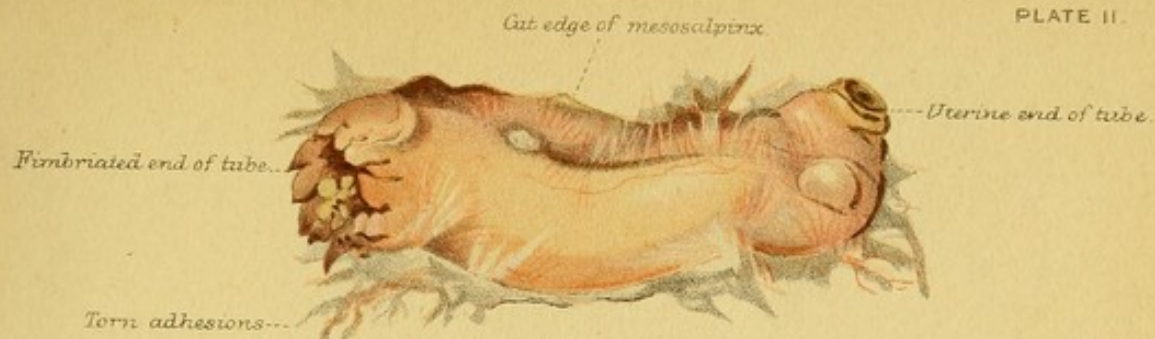


Fig. 1

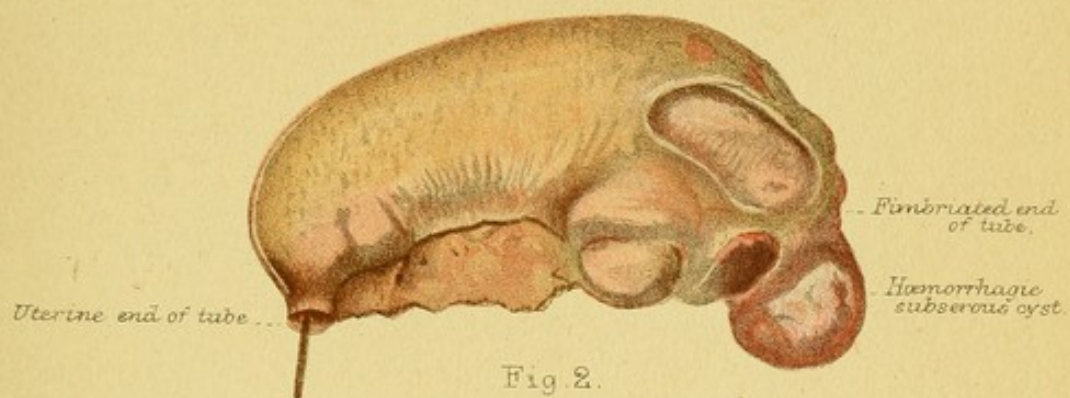


Fig. 2.



Fig. 3.

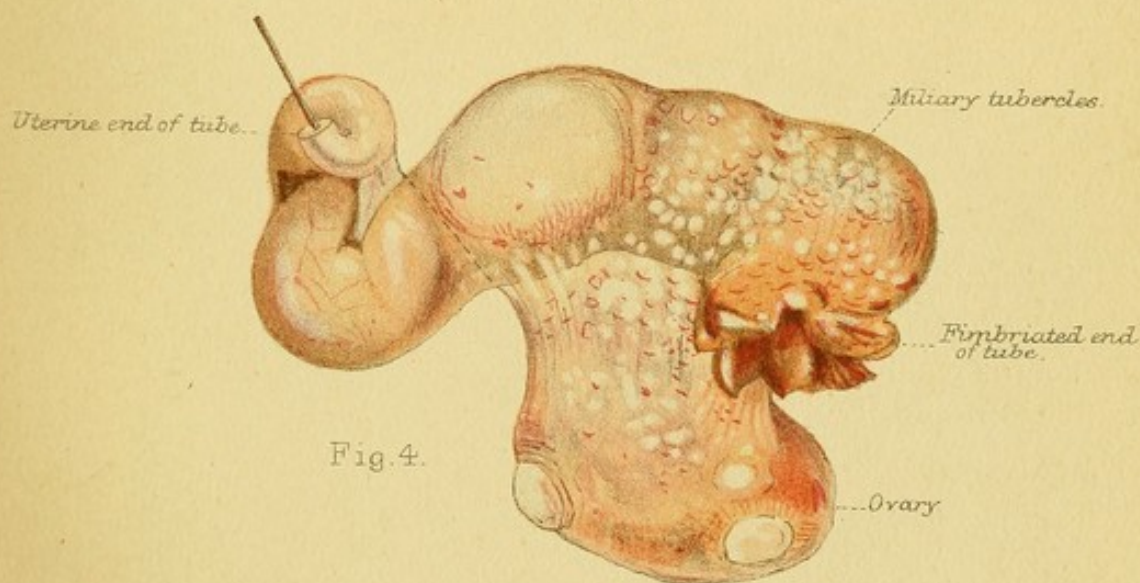
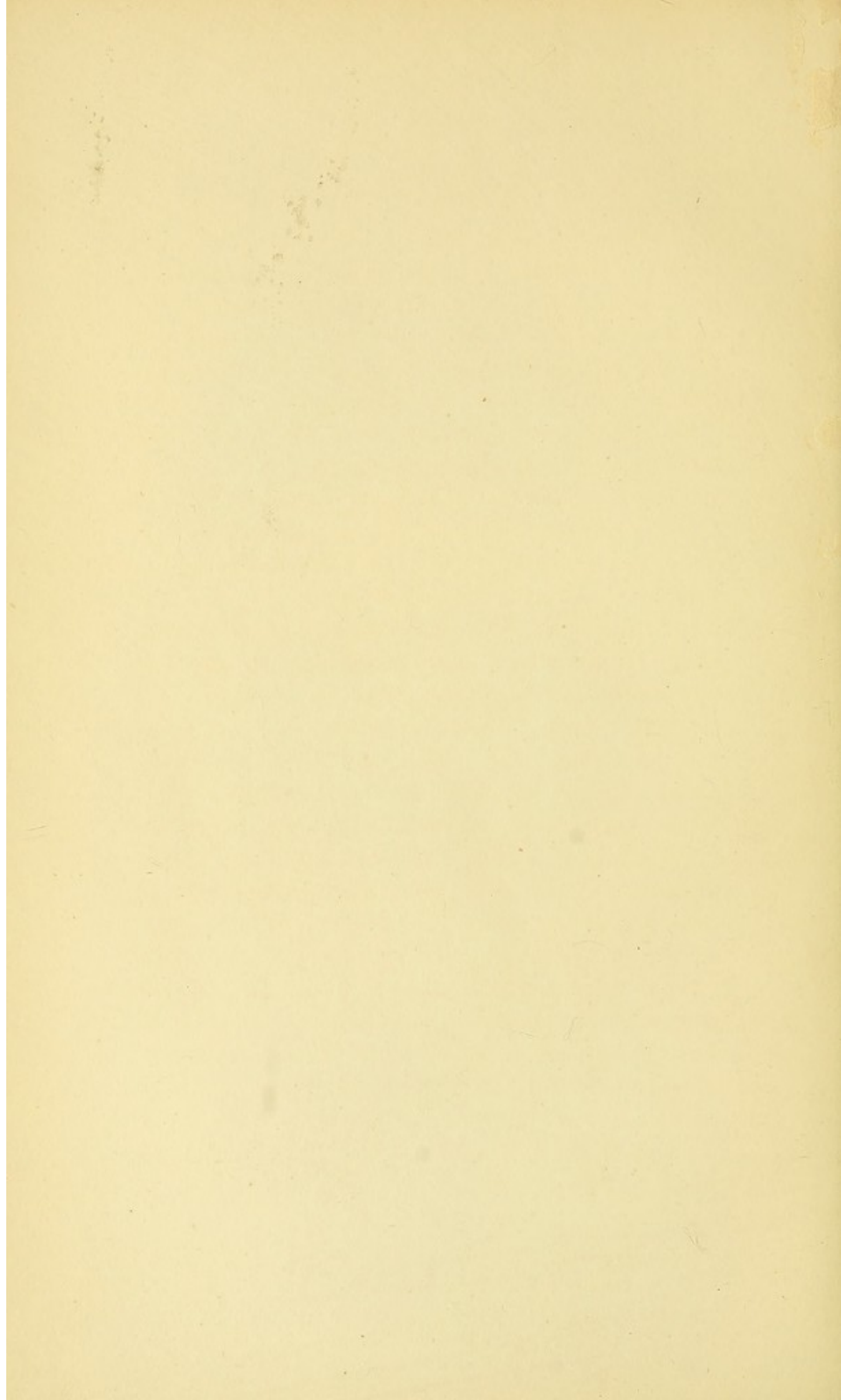


Fig. 4.



was adherent. The drawing shows the thickened portion of the tube, with shreds of separated adhesions on all sides of it. The fimbriæ are seen distorted by inflammation and œdema, and a drop of thick pus is seen issuing from the mouth of the tube. The disease is in a comparatively early stage.

The right ovary was normal, the left cystic. The left tube was to all appearance healthy.

Figure 2 shows a pyosalpinx, removed, October 17, 1889, from a prostitute, aged 22, who had contracted gonorrhœa four months previous to her admission, and had since had repeated attacks of pelvic peritonitis. In the right posterior quarter of the pelvis was a fixed, hard, irregular swelling, terminating in a small cystic tumour, which occupied Douglas's pouch. The hard swelling was diagnosed as a gonorrhœal pyosalpinx, the softer one as a prolapsed ovary adherent to the end of the tube. At the operation the right tube was found occluded at its abdominal ostium, and filled with pus. It was bent sharply backwards upon itself, and passed almost vertically downwards behind the right border of the uterus, the fimbriated end being adherent in Douglas's pouch. What had been thought to be the prolapsed and adherent ovary proved to be a subserous cyst at the extremity of the closed tube. Hæmorrhage had taken place into this cyst. Two other subserous cysts are shown in the drawing. The disease here also is in an early stage, but the abdominal ostium of the tube is already closed.

Figure 3 shows the left Fallopian tube and ovary from a sterile married woman, aged 22, who had the appendages on both sides removed for gonorrhœal pyosalpinx, October 22, 1891. The first attack of pelvic peritonitis commenced suddenly on December 26, 1890, and lasted acutely for three weeks. From this time the patient had had much abdominal pain, frequently having to go to bed for some hours. There had been a yellow vaginal discharge during most of the nine months.

On admission the patient was suffering from gonorrhœa. In both posterior fossæ of the pelvis were hard, tender, fixed, irregular swellings, which met and were adherent to each other in Douglas's pouch. Both tubes were distinctly traced into the swellings. The diagnosis was double gonorrhœal pyosalpinx.

Both tubes were found enlarged, thickened, occluded, and distended with pus. The left, shown in the drawing, measured 4 inches in length, $\frac{1}{4}$ inch in diameter at its inner end, $\frac{5}{8}$ inch at its intermediate portion, and an inch at its distal extremity. The ovary was of normal size (1 inch \times $1\frac{1}{2}$ inches). On section, after having been hardened, it was found to have undergone cystic change, and to contain a small abscess, doubtless due to infection from the tube. The ovary did not project behind the broad ligament as usual, but apparently formed part of the wall of a closed cavity distended with serum. This cavity was cut across in removing the

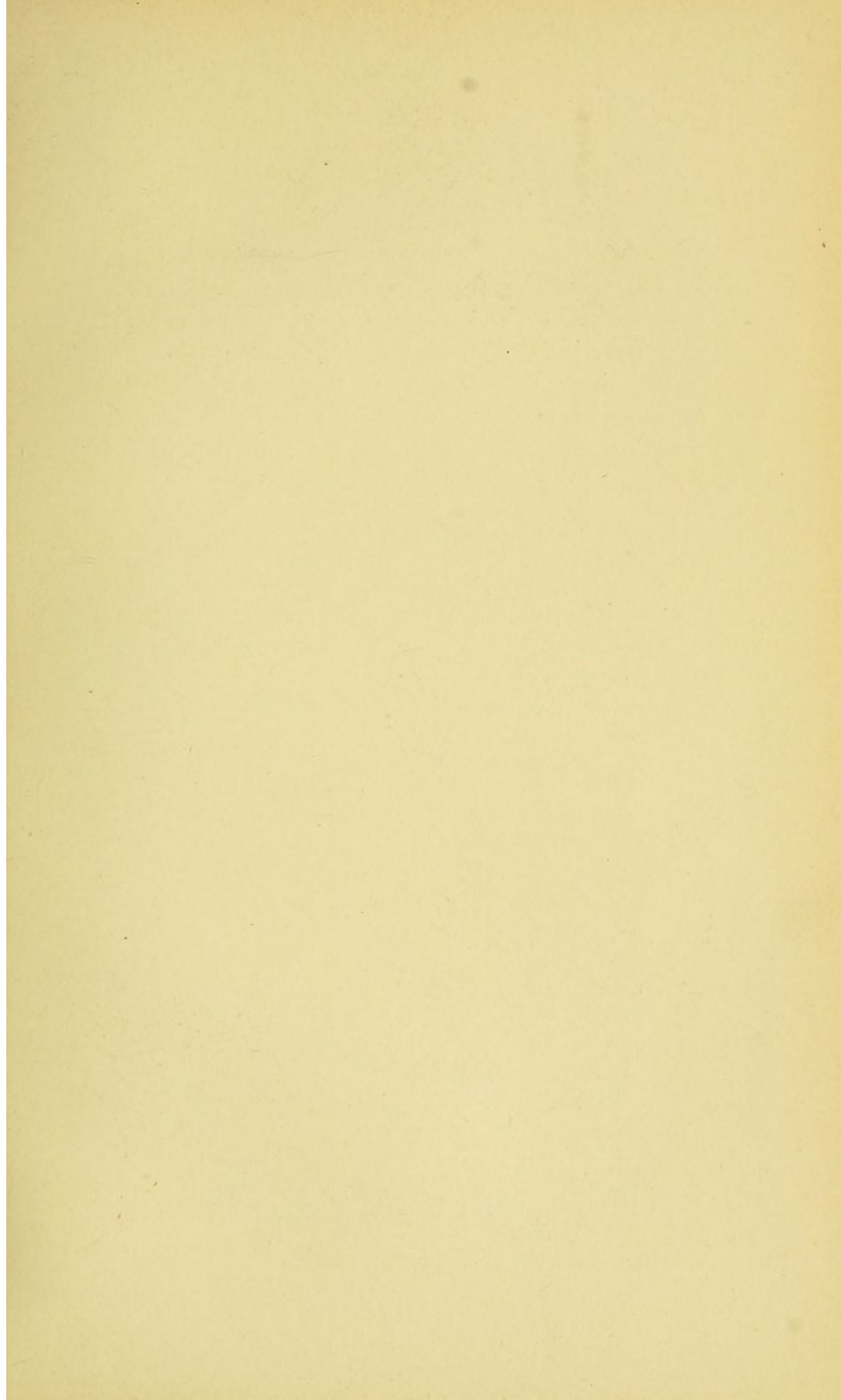
appendages. It formed a nearer approach to the ovarian hydrocele of Mr. Bland Sutton than anything I have yet seen.

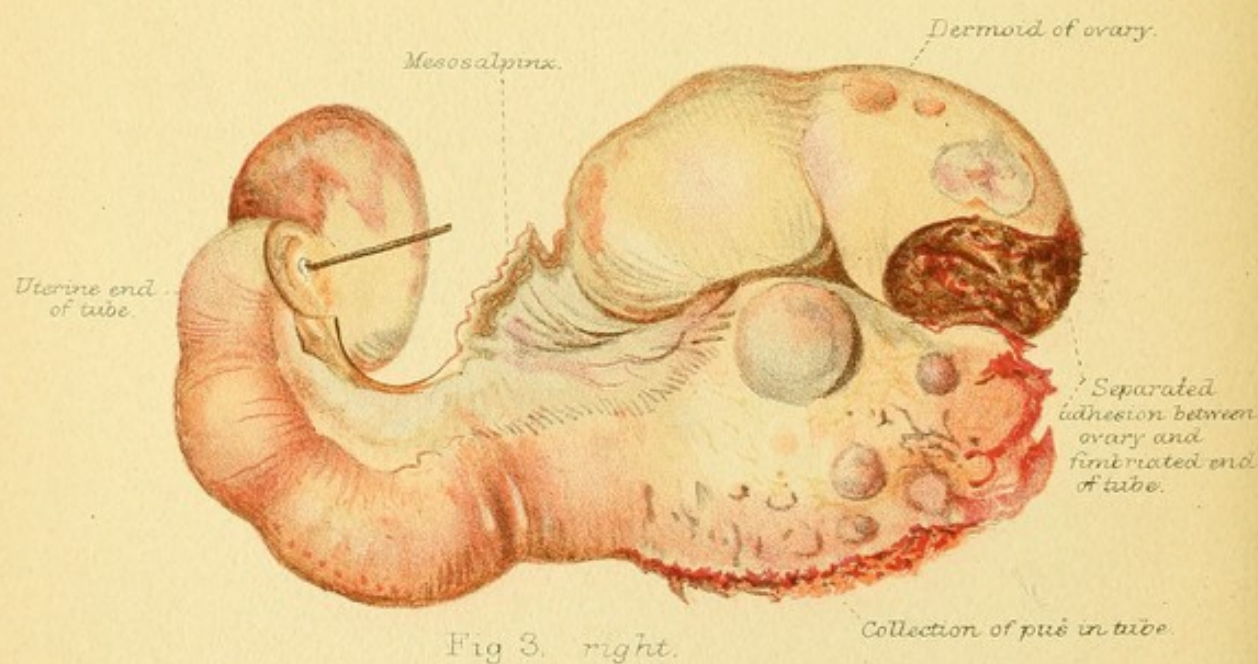
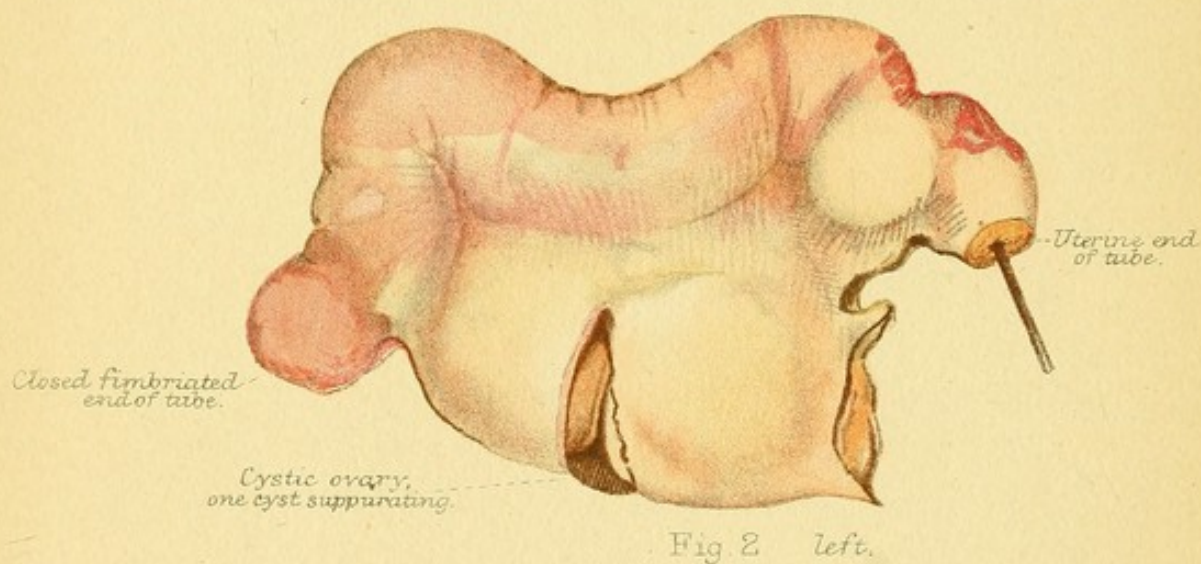
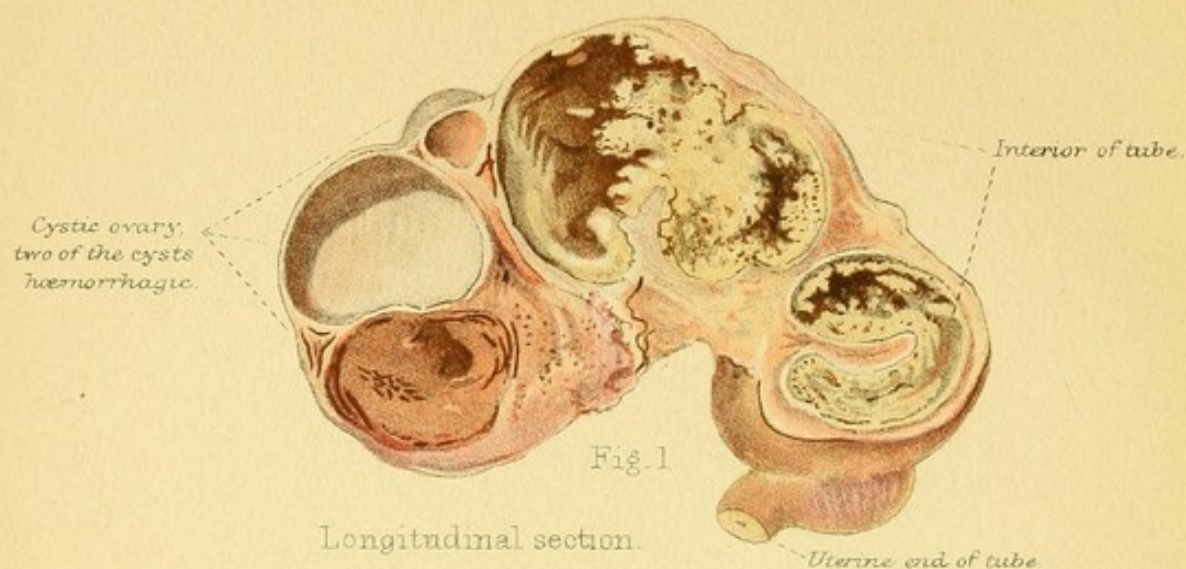
The appearances, on making a longitudinal section through the tube and ovary after they had been hardened in spirit for a month, are shown in Plate v. Fig. 2.

Figure 4 represents the left Fallopian tube and ovary, removed by operation, on December 24, 1889, from a woman, aged 30, who was said to have been at the age of eleven years threatened with pulmonary consumption, and to have recovered and remained well till married in April 1889. In July of that year she aborted at the third month and progressed satisfactorily for a week, when she began to suffer from severe pain in the pelvis. This recurred from time to time up to December. She was then ill and emaciated, with a purulent discharge from the uterus and evidence of enlarged and adherent Fallopian tubes. There were signs of old mischief at the apex of one lung. The diagnosis was made of tubercular disease of the uterus and Fallopian tubes. Abdominal section was performed, and both Fallopian tubes were removed, the right being even more diseased than the left. The pelvis was found entirely occupied by adherent viscera and thickened peritoneum studded with miliary tubercles. (For full notes of the case, see a paper on 'The Differential Diagnosis of Pelvic Inflammation,' *British Medical Journal*, December 27, 1890.)

The drawing shows the enlarged, sacculated, and tortuous left tube, with numerous miliary tubercles on the peritoneal covering of the tube and on the meso-salpinx. On the ovary, which is of normal size, are several small subserous cysts.

The tubes were filled with caseating pus, lying in ulcerated pits. These pits are well seen in the drawing of the *interior* of the left tube, laid open. See Plate IV. Fig. 2.





R.E. Holding del.

West Newman chromo.

Purulent salpingitis.

PLATE III

PURULENT SALPINGITIS

Figure 1 shows a longitudinal section of the right Fallopian tube and ovary, removed, along with the uterine appendages of the opposite side, on February 18, 1892, from a ballet-dancer, aged 18. The patient was single, but had been living an irregular life for the past six months. Three weeks before admission into the hospital she was seized with pain in the lower part of the abdomen, followed by vomiting. A yellow vaginal discharge began about the same time. She remained in bed for a week and improved, but had to return to and keep her bed a few days later, as the pain returned. On admission there were fixed, irregular swellings, traceable from the cornua of the uterus, felt in the posterior fossæ of the pelvis. Some muco-pus was seen in the vagina and about the vulva. There was no urethritis, or inflammation of the vulvo-vaginal gland ducts. Pus, which proved to contain gonococci, was seen issuing from the os uteri. There was no erosion of the cervix.

At the operation both Fallopian tubes were found acutely inflamed and buried amongst adherent viscera.

The right tube and ovary were hardened in spirit

for a month, and then laid open by a longitudinal section. The drawing shows the appearances presented. The cavity of the tube is distended and tortuous. At its fimbriated end it has a diameter of three-quarters of an inch. It was filled with pus. The folds of mucous membrane show no ulceration, but are swollen, abnormally voluminous, and coloured yellow from infiltration with pus. In the ovary there are three small cysts: two of these were filled with recently extravasated blood; the third was filled with pus.

The patient made a good recovery.

Figures 2 and 3 show the ovaries and Fallopian tubes, removed by operation, on September 11, 1891, from a married woman, aged 37, for suppurating salpingitis of uncertain origin. The left tube (*Fig. 2*) is seen to be much thickened and elongated ($3\frac{1}{2}$ in. long \times $\frac{1}{3}$ in. wide); its fimbriated end is closed. The left ovary is seen beneath it, slightly enlarged. During its removal rupture of a small abscess occurred, probably a small suppurating cyst. Besides the abscess, the ovary contained two cysts, one containing serum, the other filled with blood.

The right tube (*Fig. 3*) is still more enlarged ($4\frac{1}{2}$ in. long \times $\frac{1}{2}$ in. wide). Its distal end is dilated into a pus-containing cavity. Near the uterine end is a suppurating subserous cyst. Adherent to and entirely occluding the distal end of the tube was the enlarged right ovary, which proved on section to be the seat of a dermoid tumour, containing hair, etc.

The patient had borne eight children, her last confinement having taken place on April 14, 1890. She had nursed her child up to the date of her admission, though menstruation had been re-established since June. She was in apparently good health until July 31st, when she first began to feel pain in the left iliac region. The pain had since become worse, and was on admission chiefly felt in the *right* side. The temperature was 99° ; there was anorexia, and the tongue was furred. A fixed, irregular, tender swelling, traceable from the cornu of the uterus, was felt in each posterior fossa of the pelvis, extending into Douglas's pouch. At the operation the pelvic contents were found matted together in a confused mass. The left tube was traced forwards in the first instance where it was attached by a knuckle to the anterior abdominal wall. It then passed backwards and curled round to the back of the left broad ligament. The right tube ran first for a short distance forwards and inwards, being adherent to the right upper corner of the anterior surface of the uterus. It next passed outwards, and was adherent by a knuckle to the anterior parietal peritoneum just above Poupart's ligament. It then passed backwards, and finally turned downwards, and was adherent to the ovary, which lay at the bottom of Douglas's pouch. Posteriorly the tube had adhering to it a coil of intestine and the vermiform appendix.

The patient made a good recovery, and when last seen stated her health to be better than it had been for many years.

PLATE IV

HYDROSALPINX—TUBERCULAR DISEASE OF FALLOPIAN TUBE

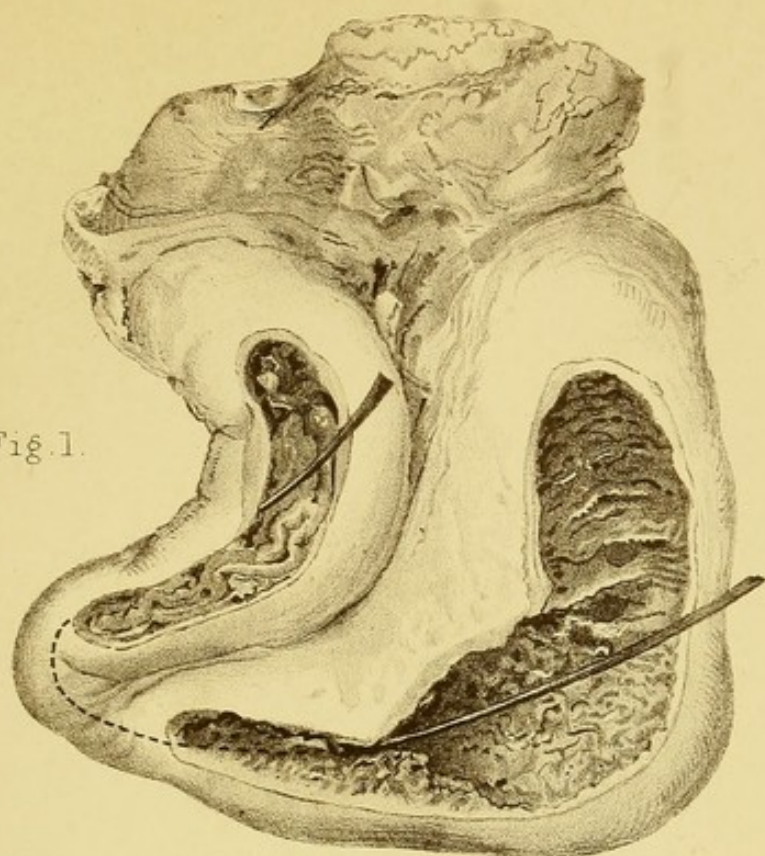
HYDROSALPINX

Figure 1 is from a specimen (No. 2397) in the Museum of St. Thomas's Hospital, and consists of the left Fallopian tube, removed August 15, 1892, from the patient whose right Fallopian tube is shown in Plate VIII.

This (left) tube is bent upon itself at a sharp angle. The portion removed, which contained blood-stained serum, measured $7\frac{1}{2}$ inches in length, and was uniformly dilated but not thickened. The fimbriated end is occluded. The ovary, like its fellow of the opposite side, was normal, and was not removed.

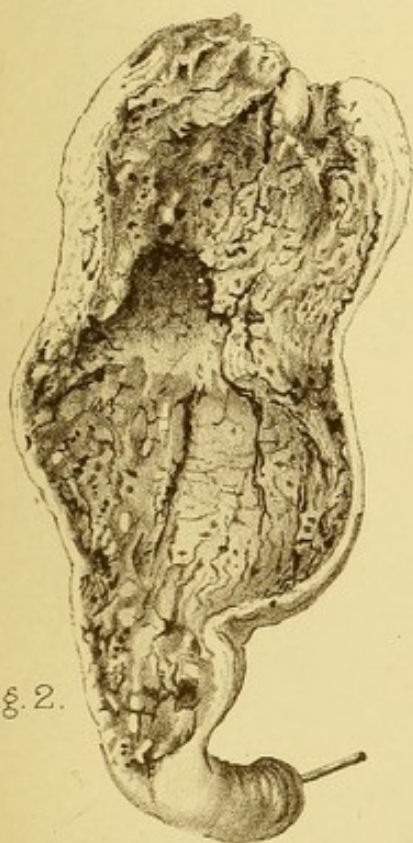
The specimen well illustrates the remarks made in describing Plate I., as to the ordinary mode in which Hydrosalpinx is produced, viz. by the incidental occlusion of the distal end of a tube, in the course of a pelvic peritonitis, and the resulting transformation of the tube into a retention cyst. The history of the case is given under Plate VIII.

Fig. 1.



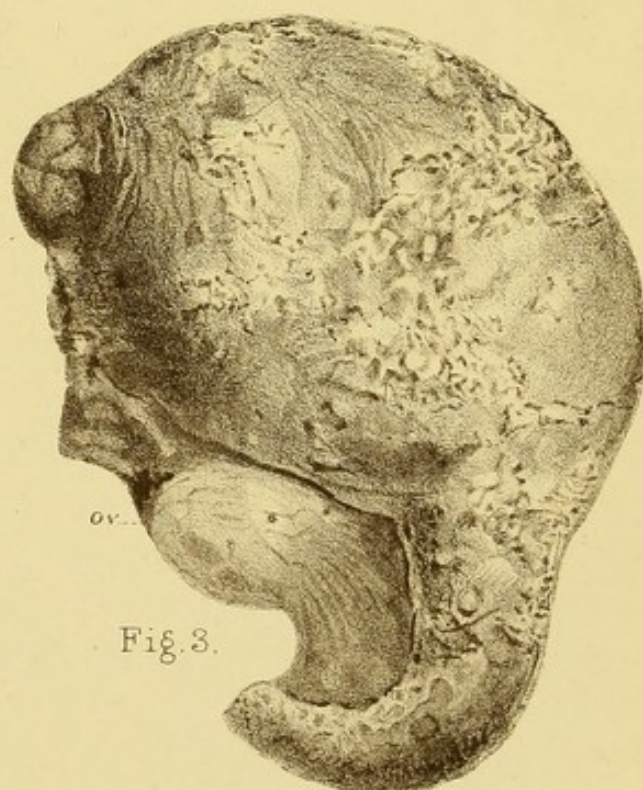
Hydrosalpinx.

Fig. 2.



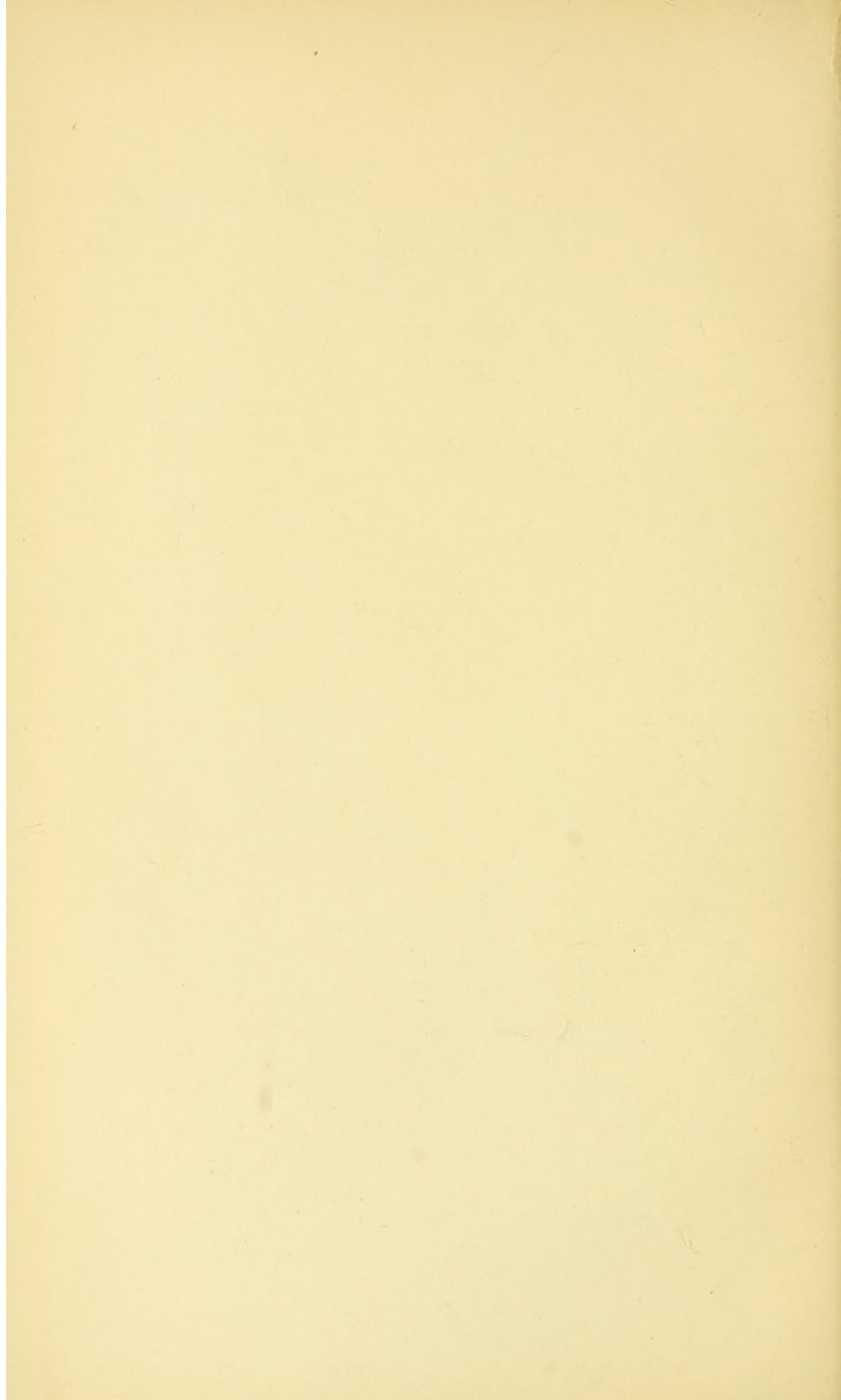
R.E. Holding del.

Fig. 3.



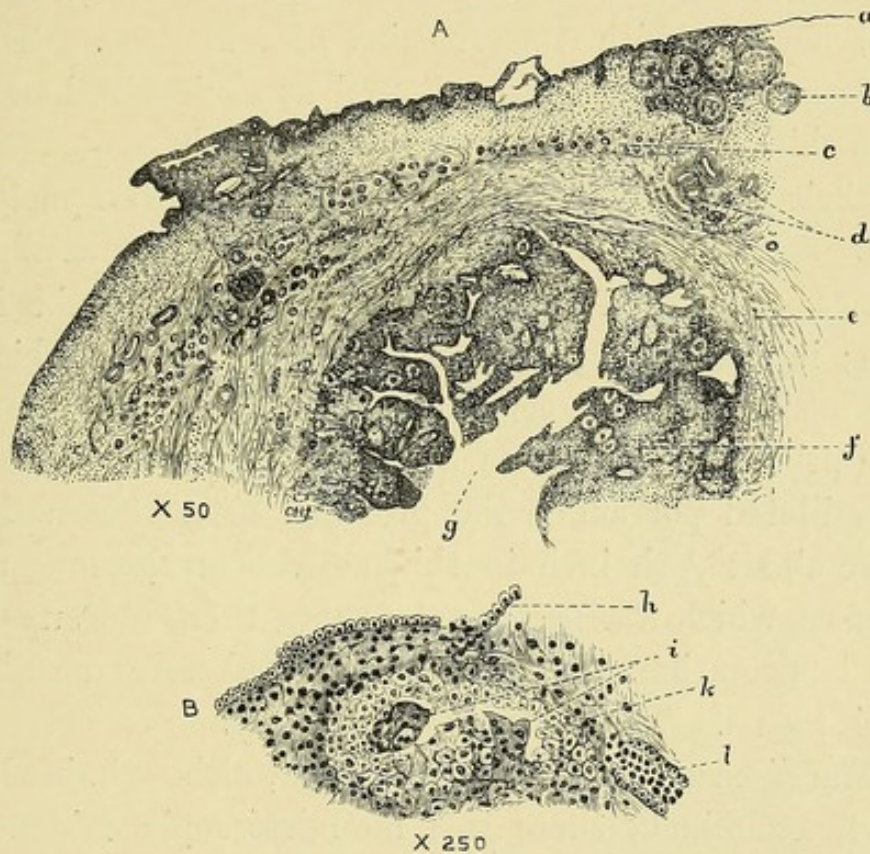
West Newman imp.

Tubercular disease of Fallopian tube.



TUBERCULAR DISEASE OF THE FALLOPIAN TUBE

Figure 2 shows the interior of the Fallopian tube, the exterior of which is represented in Plate II. Fig. 4. The mucous membrane is seen to be irregularly



A. Transverse section of tuberculous tube under a power of $\times 50$; and, B, section through a tuberculous nodule under a power of $\times 250$, showing two giant cells.

a, Peritoneum; *b*, tuberculous nodules in sub-peritoneal tissue; *c*, longitudinal muscular coat of Fallopian tube; *d*, blood-vessels; *e*, circular muscular coat; *f*, hypertrophied mucous membrane, showing numerous tuberculous nodules containing giant cells—the lining epithelium still remains in places; *g*, lumen of tube; *h*, remains of ciliated epithelium; *i*, giant cells; *k*, epithelioid cells; *l*, space lined with columnar epithelium.

and deeply ulcerated, the ulcers forming deep, ragged pits, which were filled with caseating tubercle. The annexed woodcut, from a drawing by Mr. C. H. James,

now of the Indian Medical Service, shows the microscopic appearances of a section of the tube, in which the characteristic giant cells are seen in abundance.

Figure 3 represents the exterior of a Fallopian tube, removed from a patient, aged 31, on October 10, 1891, and covered with the remains of adhesions. The tube and its fellow were dilated at their distal ends into thin-walled sacs about an inch and three-quarters in their longer diameter, and were filled with a putty-like material. No communication was traceable between the dilatation and the rest of the tube in one; in the other, there is a small aperture by which the main dilatation communicates through a septum (resulting probably from a fold in the tube) with a less dilated portion on the proximal side. The walls were about $\frac{1}{12}$ th inch in thickness. On the mucous surface, which was destitute of rugæ, there was superficial ulceration. There were no tubercles on the peritoneum. The ovaries were healthy.

The disease is probably tubercular, although, in the parts examined, there was no microscopic evidence of this.

The specimen is No. 2401A in the Museum of St. Thomas's Hospital.

The patient, in whose family there was a history of tuberculosis, had, as a rule, menstruated regularly and painlessly. She had been married nine years and a half, but had not been pregnant. There had always been some dyspareunia. For the past six months she had been subject to attacks of

abdominal pain, accompanied by a rise of temperature (101° F.). On making a vaginal examination in July 1891, I found a smooth oblong tumour, the size of a large hen's egg, high up on the right side of the pelvis, extending beyond the middle line. No fluctuation could be detected in it. The uterus was of the normal length, and was situated in the middle line, but was pushed backwards by the swelling.

I thought it probable that the tumour was a tense dermoid cyst of the right ovary.

At the operation the contents of the pelvis were found densely matted together by adhesions and roofed in by adherent omentum. The surface of the uterus was studded with a number of pedunculated sub-peritoneal myomata, of the size of marbles. After the enucleation and removal of the tumour on the right side, it was found that there was a similar and equally adherent tumour on the left, which was also separated and removed. It was not until the normal ovaries were seen that the swellings were recognised as distended Fallopian tubes. In removing the ovaries a portion of the ovarian tissue was unavoidably left in the pedicle, on the distal side of the ligature.

The patient made a good recovery, and three years afterwards remained in excellent health. The myomata, however, had become considerably increased in size.

PLATE V

PURULENT SALPINGITIS WITH ABSCESSSES OF OVARY—PURULENT SALPINGITIS

PURULENT SALPINGITIS WITH ABSCESSSES OF OVARY

Figure 1 shows the right Fallopian tube and ovary, removed by operation, April 7, 1892, from a married woman aged 39. The ovary, which measured two and a half by two inches, has been laid open, and is seen to contain several distinct cavities, which were lined by granulation tissue and full of pus. The Fallopian tube was dilated and flaccid. The portion removed was irregularly enlarged and contorted, and measured four inches and a half in length. The fimbriated end was completely occluded by its adhesion to the ovary, but no communication existed between the two. The mucous membrane of the tube was swollen and acutely inflamed, and was covered with thick, yellow, inoffensive pus.

The patient had been twice married. She had borne one child, shortly after her first marriage. She was married the second time at Easter 1887, having then been a widow a little over twelve months, and had not been pregnant since. She enjoyed good health

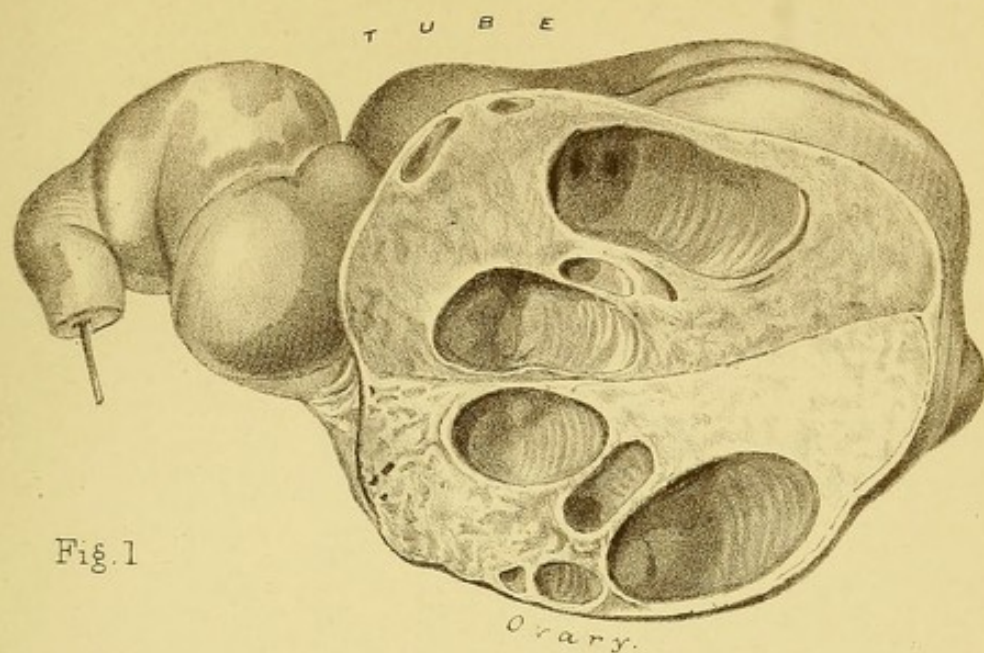


Fig. 1

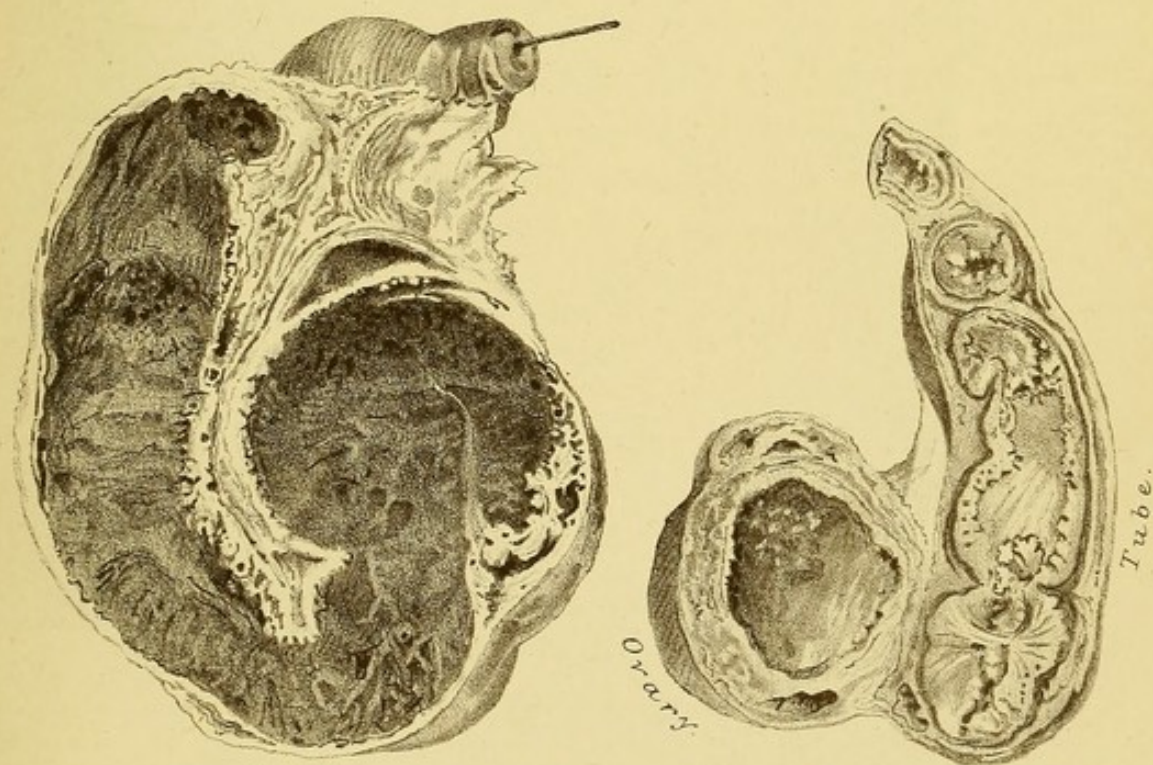


Fig. 3.

Fig. 2

R.E.Holding del.

West Newman imp

Figs 1&2. Purulent salpingitis with abscesses of ovary.
Fig. 3. Purulent salpingitis.

until Easter 1891, when she was confined to bed for a fortnight with pain in the lower part of the abdomen. She quickly recovered from this attack, and remained well until three weeks before her admission, when she was again seized with pain in the abdomen, accompanied with irregular uterine hæmorrhage, loss of appetite, diarrhoea, and vomiting. These symptoms had continued, and she had been confined to bed ever since.

On admission the hæmorrhage had ceased, but the pain was still present. The temperature was normal. In the right posterior quarter of the pelvis a firm, fixed, irregular mass about the size of a hen's egg could be felt. On the left side there was resistance, but no definite tumour.

The operation was difficult owing to the density and vascularity of the intestinal adhesions. The enlarged ovary was found adherent in Douglas's pouch, with the distal end of the right tube attached to it. The left appendages were adherent, but otherwise normal.

The patient was discharged well on the 26th of May.

Abscess in the ovary is one of the most frequent complications of purulent salpingitis, the ovary becoming apparently directly infected from the diseased tube.

Cases illustrating this sequence of events will be found in the *Lancet* for July 2nd and 9th, 1892 (a series of six cases reported by me in the *Mirror of*

Hospital Practice, the present case being included in the series), and in the *Transactions of the Obstetrical Society of London*, vol. xxxvi. for 1894, pp. 277-300 ('Three Cases of Pelvic Inflammation attended with Abscess of the Ovary, with Clinical Remarks').

PURULENT SALPINGITIS

Figure 3 is from a specimen (No. 2393) in the Museum of St. Thomas's Hospital. The specimen consists of the right Fallopian tube, removed by operation, June 24, 1892, from a woman aged 31. The tube is much enlarged, elongated, tortuous, and distended. It has been divided longitudinally after having been hardened in spirit. Into the divided uterine end is inserted a piece of coloured glass. The tube was closed at its abdominal ostium, and was full of pus. The length of tube involved in the specimen is $6\frac{1}{2}$ inches. The diameter of the dilated outer portion is an inch and one-eighth; of its inner portion, half an inch. On its exterior are the remains of adhesions torn through during removal.

The specimen in its recent state was shown at the Obstetrical Society in July 1892 (see *Obst. Soc. Trans.* vol. xxxiv. p. 221).

The patient had been a widow for three months. There was a history of miscarriage at the age of eighteen, but since her marriage, nine years ago, patient had not been pregnant. She had had four severe attacks of pelvic inflammation; of these, the first occurred soon after marriage, and incapacitated her more or less

for a month; the second was about four years later, and also lasted a month; the third took place after another interval of four years, and was more severe than the previous attacks, necessitating her entire confinement to bed for several weeks; the present attack (the fourth) began suddenly on May 30, 1892. She was admitted to the hospital on June 16th. The uterus was anteflexed, and displaced slightly to the left. The right posterior quarter of the pelvis was filled by a hard irregular mass, depressing the right fornix of the vagina, and continuous with a fixed swelling in Douglas's pouch. Beneath the mass on the right side could be felt a sulcus running transversely and dividing it into a softer portion in front, and a smaller and harder portion behind. The diagnosis was an inflamed purulent right tube, fixed by adhesions, and embracing the ovary.

At the operation the right tube was found densely adherent. It was separated with difficulty, and was removed, along with the ovary, which was normal. No definite enlargement of the left appendages could be detected; and, as they were involved in a mass of adherent intestine, it was decided to leave them undisturbed.

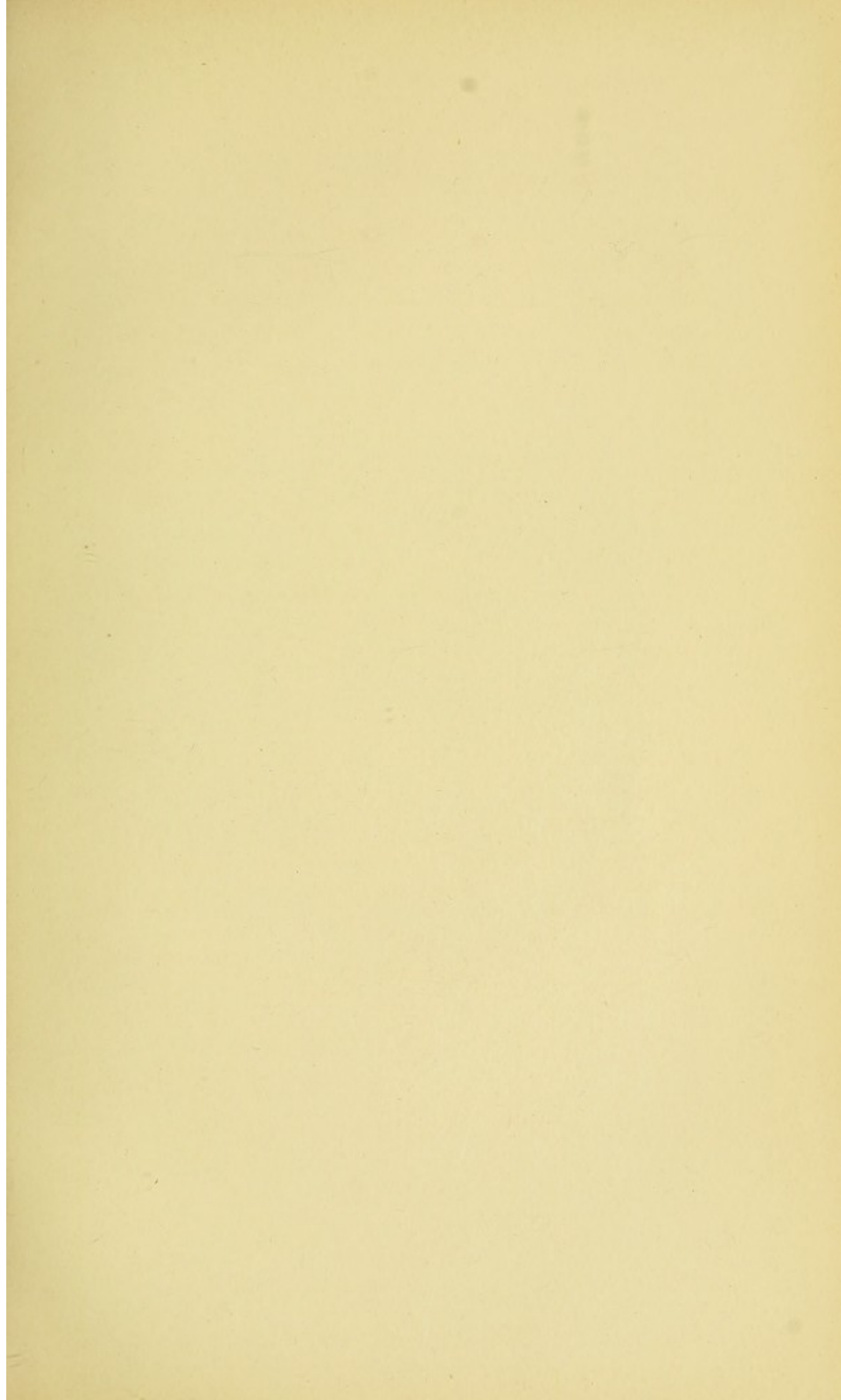
The patient made a good recovery, and was discharged well on the 23rd of July.

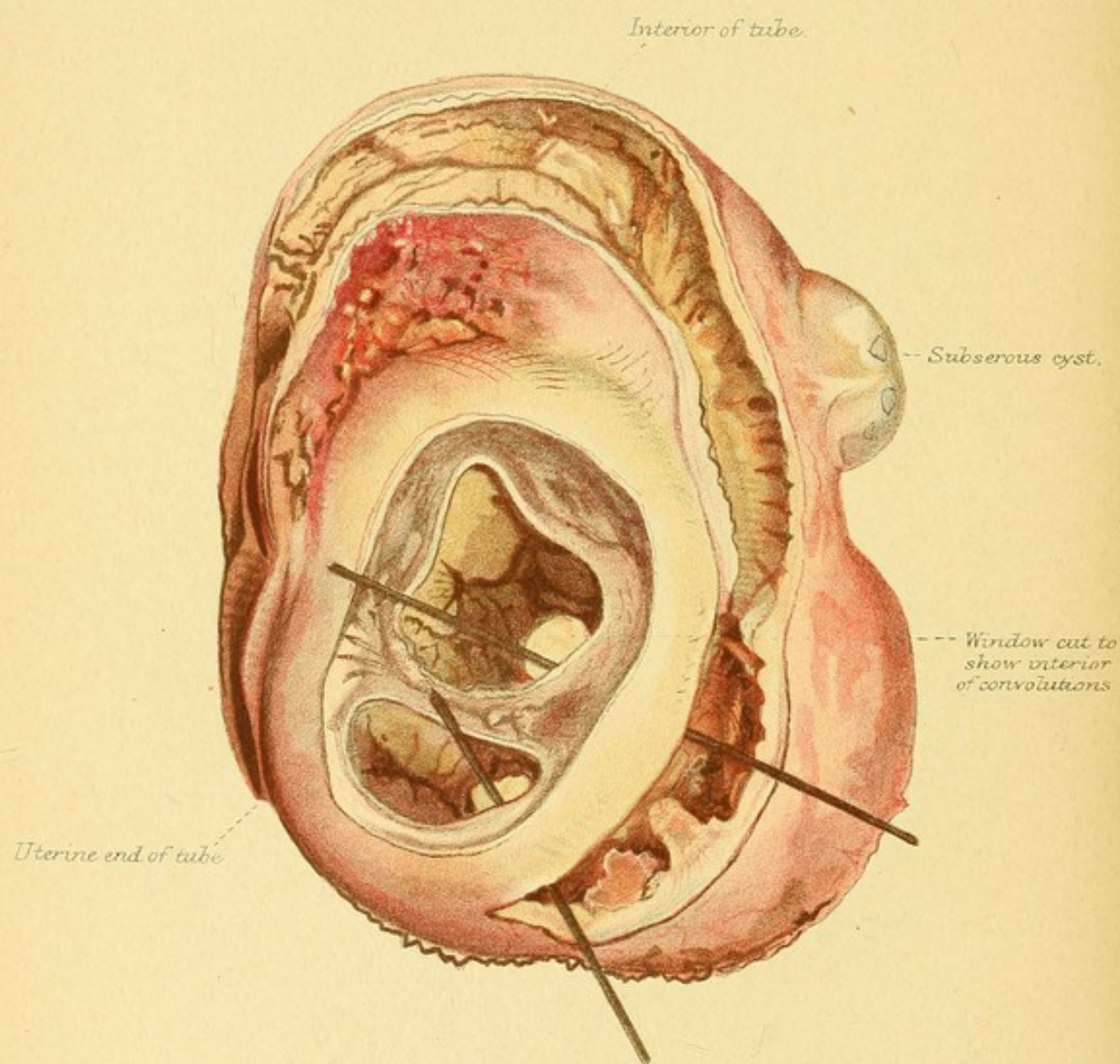
Figure 2 represents the same Fallopian tube and ovary as are shown in the fresh state in Plate II. Fig. 3. The parts have been divided by a longitudinal

section after having been hardened in spirit. The tube was distended with pus (now coagulated by the alcohol), the result of the distension being to render the tube so tortuous that in the section the lumen is exposed only in segments. At the fimbriated extremity, where widest, it measures seven-tenths of an inch in diameter. The walls of the tube are thickened, the mucous membrane being especially swollen, and its folds abnormally prominent and voluminous. In the ovary there is a granulating cavity about three-quarters of an inch in diameter, the sac of an abscess that has arisen probably in a cyst; it has no direct communication with the tube. Externally the tube and ovary are covered with recent adhesions.

The specimen is No. 2386 in the Museum of St. Thomas's Hospital. The adjoining specimen, No. 2387, consists of the right tube and ovary from the same patient. The tube is closed at the abdominal ostium, and considerably enlarged from purulent distension and a certain degree of thickening of its walls.

An abstract of the history of the case has already been given (see page 6).





Purulent salpingitis.
showing extreme convolution of distal end of tube.

PLATE VI

PURULENT SALPINGITIS—GONORRHOÆAL

THE drawing represents the left Fallopian tube, removed by operation, March 1, 1894, from a woman, aged 31, for suppurative salpingitis due to gonorrhœal infection. The parts are shown of their natural size. The tube has been laid open from its divided (uterine) end to its distal extremity, where it somewhat suddenly expands into a large loculated pus cavity. To display the ramifications of this cavity a slice has been removed from the most prominent part of the more dilated portion of the tube, and rods have been passed to show the connections of the various loculi with the main canal. The mucous membrane along the whole tube is much thickened, and towards the outer extremity (which is closed) it is swollen to such an extent as to project considerably into the lumen. The tube is enlarged, distended, and greatly elongated, the inner and middle portions curving in horse-shoe shape round the expanded outer portion. The walls are thickened throughout, their diameter near the uterine end being about $\frac{1}{4}$ inch, and at the distal end about $\frac{1}{8}$ inch. The pus contained in the tube was

extremely offensive. On the outer surface of the tube were several subserous cysts, one of which is shown in the drawing.

The patient was by occupation a laundress. She was married in 1881, and had had one miscarriage, followed by two premature deliveries, each at the seventh month. There had been no pregnancy for the past ten years. A month after the birth of her first child she had been under treatment for soreness and pain on passing urine. Her first attack of peritonitis occurred seven years ago. She had another four years ago, a third two years ago, and a fourth in December 1893. All the attacks came on suddenly, with nausea, thirst, and severe pain in the lower part of the abdomen. On the last occasion she was under the care of one of my medical colleagues at St. Thomas's Hospital, and was discharged apparently well on January 14, 1894. Two days later, however, the pain returned, and after being ill at home for three weeks she was readmitted into the hospital with tenderness and rigidity over the whole of the lower part of the abdomen. A few days after her readmission I was asked to see her, and after examination made a note to the following effect: 'Uterus pushed to the right by a rounded tumour about 4 inches in diameter. This tumour is fixed, tense, and fluctuating, and reaches to a line about half-way between pubes and umbilicus. There is a fixed, hard, nodulated swelling behind the uterus in Douglas's pouch.' I thought that the

main swelling was in all probability a suppurating cyst of the left ovary, and that the swelling in Douglas's pouch was the result of chronic salpingitis and matting of adjacent parts.

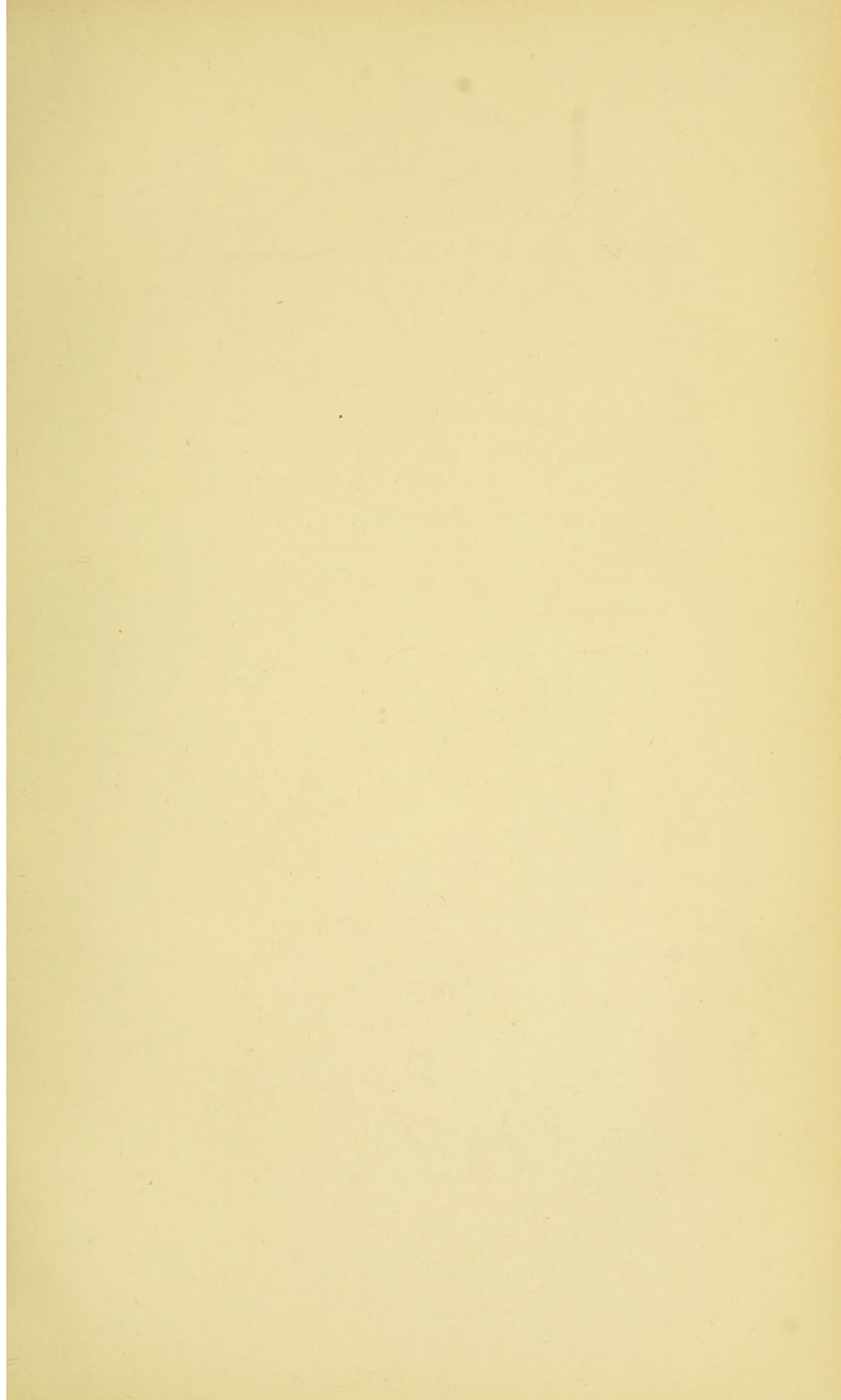
On February 19th the patient was transferred to my care, having in the meantime improved considerably in her general condition. The temperature was then normal. On February 27th examination showed a change in the physical signs. The cervix uteri was fixed; the body moderately movable. The left posterior quarter of the pelvis was occupied by a hard, irregular, fixed swelling about the size of an adult fist. *No fluctuation could be detected.* On the right side there could also be felt an irregular fixed swelling, but less in bulk and higher in the pelvis than the mass on the left.

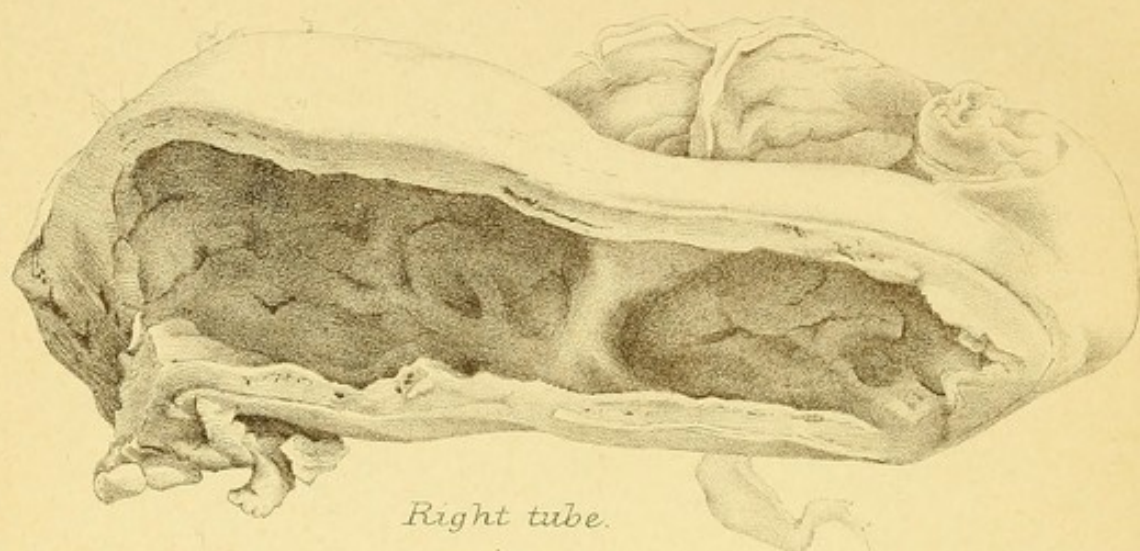
Abdominal section was performed on March 1st, and the diseased tube figured in the drawing was removed with much difficulty from the left side of the pelvis. A flaccid cyst was found connected with it posteriorly. This was unavoidably ruptured during removal, a quantity of very offensive pus escaping, of a greenish yellow colour. The appendages of the right side were involved in a mass of densely adherent structures. There being, however, no definite lump on that side, and it being evident that to persist in attempts to separate the adhesions would involve serious risk to the integrity of the rectum and other parts of the bowel, it was decided to leave them.

On the day after the operation about half a fluid ounce of foetid pus passed *per rectum*. Nothing of the kind happened again, but on the eighth day there was an escape of highly offensive pus from the lower angle of the wound. The discharge continued for some weeks, gradually becoming less offensive, and finally acquiring a merely serous character.

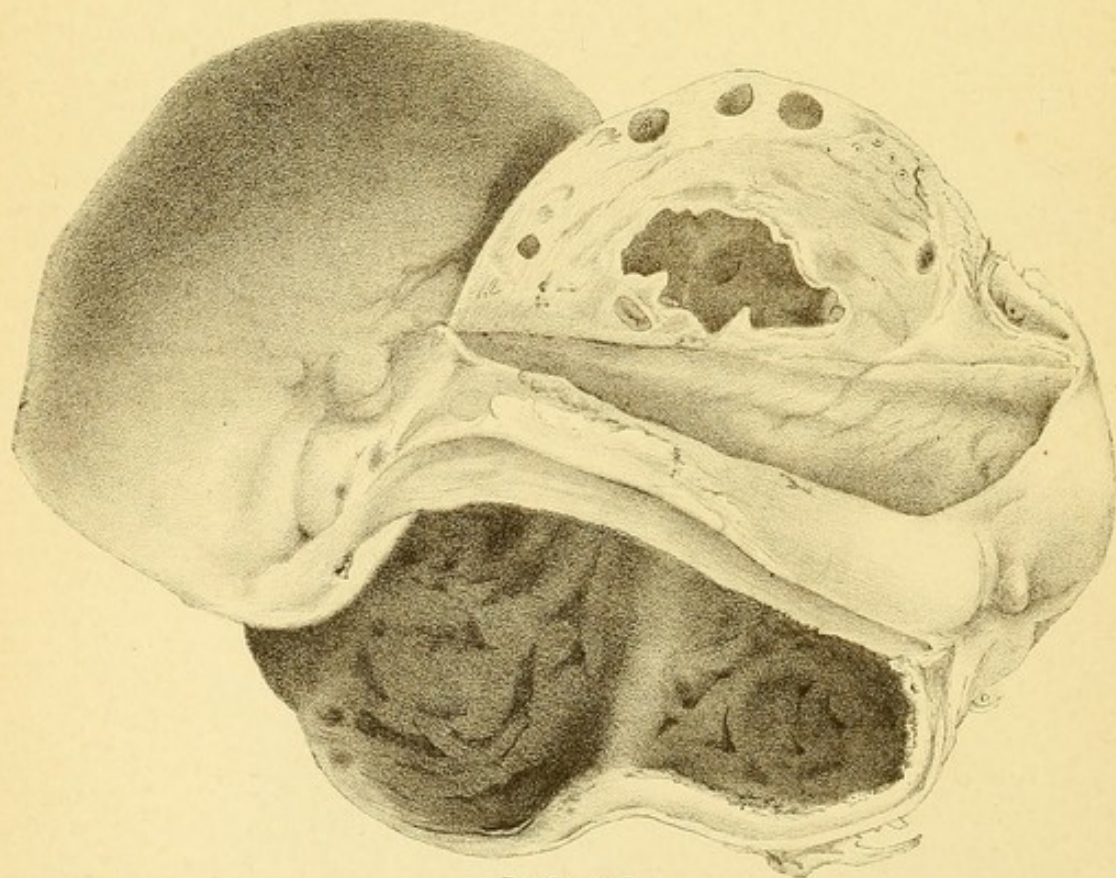
When the patient left the hospital on the 21st of April her general health was quite restored, and the wound was entirely closed.

An examination of some purulent discharge from the vagina of this patient satisfied Mr. Shattock that it was gonorrhœal.





Right tube.



Left tube.

Purulent salpingitis (gonorrhœal).

PLATE VII

PURULENT SALPINGITIS—GONORRHOËAL

THE drawing represents a mounted specimen consisting of two Fallopian tubes, removed by operation, December 17, 1890, from a woman aged 25, for purulent salpingitis due to gonorrhœa. The tubes are both of them enormously enlarged and irregularly dilated; the right (the smaller) measured four and a half, the left six and a half inches in circumference. Both have greatly thickened walls with ulceration of the mucous lining, and both were filled with thick yellow pus. The abdominal ostium of each is occluded.

The specimen is No. 2391 in the Museum of St. Thomas's Hospital.

The patient was a thin, anæmic, highly nervous woman, admitted to the hospital December 9, 1890, complaining of pain in the lower part of the abdomen, with loss of flesh and appetite, dating from two months after her marriage in August 1888. There had been no pregnancy. Menstruation, which, before marriage, had been regular and almost painless, had since been irregular and preceded by considerable pain. The pain in the intermenstrual periods came on gradually, and

was worse after standing and after exertion. It was felt not only in the abdomen, but in the back and thighs, and was accompanied by increasing weakness and inability to do her work. She had had a vaginal discharge for many months, sometimes white, but usually yellow and offensive. She was treated for displacement for many months by different kinds of pessaries without benefit. In August 1890 she consulted Dr. Gervis, who told her that her womb was not displaced, but that she was suffering from inflammation. She had been unable to do any work for eight months, and for the last four months had been obliged to lie down almost entirely.

No abdominal swelling was present.

The uterus was movable, and inclined slightly to the left. There was a lobulated mass situated behind and to the right of it, with a well-marked sulcus between the lobes where they met behind the uterus. The vaginal roof on both sides was somewhat depressed by the pelvic mass. The temperature was normal during the week following admission, except on December 15th and 16th, when it rose to 100° F.

The diagnosis was enlarged and suppurating Fallopian tubes—double pyosalpinx, probably gonorrhœal. (The husband had suffered from gonorrhœa eight months before marriage, and believed himself at the time of his marriage to be cured.)

On opening the abdomen, the pelvis was found to be filled by a large mass, consisting of the Fallopian tubes curved upon themselves and universally

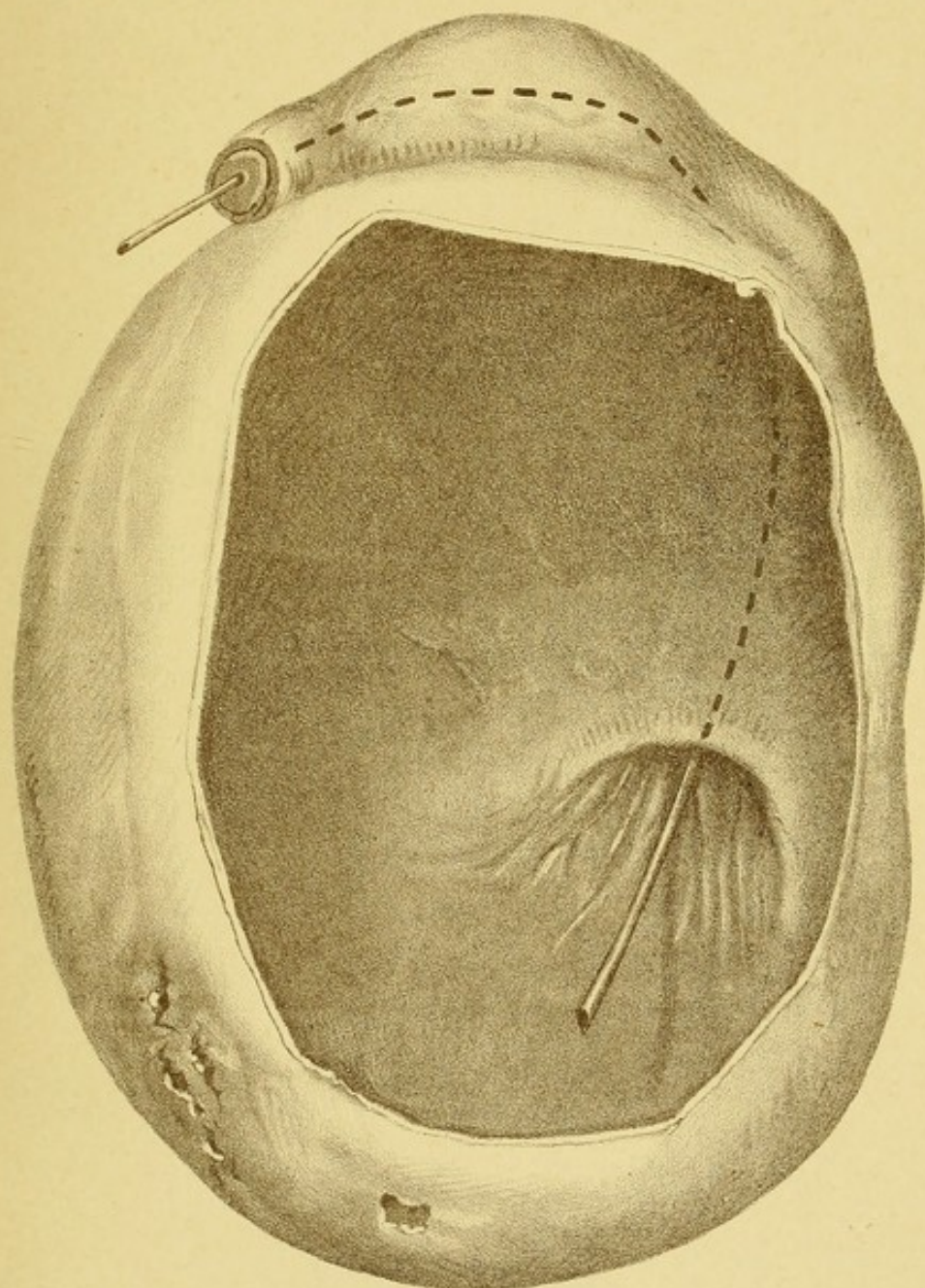
adherent to the parts around. The tubes were with difficulty separated and removed. The ovaries were not seen. The operation lasted two hours. The subsequent collapse was very severe and prolonged, but after reaction had set in convalescence progressed without interruption. No suppuration occurred from the wound, and the temperature on no occasion exceeded 100.2° . The patient four years after the operation was quite well and in full work. She was free from pain, and menstruated regularly.

PLATE VIII

PYOSALPINX SIMULATING A SUPPURATING TUBO-OVARIAN CYST

THE specimen from which this is a drawing consists of the right Fallopian tube, removed by operation, along with its fellow of the opposite side (see Plate IV. Fig. 1), from a single woman, aged 21. The distal extremity of the tube is distended into a large cyst, which contained more than a pint of foetid pus and measured nearly five inches in chief diameter. The less dilated proximal portion, which is thickened throughout from inflammation, is considerably elongated, and arches above the other portion; the two communicate with each other by a transversely oval aperture about an inch in its longer diameter. On the exterior are the remnants of many adhesions torn through during the removal of the parts. The ovary, which was quite healthy, and free from adhesions, lay in front of the diseased tube. Both it and the left ovary, which was also perfectly normal and non-adherent, were left behind.

The patient was a laundress, and a woman of a type below the average. Menstruation began at fifteen, and had always been irregular and painful. Her last period had occurred six weeks before her admission,



Pyosalpinx simulating tubo-ovarian abscess.

after an interval of several months. Three weeks before admission, whilst at work, a sudden pain, lasting only for a few minutes, occurred in the lower part of the abdomen on the right side. She stated that, up to this time, she had never been ill. In about a week the pain recurred, and had since been continuous. When admitted (August 12, 1892) the temperature was 102° ; but the next day it varied between 98° and 99.2° . On bimanual examination, the uterus, of normal size and direction, was found to be pushed forwards by a large oblong smooth tumour, which depressed the vaginal roof, and caused a bulging forwards of the posterior vaginal wall, extending upwards into the abdomen nearly half-way to the umbilicus. No fluctuation was detected in the swelling.

The operation was performed on August 15th. The right tube was universally adherent; whilst separating it, a quantity of offensive pus escaped. Twenty fluid ounces were collected and measured, and much more escaped. The opposite tube, having become occluded and distended with serum (hydrosalpinx), was also removed, but both ovaries, being free from disease, and not being involved in the adhesions, were left. The abdominal cavity was douched and drained. The patient had some vomiting for four or five days after the operation, and there was some suppuration before the wound finally healed. On September 7th the wound had quite healed, and on the 17th the patient was discharged well.

On examining the cyst after removal its walls were found to be of cartilaginous hardness, and to be perforated in several places by ulceration. It was evident that it was the separation of portions of the cyst where these ulcers were situated that allowed the contents of the cyst to escape during the operation. An intra-peritoneal abscess, opened during the operation, was also manifestly due to a perforating ulcer in the cyst wall.

The interest of the specimen mainly consists in its close simulation of a tubo-ovarian cyst, for which it might easily be mistaken. That, notwithstanding the cyst-like character of the dilated portion and the abruptness with which the expansion commences, the specimen is really a pyosalpinx, and not a tubo-ovarian abscess, is conclusively proved by the fact that both the patient's ovaries were seen and examined during the operation, and ascertained to be healthy. Further evidence is afforded by the continuity of the lining of the less dilated portion of the tube with that of the cyst-like expansion, and by the presence, as shown under the microscope, of unstriped muscular tissue in the walls of the cyst. The specimen is now in the Museum of St. Thomas's Hospital (No. 2396).

It is a signal illustration of the insidious character of some forms of pelvic suppuration (and perhaps also of the unobservant habits of persons in the lowest strata of society) that the patient from whom this specimen was removed had presented no symptoms of illness until three weeks before the operation.

When exhibiting the specimen at the Obstetrical Society (November 2, 1892) I expressed the opinion that some Museum specimens, at present described as tubo-ovarian cysts or abscesses, would, on careful examination, and in the light of this specimen, turn out to be of the same character. This opinion has since proved to have been well founded.

PLATE IX

HÆMATOSALPINX

Figure 1 represents the longitudinal section of a right Fallopian tube distended with blood-clot, removed by operation, July 2, 1891. The clot is firm and homogeneous. The fimbriated end (only partially seen in the drawing, having been divided in making the section) is sufficiently open to admit a goose-quill. Blood had escaped through it into the peritoneal cavity, where there was a small handful of soft dark clot encysted amongst adhesions. The clinical history pointed to tubal pregnancy, but no organised tissues were detected amongst the clot. (Specimen in St. Thomas's Hospital Museum, No. 2478.)

The history of the case is as follows: A. B., aged 29, married, a tailoress, was admitted into hospital, June 24, 1891. She had had two children, the younger one having been born seven and a half years ago. She had nursed this younger child for eighteen months. There had been no menstruation whilst she was suckling him, but on the day he was weaned the patient had a severe hæmorrhage, and continued to lose blood for a month. After that she had menstru-

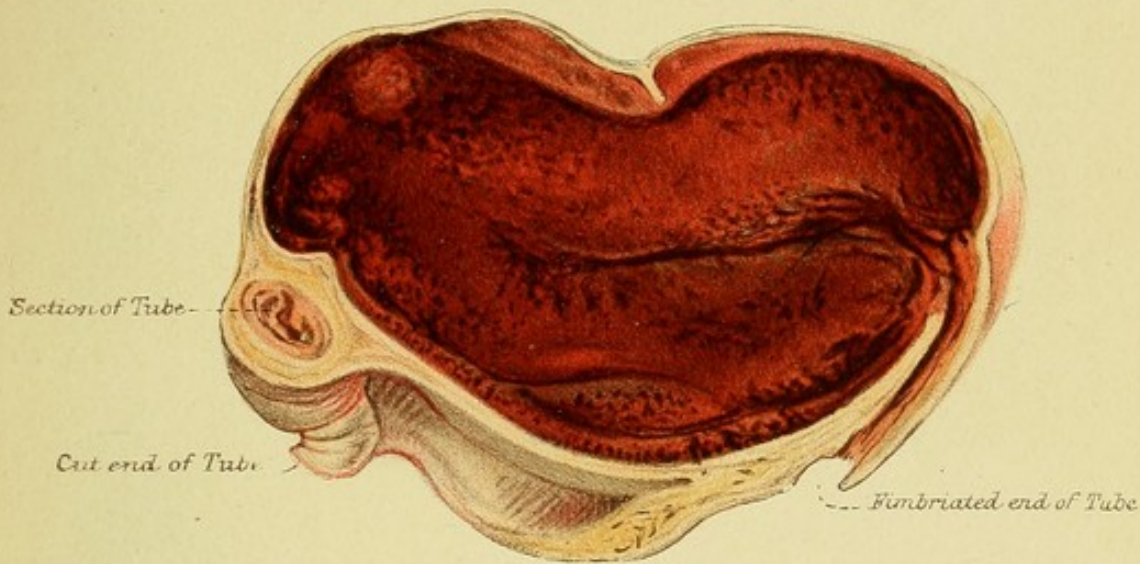


Fig.1. Fallopian tube distended with blood clot.

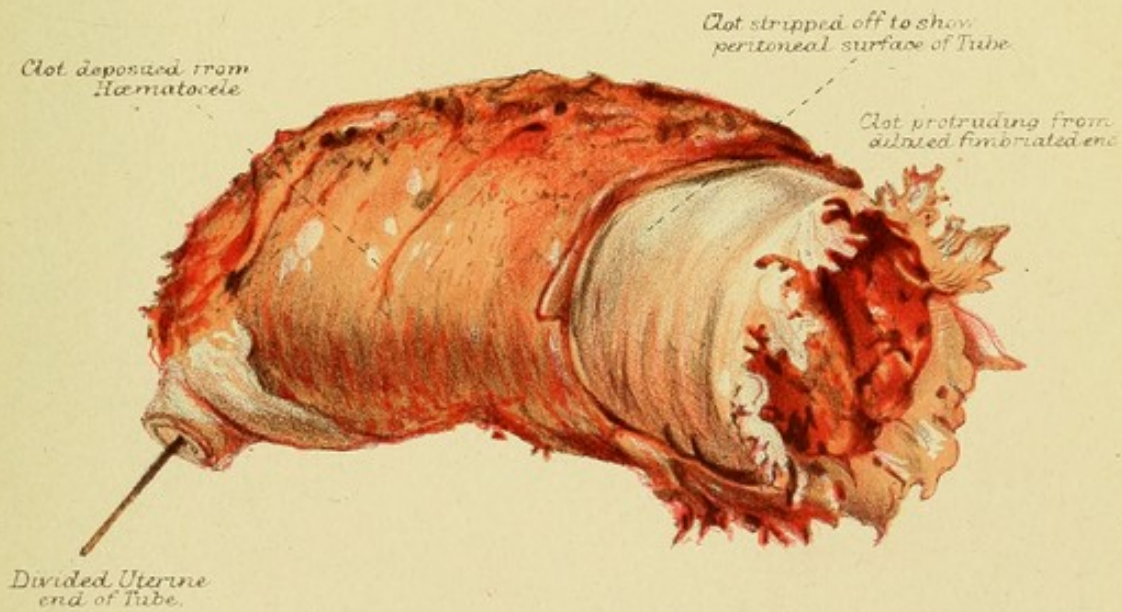
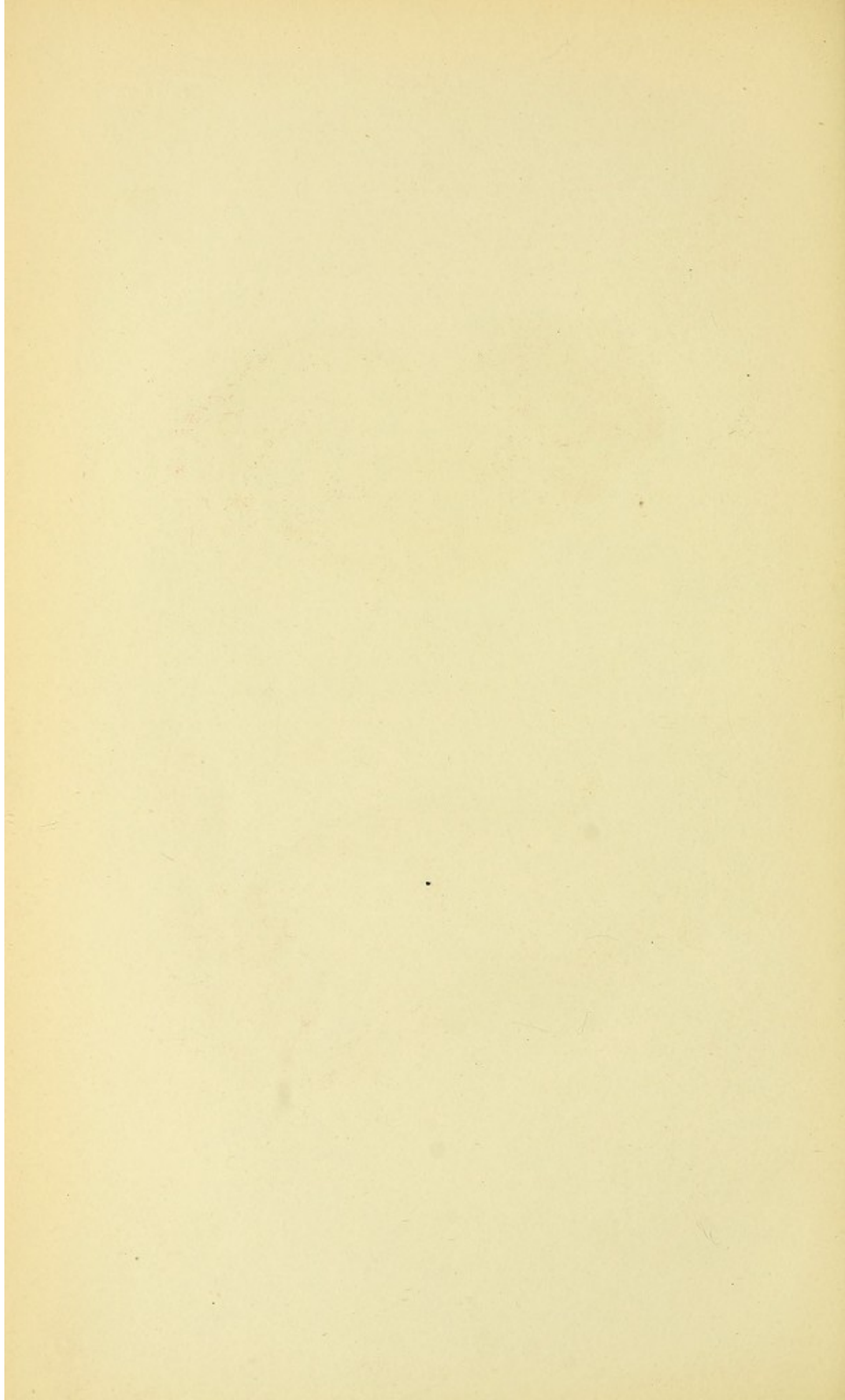


Fig 2. Fallopian tube distended with blood-clot



ated regularly until April 1891. During the period that occurred in that month she began to suffer from pain in the lower part of the abdomen of a dull aching character, which gradually became more severe. She missed her period in May, and since that time the pain had become so severe as to interfere seriously with her work. On June 10th she menstruated at the usual time and in the usual manner, except that there were clots in the discharge. Since that time there had been a blood-stained discharge, increased by exertion. The pain in the lower part of the abdomen had become more general and continuous. During part of the week preceding her admission it had been sufficiently severe to necessitate her remaining for two days in bed. On admission the patient was well nourished but anæmic. The uterus, which was movable and of normal length, was displaced forwards by a mass occupying Douglas's pouch and extending to the right side of the pelvis. The mass was elastic and fluctuating, and equal in size to a large orange. A finger could be passed between it and the pelvic wall on the left side. A rounded body, which was thought to be a displaced and tender tube, was felt lying above the body of the uterus.

The diagnosis was early tubal gestation with apoplectic ovum and (intra-peritoneal) hæmatocele.

The abdomen was opened on July 2nd. Some dark blood welled up during the preliminary investigation of the parts. The Fallopian tube was found to be

connected with the *right* cornu of the uterus and to have become displaced above, behind, and to the left of the uterine body. On separating it, a cavity was opened containing a small handful of soft dark clot, with fragments of decolorised coagula. The tube was removed with the corresponding (normal) ovary. The left appendages were normal. Recovery was complete.

The clinical history leaves little doubt that this was a case of tubal gestation. Supposing this to have been the case, the vitality of the ovum must have been destroyed (by the occurrence of apoplexy) during some part of the second month, after only one period had been missed, and before the abdominal ostium had had time to become closed. It was disappointing not to find pathological proof of the correctness of the diagnosis, but, from a series of cases I recorded in the *St. Thomas's Hospital Reports*, vol. xxi. (in which are included the cases referred to in the description of this and some of the following drawings), it seems evident that such proof is frequently unobtainable.

Figure 2 represents a right Fallopian tube distended with firm clot, removed by operation, June 27, 1889. The abdominal ostium is widely dilated, and clot is hanging from it. The fimbriæ were folded back upon the exterior of the tube; in the drawing they appear unfolded, as when the specimen was placed in water. The tube was surrounded by a quantity of fluid and clotted blood, measuring thirty fluid ounces, and

forming an intra-peritoneal hæmatocele. A firm coat of adherent blood-clot had been deposited on the entire surface of the tube. A portion of this has been removed to show the smooth peritoneal surface beneath. Though examination of one-half the clot gave negative results, yet I think the case is probably one of early tubal gestation.

The history of the case is as follows:—N. B., aged 33, was admitted into hospital June 8, 1889. She was married at the age of sixteen, and had borne four children and had one miscarriage. Her last child was born nine years ago. Menstruation was regular up to the commencement of the present illness. For six weeks previous to her admission she had continuous uterine hæmorrhage. Five days before admission, and again on the day preceding admission, she was suddenly seized with acute abdominal pain, rectal and vesical tenesmus, vomiting, and alarming faintness. Similar symptoms presented themselves on the eighth day after admission, and again on the sixteenth. On the morning of the day on which she sought admission, the hæmorrhage, which had hitherto been slight, became profuse, and a 'whitish lump' (? *decidua*) was passed *per vaginam*.

The physical signs on admission were those of (intra-peritoneal) pelvic hæmatocele. The recurrence of the symptoms of fresh internal hæmorrhage determined me to open the abdomen. Thirty fluid ounces of fluid and clotted blood were found within the peritoneal cavity, shut off from its upper part by a thick roof composed

of omentum infiltrated with blood-clot. The right Fallopian tube was in the midst of the hæmatocele, and was itself evenly distended with firm blood-clot. Its uterine end was normal. Its distal end was widely open, and dark clots protruded from it. The diameter of the abdominal ostium was an inch; the fimbriæ were folded back upon the outer surface of the tube, which was surrounded by a thick coat of firm, adherent blood-clot. The walls of the tube were healthy. The portion of tube removed measured three inches in length and two in width.

The patient made a good recovery, though not without some pelvic suppuration and the formation of a sinus which ultimately closed six months afterwards, on the escape of a silk ligature.

The contents of the tube and the blood from the hæmatocele were carefully examined, but no products of conception were discovered.

Notwithstanding the absence of pathological confirmation, there are several facts in favour of supposing this to be a case of early tubal gestation with apoplexy of the ovum, *e.g.* (1) the long interval that had elapsed since the last pregnancy, and (2) the absence of inflammatory change in the walls of the distended tube or other morbid condition likely to be a source of hæmorrhage.

There is no history of missed menstruation, but this may be explained by supposing that the apoplexy occurred during the first month of gestation.

The specimen was exhibited at the Obstetrical

Society, and is described in the *Transactions*, vol. xxxi., for 1889, p. 226. It is now in the Museum of St. Thomas's Hospital (No. 2479). Full details of the case will be found in the *St. Thomas's Hospital Reports*, vol. xix. p. 182.

PLATE X

HÆMATOSALPINX

Figure 1 represents the exterior of a left Fallopian tube, distended with blood-clot, removed by operation April 30, 1891. The wall of the tube is so thin in places that the colour of the contained clot is easily seen through it. The fimbriated end is open, and from it clot was protruding, there being a small quantity of dark fluid blood and some old clot in the peritoneal cavity. Along the under surface of the tube is seen the divided edge of the thickened meso-salpinx.

Figure 2 represents the interior of the same tube as seen on longitudinal section. The clot is solid and homogeneous, with a well-defined, firmer layer where the clot is in contact with the tube wall. In the interior of the clot a long, narrow chink lined with membrane probably represents an amniotic sac compressed by hæmorrhage around it. No chorionic villi or other distinctive products of conception, however, could be detected under the microscope in this situation.

The specimen is in the Museum of St. Thomas's Hospital (No. 2476).

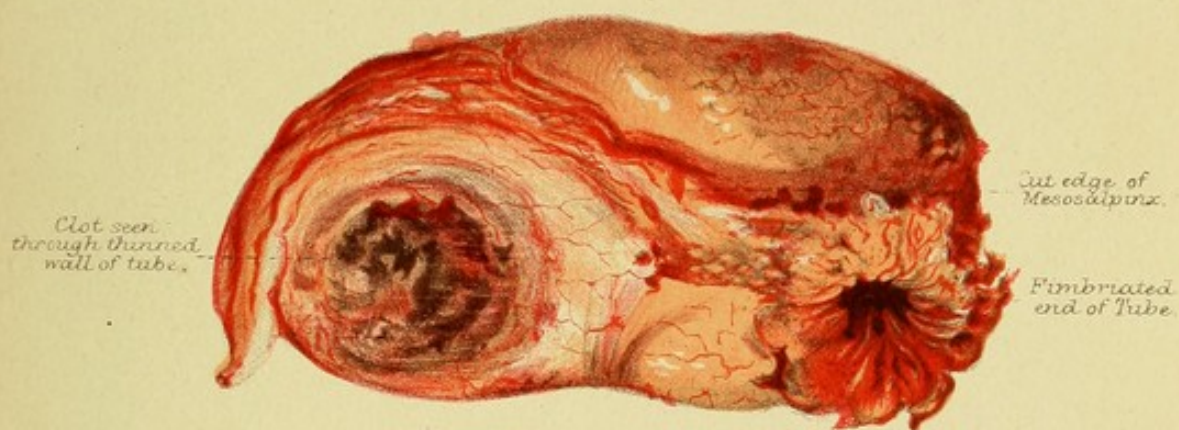


Fig 1. Exterior.

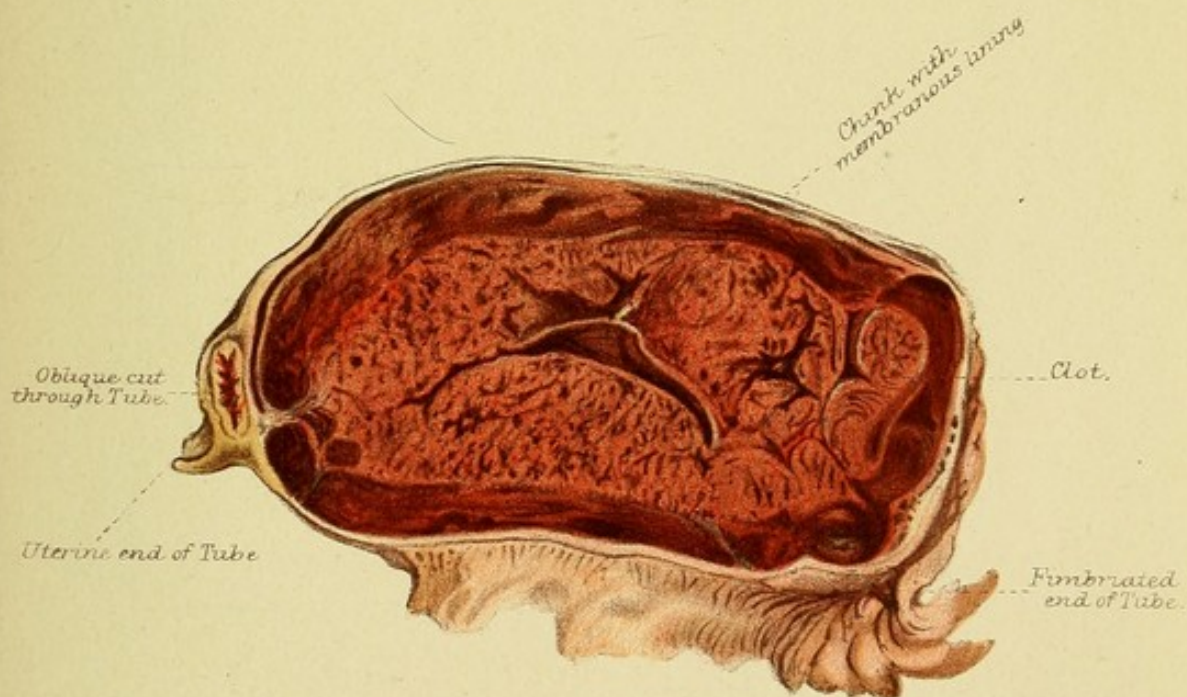
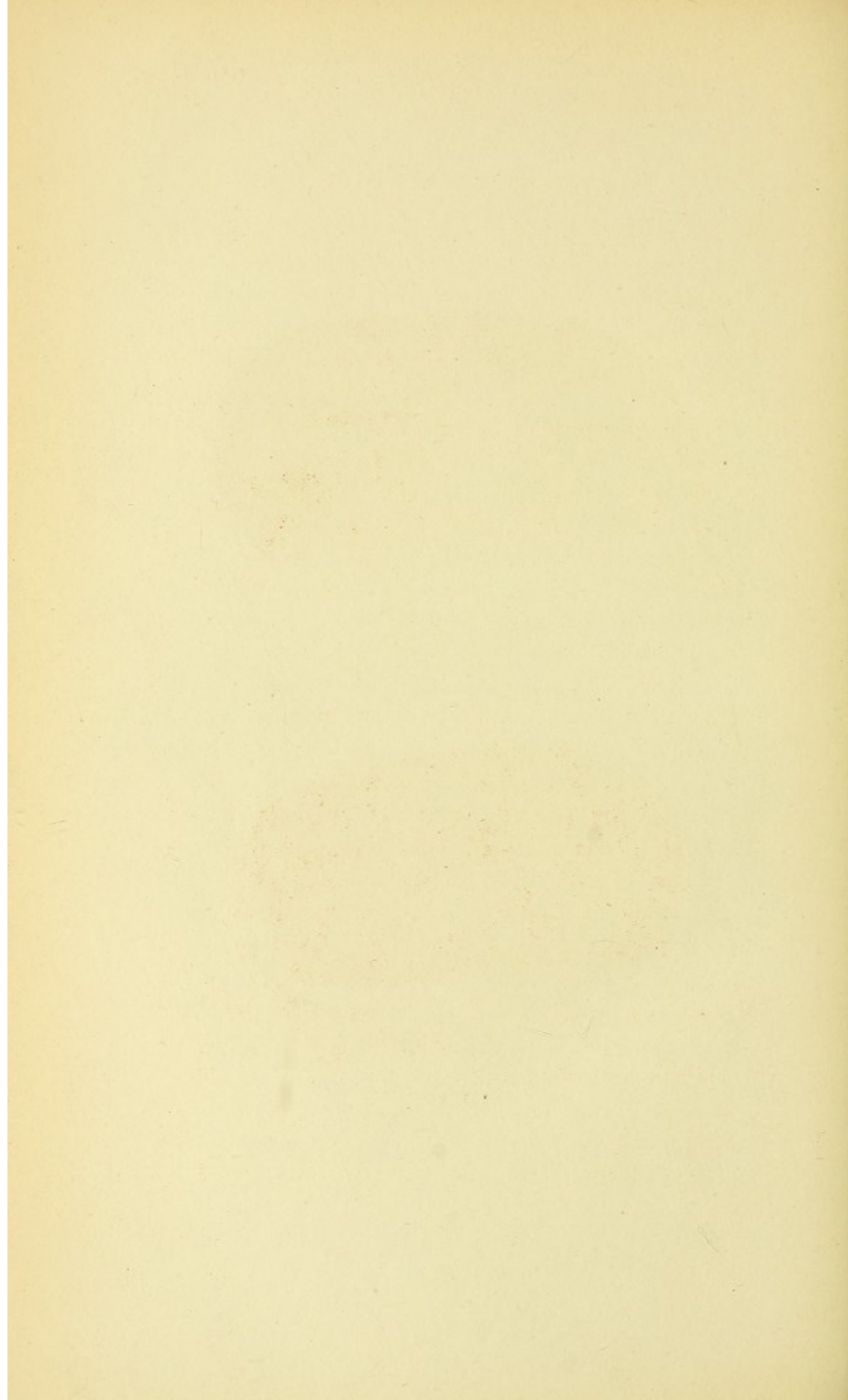


Fig 2. Interior.

Fallopian tube distended with blood clot.



The history of the case is as follows:—E. P., aged 27, single, a cook, was admitted into hospital April 24, 1891. She had an attack of severe pain in the left side of the lower part of the abdomen five years ago, and several similar attacks since. She admits that during the twelve months before she took her present situation, she had exposed herself on several occasions to the risk of becoming pregnant, but she states that nothing of the kind has occurred during the last six months. She has been in her present situation near London for five months. During that time she has felt very unwell, and suffered much from headache, but there is no history of a period having been missed. Six weeks ago she had an attack of severe pain in the left iliac region, lasting an hour and a half. Four days later the pain returned, and it continued to do so every day until three weeks ago, when it became so severe she had to see a doctor, and she has been in bed ever since. On April 7th, and again on April 15th, she vomited continuously for several hours. Her period was due on April 12th, but the discharge did not come in the usual quantity, and she has been losing blood ever since in an irregular way. She was admitted to the medical wards on April 17th. There was then discovered great tenderness, with sense of resistance, in the left iliac region. Temperature was normal; pulse 90; the urine showed a trace of albumen. On April 21st I examined her vaginally, at the request of my medical colleague, and made the following note:—‘Teens

oblong swelling to the left of the uterus, high above the vaginal roof, in the posterior quarter of the pelvis. The uterus displaced to right; fundus two inches to right of middle line; canal of normal length.' My diagnosis was distension of left tube; contents probably purulent.

The patient was transferred to my care, and on April 30th the abdomen was opened. There was a small quantity of dark fluid blood with some fragments of old clot and shreds of lymph in the peritoneal cavity. A firm, tense swelling occupied the left posterior fossa of the pelvis, and pushed the uterus forwards and to the right. This swelling having been separated from its adhesions was found to consist of the left Fallopian tube uniformly distended with firm blood-clot. The portion of tube removed measured $3\frac{1}{2}$ inches in length, $1\frac{7}{8}$ inch in breadth, and $5\frac{1}{2}$ inches in circumference. From the fimbriated end, the opening of which was large enough to admit a goose-quill, some ragged portions of firm, dark clot were seen protruding.

The right ovary and tube were normal. The left ovary was not seen.

The patient made an uninterrupted recovery, and was discharged well on June 3rd.

The clinical history in this case is not conclusive, but it affords strong presumptive evidence of tubal gestation having occurred some months previous to her admission. If that was the case, the ovum must have become apoplectic at an early stage before the

fimbriated end of the tube had had time to close. The acute symptoms immediately preceding admission were evidently due to localised peritonitis around the distended tube, and probably also to the occurrence of some fresh hæmorrhage. The clot was not of recent date, and this circumstance tends to support the above explanation of the phenomena.

At the same time, as no chorionic villi or other products of conception could be detected under the microscope, the case for tubal gestation cannot be said to have been absolutely proved.

PLATE XI

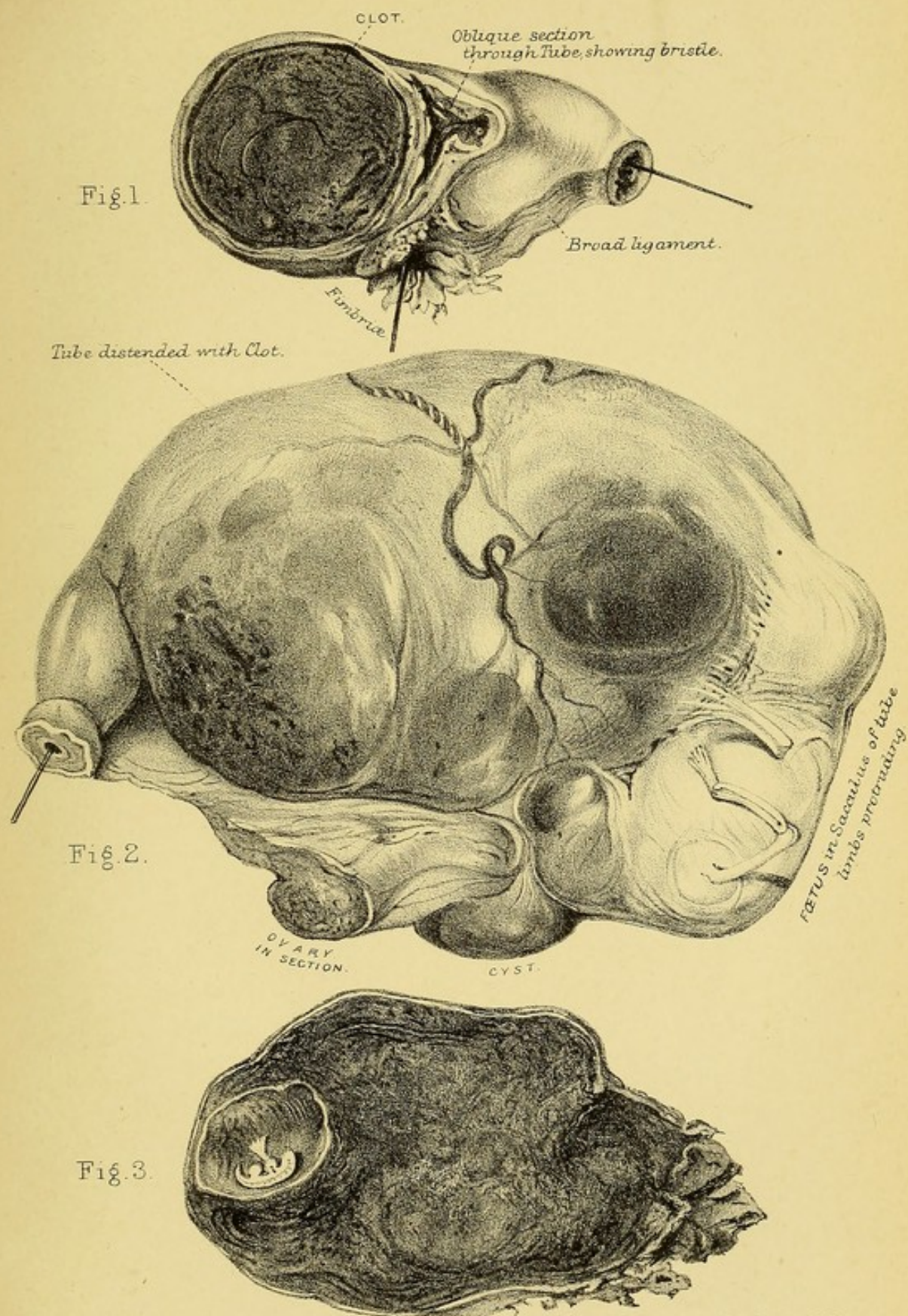
SACCULATED HÆMATOSALPINX—UNRUPTURED TUBAL GESTATION WITH APOPLECTIC OVUM—TUBAL ABORTION

SACCULATED HÆMATOSALPINX

Figure 1 is from a water-colour drawing showing a Fallopian tube, removed by operation, May 26, 1892. A bristle has been passed through the lumen and out by the ostium abdominale. In connection with the distal portion is a closed, cyst-like cavity full of blood-clot, possibly a portion of the tube in which a tubal mole has formed, the cavity being completely instead of being partially cut off from the tube, as is the case in the next drawing; no chorionic villi, however, were detected by microscopic examination in the clot.

The specimen is in the St. Thomas's Hospital Museum, No. 2480.

The following is the history of the case:—K. A., aged 34, was admitted into hospital, May 14, 1892. She was married a second time in September 1890, having had several children by her previous husband, the last one in June 1883. She continued to menstruate regularly until January 1891, when she fell and



R.E. Holding del.

West Newman lith.

Fig. 1. Encysted hæmatosalpinx.
 Fig. 2. Unruptured tubal gestation with apoplectic ovum.
 Fig. 3. Clot & ovum from a complete tubal abortion.

injured her elbow. From that time menstruation was irregular. Her last period ceased November 15, 1891. On February 3, 1892, after feeling unwell for three or four days, she had a sudden attack of hæmorrhage, and there has been irregular hæmorrhage from that time up to her admission, that is, for three months. The blood has sometimes been red, sometimes dark brown. For about eight weeks she remained entirely in bed. She then for a week or two sat up in a chair part of a day, but was unable to sit for more than three or four hours at a time. After that she remained in bed altogether. At no time during the three months has she been able to take any part in the work of the house. Pains like those of labour came on at irregular intervals, followed by an increased discharge of blood. Between these attacks she was free from pain. No membrane or other solid substance has been observed in the discharges.

On admission a vaginal examination was made under anæsthesia. The uterus was of normal length and somewhat retroverted. In Douglas's pouch, adherent to and moving with the cervix, was a swelling of the breadth of two fingers, lying obliquely, with its upper and outer extremity directed to the right. The swelling was soft, even, and elastic, and bulged the upper part of the posterior vaginal wall forwards. The right uterine appendages could not be felt in their normal situation. The left could be distinctly mapped out, and were normal.

The swelling was diagnosed as the right tube distended with blood and adherent in Douglas's pouch, and the case was thought to be one of tubal gestation with apoplectic ovum.

Three days after admission the pain ceased, and the hæmorrhage diminished.

The abdomen was opened on May 26th, when the parts figured were removed. The ovary, being normal, was separated from its adhesions, but not removed. There was no blood, either free or encysted, in the pelvic cavity.

Recovery was uninterrupted.

The specimen was exhibited, unopened, at the meeting of the Obstetrical Society, held June 1, 1892 (*Transactions of Obstetrical Society, London*, vol. xxxiv., for 1892, p. 182); and a Committee, including Mr. Doran, Mr. Bland Sutton, Dr. Wm. Duncan, and myself, was appointed to examine and report upon it. The following is a copy of the Committee's report :—'The specimen consists of the greater part of the right Fallopian tube, 7 cm. in length. Immediately above the abdominal end is an oval swelling of the size of a pigeon's egg, which projects freely outwards. The ostium is patulous and surrounded by fimbriæ, which are somewhat œdematous. The canal of the tube is not only pervious but dilated, so as to measure 0·5 cm. at its narrowest part. On section the oval swelling is found to be a cyst filled with apparently homogeneous clot. On clearing out the clot, which is partly adherent, the wall of the cyst appears simple, without

any evidence of former loculi. No communication with the canal of the tube can be detected. There is a ragged hole immediately above the fimbriæ, apparently artificial.

'On microscopical examination of the clot no chorionic villi could be detected. The clot was intimately adherent to the wall of the cyst, and the epithelial investment of the mucous membrane did not exist.'

This was in many respects a remarkable and obscure case. The clinical history led me to feel pretty certain that I should find distinct evidence of tubal gestation with an apoplectic ovum. But although there can be practically little doubt that the case was one of tubal gestation, no pathological evidence to that effect was forthcoming. The pouch-like dilatation in which the effused blood was found had, in a manner that at present seems quite inexplicable, apparently become shut off from the rest of the tube.

The case is fully reported in vol. xxi. of the *St. Thomas's Hospital Reports*, p. 42.

UNRUPTURED TUBAL GESTATION

WITH APOPLEXY OF OVUM

Figure 2 shows a right Fallopian tube, removed by operation from a case of tubal pregnancy, April 8, 1892. The tube is distended into an oval thin-walled sac, 9 cm. ($3\frac{3}{5}$ inches) long by $6\frac{1}{2}$ cm. ($2\frac{3}{5}$ inches) in vertical measurement. From one

extremity hangs the uterine end of the tube 3 cm. ($\frac{3}{5}$ inch) long. The greater part of the sac is seen to be filled with blood-clot. At its distal extremity the sac-wall is bulged out into an oblong projection about $6\frac{1}{2}$ cm. ($2\frac{3}{5}$ inches) long, through which the parts of an embryo can be easily seen. The denuded bones of one leg and part of one arm have escaped through small fissures, and are hanging outside.

A longitudinal section of the parts is shown in Plate XII.

The history of the case is as follows:—S. E., aged 32, married, was admitted into the hospital, April 4, 1892, for what she believed to be a threatened miscarriage. She had been pregnant only once, eight years ago. On that occasion she aborted at the fourth month. She was not at that time married. Menstruation continued regular after her marriage, twelve months ago, until November 12, 1891, when her last period ceased. She had no discharge from that time until seven weeks ago, and she believed herself to be pregnant. About the beginning of February 1892 she slipped off a table on which she was standing to clean windows, and, two days later, noticed a slight discharge of blood from the vagina. This continued up to the time of her admission, *i.e.* for two months, gradually increasing in quantity, but never very great in amount. She had had no pain or interference with the general health throughout. The breasts were fairly well developed, the areolæ

slightly pigmented. On vaginal examination, a soft, smooth, elastic, well-defined swelling could be felt occupying the right posterior quarter of the pelvis, and pushing the uterus, which was to a certain extent movable independently of the tumour, an inch to the left of the middle line. The uterine sound was cautiously passed, and the uterine canal found to measure $2\frac{3}{4}$ inches in length.

The diagnosis was unruptured tubal gestation, with apoplectic ovum, or, less probably, an ovarian cyst with recent or still incomplete abortion.

Abdominal section was performed on April 8, 1892, when the distended tube here figured was found adherent to the posterior surface of the uterus and right broad ligament and, by its posterior extremity, to the rectum and the floor of Douglas's pouch. It was carefully separated from its adhesions and removed, along with the normal right ovary. No blood was found in the peritoneal cavity. The left appendages were adherent, but were otherwise normal, and were not removed. The patient made a good recovery.

For a detailed description of the contents of the tube, see explanation of Plate XII.

TUBAL ABORTION

Figure 3 is a drawing of a firm blood-clot, laid open, and displaying in its interior an embryo in its amniotic sac. The specimen was removed by

operation on December 1, 1894, from the pelvis of a woman suffering from extensive intra-peritoneal hæmorrhage.

The clot measures 6 cm. ($2\frac{1}{2}$ inches) \times 4.5 cm. ($1\frac{3}{4}$ inches), and is firm and homogeneous. The embryo is seen near one end of it. The head is wanting. The procurved trunk measures, in a straight line, 8 mm., and presents undivided, simple lower limbs and a sharply curved caudal extremity. The umbilical vesicle has been detached; above it remains there protrudes a well-developed heart.

The embryo corresponds in its development to one between the third and fourth week.

The specimen was exhibited at the Obstetrical Society on April 6, 1895, and is now in the Museum of St. Thomas's Hospital.

The history of the case is as follows:—The patient was 36 years of age. She had been married 15 years and 10 months, but was without children. Menstruation had always been irregular. Her last menstrual period occurred on October 1st and 2nd, 1894. She had been subject to indigestion for two years, but had not suffered from vomiting. For the last three weeks she had vomited in the early morning.

On the evening of Wednesday, November 28, 1894, she was seized with sudden but not very severe pain in the upper part of the abdomen. She ascribed it to flatulence. After it had continued for two hours she fainted. She became alarmingly ill during the night, and remembers nothing of what occurred.

She was told that she fainted a second time between 1 and 2 A.M. She was in pain all the next day, complained much of thirst, and vomited repeatedly. On the 30th she was sent up to the hospital, by Dr. Collier of Wimbledon, as a probable case of ruptured tubal gestation. There had been a slight discharge of blood *per vaginam* since the previous day.

On admission she was very pale, and looked extremely ill. Her pulse was rapid and feeble, and she had frequent vomiting of small quantities of mucus. She complained of no pain, and the abdomen was not distended. Vaginal examination showed the uterus to be freely movable, of normal size, and displaced to the left of the middle line. The vaginal roof on the right side was slightly depressed by an ill-defined softish swelling, such as would be caused by soft blood-clot.

No urine had been passed since the morning of the previous day. The bladder was empty.

A consultation was held, and it was decided to administer nutritive and stimulating enemata, and to open the abdomen early the following morning if she had rallied sufficiently.

During the night the catheter was passed twice; on one occasion $1\frac{1}{2}$ fl. oz., and on the other 3 fl. oz. of urine being withdrawn.

At 10 A.M. on December 1st abdominal section was performed. A quantity of dark blood, chiefly fluid but partly clotted, was found free in the peritoneal cavity. About 28 fl. oz. were collected and

measured; some, of course, escaped. Behind the uterus and at the fimbriated end of the right Fallopian tube, to which it was lightly attached, was found the blood-clot shown in the drawing. On grasping it it came away loose in the hand. There were no adhesions. The right tube and ovary were quickly removed. Though the operation only lasted twenty minutes, the patient ceased to breathe before its termination. She revived somewhat on discontinuing the anæsthetic, and a pint and a half of saline solution was injected into one of the veins of the upper arm. When the patient was put back to bed the pulse was distinctly perceptible and the body warm. About 2 P.M. she became delirious, flushed, and restless. After a time she fell asleep, but about 5.30 P.M. the breathing became noisy and difficult from ineffectual efforts to clear the air-passages of mucus. She died at 7.45 P.M., apparently from suffocation.

The portion of Fallopian tube removed was found on examination to be quite empty. No trace of a decidual lining was to be seen. The fimbriated end was open, and the lumen of the outer part of the tube was sufficiently dilated to admit the finger. There was a little inflammatory lymph on the outer surface of the tube.

The ovary removed presented a *corpus luteum* half an inch in diameter.

At the autopsy the uterus was found to be very little above the normal size. The body was lined by a distinct decidual membrane which was everywhere



adherent to the uterine wall. It ceased abruptly at the *os internum*. The left tube and ovary were normal.

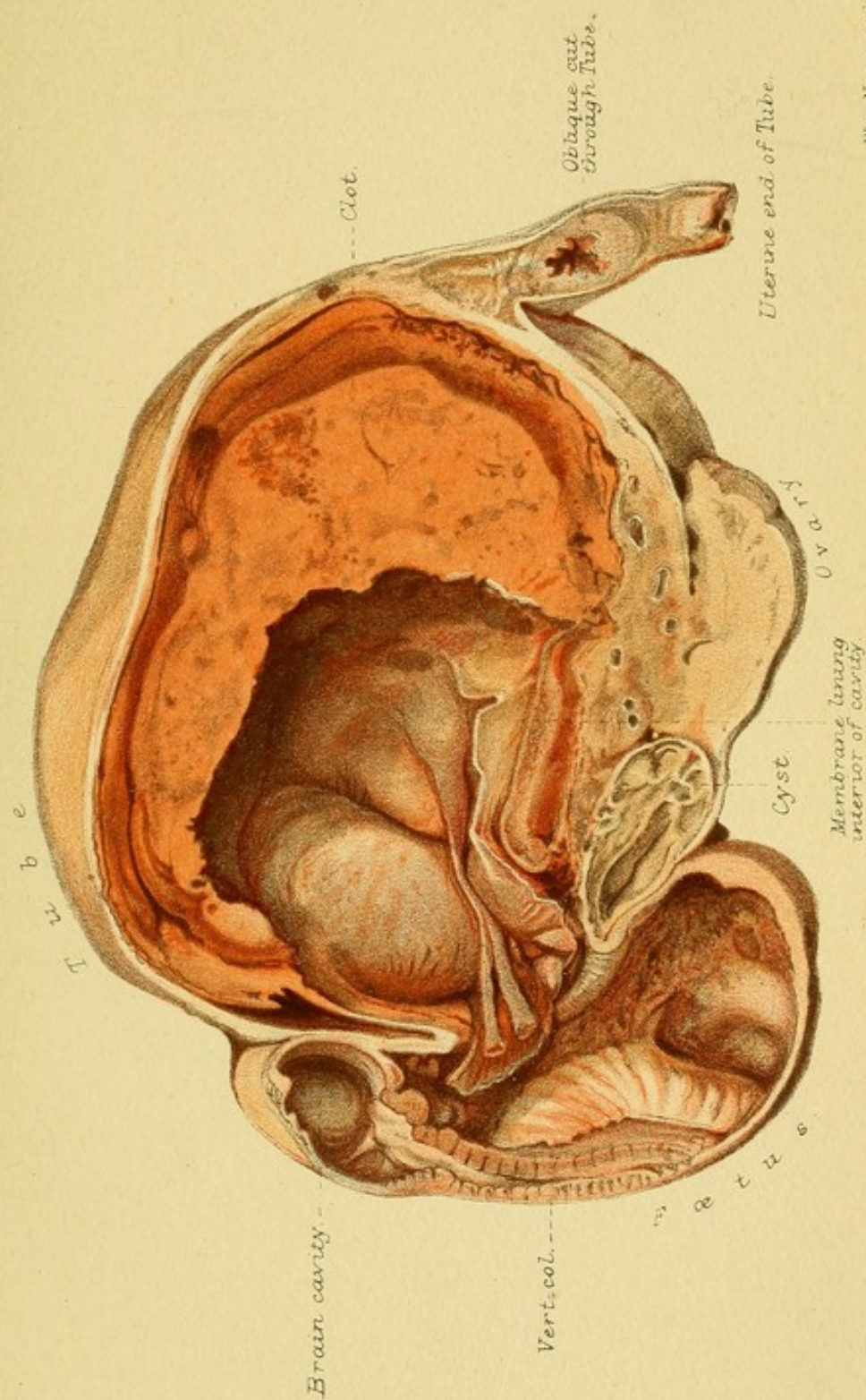
This is an indisputable case of complete tubal abortion. It possesses special interest on that account, and because of the extreme rarity of specimens with an embryo in so early a stage of development.

PLATE XII

UNRUPTURED TUBAL GESTATION WITH APOPLEXY OF OVUM

THE drawing shows a longitudinal section of the Fallopian tube, of which the exterior has been already figured and described (see Plate XI. Fig. 2). The greater part of the distended tube is occupied by a mass of pale red clot, which shows distinct lamination. To the right is seen the undilated uterine end of the tube. At the opposite end, that, namely, to the left of the drawing, is a pouch formed in the wall of the tube, communicating with the main cavity by a circular, smooth-edged aperture $\frac{3}{8}$ ths of an inch in diameter. Against the outer wall of this pouch lies a fœtus, compressed by the mass of blood-clot. The cranial cavity and vertebral column, divided longitudinally, are well seen. The ribs have been displaced downwards *en masse*. The amnion and torn umbilical cord are seen in the body of the tube, having been left behind by the fœtus when it escaped into the pouch.

The sac holding the fœtus is probably a portion of the tube, incompletely parted from the rest by such



R. E. Holding del.

Unruptured tubal gestation, with apoplexy of ovum.

West Newman chromo



a septum as is shown in some of the drawings of pyosalpinx.

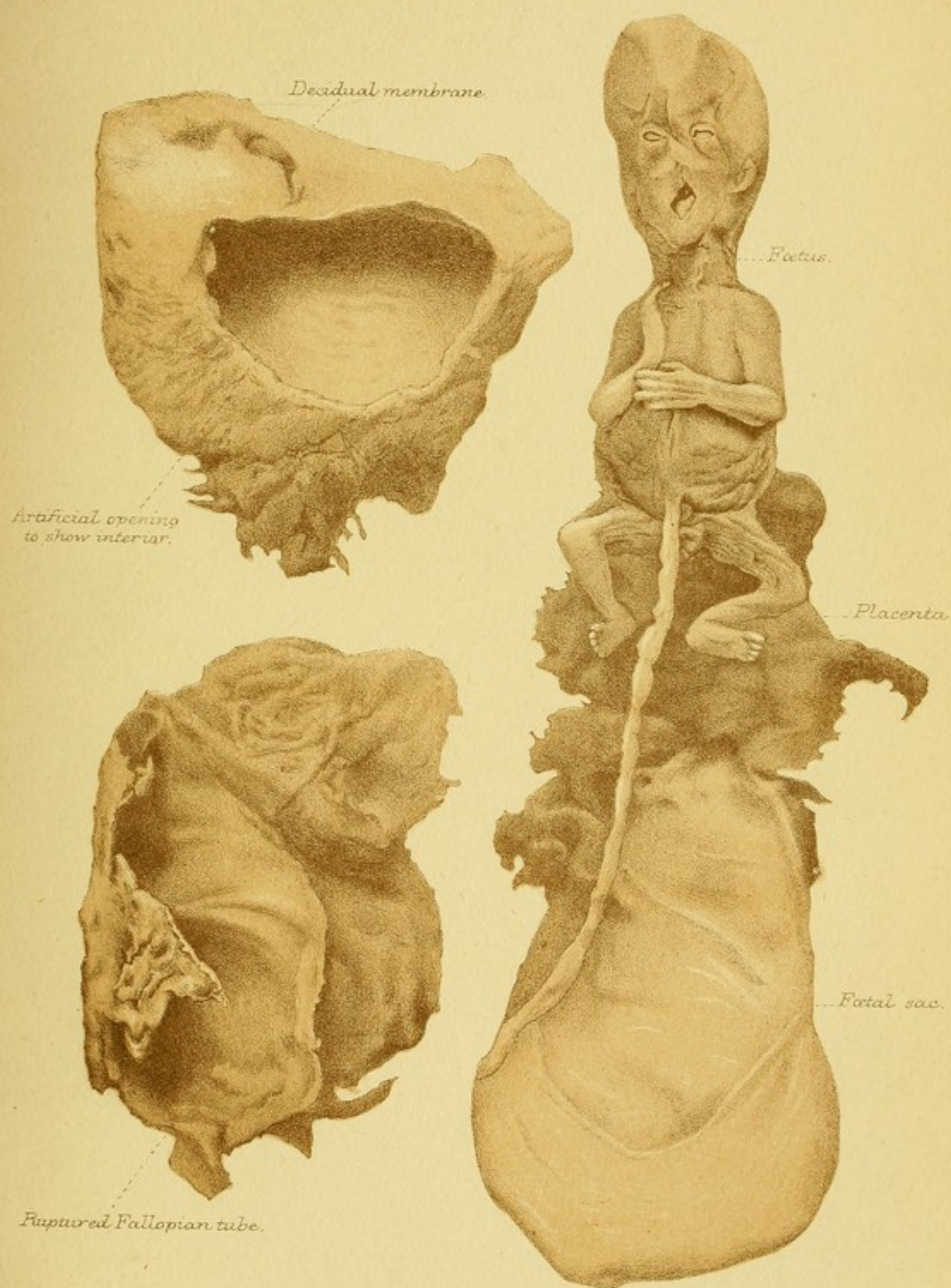
The case was published in the *St. Thomas's Hospital Reports*, vol. xxi. The preparation, mounted with great care by Mr. Shattock, is in the Museum of St. Thomas's Hospital, No. 2481.

PLATE XIII

RUPTURED TUBAL GESTATION

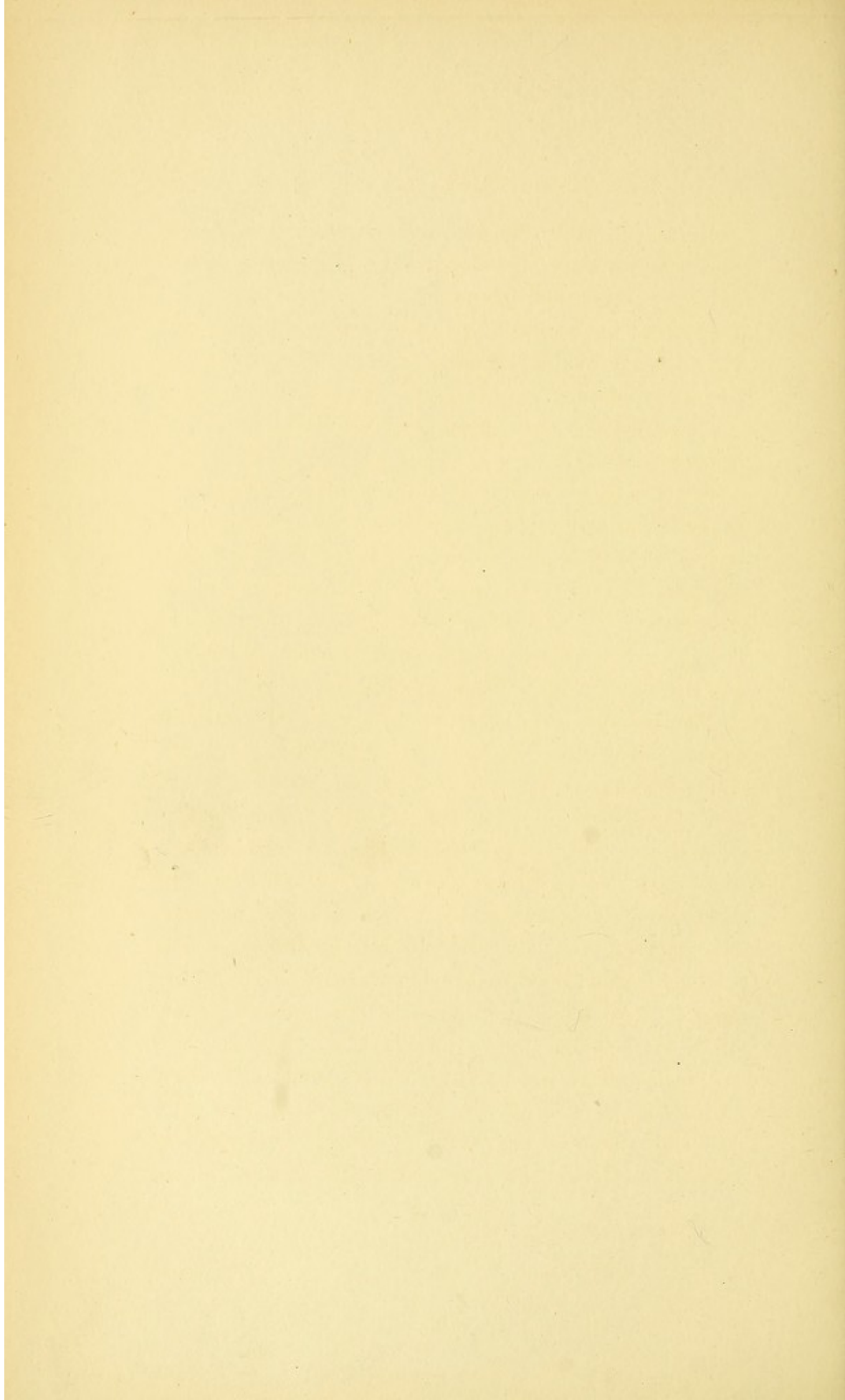
THE preparation, from a photograph of which this plate has been taken, consists of the foetus, placenta, and membranes from a case of ruptured tubal gestation, together with the portion of the ruptured tube removed by operation and a decidual cast of the cavity of the uterus.

The foetus is represented a little under the natural size. Below and behind it is the torn and irregular placenta, with the foetal membranes attached. (In the photograph the foetus appears to be sitting, as it were, on the placenta, or at any rate to be in immediate contact with it. This impression is erroneous. In the preparation the foetus and placenta are suspended separately, the latter on a vertical plane at least an inch behind the former.) The foetus was four inches in length, softened, flattened, and of a dark colour. It was connected with the placenta by a thin, tape-like umbilical cord, $6\frac{1}{2}$ inches in length. The insertion of the cord was of the velamentous variety, that is, the umbilical vessels did not enter the placenta directly, but ran along for some distance between the membranes, diverging as they went. The sac has



West, Newman chrlita.

Ruptured tubal gestation.



been turned inside out, so that the amnion is represented as its outer envelope. The placenta is small, and very ragged and irregular.

The rent in the Fallopian tube was a large one, and was situated on the posterior aspect. The portion of the ruptured tube removed, and figured in the lower left-hand corner of the plate, has been slightly reduced below its actual size.

The decidual cast of the uterine cavity was passed a fortnight before the operation. It measured $2\frac{1}{2}$ inches in length and 2 inches in breadth, and was complete. It was of considerable thickness, and its outer surface was covered with delicate shreds. In the figure it is represented of natural size. A window has been cut in it to display its interior.

The patient, a married woman, aged 37, was admitted into St. Thomas's Hospital, February 23, 1892, looking very weak and ill, and presenting the ordinary physical signs of intra-peritoneal pelvic hæmatocele, the uterus being pushed forwards against the abdominal wall by an ill-defined soft swelling that filled the pelvis and extended two inches higher than the fundus uteri. The history was as follows:—The patient was confined of her fourth and last child five years previously. Her last menstrual period ceased on November 24, 1891. From that time she had suffered more or less continuous pain in the lower part of the right side of the abdomen. On the 20th January 1892 she was suddenly seized, whilst sitting quietly in the house, with a very violent pain in the

right iliac region, which compelled her to go to bed. Two hours later she had a somewhat profuse hæmorrhage *per vaginam*. She had two subsequent attacks of hæmorrhage, slighter in character, during the following month, and she was in constant though less severe pain.

On admission (February 23rd) the case was diagnosed as a pelvic hæmatocele, originating in a tubal gestation. On March 8th, painful uterine contractions came on, and the decidual cast, figured and already described, was expelled *per vaginam*. The diagnosis was, of course, thereby placed beyond doubt. It was decided, however, to watch the case for the present, but to be prepared to interfere at any moment if the necessity arose. When the patient had been under observation for a month, and the swelling was found not only to have not diminished, but to have increased in size, it was determined to open the abdomen. This was done on the 21st of March. A mass of dark firm clot, $11\frac{1}{2}$ oz. by weight, was found filling the pelvis, and in the midst of this mass was found the foetus, with cord, placenta, and membranes. The hæmatocele was roofed in by adherent omentum and intestine. After the pelvis had been cleared, the dilated and ruptured right tube was brought into view and removed. The patient made an uninterrupted recovery.

The size of the foetus made it evident that—either the patient was mistaken as to her dates, and was really eleven or twelve weeks pregnant when the first

symptoms of internal hæmorrhage occurred—or the foetus had continued to live and grow for three or four weeks after the occurrence of the hæmorrhage.

The specimen was shown at the Obstetrical Society of London on April 6, 1892, and is figured and described in the Society's *Transactions*, vol. xxxiv., p. 134. The preparation is now in the Museum of St. Thomas's Hospital.

PLATE XIV

CARCINOMA OF FALLOPIAN TUBE

THE two drawings are taken from a specimen, now in the Museum of St. Thomas's Hospital, of primary carcinoma of the right Fallopian tube, with secondary infection of the broad ligament and of the exterior of an ordinary adenomatous cyst of the corresponding ovary.

Figure 1 shows the cancerous tube laid open. The ragged, irregular cavity is well seen, with its walls thickened by cancerous infiltration. A portion of the ovarian cyst has been retained to show the intimate connection between it and the posterior surface of the diseased tube.

- A. Divided surface of diseased tube.
- B. Irregular interior of same.
- C. Outer surface of the ovarian cyst against which the tube lay and to which it was attached.
- D. Closed cavity, probably a part of the canal of the tube isolated from the rest.

Figure 2 shows a portion of the external surface of the ovarian cyst, upon which is seen a cluster of hemispherical elevations of (secondary) new growth,

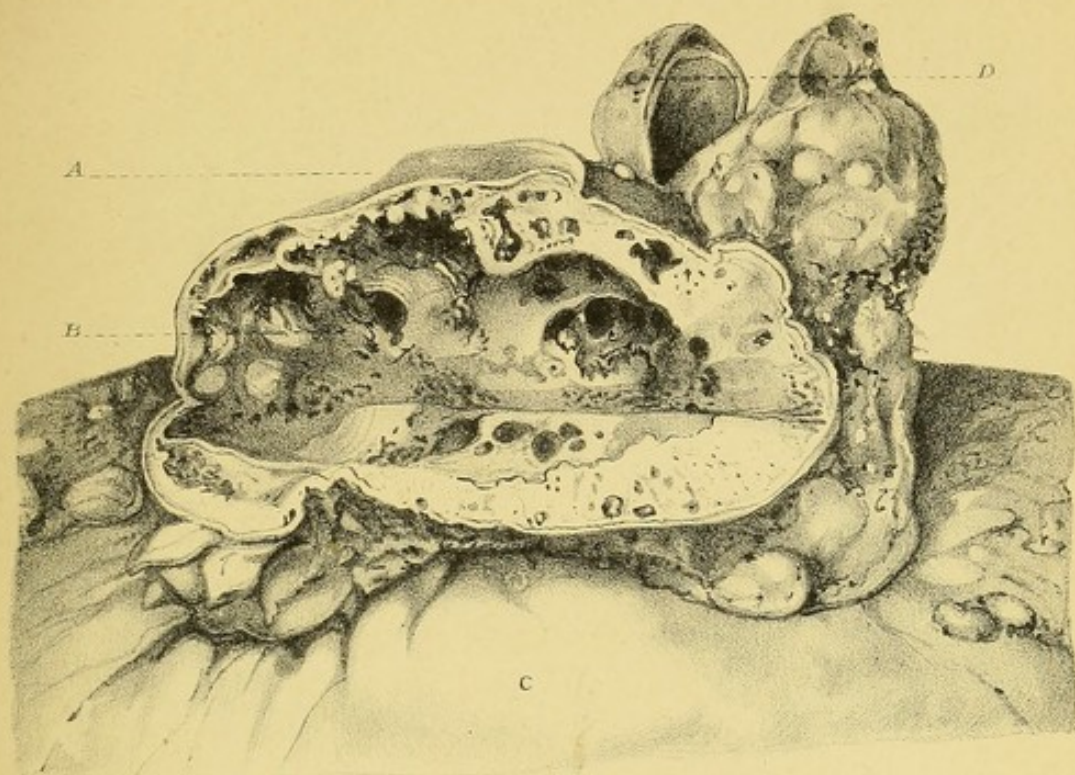
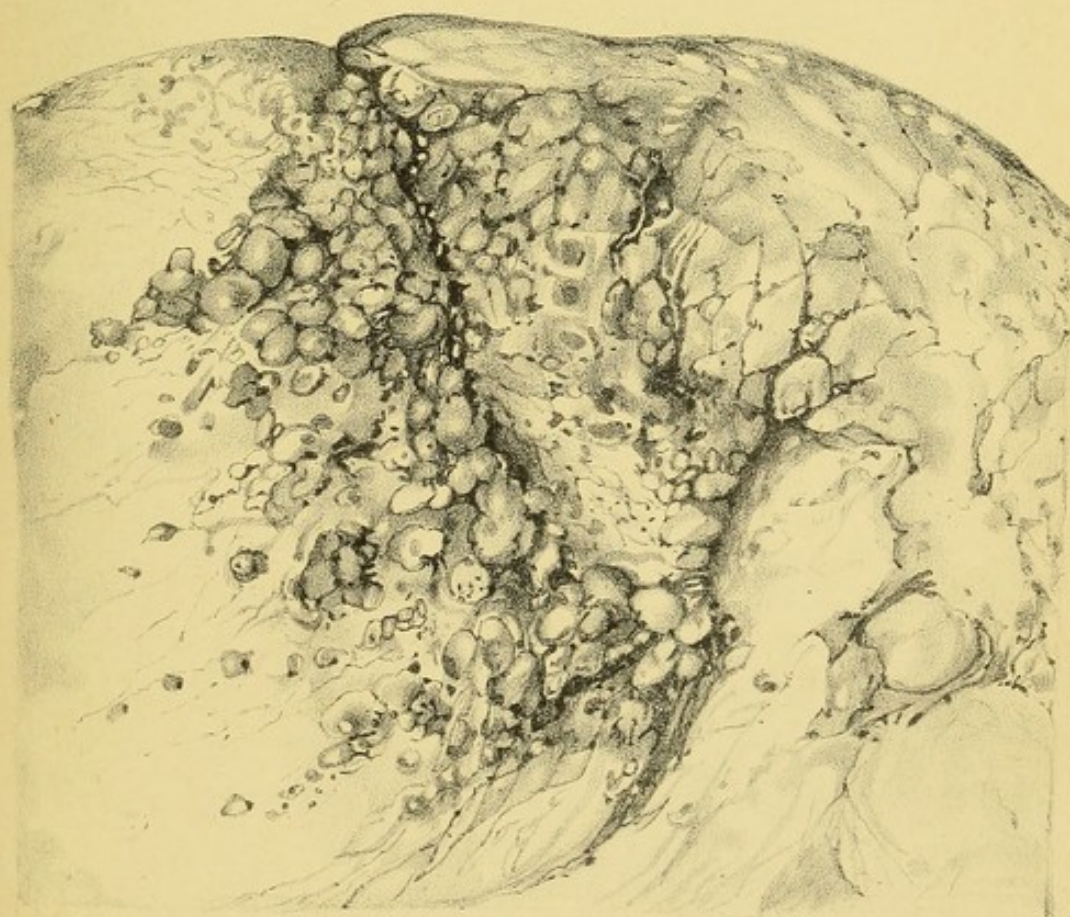


Fig. 1.

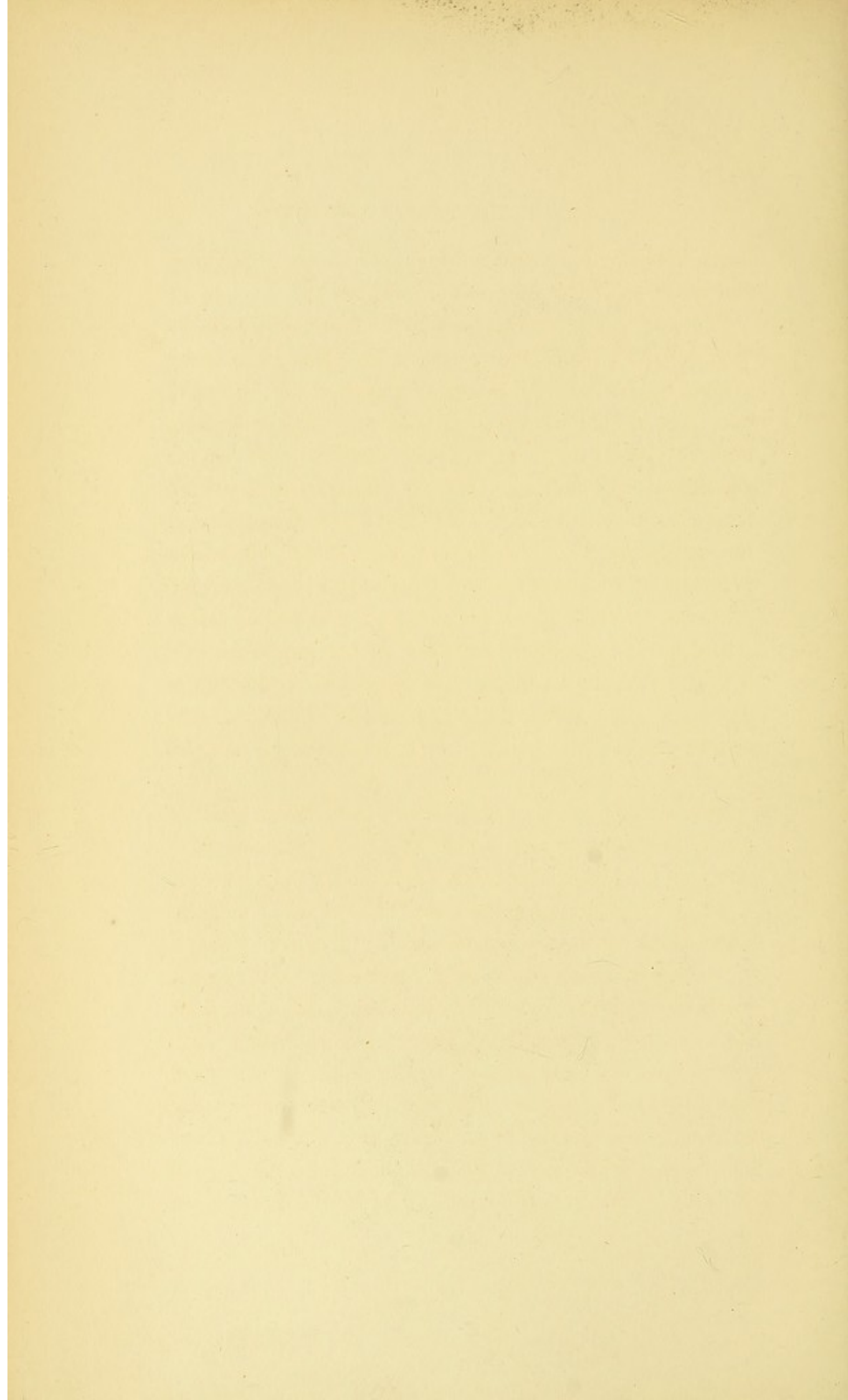


R.E. Holding del.

Fig. 2

West, Newman lith

Primary carcinoma of Fallopian tube, with secondary growth on exterior of adjacent ovarian cyst.



surrounded by scattered nodules of a similar character. The interior of the cyst was unaffected.

The specimen was removed by abdominal section, on July 21, 1892, from a woman aged 60. Her mother was said to have died from cancer in the chest at the age of 63. Her own history was as follows:—The catamenia appeared at the age of 15, and were regular up to the age of 48, when she had an illness, during which they ceased for a time. This illness was characterised by severe pain in the lower part of the abdomen, necessitating confinement to bed for several weeks, with the application of leeches and poultices. Menstruation became re-established on her recovery, and continued regular, until it finally ceased at the age of 51 or 52. The patient was married in 1853, but had never become pregnant. Her husband, a healthy stonemason, was still living.

She dated her present illness from an attack of severe paroxysmal pain in the right iliac region which occurred suddenly in March 1892. The pain lasted a week, and gradually spread over the whole abdomen. There was absolute constipation for twenty days, when a natural motion was passed. After some weeks in bed she recovered, but had a relapse about the end of April, and had been in more or less pain ever since. About three weeks before admission (July 16th) she noticed that her abdomen had become enlarged, and felt a hard lump low down. There had been gradual loss of flesh, dating from the attack in March, but, notwithstanding this, the patient on

admission was healthy-looking and fairly well nourished. Her tongue was clean, her temperature normal, her urine free from albumen or sugar, and of spec. grav. 1015. The chest signs were all healthy; the abdomen was somewhat distended, chiefly in the flanks and at the lower part. There was a hard nodulated tumour in the hypogastric region, with a well-defined margin $4\frac{1}{2}$ inches from the anterior superior spine of each ilium. There were two hard nodules to the right of this, very superficial, and apparently unconnected with the main mass. The front of the abdomen was for the most part resonant on percussion; there was dulness from the pubes upwards to a distance of about $4\frac{1}{2}$ inches, and also in the flanks, the note in the latter situation changing with the position of the patient. The girth at the umbilicus was $33\frac{1}{2}$ inches; the other measurements showed nothing of special interest.

Abdominal section was performed on July 21, 1892. There was a quantity of free fluid in the peritoneal cavity. The right ovary was the seat of a large cystic tumour adherent to neighbouring parts. The walls of the tumour were thin, but presented in places on their external surface numerous nodules of solid growth. The cyst contained about six pints of dark, brown fluid. In front of the ovarian tumour, and attached to it, lay a hard, inflexible, elongated tumour about $3\frac{1}{2}$ inches long and an inch in diameter, consisting of the right Fallopian tube infiltrated with new growth. The uterus was apparently unaffected

by the disease. The pelvic glands were felt to be enlarged and indurated. A band of omentum was adherent to the anterior abdominal wall just below the lower angle of the incision. In the omentum at the site of the adhesion was a hard mass of new growth about an inch long and half an inch broad. An attempt was about to be made to remove the nodule, when it was noticed that it had attached itself to and implicated the wall of the bladder. The right kidney was felt to be enlarged and fixed. The diseased Fallopian tube and ovary were removed.

The patient recovered well from the operation, the temperature on no occasion reaching 100°. She was discharged on the twenty-third day with a good appetite and feeling greatly relieved.

Six months after leaving the hospital the patient presented herself in the medical out-patient room, complaining of symptoms that were suggestive of impending intestinal obstruction. Up to Christmas she had been fairly well, free from pain, and able to get about, but since then had been obliged to take aperients, which caused her much pain. She looked well, and had lost very little flesh. A lump could be felt above the umbilicus. There was at that time no reaccumulation of fluid. For her subsequent history I am indebted to the kindness of her medical attendant, Dr. Daniel of Epsom, who writes as follows — 'Within a few months of her death the dull aching with occasional shooting pain recommenced. The whole region of the uterus became a

large, hard, and irregularly globular mass, firmly adherent on the right side, but with slight movement on the left, and a large portion of the vagina became involved. The whole abdomen became enormously distended, and there were occasional attacks of local peritonitis, some ascites, distension of veins and œdema of the legs. Constipation increased, vesical troubles supervened, and the patient became unable to take food. For a few weeks previous to her death she was kept under the influence of opium or morphia. She died from exhaustion on July 11, 1893, ten days short of a year from the date of the operation. There was no *post-mortem* examination.

The following description of the parts removed has been furnished by Mr. Shattock, curator of the St. Thomas's Hospital Museum:—‘The tube is transformed into a resistant, somewhat tortuous, coarsely nodulated, cylindrical mass, about 8 cm. (3 inches) long, which, on incision, presents an irregular cavity about 2 cm. in maximum diameter, with ragged, broken-down interior.

‘The ovary is the seat of a large multilocular cyst, measuring in its collapsed state 6 inches by 4 inches. The interior of this offers no unusual appearance; but on the peritoneal aspect there are numerous small hemispherical elevations of new growth, which in places form a coarsely granular confluent layer, indicating peritoneal infection, arising probably from the interior of the tube, on the outer surface of which there occur similar elevations. The fimbriated end

of the tube, however, appears at present to be closed.

‘*Histology.*—Longitudinal sections carried through the entire thickness of the wall of the diseased tube show an infiltrating growth, having characters closely resembling a duct carcinoma of the breast. Close up to the external surface the walls of the tube (which at the part examined are about a quarter of an inch in thickness) are riddled with spaces lined with columnar epithelium; the spaces have mostly so wide a lumen that they may be designated cystic, and into them there project papillary processes invested with similar epithelium.

‘The histology of a prominent solid projection of new growth, about the size of a filbert, in the neighbourhood of the tube is for the most part precisely similar. But the section presents areas of younger date, in which the fibrous matrix is occupied with groups of small solid cylindrical epithelial processes; these, as they grow, acquire a lumen of increasing dimensions, until a microscopically cystic character arises, and intra-cystic papillary formation ensues.’

This case was figured and described in the *Transactions of the Obstetrical Society of London*, vol. xxxvi., pp. 307-311; but I have thought it desirable, on account of the extreme interest and rarity of the disease, to give the details here at length. In the discussion which followed the presentation of my specimen at the Obstetrical Society, it was stated by Mr. Doran that only seven instances of primary

carcinoma of the Fallopian tube had previously been reported in a satisfactory manner. In two there was a cyst, into which the ostium opened. In five, the new growth had developed in an apparently normal tube.

S U M M A R Y

I.—SALPINGITIS

IN acute cases of salpingitis the mucous membrane, with its longitudinal folds, is found swollen, congested, and œdematous, and covered with purulent or muccopurulent secretion. In chronic cases its condition varies according to whether the inflammatory secretions are pent up within the tube or have made their escape from its open fimbriated end. In the former case it is usually either covered with granulation tissue or distinctly ulcerated; in the latter, having got rid of its secretions, it is often found to have resumed more or less completely its normal appearance, except in the neighbourhood of the adherent abdominal ostium, where it is frequently intensely congested and œdematous.

The most striking change in chronically inflamed tubes is due to the extension of the inflammation to the middle or muscular coat, which becomes greatly thickened and indurated from inflammatory exudation amongst the connective tissue elements of the muscular layer. The result of this exudation is to cause an irregular separation of the muscle fibres

and a general thickening of the tube-wall, which often measures one-eighth of an inch to half an inch in diameter. This thickening is well seen in Plate III. Fig. 1, in Plate v. Fig. 2, in Plate VI., and particularly in the two tubes figured in Plate VII.

The enlargement of the tube is not only manifested by an increase in its width and circumference, but frequently also by an increase in its length; and as this increase in length takes place within a confined space, it frequently results in the tube becoming doubled and folded upon itself, forming a more or less intricate series of convolutions. The various stages of the process may be traced by a reference to the plates. Thus, while in Plate II. Figs. 1 and 2, the tube is increased in diameter without being manifestly altered in length, in Fig. 3 of the same Plate, and in Figs. 2 and 3 of Plate III., there is seen to be a gradually increasing elongation of the tube with proportionately greater tortuosity; and, in the single drawing of Plate VI., this tortuosity has become so extreme as to form a series of convolutions almost bewildering in their complexity. Sometimes the convolutions take a sharp turn, forming knuckles on the external aspect and shutting off by the suddenness of the bend one portion of the canal from the other. This condition is well seen in Plate IV. Fig. 1, where, the fimbriated end having become occluded by inflammatory changes, the tube has become distended with clear fluid consisting of mucus

and serum, forming one of the varieties of hydrosalpinx.

When the tubal inflammation is distinctly purulent in character, the result varies according to the condition of the abdominal ostium of the tube. If the ostium remains patulous, as in Plate II. Fig. 1, the pus makes its way through the open mouth of the tube into the peritoneum, where it finds itself surrounded by peritonitic adhesions, and thus forms an intra-peritoneal abscess. If, as more commonly happens, the fimbriated end of the tube becomes occluded by the secondary peritoneal inflammation, the pus accumulates in the closed tube, forming a pyosalpinx. The tube in this case becomes distended, sometimes uniformly, as in Plate II. Fig. 2, but more often irregularly, forming a series of loculi or pouches. Generally, these pouches are in communication with each other, the intervening portions of the tube remaining pervious; but occasionally, owing to sudden bends in the tube or to constrictions (from peritoneal bands outside the tube or from adhesions within it), the distended pockets are completely shut off from one another, forming a series of independent collections of pus. Sometimes the distension affects only the outermost portion of the tube, the tube remaining of little more than its normal calibre up to a certain point, and then suddenly expanding into a cyst-like pouch, which it is difficult, and often impossible, to distinguish, when examining the patient before operation, from cystic enlargement of the ovary.

This condition is seen on a comparatively small scale in Plate IV. Fig. 3, and on a larger scale in Plate VIII.

The ovary, which is usually embraced by the inflamed tube, is almost always involved in the peritonitic adhesions. In many cases the ovary itself remains healthy, but sometimes it is found to be in a condition of incipient cystic degeneration (see Plate III. Figs. 1 and 2), and not unfrequently there is unmistakable evidence, in the form of ovarian suppuration, of the ovary having become secondarily infected from the tube. If the ovary, at the time of infection, was the seat of cystic changes, the result of the infection is to cause the contents of one or more of the cysts to suppurate (see Plate III. Fig. 2, and Plate V. Figs. 1 and 2); otherwise the suppuration takes the form of simple ovarian abscess, single or multiple. Whether the pus is enclosed within a cyst-wall or not, the changes in the ovarian tissue surrounding it are the same, namely, chronic thickening and induration, the loose spongy texture normal to the healthy ovary being replaced by a close dense tissue, the result of chronic inflammation. These changes are well shown in Plate V. Figs. 1 and 2.

In the great majority of non-puerperal cases, the inflammatory changes in the tubes are the result of *gonorrhœa*, the infection travelling upwards to the endometrium, and thence to the lining membrane of the tubes. In salpingitis following parturition and abortion, the infection is almost invariably due to the

extension to the tubes of a *septic* endometritis. But, in a by no means inconsiderable number of cases, the inflammatory changes are due neither to gonorrhœa nor sepsis, but to the infection of *tubercle*. Out of 91 cases in which the tubes and ovaries were removed for purulent processes or for adhesions, and in which a careful microscopical examination was made, Whitridge Williams found indisputable evidence of genital tuberculosis in 7 cases, or 7·7 per cent. In each of the seven cases the tubes were affected, and in three the ovaries. The infection may reach the tubes (which are by far the most frequent seat of genital tuberculosis in the female) from areas of tuberculosis already existing in the patient, either through the blood, or from the peritoneum, or from other organs, as in perforation of tubercular ulcers of adjacent intestine. But genital tuberculosis is occasionally found without any trace of tuberculosis being discoverable elsewhere in the body. It is not likely that in all these cases the infection has reached the genital organs from without. The more probable explanation is that, as in some cases of primary bone tuberculosis, the infection has been conveyed by the blood without any demonstrable lesion having been caused at that part of the body where the tubercle bacilli first gained entrance. Whether genital tuberculosis can result from the introduction of tubercle bacilli into the vagina by the examining finger, by the use of foul syringes or instruments, and more particularly by coïtus, has not yet been definitely determined, though

there is a considerable amount of evidence tending to render it probable that the infection is occasionally conveyed, directly from without, in one or other of these ways.

Tubercular salpingitis is found in three forms: (1) Miliary tuberculosis; (2) Chronic diffuse tuberculosis; and (3) Chronic fibroid tuberculosis. The first and second forms are not unfrequently associated in the same tube. Sometimes they are found along with miliary tubercle of the general peritoneum. In Plate II. Fig. 4, miliary tubercles are seen studding the meso-salpinx and the outer covering of the ovary as well as the peritoneal covering of the tube. In Plate IV. Fig. 2 there is a drawing of the interior of the same tube, showing marked caseation with deep tuberculous ulcers, an advanced stage of chronic diffuse tuberculosis. In some instances of tuberculosis of the tube, instead of assuming the typical caseous form, the tube is converted into a thin-walled pus-sac, which may reach extraordinary dimensions. An example of this, where the enlargement is, however, of but moderate extent, is given in Plate IV. Fig. 3.

The third form of tuberculosis of the tubes—Chronic fibroid tuberculosis—is comparatively rare.

II.—TUBAL GESTATION

When the impregnated ovum is arrested in the Fallopian tube instead of passing on into the uterus, experience shows that it is specially liable to be the

seat of hæmorrhage. The blood is extravasated around and between the membranes, and forms a clot, which by its pressure destroys the embryo and obliterates more or less completely the amniotic cavity. From its analogy to the carneous mole of intra-uterine pregnancy, this condition has been named a tubal mole. If a tubal mole is formed in an early stage of pregnancy, *i.e.* before the sixth or seventh week, the abdominal ostium of the tube will usually be still patulous, and the result will be that blood will flow through the open end of the tube into the peritoneal cavity. Under these circumstances, the diminutive embryo often gets washed away in the current and is lost, while the tube becomes distended with clotted blood, forming a hæmato-salpinx. This condition is well shown in Plates IX. and X. In Plate IX. Fig. 2 the abdominal ostium of the tube is wide open, and the clot is seen protruding. In Plate X. Fig. 1 the fimbriated end is also open, but less widely; while in Plate IX. Fig. 1 it is almost, but not quite, closed. Usually, chorionic villi can be detected amongst the clotted blood within the tube, confirming the diagnosis just as surely as the discovery of an embryo. It happens that in none of the three cases, from which the drawings in Plates IX. and X. were taken, could either chorionic villi or embryo be found, but in each case the clinical history leaves little or no doubt as to the nature of the case.

When the tubal mole is formed in the outermost portion of the tube, and the abdominal ostium is

sufficiently patulous, the mole itself is occasionally dislodged from the tube and escapes into the peritoneal cavity. This occurrence has been termed tubal abortion. It is illustrated in Plate XI. Fig. 3. The clot, which is shown in section, had escaped from the tube and was found lying loosely attached to its fimbriæ. On laying the clot open, a three weeks' embryo was found in its interior. The head was accidentally separated in making the section, and could not afterwards be found, but otherwise the embryo was complete. Plate XI. Fig. 1 shows an unusual condition, in which a clot had formed in a pouch of the Fallopian tube, the aperture of communication between the pouch and the lumen of the tube having subsequently become closed. Though no chorionic villi or other products of conception could be demonstrated, the clinical history left little doubt as to the clot having originated in a tubal mole.

When apoplexy of the ovum, or, in other words, a tubal mole, is formed at a later stage of the pregnancy, and the abdominal ostium has become closed, the tube becomes greatly distended, and usually undergoes rupture. Plate XI. Fig. 2 shows a tube thus distended. The diagnosis was made in this case and the tube removed before rupture had occurred, but it was evident from the condition of the walls of the tube that rupture was imminent. Indeed, the limbs of the foetus had already become extruded through the thin covering, though fortunately without any accompanying hæmorrhage. It will be seen on

referring to the section of the tube shown in Plate XII., that the fœtus had escaped into a pouch formed in the wall of the tube, leaving behind it, in the body of the tube, the torn umbilical cord, with the membranes, placenta, and blood-clot.

Rupture of a tubal gestation is generally preceded by the formation of a tubal mole, that is to say, the rupture is more frequently the result of the sudden increase in the size of the contents of the tube due to the extravasation of blood than of mere distension of the tube from the growing ovum. In Plate XIII. are shown the fœtus, placenta, and membranes from a case of ruptured tubal gestation, together with the ruptured tube and the membrana decidua from the uterus.

Most cases of intra-peritoneal hæmorrhage in the female are due to tubal pregnancy. The slighter hæmorrhages, in which the blood has time to form a pelvic hæmatocele, that is, to become encysted by adhesions and by the formation of a firm wall of fibrin derived from the extravasated blood itself, are in the great majority of cases due, not to rupture of the tube, but to the escape of blood from the open fimbriated end of a tube in the manner above described. When the hæmorrhage is due to rupture, the quantity of blood is usually too large and the hæmorrhage too rapid for the blood to become encysted, and the ordinary result is that the blood is diffused in the peritoneal cavity. This is the rule, but there are, of course, exceptions. Hæmorrhage

from the open mouth of the tube may be so considerable in quantity, and may occur so rapidly, that there is no time for the formation of a pelvic hæmatocele. Such an occurrence is, however, rare. Equally rare is it for rupture to be accompanied with a hæmorrhage sufficiently slight to permit of the formation of a hæmatocele. The case from which the photograph in Plate XIII. was taken was one of these exceptional instances, but it was the only one that I have met with in my own practice. In all the other cases of rupture upon which I have operated, the blood has been freely diffused in the peritoneal cavity.

It is because pelvic hæmatocele is usually associated with an *early* stage of tubal gestation, when the embryo is of insignificant size and easily absorbed, that so many cases recover without operative interference. The blood, and with it the diminutive products of conception, becomes gradually absorbed. But it can only be safe to withhold operative interference when the clinical history points unmistakably to the hæmorrhage having occurred within the early weeks of pregnancy. At a later stage the embryo and other products of conception are too large, and the risk of further hæmorrhage is too considerable, for non-operative treatment to be justifiable. It would, for example, have been too much to expect that the unassisted powers of Nature would have proved equal to the bringing about of a satisfactory termination in such a case as that which is the subject of illustration in Plate XIII.

It need scarcely be added that where the hæmorrhage from a tubal gestation, whether due to rupture or not, is diffused in the peritoneal cavity, the necessity for immediate operation, if the condition of the patient permits it, is indisputable.



