Descriptive catalogue of the specimens illustrating gynaecology and obstetrics.

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GYNÆCOLOGICAL & OBSTETRICAL CATALOGUE.

BY

HERBERT R. SPENCER, M.D., B.S., F.R.C.P.

AND

T. W. P. LAWRENCE, M.B., F.R.C.S.

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DESCRIPTIVE CATALOGUE

OF THE

SPECIMENS ILLUSTRATING

GYNÆCOLOGY AND OBSTETRICS

IN THE MUSEUM OF

UNIVERSITY COLLEGE HOSPITAL, LONDON.

SECOND EDITION.

BY

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COPIES MAY BE OBTAINED AT THE OFFICE OF THE MEDICAL SCHOOL.

1911.

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PREFACE.

Twenty years have elapsed since the First Edition of the Catalogue was prepared by Sir John Williams and Mr. Charles Stonham. The great development during that period in the knowledge of the pathology and treatment of affections of the female generative organs has necessitated the preparation of a new edition. The collection is especially rich in tumours of the uterus, ovaries, and tubes, and in teratological specimens. In the case of malignant tumours an endeavour has been made to give the after-histories when possible. The large collection of specimens of uterine myoma has been made with the view of illustrating the changes and degenerations and complications to which they give rise; and the numerous specimens of cancer of the uterus have been collected in order to show the various forms which the disease may assume and the courses it may pursue and the results of various methods of treatment.

We apprehend that the function of a museum is twofold: one to illustrate the current knowledge of disease for the purpose of the ordinary teaching of students, the other to enable advanced students and teachers to perfect and advance their knowledge of disease. The specimens available for the latter purpose have been included as not the least important part of the collection of a scientific medical school.

A brief account of each section precedes the description of the specimens, with indications in brackets of some of the more typical specimens illustrating the subject.

In the history of the cases printed with small type (H. R. S.) signifies that the patient was under the care of Dr. Herbert Spencer, (G. F. B.) that the patient was under the care of Dr. George Blacker: in other cases when known the names are given in full.

University College Hospital
Medical School,
July, 1911.

HERBERT R. SPENCER.
T. W. P. LAWRENCE.

Note.—The numbers following the descriptions of the specimens are those in the MS. Catalogue.

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CATALOGUE

OF SPECIMENS ILLUSTRATING

GYNÆCOLOGY AND OBSTETRICS.

DISEASES OF THE VULVA.

Malformations of the Vulva.

Congenital malformations of the vulva are rare, except in monsters, in which the parts may be wanting, abnormal, or duplicated. Hypertrophy of the clitoris (1) may occur, and phimosis, by leading to accumulation of smegma, may give rise to an appearance of hypertrophy. Hypospadias, epispadias, and hermaphroditism may be met with. The anus sometimes opens into the vestibule (*anus vestibularis*) or vagina (*anus vaginalis*) or perineum (*anus perinealis*). Occasionally one labium (majus or minus) is larger than the other. Both labia minora are enormously enlarged in Bushwomen, forming an "apron" deeply depending between the thighs.

The commonest congenital malformations are found in the hymen. Normally an annular band of the shape of a horseshoe with the thickest part posterior, it often has a little tag either posteriorly or anteriorly (4, 5). Occasionally a band divides the orifice into two (*hymen bifenestratus*, 6); very rarely there are three or more apertures in the hymen (*hymen cribriformis*). The edge of the hymen may be notched (*hymen dentatus*, 5) or fringed (*hymen fimbriatus*), and in this form fringes are sometimes met with around the urinary meatus. Sometimes the hymen is imperforate, or the vagina may be closed by a septum just above the hymen. The hymen is never congenitally absent, except in monsters. The orifice varies much in size and usually it will admit the fore finger without tearing, but it may be so small as to only admit a probe. It may be uninjured even after coitus, and sometimes causes delay in parturition. Usually it is torn during coitus in two or more places, and the segments left become bruised and thickened, especially after parturition, and form the "carunculæ myrtiformes."

Acquired malformations.—In young children and occasionally in adults, as a result of inflammation, the labia majora adhere together, except in front over the meatus urinarius, so that at first sight it appears as if there were no vagina. The parts are easily separated with a probe and disclose the normal condition. Sometimes the labia adhere at the site of tears produced during parturition. Simple hypertropy of the vulva is rarely seen, but true elephantiasis is sometimes met with and gives rise to pendulous growths, which may reach an enormous size. These consist of dense fibrous tissue covered with skin, the surface of which may be corrugated or warty and may be the seat of deep ulceration (9). Some of these cases are due to filariasis and some to syphilis.

1. A wax model of the vulva and buttocks of a young negress. The labia majora are well developed and are separated posteriorly by a distance of 4·5 cm. Projecting from between their anterior extremities is a hypertrophied clitoris 12 cm. in length by 4 cm. broad; it is spoon-shaped and is covered superiorly by black skin corrugated in front, and inferiorly by a smooth pink-brown mucous

membrane forming a shallow groove. The labia minora are well developed, of a pinkish colour, and extend backwards to the anus, around the posterior two-thirds of which is a similar fold. The anterior part of the vestibule has a well-marked groove down to the urethra, continuous with that beneath the clitoris; the posterior part has a well-marked scaphoid fossa which is, however, open posteriorly towards the anus. The right half of the hymen is a cribriform structure with four small foramina; the left half is represented by two annular rudiments. There is no perineal body. 10224

2. The genitalia of a new-born fœtus. The nymphæ were united at birth and formed a sac distended with fluid; below they form a raphé extending backwards to a small orifice (vaginal orifice) situated just in front of the anus. The labia majora are well formed. At the bottom of the distended conjoined nymphæ is an aperture (urethral) through which a probe can be passed into the bladder and into the vagina. A probe can also be passed through the vaginal orifice into the bladder and into the vagina, so that there is a congenital vesico-vaginal fistula. The vagina is distended to form a pear-shaped tumour with the narrow end below measuring 7 cm. × 5 cm. × 4 cm. The rugæ of the vagina are well marked. The bladder, the uterus and appendages, and rectum are normal. The ureters are dilated by the pressure of the distended vagina. 6605 A

At birth the nymphæ formed a globular tumour of the size of a walnut, consisting of corrugated skin and at its most prominent part of a membrane which ruptured at the time of birth; the tear has since been enlarged by an incision, so as to expose the interior of the sac.

The vagina has become distended with mucus, and possibly with urine, on account of the narrowness of its orifice.

General peritonitis was present.

3. The septum of a biperforate hymen, excised from a virgin aged 24. It measures about 1·3 cm. in length and ·5 cm. in width, and is somewhat narrowed in the middle. The surface is beset with small rounded eminences and ridges. 7774

4. The vulva of a new-born child. The labia have been divided anteriorly in order to show that the hymen is really annular, though appearing crescentic before the division. The hymen is annular, broader behind than in front, and in the middle line posteriorly there is a tubercle on the lower surface at the edge, 3 mm. × 2 mm. at this spot the upper surface of the hymen is grooved. 7496

5. The vulva of a new-born child, showing a hymen with an anterior and posterior tag. The left margin of the hymen is scolloped; this is a natural gap in the hymen; there is an oval breach of surface of the hymen in front of this gap also of congenital origin. 669

6. A biperforate hymen, excised from a virgin aged 50 who had the uterus excised at the same time for carcinoma of the body. The hymen measures 3·5 cm. long by 2 cm. broad, and is perforated only by two small apertures at its posterior part, the right aperture being a round hole 4 mm. in diameter, the left being a slit-like aperture of the same length. Between the two apertures is a narrow vertical band. The entire free surface of the hymen is thickly beset with white papillæ, which for the most part are sessile, but in places are as much as 2 mm. in length. 996

Microscopic Structure.—A section of one of the papillæ shows a central core continuous and identical with the tissue of the hymen, consisting of loose and rather cellular fibrous tissue covered by a stratified squamous epithelium.

7. A labium minus from a negress. It measures 12 cm. × 7·5 cm. × 6·5 cm., and has a somewhat reniform shape with the broader end below; it is covered with

thickened, rough skin of blackish colour. At the upper part of its concavity is a raw surface of attachment measuring 4 cm. × 3·5 cm. The section is smooth, fibrous, fairly uniform, and in places streaked with whitish lines. 9830

Microscopic Structure.—There is great pigmentation of the Malpighian layer of the epidermis, and pigment is also present in isolated masses at a considerable distance beneath the epidermis. The tumour is made up of bundles of fibrous tissue. Dispersed among the bundles of fibrous tissue are collections of cells, some of the size of leucocytes and some larger, with rounded nuclei and scanty protoplasm.

8. Hypertrophied nymphæ removed by the actual cautery. The surface is corrugated and warty, and resembles skin. The cut surface shows the mass to consist of firm fibro-cellular tissue with numerous vessels, which are especially noticeable at the attached part of the nympha.

Microscopic Examination.—The growth consists of fibrous tissue arranged in wavy bundles, with small round cells and a little fat scattered through the substance.

9. A portion of a much enlarged labium majus. The skin is wrinkled but healthy, except at one part, where there is a circular ulcer about the size of a sixpence. The cut surface is smooth, and traversed by bundles of fibrous tissue. At one part there is an irregular ulcerated cavity extending from the surface about two inches into the substance of the mass. A smaller ulcerated part is also seen.

Microscopic Structure.—The growth is very vascular and of a fibro-fatty nature. In the centre is a large quantity of œdematous tissue.

From a patient, aged 20, admitted under the care of Mr. Heath, Feb. 5th, 1879. Three years before she had an abscess in the right labium; this discharged and then healed. A year later there was gradual and painless enlargement of the labium; a small abscess formed and burst, leaving an ulcer, which continued to increase in size and cause pain until she was admitted. On admission the right labium was found much enlarged: firm, elastic, solid, and pendulous. The skin was normal, except at the lower part, where there was a large phagedænic ulcer, of the size of the palm of the hand. The left labium was also somewhat enlarged. The vagina and rectum were much ulcerated, and there were condylomata round the anus. Mr. Heath removed the right labium with the knife; there was considerable bleeding; the vessels were tied and the parts sutured. Recurrent hæmorrhage occurred a few hours later; the vessel was tied. The wound sloughed, and the sutures carried away, but the patient eventually made a good recovery.

INJURIES OF THE VULVA.

Lacerations of the vulva occur as the result of parturition, accidents, and coitus. During parturition lacerations of the vestibule, labia minora, and perineum occur. The perineum is lacerated to the "first degree" (laceration of the fourchette and edge of perineum) in every primiparous labour; to the "second degree" (deeper laceration, but not involving the sphincter ani); or to the "third degree" (through the sphincter ani into the rectum), mainly as a result of precipitate, difficult, and instrumental labours. The perineum may be lacerated traumatically, as by falling on the leg of a chair, by violent traction on a large metallic speculum (the prolonged pressure of which may also produce gangrene), and by the introduction of the forearm in obstetric operations. Rarely the child bursts through the perineum, causing the so-called "central rupture." The second and third degrees of rupture require immediate suture. The complete rupture cannot heal spontaneously, but leaves a gaping cloaca divided by the thin cicatrised edge of the recto-vaginal septum, the anus having a semilunar shape owing to the retraction of the ends of the divided sphincter, which pucker the skin on either side. The most important point in operating for complete rupture is the coaptation of the ends of the sphincter.

Hæmatoma of the vulva occurs as the result of external traumatism or from the rupture of an artery or vein through pressure of the child's head during parturition. In the latter case it may cause an obstacle to delivery, or may form slowly after delivery and may attract attention by the pain to which it gives rise.

Leukoderma, Leukoplakia, and Kraurosis of the Vulva.

Leukoderma is met with not infrequently in the vulva. It consists of white patches and areas of skin markedly contrasting with the normal brownish skin. It often extends around the anus.

Leukoplakia consists of white patches and areas of skin due to thickening of the horny layer, especially on the labia majora and sometimes extending to the perineum. It is usually present with carcinoma of the vulva (34) and probably usually precedes that disease. It is sometimes associated with irritation and itching (pruritus).

Kraurosis is the name given by Breisky to an atrophic shrunken condition of the vulva occasionally met with affecting the labia minora, the frænum and prepuce of the clitoris, the inner surface of the labia majora up to the fourchette, and the adjacent skin of the perineum (11).

10. Half a papilloma of the size of a walnut with the skin of the vulva and left groin. The papilloma has a lobulated cerebriform free surface, yellowish-white colour, and on section shows a central fibrous core to the lobules with whitish covering of thickened epithelium.

The skin of the vulva shows the scar from which the labia minora and part of the labia majora, the seat of the above and other papillomatous growths, were removed two years previously. There is now an oval surface of leukoplakic skin on the remains of the labia majora, at the centre of which is the glans clitoridis also covered with leukoplakial skin. The skin below the scar (vestibule) and the adjacent skin of the left groin are covered with an uneven surface of thickened white epithelium, which in places forms definite little prominences. 11631

Microscopic Structure.—The tumour is a papilloma closely resembling squamous carcinoma. The leukoplakial skin shows some thickening of the horny layer and small cell infiltration of the corium.

The tumour was removed from a virgin aged 57, eighteen months before the excision of the vulva (H. R. S.). The leukoplakia caused intense pruritus. There was a fibroid of the size of an orange in the uterus.

11. A vulva (8·5 cm. × 5·5 cm.) removed by operation. All the parts are shrunken. The surface of the skin of the labia majora is in parts thickened and in parts excoriated. The whole of the right and the lower part of the left labium minus and the prepuce are thickened and yellowish white in colour. 9425

Microscopic Structure.—A section through the right labium minus shows that the epithelium is not altered; in several places there is an extensive infiltration of leucocytes beneath it. The dense fibro-areolar tissue beneath the epithelium contains numerous small blood-vessels, but no new growth.

The specimen is one of kraurosis vulvæ.

From a patient aged 77. The vulva was excised (G. F. B.) on account of pruritus vulvæ.

Inflammation of the Vulva.—Vulvitis.

The commonest cause of vulvitis is gonorrhœa, which may occur even in infants and young girls from inoculation by using infected towels. The urethra with Skene's tubules and Bartholin's glands are very prone to be affected. Vulvitis may also occur as a result of the irritation of saccharine urine or vaginal discharges. It may arise also in acute specific fevers, especially in typhoid fever, in

10. Miss Merry. The operation cured the pneumothorax but the papilloma recurred & was treated with radium with good effect. In July 1918 I heard that the original papilloma was extracted & there was a papillary growth just behind it.

which disease ulcers resembling soft chancres sometimes form. An eczematous vulvitis is met with in gouty subjects. Vulvitis may also be due to tubercle or syphilis, in both of which overgrowths and ulcerations may occur.

12. A left labium minus and part of the left labium majus, measuring 7·5 cm. by 5 cm. The labium minus is greatly enlarged and 1·5 cm. thick. Its outer surface is fairly normal; the inner surface is somewhat elevated and uneven, and on its central and lower parts are irregular ulcers with a tuberculated base. 9038

Microscopic Structure.—A section taken at the edge of the larger ulcer shows the epithelium to be somewhat thickened and the epithelium between the papillæ somewhat hypertrophied in places, but shows no irregular downgrowth. The corium is extensively infiltrated with small round cells. In no parts are there any tubercle systems present.

The thickening and ulceration are probably of syphilitic origin.

Syphilis of the Vulva.

Syphilis of the vulva is sometimes overlooked, the primary lesions often giving rise to few symptoms. It may occur as a slight parchment-like thickening inside the labium or as a chancre, the induration of which is often not marked. It may form an extensive or even phagedænic ulcer involving the labium or vestibule, and may extend into the vagina. The primary sore is scarcely ever met with in the vagina, owing to the cutaneous structure and lubricated surface of that tube. Mucous tubercles are met with in the vulva, perineum, and around the anus. Not infrequently extensive overgrowths occur in the vulva associated with ulceration. These overgrowths used to be called "lupus major" or "esthiomène" (for illustrations see Matthews Duncan, Obstet. Soc. Trans. vol. 27).

Cysts of the Vulva.

The commonest cyst of the vulva is due to the distension of the duct or of the gland of Bartholin; it lies beneath the posterior part of the labium majus. It may occur on both sides, but is usually unilateral and does not exceed in size a plum or a lemon, though it may attain enormous dimensions (14). These cysts frequently become inflamed when due to gonorrhœa; the symptoms will then be relieved by incision or excision of a portion of the wall, but for a radical cure complete excision is usually required.

Rarely a hydrocele of the canal of Nuck is found in the labium majus. Small mucous cysts are also met with in the labium minus (18), clitoris, hymen, and vestibule. Implanted epidermal and dermal cysts are sometimes met with in the vulva as the result of injuries during parturition or operation (17). Cysts arising from distension of the urethral glands and urethroceles (pouches communicating with the urethra) and vaginal cysts may present at the vulva.

13. A Bartholin's cyst (4·5 cm. × 3·2 cm.), excised and laid open. The lining is reddened and stained with blood effused into its substance. 8327

Microscopic Structure.—The cyst-wall is composed of fibrous tissue in a condition of hyaline degeneration. There are numerous vessels in it distended with blood, which has become extravasated in places. The cyst is lined with epithelium, in some parts cubical and in a single layer and in other parts in several layers.

14. An enormous Bartholin's cyst (21·5 cm. × 12·7 cm. × 12·7 cm.), excised. It has the shape of a slightly curved cylinder with rounded ends. It is covered externally with fat and areolar tissue and has been torn in several places in

process of removal. The wall is thin and of a brownish colour. It contained 32 ounces of chocolate-coloured fluid. 9908

Microscopic Structure.—The cyst-wall is composed of strata of wavy fibrous tissue, which has undergone hyaline degeneration in the part adjacent to the epithelium, containing numerous vessels. The cyst is lined with several layers of flattened epithelial cells, the nuclei of the deeper parts of which are smaller and much more deeply stained than those of the superficial cells.

From a very fat woman, aged 52. The cyst, which was situated on the left side, had gradually grown during many years and had taken a forward direction owing to the fatness of the thighs and the patient adopting a sitting position.

15. A Bartholin's cyst, excised. The cyst measures 3·5 cm. × 2·5 cm. × 1·5 cm.; its wall is thin on its superficial side and thicker on its deeper aspect. It is lined with a smooth wrinkled membrane. 9239

Microscopic Structure.—The cyst-wall consists of several lamellæ of fibrous tissue, containing very numerous small vessels, intermingled with layers of involuntary muscular fibres in its superficial parts. Internally the cyst is lined with several layers of epithelial cells of varying shape. The cells are mostly vertically elongated, but those on the surface are flattened.

16. A Bartholin's cyst, excised; a window has been cut out of the front wall. The cyst measures 7 cm. × 4·7 cm. It is ovoid in shape; the upper part of the wall is thin, the lower part is 6 mm. in thickness. The outer surface is smooth, except where covered by areolar tissue. The inner wall is stained a yellowish-brown colour by pus, a thin layer of which adheres to it in places. 9450

Microscopic Structure.—The cyst-wall consists of fibrous tissue with numerous vessels in the outer looser layers, and is lined with several layers of epithelium which are slightly degenerated. At one part the epithelium is absent and the superficial layers of the cyst-wall at that spot are extensively infiltrated with leucocytes and blood-pigment. At one spot in the thickness of the wall there are three or four glandular acini lined with large cuboidal or columnar cells, with basal nuclei, and in continuation of one of the acini is an irregular tubular structure lined with small cuboidal or columnar epithelium, which appears to be the duct of the acinus.

17. A piece of the anterior edge of a torn perineum, excised, containing a cyst of the size of a pea. The contents are white coagulated material, and the surface is for the most part smooth but slightly wrinkled towards the base. 10064

Microscopic Structure.—The cyst is covered with skin, the subcutaneous tissue containing bands of muscle, fibrous tissue, sebaceous glands, and at one place a mucous gland lined with cubical epithelium. The cyst is lined with a single layer of cubical epithelium and contains mucus.

18. Part of a labium minus containing a cyst of the size of a large pea. The top of the cyst has been removed, showing the cyst-wall, which is thin and gelatinous and smooth on the surface. The cyst contained mucus. 6974

Microscopic Structure.—A section shows strata of wavy fibrous tissue, more dense towards the surface, covered externally with skin and internally with a double layer of cuboidal epithelium. Beneath the skin and running parallel to it is a gland, the acini of which are filled with large epithelial cells, the nuclei of which are faintly stained and the protoplasm appearing as droplets of clear highly refracting material of about the size of a blood-corpuscle.

19. Two cysts of the size of a grape, one from each labium minus. The smaller has been enucleated and shows a thin translucent wall. The other cyst has been excised; it is covered with the corrugated skin of the labium, and its inner surface is smooth. The true cyst-wall is thin. The cysts contained mucus mixed with blood. 9245

Microscopic Structure.—A section shows strata of fibrous tissue, with numerous vessels, covered externally by skin and internally by columnar epithelium.

20. A cyst, of the size and shape of a billiard-ball, removed from the labium. It is completely covered by skin, except in an oval area measuring 1½ inch by ½ inch. The skin is very thin and free from hair; for the most part it is healthy, but at the part opposite the attached side of the cyst it is opaque and scar-like. The cyst-wall at the part exposed is seen to be smooth and opaque, and apparently of some thickness. 548

It probably is a retention cyst, formed from one of the mucous glands of the labium. It was removed by Liston.

Fibroma of the Vulva.

Fibroma is found in the labium majus, labium minus, hymen, and vestibule. In the labium majus it may be pedunculated (23) and then is usually of the soft variety (molluscum fibrosum), or it may be contained in the substance of the labium, either as a soft fibroma closely resembling a Bartholin's cyst clinically (24) or as a firmer tumour arising from the round ligament, in which case it is usually a fibro-myoma and may contain glands (adeno-fibroma) or be cystic.

Fibroma of the hymen is exceedingly rare (25).

21. A tumour measuring 5 cm. × 3·5 cm. × 3·5 cm., with a pedicle beset with hairs 2 cm. long and ·75 cm. thick. The surface of the tumour consists of corrugated and slightly pigmented skin. The section shown is fairly uniform and shows the orifices of a few vessels. 7737

Microscopic Structure.—The tumour is a soft fibroma. The skin on the surface is normal.

The tumour was removed from the labium majus.

22. A tumour measuring 1·8 cm. × 1·6 cm. × 1·1 cm. The surface of the tumour consists of corrugated and pigmented skin. At the narrower end of the tumour is a dimple where the tumour was attached; at the other end the epithelium is raised from the underlying skin. The section is fairly uniform; it shows a few whitish fibres and vessels. 9436

Microscopic Structure.—The tumour is composed of wavy fibrous tissue extensively infiltrated with red blood-corpuscles with a few small round cells scattered through it. The surface is covered with squamous epithelium.

The tumour was removed from the left labium majus, from a patient aged 36.

23. Two large and several soft fibromata attached by pedicles to the front of the right labium majus. The skin over the tumours is corrugated like the scrotum. At the upper part is the broad attachment—2½ inches wide—to the anterior part of the labium. 11645

Microscopic Structure.—The growth consists of loose connective tissue with hyaline degeneration in parts. The tissue has the structure of myxoma in places.

From a single multipara, aged 32. The tumours had been present as long as the patient could remember, and certainly for 20 years; they had got much larger of late.

24. A fibroma measuring 4½ cm. × 3½ cm. × 3 cm. It is oval in shape and covered with a thin layer of areolar tissue. A segment has been removed from it showing its fibrous structure. 11521

Microscopic Structure.—The tumour is an œdematous fibro-myoma.

Enucleated (H. R. S.) from the substance of the right labium majus, in which it lay completely embedded and resembled a Bartholin's cyst. It was diagnosed as a Bartholin's cyst, as it appeared to fluctuate. After incising the skin and its capsule, it was enucleated without any difficulty and had no deep attachments.

25. A tumour removed from the right half of the hymen; it measures 3·2 cm. × 3 cm. × 2 cm.; the hymeneal attachment measures 2 cm. in length. At its free end is an ulcerated surface with a smooth base and crenated margin. On section the tumour is found to be solid, extremely elastic, is surrounded by a thin white

capsule except at its ulcerated surface, of a homogeneous consistence and of a yellowish waxy appearance ; it is somewhat stained brown towards its attached border. 11420

Microscopic Structure.—The growth is a fibroma. It is covered with a layer of stratified epithelium.

From a patient with an unruptured hymen who had been married for several years. The tumour had only been noticed for some months, but had probably been present for a long time.

Lipoma of the Vulva.

Lipoma is one of the rarer tumours of the vulva and is situated in the labium majus. Its lobulated shape and soft consistence may cause it to simulate clinically a varicocele or an enterocele. It may be situated in the substance of the labium or may form a pendulous tumour.

26. A fatty tumour, 6 cm. × 4·5 cm. × 2 cm., consisting of several lobules, the upper ones slender and pointed. 7608

The growth was excised from the right labium majus.

27. A lipoma excised from the labium majus and adjacent part of the buttock. The tumour measures 18 cm. × 9 cm. × 5·5 cm. The tumour consists of an ovoid mass of fat with one outlying lobule. 10037

From a married woman 40 years of age who had had 12 children. The tumour had been noticed 12 months and had been getting larger of late. It caused a dragging sensation after prolonged standing, and was said to get smaller when the patient lay in bed.

28. A lipoma of the labium majus. The tumour consists of two slightly connected portions and measures 9 cm. × 7·5 cm. × 2·5 cm. It has the usual lobulated appearance of a fatty tumour. 10660

Adenoma of the Vulva.

Adenoma is rarely met with. The Museum contains two specimens, No. 29 being a pedunculated growth from the urethra, and No. 30 a *sebaceous adenoma* from the inner surface of the labium majus. The sebaceous adenoma has been thought by some to arise in sweat-glands, and has therefore been called "adenoma hidradenoides," but the racemose arrangement of its epithelium and the fact that it sometimes occurs in the labium minus, where sweat-glands do not exist, point to its origin in sebaceous glands.

29. A growth, which in the fresh state was of the size of a pigeon's egg and of a bright pink colour. It was attached to the lower border of the meatus urinarius externus and slightly to the mucous membrane below the edge of the meatus, over an area of about 6 mm. in diameter. The growth is ovoid and in the fresh state was fairly smooth, but somewhat crenulated on the surface and lobed. 8305

Microscopic Structure.—The growth is an adenoma.

The growth was removed (H. R. S.) with the galvano-cautery from a patient aged 68. It had caused constant bleeding for several months. There was no recurrence 6 months later. (Obstet. Soc. Trans. vol. 41, p. 383.)

30. A tumour excised from the inner side of the right labium majus, measuring 2·5 × 1·7 × 1·2 cm. It is covered in part by normal skin, which in the fresh state was bulged by the tumour and umbilicated at one spot. On section the growth is kidney-shaped, distinctly lobulated, containing glandular structures with a few small cysts. 7976

Microscopic Structure.—The tumour is a sebaceous adenoma, with a dense fibrous stroma and glandular spaces lined with columnar epithelium, which in some of the acini shows papillary projections into the lumen, but no true proliferation.

From a virgin aged 35, who was quite well 10 years afterwards.

Papilloma of the Vulva.

Papilloma is not uncommon. Ordinary warts may be met with, or pigmented warts, especially on the mons veneris and labia majora. These may contain epithelioid cells beneath the surface and are liable to become sarcomatous. The commonest warts on the vulva are due to gonorrhœa, and may either be small and isolated or aggregated into a mass, with a moist cauliflower-like surface covering the whole of the vulva: they are very vascular and when large should be removed with the cautery.

31. Part of a vulva, the skin of which is covered with numerous pedunculated warty growths varying in size from a pin's head to a bean. The surface of the growths is papillary and finely cleft. The corium is thickened. 1139

The growths are gonorrhœal warts.

Microscopic Structure.—The growths are papillomata, the stroma consisting of an open fibrous tissue and the epithelium being squamous and in several layers.

32. Gonorrhœal warts removed from the vulva with the cautery. They consist of rounded masses of the size of nuts with a narrow base of attachment and a surface coarsely granulated and cleft. No fine villous processes are present, but the granules are for the most part smooth and rounded. On section the epithelium is seen to be heaped up to a thickness of 5 mm., into which fine processes radiate from the central stroma. 9620

Microscopic Structure.—The growths have a central stroma, consisting of loose fibrous tissue containing numerous spindle cells with oval or elongated nuclei. The stroma branches in all directions and is covered with a thick, fairly uniform layer of stratified squamous epithelium, the superficial layers of which are horny. Prickle-cells are well marked.

33. A pigmented wart measuring $1\frac{1}{2}$ cm. × 1 cm. × 8 mm. with a small amount of the surrounding skin and subjacent fat, removed from the right side of the mons veneris of a patient aged 41, from whom a fibro-myomatous uterus weighing 3 lb. $3\frac{1}{4}$ oz. was removed at the same time. The wart had been noticed for many years and had grown slowly.

The surface of the growth is covered with rounded elevations and finger-like processes and has a few hairs growing from it. 11044

Microscopic Structure.—The tumour has a pigmented papillomatous surface, with a considerable mass of non-pigmented epithelioid cells beneath the surface.

34. A urethral caruncle. The growth is made up of small papillary projections from a fleshy base. 9247

Microscopic Structure.—The growth has the structure of a wart, the papillæ being enlarged, densely infiltrated with leucocytes, and its epithelium thickened. The connective tissue stroma is very vascular and infiltrated with leucocytes. There are no glands.

Carcinoma and Sarcoma of the Vulva.

Carcinoma of the vulva is a somewhat rare disease, occurring usually after 40 and most commonly after 50 years of age. Primary carcinoma is usually of the squamous-cell variety, though columnar cell carcinoma may arise from the glandular structures of the vulva or urethra, or may occur as a secondary affection. Metastases of chorion-epithelioma are also met with. Carcinoma is usually found in the labia and the folds between them; it also occurs on the prepuce and clitoris and even in the perineum. It is usually associated with leukoplakia, and early affects the inguinal glands. Cancer is usually single and may by contact-infection lead to bilateral or multiple growths. Often, however, such growths, though apparently separate, are continuous beneath the surface of the skin. In operating, the whole of the skin of the vulva and the superficial inguinal glands should be removed, as secondary deposits are very liable to occur in leukoplakial skin and inguinal

glands. Carcinoma of the vulva has a high degree of malignancy, which varies in different cases. In some patients repeated recurrences occur over a long period of years (42); in others, death ensues within a few months. Occasionally cases remain free from recurrence and are apparently cured, many years after operation (37, 40). Cancer usually commences as a warty growth with thickened edge or as a flattened plaque or lump with a smooth or pitted surface and is very painful on examination. Before long destruction occurs, and an ulcer with hard everted edges results, which may resemble a syphilitic or tuberculous ulcer.

Sarcoma of the vulva is rare; it is usually of the melanotic variety (48).

35. A water-colour sketch of a vulva showing a large cancerous ulcer occupying the region of the nymphæ, clitoris, and vestibule as far as the meatus urinarius externus. The surface of the ulcer is fairly smooth, but slightly tuberculated, its edge is thickened, slightly raised, and the skin around it whitish. Below it is a microscopic section through one half of the ulcer, which shows that the growth has a uniform thickness of about 2 mm. only. 10227

The sketch (by H. R. S.) was made just before removal.

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient aged 50. The growth was removed (H. R. S.) on August 25th, 1887.

36. Part of the mons veneris, together with the labia and clitoris from a case of squamous carcinoma of the vulva. There is a growth 2·2 cm. × 1·5 cm. on the inner surface of the right labium majus, another 1 cm. in diameter separated by 2 mm. from the former. Growth also affects the right side of the præputium clitoridis, and there is slight ulceration of the lower end of the right labium minus. The whole epithelium of the vulva is thickened and white (leukoplakia). Portions have been removed for microscopic examination at the junction of what appear to be two growths and from the leukoplakial skin. 10629

Microscopic Structure.—The growth is a typical squamous carcinoma with cell-nests, and with a relatively small amount of round-cell infiltration. The leukoplakial part shows a thick epithelial layer, beneath which is a considerable layer extensively infiltrated with leucocytes. The tissue here appears to be œdematous and the leucocytes can be traced between the fibrous layers of the subjacent tissue.

From a patient aged 43. Glands were removed (H. R. S.) from both groins at the same time. The tumour was removed with the knife and the wound healed by first intention. The patient had 8 children and no miscarriage.

37. A vulva removed by operation for squamous carcinoma. The specimen has been divided transversely in order to show the extent of the growth. The upper part of the labia minora and majora are thickened by growth. The growth on the left labium minus is fairly smooth; that on the right labium is superficially ulcerated and has an irregular surface. The right labium majus is the seat of an extensive growth with a rounded smooth and slightly pitted surface, ulcerated at its junction with the labium minus; it is fairly smooth, but superficially excoriated, and with a lens shows numerous small apertures, and on section is 2 cm. thick, contrasting markedly with the healthy left labium majus. The groove between the two labia is also occupied by ulcerated and fissured growths. The skin of the left labium majus and prepuce is somewhat affected with leukoplakia. The surface of the section shows the growth to be continuous from the edge of the left labium minus to the edge of the right labium majus; it has a depth of 7·5 mm. and presents a fibrous structure with rounded yellow opaque spots. 7889

Microscopic Structure.—The growth is a typical squamous carcinoma.

From a patient, aged 43. The operation was performed (H. R. S.) on September 10, 1897. The growth had been previously treated with caustic for 5 months. The whole vulva was excised and a gland was removed from the groin. The wound united by first intention, and the patient remained well and free from recurrence in 1910, thirteen years

16 E. Fowler

17 Ann Mills

38. E. Symonds

39 E. Symonds (38)

40. Greenfield

41.

42 M. St. L. Smith

after operation. The vaginal orifice, however, contracted to an aperture admitting a probe and causing difficulty in micturition, which was easily overcome by dilatation with the finger on three occasions.

38. Part of a left labium majus measuring 4·5 × 3 cm. removed by operation for carcinoma. At the upper part is a circular growth measuring 2·5 × 2·25 cm. The upper part of the growth is 5 mm. thick, but slightly raised above the level of the skin, which is affected with leukoplakia. The surface of the growth is slightly uneven and presents numerous pits which are produced by loss of the central portions of the epithelial downgrowths. The growth recurred locally (see No. 39). 7553

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient, aged 43. The growth was excised (H. R. S.) on March 26, 1896. The growth had existed for 4 months. There were no enlarged glands in either groin.

39. The vulva removed by operation from the same case as No. 38. There is a growth in the upper part of the left labium majus measuring 3 cm. in diameter; it is fairly smooth on the surface, but superficially ulcerated. On the lower part of the left labium majus is another growth 1·2 cm. in diameter and raised 3 mm. above the surface of the skin. The two growths are separated by a groove 1·8 cm. in width which is occupied by leukoplakial skin. The skin is generally affected with leukoplakia. 8083

Microscopic Structure.—The growths are squamous carcinomata. The strip of epithelium between the growths is unaffected. In some of the epithelial masses the core is seen breaking down into epithelial débris, thus forming pits on the surface and cavities in the substance of the growths. The vulva was excised on August 20th, 1898.

40. A vulva measuring 4·5 cm. in length, 4 cm. in width, and 3 cm. in thickness; excised for carcinoma. Both labia minora are thickened by growth, which forms a prominent tumour in the right lip, with a slightly uneven and ulcerated surface. There is ulceration on either side, between the labium majus and labium minus. The whole of the skin is leukoplakial. 8401

Microscopic Structure.—The growth is a squamous carcinoma.

Removed in Jan. 1900 (H. R. S.) from a woman aged 63, who was quite well and free from recurrence in July 1910.

41. The greater part of a vulva, excised for carcinoma. There is an ulcerated growth, 4 cm. × 3·5 cm., in the region of the clitoris and vestibule and extending on the right side into the labium minus. 9702

Microscopic Structure.—The growth is a squamous carcinoma, with numerous cell-nests.

The growth was excised from a married woman aged 60 on Dec. 10, 1904 (H. R. S.), and a gland removed from the right groin at the same time. The wound healed by first intention and no local recurrence occurred, but in Jan. 1906 a gland in the right groin became affected, and the patient died suddenly soon afterwards, apparently from embolism.

42. The skin of the pudendal region with the scar of a previous operation for removal of the vulva. The vaginal orifice is a vertical slit 2 cm. in length with yellow, thickened border. Above this is a median scar; the skin is superficially ulcerated. The whole of the skin is leukoplakial and the part around the vaginal orifice stained yellow. To the left of the vaginal orifice and separated by 1 cm. from it is a growth projecting about 5 mm., with its upper thick edge somewhat overhanging the skin, the lower edge shelving off into the surrounding skin; the surface of the growth is slightly uneven. 9388

Microscopic Structure.—The growth is a squamous carcinoma, the cells of which are in parts degenerated and vacuolated.

From a patient, aged 59. The specimen was excised (H. R. S.) on Oct. 15, 1903, for recurrent carcinoma of the vulva. A growth had been removed on Sept. 29, 1894, and a recurrent growth

in 1897; another recurrent local growth and a left inguinal gland were removed in King's College Hospital in 1899. After the removal of the present specimen no local recurrence had occurred in June 1905, but there was swelling of the left limb and probable growth in the iliac glands. The patient died in August 1905, with extensive glandular recurrence.

43. A vulva removed by operation for carcinoma. The prepuce and frenum of the clitoris and the upper part of the labia minora are thickened by growth, measuring 3 cm. transversely and about 3·5 cm. vertically. On the left side the growth extends for a short distance on to the labium majus, and the groove between the two labia on that side is somewhat ulcerated. The surface of the growth is smooth; the skin of the vulva is leukoplakial and stained brownish yellow in the neighbourhood of the growth. There is slight excoriation of the inner side of the right labium majus. 9387

Microscopic Structure.—The growth is a squamous carcinoma. There is a free formation of cell-nests and abundant infiltration of leucocytes into the stroma. The surface epithelium is absent.

From a patient, aged 65. The growth was excised (H. R. S.) on Oct. 15, 1903. The growth recurred and the patient died on Dec. 24, 1904.

44. The pubes with the external genitals of a woman, showing very extensive destruction of the pudendum by carcinoma. The left labium majus is entirely destroyed by the growth which has spread to the clitoris, and has affected the right labium minus, but the right labium majus is not diseased. The surface of the growth is irregular and deeply excavated, and its edges are indurated, raised, and everted. The orifice of the urethra, through which a piece of glass has been passed, is intact, the disease passing just above it. The orifice of the vagina is almost obliterated by the growth. 2197

Microscopic Structure.—The growth is probably a squamous carcinoma, but the condition of the specimen renders microscopic examination unsatisfactory.

45. The pubes with the external genitals, vagina, uterus, and bladder, which have been laid open. Close to the orifice of the vagina its anterior wall has been totally destroyed by cancer, which has also destroyed the urethra and spread to the inner surface of the labia. The neck of the bladder consequently communicates directly with the vagina. The interior of the bladder itself is healthy, as is also the upper part of the vagina. The mucous membrane of the body of the uterus is shreddy and ulcerated. 4372

46. A vulva removed by operation for carcinoma. The whole of the skin of the vulva is thickened, corrugated and opaque white. At the posterior part of the left labia is a slightly elevated growth 2·8 cm. in diameter, with a sinuous and very slightly raised margin, and fairly smooth but slightly pitted surface, ulcerated in the centre. Below the vulva is preserved a left inguinal gland removed by operation for recurrent growth, together with the surrounding fat. The gland is extensively invaded with a whitish growth. 9957

Microscopic Structure.—The growth is a squamous carcinoma. The surface of the mucous membrane internal to the growth has papillæ on the surface, covered with columnar epithelium. The gland and surrounding tissues are invaded by squamous carcinoma. The growth was excised (H. R. S.) in July 1905. A recurrent growth in left inguinal gland was removed in Nov. 1905. The patient died of recurrence in April 1906.

47. Part of the skin of a vulva with the scar of a former operation, and an ulcer 5 mm. in diameter, together with an inguinal gland removed at the same time. The ulcer is circular, punched out, and the edge scarcely raised and thickened. The skin is leukoplakial. The gland in section shows extensive white growth, degenerated in the centre and invading the surrounding fat. 9820

Microscopic Structure.—The ulcer is a squamous carcinoma.

3. E. A. Clewitt

46. Greyson

48. Part of the skin of a vulva with a nodule of melanotic sarcoma. The fat and skin communicating with the groins, not present in the specimen, were removed in one continuous strip with the specimen, so as to remove the inguinal glands and their lymphatics. Two of the glands, which are infiltrated, are preserved in the specimen. 11493

The patient died of pulmonary embolism on the fifth day after the operation. (See Proc. Roy. Soc. Med. Obs. & Gyn. Sec. Nov. 1910, p. 66.)

Prolapse of the Urethra.

Prolapse of the urethra occurs occasionally, even in young children. It appears as a deep red pouting or prolapsed frill, which may project for nearly an inch, showing the orifice of the urethra at its extremity. A condition somewhat resembling this, consisting of inflammatory hypertrophy of the meatal papilla, is sometimes met with. It is easily distinguishable from prolapse, as it forms a rigid somewhat funnel-shaped tube, which is not reducible and is of a less vivid colour.

Urethral Caruncle and Urethral Carcinoma.

Urethral caruncle is a small red very sensitive growth situated at the orifice of the meatus urinarius externus, usually at its posterior border. It is frequently a sequel of gonorrhœa, which by infecting Skene's glands causes an irritating discharge which produces the overgrowth. The structure of the caruncle varies; sometimes it is adenomatous, consisting largely of Skene's tubules, sometimes angiomatous, and sometimes granulomatous.

Carcinoma of the urethra may occur. Usually it is secondary to carcinoma of the vulva, vagina, or bladder, but rarely it is met with as a primary affection (49).

49. The lowest 1½ cm. of the urethra, of which the lower extremity measures 2½ cm. × 2 cm., and has a thickened margin. It has been laid open to show a slightly roughened growth, which has extended beyond the cut surface. 9401

Microscopic Structure.—The growth is a squamous carcinoma.

DISEASES OF THE VAGINA.

Malformations of the Vagina.

The vagina may be absent, incompletely developed, stenosed, or furnished with valves or septa, or it may be more or less completely duplicated. Stenosis gives rise to an accumulation of fluid (simple, unilateral, bilateral, hydro-, hæmo-, or pyo-colpos). Congenital fistulæ are also found.

Injuries of the Vagina.

Injuries occur as the result of parturition, coitus, or accident (as by falling on a pointed object). When due to parturition they usually extend from laceration of the perineum or cervix. Injuries from coitus occur in very young or elderly females, and either extend upwards from laceration of the hymen or perineum, or involve the posterior fornix, when they sometimes perforate the peritoneum. Accidental lacerations, as from falling on to the leg of a chair or from clumsy attempts at criminal abortion may be very extensive, involving the peritoneum. As a result of the prolonged pressure of the child's head, the vagina may slough, or it may be torn by instruments, into the bladder or rectum, giving rise to vesico-vaginal or recto-vaginal fistulæ.

See specimens of Rupture of Uterus and Vagina.

Foreign Bodies in the Vagina.

A great variety of foreign bodies have been found in the vagina, such as hair-pins and pencils (also sometimes introduced into the bladder), and neglected pessaries or tampons. Pessaries, when left for a long period, are apt to cause ulceration, which may embed the pessary and cause great difficulty in its removal, or may lead to perforation of the bladder, uterus, peritoneum, or rectum. The Zwancke and the cradle-pessary are especially liable to cause injuries in this way.

50. A cowrie shell which was removed from the vagina by Mr. Quain. The specimen had remained in the vagina for three months, and was firmly fixed in its place by a fleshy growth that entered the aperture in the shell. This growth was connected with the anterior lip of the uterus. Mr. Quain first drew the shell down to the orifice of the vagina, and then broke it before removal. No mention is made in the MS. Catalogue of the condition of the vagina. 3637

51. A cedar pencil, 5½ inches in length, sharpened at one end, removed from the abdomen after being lodged there for eight months. 5329

The patient, a woman, attempted to pass a cedar pencil into the urethra, "to relieve a difficulty felt in passing water." While thus engaged, some person entered the room and interrupted her. She sat down and felt acute stabbing pain in the lower part of the abdomen. The pencil disappeared, and though she was examined shortly after by a surgeon it could not be found. She had four or five attacks of peritonitis. Eight months after she was examined by Mr. Erichsen, who found one end of the pencil lying in the concavity of the sacrum, while the other, the pointed end, was felt distinctly under the integuments midway between the umbilicus and Poupart's ligament. The pencil was extracted through an incision in the abdominal wall, but the patient died on the fourth day after the operation. Post-mortem examination showed that the pencil had perforated the coils of intestine, and a depressed cicatrix was found in the vagina close by the side of the uterus. (See Med. Chir. Trans. vol. xxxix. p. 15.)

Prolapse of the Vagina.

The vagina may be prolapsed to various degrees. In its simplest form the anterior columns of the vagina are prolapsed between the labia. When the bladder is contained in the prolapsed part the swelling is called a *cystocele*. Similarly, the posterior column of the vagina may be prolapsed at the fourchette, and when the anterior wall of the rectum is contained in the prolapsed part the swelling is called a *rectocele*. The vagina may be completely inverted in *procidentia uteri*. In some cases of prolapse the small intestine may be contained within the swelling (*enterocele*).

52. A piece of vaginal mucous membrane measuring 12 cm. by 8½ cm. It is thickened, corrugated, and presents three sharp-cut ulcers, with a clean-cut edge and a smooth base. 9202

Removed (G. F. B.) from a patient with a large rectocele.

Inflammation of the Vagina.

Inflammation of the vagina (*vaginitis*, *colpitis*) occurs as a result of infection by microbes, of which the commonest is the gonococcus. Foreign bodies and pessaries may also set up inflammation, either by leading to the accumulation of secretions in which microbes may develop, or by causing abrasions or ulcerations which form portals for the admission of germs (streptococci, staphylococci, &c.). Inflammation, ulceration, and even gangrene of the vagina may occur in the acute specific fevers.

In prolapse of the vagina the mucous membrane becomes thickened, dry, and leathery in consistence, and sometimes extensive ulcers are found in it.

In the acute stages the vagina is swollen, red and tender, and discharges a milky or yellow pus; in acute gonorrhœal cases the discharge often has a greenish tinge. The discharge has a peculiar odour, is very irritating (sometimes even to the examining finger), and is highly contagious, especially to the vulva of infants, and to the urethra, the vagina, and the conjunctiva.

In chronic forms of vaginitis the discharge is milky (leucorrhœa), and the vagina often feels rough and looks red in places (" spotty vaginitis ").

A rare form of inflammation (vaginitis emphysematosa v. cystica) is sometimes met with in the form of little cysts beneath the vaginal epithelium, which contain air. It appears to be an emphysema produced by a bacillus resembling the B. coli communis.

Cysts of the Vagina.

Cysts may arise in any part of the vagina, but occur especially in its anterior wall. They are usually of small size, rarely exceeding that of a hen's egg. They may originate in the vaginal glands, of which but few are normally present, in dilated lymphatics, in traumatism (serous and sanguineous cysts), from the adhesion of the folds of the vaginal rugæ as the result of inflammation, which seems at times to cause the development of glands, and may give rise to small air-containing cysts (*vaginitis emphysematosa*), in traumatic implantation (epidermal cysts), or from hydatids. Cysts also arise congenitally from Gartner's or Müller's duct. A Gartnerian cyst may extend into the uterus or broad ligament, and its complete removal by the vaginal route may then be difficult or impossible.

53. A cyst 2 cm. × 2 cm. × 1½ cm., with purulent contents. The inner wall of the cyst is discoloured brown, and shows slight indications of septa. 8088

Microscopic Structure.—The cyst-wall is composed of loose fibrous tissue, and has a lining of stratified epithelium.

Removed from the posterior vaginal wall, 1 inch from the vulva. There were pain and discharge, and several warts were found growing on the vulva.

54. A vaginal cyst, 3·5 cm. × 3 cm. Half of it is covered by smooth vaginal mucous membrane. 8213

The surface of the cyst is covered with stratified epithelium. The wall of the cyst is made up of fibrous tissue containing a few blood-vessels. The cyst is lined with cubical epithelium.

55. A cyst, 4·5 × 3·5 × 3 cm., of the lower part of the anterior vaginal wall. The wall varies in thickness from 3 mm. downwards. The lining is somewhat tuberculated. 10195

Microscopic Structure.—The cyst-wall is composed of interlacing bundles of fibrous and muscular tissue with a lining of cubical epithelium.

The cyst was excised from the anterior vaginal wall. The tumour was, in the fresh state, as large as a hen's egg, and had been mistaken by a gynæcologist for a cystocele.

56. An epidermal cyst of the lower part of the anterior vaginal wall, measuring 6 cm. × 4 cm. A portion of the vaginal wall, with a circular ulcer in it, has been removed with the cyst. The ulcer is clean-cut and the base fairly smooth, a few shreds projecting from it. 8662

Microscopic Structure.—The surface of the cyst is covered with stratified epithelium. The wall is made up of fibro-muscular tissue with numerous vessels, and the cyst is lined with stratified epithelium. The tissues beneath the ulcerated portion are œdematous and infiltrated with leucocytes.

Excised (H. R. S.) from the anterior vaginal wall. From a patient aged 37.

57. A vaginal cyst, measuring 7·5 cm. × 5 cm. × 5·5 cm. The greater part of the cyst is covered with smooth vaginal skin, which at one part is slightly eroded, the erosion having a smooth base. The lining is smooth and the contents mucus. Beneath the eroded skin the lining of the cyst is darker than elsewhere, and there is some ecchymosis seen in the section of the wall at this spot. 8958

The specimen was removed (G. F. B.) from a patient aged 40.

Microscopic Structure.—A section of the cyst-wall at the eroded spot shows a lining of stratified epithelium a few layers thick. The wall consists of fibrous tissue. The surface consists of ordinary skin, but at the eroded part there is a loose network of tissue feebly staining, the Malpighian layer alone taking the stain well; the rest of the epithelium is evidently atrophied. Beneath this part of the cyst there is considerable small-cell infiltration. The network is considerably thinner than the normal skin, yet the surface epithelium is continuous from the healthy to the eroded portion, showing that the condition is an atrophy and not an ulceration.

Myoma, Fibroma, Fibro-myoma, and Fibro-adenoma of the Vagina.

Myoma, fibromyoma, and fibroma (conveniently comprised in the term "fibroid") occur in the vagina, but are rare. They may be sessile on the vaginal wall or polypoid. Fibroids are also met with in the paravaginal tissue. Fibro-adenoma is occasionally seen, the glands probably originating in Gartner's or Müller's duct. Vaginal fibroids are small, and usually give rise to no symptoms.

58. An adeniferous fibro-myoma removed from near the posterior vaginal fornix. It is pyriform in shape, and measures 2 cm. by 1·5 cm. by 1·7 cm. The cut section shows white fibrous trabeculæ with a yellowish intertrabecular substance. The surface is smooth and somewhat nodulated. 9885

Microscopic Structure.—The section shows fibro-muscular tissue in a state of hyaline degeneration. At one spot near the surface the tissue is looser in structure, and has embedded in it several glands lined with columnar epithelium. In some parts of the denser portions of the tumour are numerous colonies of leucocytes.

Sarcoma of the Vagina.

Sarcoma of the vagina occurs in infants and young children in the form of polypoid outgrowths ("grape-like sarcoma"). It grows mainly from the anterior wall, and often implicates the bladder. In structure it contains spindle-cells or round cells and giant-cells. In some cases smooth and striated muscle-cells have been observed. In adults similar polypoid forms and sessile growths are met with. Sarcoma of the vagina is rare, and has a high degree of malignancy.

Carcinoma of the Vagina.

Primary carcinoma of the vagina is a rare disease which mostly affects the vaginal wall at its upper part. It is usually separated by a distinct interval from the portio, but as it advances it may invade the portio, so that in some cases it is difficult to decide whether the growth has originated in the cervix or vagina. It occurs in the form of a warty or a diffuse or fungating growth, or an indurated growth.

The vagina is often invaded by extensions of cancer from the portio, and glandular carcinoma of the cervix is liable to invade the substance of the neighbouring vaginal wall beneath the surface of the epithelium. Owing to the thinness of the vagina, carcinoma soon penetrates into the paravaginal tissue and rectum. Usually the growth is a squamous carcinoma; primary columnar-cell carcinoma is also met with, originating in the vaginal glands or Wolffian or Müllerian structures; but when columnar-cell cancer occurs the suspicion should arise that the growth is secondary to cancer of the uterus, Fallopian tube, or intestine. *Chorion-epithelioma* is also met with, especially in the lower part of the tract.

Carcinoma of the vagina shows a high degree of malignancy, dependent on the thinness and the abundant lymphatic supply of the structures in which it grows. The lymphatics of the upper two-thirds of the vagina discharge into the iliac glands.

It is advisable, in operating, to remove the whole of the vagina and uterus, and in some cases part or the whole of the rectum as well.

59. S. Emerson

60. L. Cobb

63. Red 13. Nov. 1909.

59. A uterus and the adjacent part of the vagina. The uterus has been laid open along the front. In the right fornix is an irregular ulcer, 3 cm. × 1·5 cm., extending to the edge of the lip of the cervix but not involving it. 8804

Microscopic Structure.—The growth is a carcinoma, consisting of masses of large epithelial cells, some of which have a squamous form, and are in places arranged in cell-nests. There is much round-cell infiltration.

Removed (H. R. S.) from a patient aged 54 by vaginal hysterectomy with the cautery. The patient died on the sixth day.

60. Half a uterus and upper 4·5 cm. of the vagina. In the upper part of the vagina is a raised and ulcerated growth, 2·5 cm. × 2 cm., and projecting nearly 1 cm. from the surface. The upper edge of the growth is separated by 1 cm. from the lip of the cervix. The vagina has been divided at one point only about 5 mm. from the growth. 9801

Microscopic Structure.—The growth is a carcinoma consisting of large masses of squamous cells. The tissue is extensively infiltrated with leucocytes. The cervix is not affected.

The specimen was removed (H. R. S.) by total abdominal hysterectomy by the galvano-cautery, neither the knife nor the scissors being used. The patient appeared to be free from recurrence a year later, although she suffered from sciatica. A large growth soon afterwards appeared in the lower abdomen, and the patient died 16 months after the operation. The vagina remained free from disease.

61. The portio vaginalis and a large mass of the posterior vaginal wall, forming a tumour 10 cm. × 8 cm. × 4 cm. The surface is generally smooth, in places slightly eroded and granular. The portio is healthy and flush with the vagina; the deep surface is raw, rough, and burnt with the cautery. 7369

Microscopic Structure.—The tumour is a squamous carcinoma which penetrated for a depth of 1 cm. from the surface.

Removed (G. F. B.) with the cautery from a patient aged 67. There was a good deal of hæmorrhage at the operation, and the patient died 24 hours after the operation. The patient had procidentia uteri for some years. The whole mass was outside the vulva, and was ulcerated on the surface from constant rubbing.

62. A uterus and appendages and the upper part of the vagina, removed by the extended abdominal operation. The uterus and appendages are normal. In the anterior vaginal fornix is a deep ulcer with a slightly serrated edge, measuring 3 cm. transversely by 1·5–2 cm. vertically. The growth reaches to, but has apparently not invaded, the edge of the anterior lip. 10071

Microscopic Structure.—The growth is a squamous carcinoma.

63. A uterus and vagina removed by vaginal hysterectomy for carcinoma of the vagina. The uterus is 6½ cm. long and is not diseased. The vagina has been laid open, and shows at its upper posterior wall a growth 3 cm. transversely by 2 cm. vertically, and separated from the atrophied cervix by 1·5 cm. of smooth vaginal wall. The lower edge of the growth is everted; the surface is irregular; the growth invades the vaginal wall, which tore across during removal. 11258

Removed (H. R. S.) in Nov. 1909 by vaginal colpo-hysterectomy from a patient aged 48, who recovered from the operation, but had evident recurrence a few months later and died Feb. 25, 1911.

DISEASES OF THE UTERUS.

Menstruation.

By menstruation is meant the monthly sanguineous uterine discharge, normally of five days' duration and recurring every 28 days, which occurs from the age of 15 to the age of 47 in this country. It appears somewhat sooner in hot countries and somewhat later in cold. The discharge consists of blood, desquamated epithelium, and mucus. The discharge does not clot, and has a peculiar odour.

Menstruation sometimes begins in very early life, and then is usually associated with precocious development of the genital organs. It often continues to the age of 50–55 or even later in women who are affected with fibroid tumours. Newborn children often have a bloody discharge from the uterus during the first few days of life; it is due to hæmorrhage into the endometrium, and does not recur. Menstruation may not appear till the twentieth year or later, and it may never occur if the essential organs are absent or ill-developed, or the discharge may accumulate above the obstruction in cases of stenosis, imperforate hymen, vagina, or cervix. It may be absent temporarily from various general and local causes and during pregnancy and lactation (*amenorrhœa*). In nearly three-fourths of virgins menstruation is painful (*dysmenorrhœa*). In many of these no abnormality can be found, and the pain appears to be due to muscular spasm. In some the uterus is ill-developed (infantile) and anteflexed. Stenoses, inflammation of the appendages, and fibroid tumours are a frequent cause of dysmenorrhœa. In a few of these cases casts of the uterus are discharged at the "periods" (*membranous dysmenorrhœa*); the casts consist either of endometrium or of clots. Menstruation is supposed by some to be connected with the rupture of the Graafian follicles, but it is doubtful if this is usually the case, and it certainly is not always so.

Menstruation ceases when the ovaries are completely removed, though a discharge more or less resembling the menses may occur at intervals for some time. Patients who do not menstruate sometimes have bleeding from other organs, such as the nose, stomach, and skin; this has been called *vicarious menstruation*, but investigation almost always shows that the hæmorrhages are not of monthly periodicity. Menstruation usually ceases about the 47th year in this country. This cessation (*menopause*) sometimes occurs suddenly, or the patient may be "irregular" in time and amount for some time before the cessation. Irregular hæmorrhage at this time especially should always lead to careful examination, as it is then that cancer of the uterus is most liable to occur. The menopause is accompanied by flushings and sweating, which may last for several years; various nervous phenomena are also apt to develop then. The same symptoms follow removal of the ovaries.

Menstruation ceases during pregnancy and usually during lactation. During the first three months of pregnancy, before the decidual cavity is closed, periodic discharges of blood may take place from it. During menstruation the endometrium becomes congested and infiltrated with blood, and either the superficial layer, or the whole of the membrane except the basal layer, becomes discharged, either in pieces or as a complete cast. The mucous membrane of the cervix takes no part in the process, nor does the mucous membrane of the Fallopian tube partake in the process normally.

After the rupture of the follicle and the escape of the ovum, the follicle is filled with blood and a reddish-yellow substance, and, if impregnation has not occurred, the blood is gradually absorbed, and the whole follicle shrinks and ultimately disappears. During this process it is known as a false corpus luteum (64, 65). A corpus luteum is irregular in outline owing to the thickened follicular wall being thrown into folds. This process gradually extends until the follicle is obliterated, new fibrous tissue and developing blood-vessels taking its place. If impregnation should occur the corpus luteum (true corpus luteum), instead of contracting and ultimately disappearing, continues to grow until about the fourth month, when it forms a marked projection on the ovary, often measuring an inch by half an inch.

The corpus luteum is formed of the thickened and folded wall of the follicle, the cells of which proliferate and undergo fatty degeneration. New vessels are formed in the thickened wall.

After reaching its maximum development the corpus luteum gradually undergoes atrophy and absorption, which is complete shortly after delivery. There is no essential difference between a true and false corpus luteum, the difference being one of degree of development and duration.

64. A menstruating uterus and appendages. The anterior wall of the uterus has been removed. There is a corpus luteum in the left ovary. The decidua is about 3 mm. thick; over the greater part of the posterior wall it is nearly smooth, but along the left side and at the bottom of the right side it is shaggy.

Microscopic Structure.—The surface of the mucosa is shaggy and devoid of epithelium. The mucosa consists of loose tissue with rounded and spindle-cells. The glands at the surface are few in number, and have almost completely lost their epithelium; the deeper glands retain their columnar epithelium, but mostly appear to be desquamating.

65. The uterus, etc., of a virgin aged twenty-three, who died from the effects of a burn. At the time of death, on the 23rd day, she had been menstruating for about twenty-four hours. The lining of the uterus is thickened, shaggy, and blood-stained, and is becoming detached in pieces of considerable size. The right ovary has been laid open; at its outer part a cyst is seen in section; close to this is a recent corpus luteum. Two smaller cysts are seen in section near the surface of the organ. The left ovary has been bisected: a corpus luteum is seen in section; there is also a small cyst, whose walls are blood-stained; this had burst at the time of the autopsy. Portions of omentum are adherent to the broad ligaments, and delicate pseudo-membranes are attached to the broad ligaments and appendages. (Surg. Reg. Rep. 1890, p. 137, No. 1827.) 6572

66. A uterus with its appendages, removed from a young girl who died from peritonitis, and is said to have been menstruating. The anterior wall of the uterus has been removed: the inner surface is shreddy owing to disintegration of the surface of the mucosa of the body, the cervical mucosa being quite normal. The uterine walls are of normal thickness. The peritoneal covering is nowhere coated with lymph, nor does it appear to have been the seat of any morbid process. The ovaries have been removed.

67. The uterus and ovaries of a young unmarried woman who was supposed to have taken poison. At the post-mortem examination the fundus of the uterus and the right ovary were found congested. The right ovary has been laid open and shows a corpus luteum measuring 2 cm. × 1·3 cm. The mucous membrane of the uterus is thickened and spongy. A small pedunculated cyst is attached to the left Fallopian tube, close to its free end. The changes in the uterus and ovary are probably dependent upon menstruation.

In the MS. Catalogue the specimen is described as one of early pregnancy, but it also states that no ovum was found at the post-mortem examination.

Microscopic Structure.—The mucous membrane consists of loose cellular tissue with oval, rounded, and spindle cells, embedded in which are somewhat dilated glands with swollen epithelium, which is, in many cases, desquamating. Numerous dilated capillaries are also seen. There is no epithelium on the surface.

68. A uterus, according to the MS. Catalogue, just after menstruation. The mucous membrane of the body is thickened irregularly, has a shaggy surface, and is eroded in places. 7440

Microscopic Structure.—The surface epithelium has disappeared, and the mucosa consists of a loose cellular matrix containing round and spindle cells and widely dilated capillaries, some of which have ruptured and suffused the upper layers with blood. No glands are to be seen in the superficial parts of the membrane, but the deeper parts contain glands, in all of which the epithelium is desquamating.

From a single woman, aged 24. The ovaries were enlarged and covered with adhesions; the parametrium on one side was thickened.

69. The decidua discharged during menstruation as a "cast" from the uterus. The attached surface is shaggy; the free surface is smooth, but convoluted; in the sulci between the convolutions are pores which are the orifices of uterine glands. 6117

From a woman, aged 52, who was under the care of Dr. Graily Hewitt in 1885. She was a multipara, the youngest child being 8 years old. The patient had been in feeble health before the cast was discharged, but the notes give no menstrual history.

70. A dysmenorrhœal cast measuring 4·2 cm. by 2·2 cm. The inner surface is smooth, but furrowed. The outer surface is shaggy. The membrane is Y-shaped. 7663

Microscopic Structure.—The remains of a few glands are seen on the surface; the main bulk of the tissue consists of a fine reticulum of fibrils, in the meshes of which are numerous round cells, some of which are large and have abundant protoplasm. In places spindle cells are seen. Through the tissue are interspersed some degenerating areas.

Malformations of the Uterus and Appendages.

The uterus and vagina are formed by the fusion of the two Müllerian ducts. The ducts remain separate at the upper ends as the Fallopian tubes; below these the fusion may fail wholly or in part, or one duct may wholly or partly fail to develop.

The *Fallopian tube* may be absent or rudimentary, or stenosed at its abdominal or uterine end. An accessory tube is sometimes met with, and very commonly an accessory ostium is met with in the ampulla, or a blind sacculus (the antrum).

The *ovaries* are rarely absent, though they may be rudimentary on one or both sides. *Supernumerary* ovaries have been described, but in many cases these are portions which have been separated from the main organ (*accessory*). Ovarian tissue is sometimes met with in the ovarian ligament.

The *ligaments* of the uterus vary in size in different cases, and occasionally the round ligament is inserted at a lower level on one side than the other, and the round ligament of a rudimentary horn is usually highly developed.

The *uterus* may be absent, rudimentary, ill-developed, or duplicated. Two separate uteri may be present (*u. didelphys*), or conjoined side by side (*u. duplex*), or the uterus may possess a septum extending for a varying distance from the fundus to the internal os (*u. septus unicollis*), or external os (*u. septus bicollis*), or vagina (*u. septus, vagina septa*). This septum may be perforated at some part. The two horns of the uterus may be separate (*bicornuate uterus*), or a septum of variable depth may give the organ a heart-shape (*u. cordiformis*). Although the horns are separate, the top of the uterus may be flattened (*u. incudiformis*). One horn only of the uterus may be developed (*u. unicornis*); in this form the other horn is often represented by a strand of tissue, and the Fallopian tube and ovary may be present though malformed, and the corresponding kidney may be absent (see under Malformations of the Fœtus).

In cases of rudimentary uterus the vagina is often rudimentary or absent, though the external genitals are often normally developed.

In the new-born child the cervix is much larger than the body, and the rugæ of its lining extend to the fundus. Occasionally there is a congenital tumour at the internal os which may cause hydrometra (79, 80). Infantile shape is sometimes maintained through life (*u. infantilis*). The cervix may be conical, and the external os, instead of appearing as a slit, may appear as a small round aperture ("pin-hole os"); this condition may be a cause of sterility.

Other examples of malformation of the uterus and vagina, including u. didelphys, are described in the Catalogue of Surgical Pathology, Nos. 2538, 2544, 2546, 2547, and 2548.

71. The organs of generation with the bladder, from an unmarried woman, aged twenty. The external genitals are normal, except for a slight redundancy of the mucous membrane covering the clitoris. The vagina and uterus are double. The two parts of the vagina are separated by a well-marked septum about $\frac{1}{8}$ inch in thickness. The rugæ of the vaginal mucous membrane are well marked. Each vagina has been laid open at the upper part to show the os uteri of its own side, into which a piece of whalebone has been passed. The two uteri are united below for about an inch, and here measure about $2\frac{1}{4}$ inches across. At the point of separation they form an open angle and remain separate for about $1\frac{3}{4}$ inch, being rounded in form, with a diameter of one inch. On the left side the Fallopian tube and ovary

are matted together by inflammation, and the peritoneum has been removed from them and from the greater part of the right side, both back and front.

The condition was unsuspected during life; the patient menstruated normally. 4050

72. A specimen of double uterus and vagina. The part of the vagina which has been laid open is in connection with the left uterus. It does not present any abnormal appearances, with the exception of a small fistulous communication with a cystic cavity to the right of and a little behind it. This cavity, which has been laid open from the side, measures $2\frac{3}{4}$ inches by $1\frac{3}{4}$ inch. Its walls are thickened and its interior smooth, communicating superiorly with the cavity of the right uterus. This cyst is the right vagina distended. The fistulous communication between the two may be the result of a puncture made with a view of ascertaining the nature of the cyst; or it may be congenital. The dilatation of the right vagina was caused by retention of the menses ("Unilateral Hæmatocolpos").

Of the two uteri, which are united below for about $1\frac{3}{4}$ inch and separate above, forming a very open angle, the right one is the larger and its walls are thicker than those of the left; the cavity is also dilated and the wall hypertrophied, the results of retention of the menses. The lining of the left uterus is normal in appearance, and the arbor vitæ is well marked.

The uterine appendages are healthy. Bristles have been passed along each Fallopian tube into the cavity of the uterus. The uterine bodies are completely separated by a considerable space, and each is bent—as is usual in such cases—to the side to which it belongs, so that the axes of the body and cervix do not bear the normal relation to each other (lateri-flexion).

73. A uterus bicornis unicollis and right appendages, and a piece of small intestine adherent to the remains of the left broad ligament. The uterus measures 5 c m. in length × 5·5 cm. in breadth × 2·5 in thickness. The two horns, of which the left is the longer, are separated by a partial septum.

Below is mounted a piece of the abdominal wall showing the scar of the operation for removal of the left appendages 5 years previously. 6870

74. A uterus and appendages, six days after labour, from a case of placenta prævia. The uterus measures 15 cm. × 13 cm. A septum 2 cm. long partly divides the fundus into two cavities. In the anterior wall is seen the rough placental site, 10 cm. × 6 cm., extending down to the internal os on the right side. 6796

During labour the uterus was heart-shaped, the fœtal head being in one horn and the breech in the other. The placenta could be felt through the abdominal wall. Version was performed. The patient died of septicæmia six days later.

75. A bicornuate uterus with cystic stenosed right horn, measuring $3\frac{1}{2}$ cm. across. The right Fallopian tube takes its origin from this cyst, but does not open into it. The tube is dilated and communicates with a unilocular ovarian cyst 15 × 9 × 8 cm. (tubo-ovarian cyst). The uterus measures 10 × 6 × 4 cm., has a median ridge on the surface and a Y-shaped cavity, owing to the thickening of the body by the central wedge, which measures $2\frac{1}{2}$ cm. in depth. There is a small myoma in the right side of the lower segment in front. 11632

Removed (H. R. S.) from a patient aged 49, who complained of swelling of the abdomen and pain on bending the body or carrying anything, for $6\frac{1}{2}$ years. She had had 6 children. Menstruation had been regular till 12 months ago, when it ceased for 3 months. The patient died on the fourth day from broncho-pneumonia.

76. A uterus duplex bicornis and appendages with double vagina and external genitals. The two vaginæ intercommunicate at the lower end by a small aperture, and open by a single orifice at the hymen. The vaginal rugæ are well marked and so are the columns. The uterus measures 11·5 cm. × 5·5 cm. in height, the

great width being due to the divarication of the corpora. The cervical canal measures 4·5 cm., the corporeal canal 2·7 cm. The arbor vitæ is not well marked; there are a few cysts in the lower part of the corporeal mucous membrane. The corporeal endometrium is thin, congested, and the cavity was filled with blood-clot. The ovaries are large; in the right ovary is a cyst 2 cm. in diameter. The tubes measure 10 cm. and are healthy. There is a fold of peritoneum passing from the rectum to the angle between the two bodies, and a pouch is present on either side of it. The nymphæ and clitoris show nothing abnormal; the parts of the labia majora remaining are small, and posteriorly are continued almost to the anus as two pigmented bands with a groove between them. 9192

77. A uterus unicornis with appendages. The uterus is flexed to the left and measures 7 cm. high × 4 cm. broad × 2·5 cm. thick. The left horn and appendages are normal. The right horn is represented by a solid cord 1 cm. in diameter and 4·5 cm. in length coming off 2 cm. below the fundus. The ovarian ligament comes off from this horn at a distance of 3 cm. from the main uterus. The ovary and its ligament are normal. The horn is prolonged into a rudimentary Fallopian tube 2·5 cm. long, which appears to be solid. A band runs on the anterior surface of the horn, and possibly represents a round ligament. 9267

Microscopic Structure.— A section of the right horn shows that it has no cavity; it is made up of fibro-muscular bundles, and with numerous vessels which in parts give it a honeycomb appearance. The vessels are very thick-walled towards the broad ligament. Most of the vessels, however, appear to be veins.

78. A uterus and appendages. The uterus measures 8·5 cm. long × 6 cm. broad × 3 cm. thick. The appendages are normal. The left round ligament is 1 cm. thick and comes off from the uterus 2·5 cm. below the commencement of the Fallopian tube. The left ovarian ligament comes off from the uterus 2 cm. below the commencement of the Fallopian tube, the round and ovarian ligaments on the right side being inserted at the normal level. 9100

79. The uterus and appendages of a new-born child showing hydrometra produced by the blocking of the internal os by a congenital tumour. The child was a twin, the other twin being a male. The body of the uterus was of nearly twice its normal bulk, and when cut open was dilated by a plug of yellowish viscid mucus as big as the end of the little finger. The anterior column is well marked; from it plicæ pass upwards and outwards. A little round tumour, of the size of a small pea, is situated at the internal os. It is sessile, though slightly constricted at its base, fairly smooth but faintly furrowed upon its upper surface, and some of these furrows pass laterally over the anterior wall of the uterus in a transverse direction. The cavity of the body is fairly smooth; in the middle line running from the tumour to the fundus is a marked but very narrow groove. There was no other malformation in the body. (Obstet. Trans. vol. xl. p. 332.)

80. The uterus and appendages of a new-born child showing hydrometra produced by the blocking of the internal os by a congenital tumour. Polypi are present in the cervical canal. The child weighed 7 lb. 8 oz. The body of the uterus is about twice its normal bulk. The cervix projects somewhat more than usual into the vagina. The vagina and portio vaginalis are less rugose than in No. 79. The body of the uterus was dilated and filled with viscid greenish mucus. There is a tumour at the internal os formed, as in the preceding case, by the upper extremity of the anterior median column of the arbor vitæ, but in this specimen the column is divided by longitudinal grooves into three parts, which below swell out into polypoid growths at some distance from the external os. There is a median longitudinal groove in the body of the uterus extending from the tumour to the fundus and on either side of it two grooves diverge from the tumour in the direction of the cornua. There is also slight enlargement of the posterior

column. The right Fallopian tube is occluded at its outer extremity. Attached near the outer end of the right ovary is a plicated body which appears to be the congenitally displaced fimbriæ. There were no other abnormalities in the body.

Microscopic Structure.—The tumour shows the structure of cervical mucous membrane, the surface being covered with cylindrical ciliated epithelium, and being furnished with closely set simple crypts lined with long cylindrical cells and goblet cells. The centre of the tumour consists of loose fibro-cellular tissue with a few thin-walled vessels.

(*See* Obstet. Trans. vol. xl. p. 332, where a third case is described, also a twin, its fellow being a male. The three cases were met with in examining about a hundred uteri of new-born children.)

81. A uterus unicornis with appendages. The uterus is small, the Fallopian tube is normal, and the ovary well developed. There is no uterine cavity.

The specimen was removed by sub-total hysterectomy (G. F. B.) from a woman aged 21, who had never menstruated, and had suffered for some years from epileptic fits occurring more or less regularly at monthly intervals. The vagina was represented by a depression half an inch in depth. The patient had no fit for 8 weeks after the operation; after this they recurred with less frequency. The patient died within two years from the operation from a fall from a window, probably as a result of an epileptic seizure. (Obstet. Soc. Trans. vol. 48, p. 82.)

Displacements of the Uterus.

The uterus normally lies with its axis slightly curved forwards, approximately in the axis of the pelvic inlet and its *fundus* (that part of the body which lies between the Fallopian tubes) nearly in the plane of the pelvic brim. In the erect posture the upper limit of the uterus is from 1 to 2 inches above the level of the pubes.

The uterus may be displaced upwards (*elevated*) or downwards (*prolapsed*) or to the front (*anteposed*) or back (*retroposed*) or to one side (*dextro- or sinistro-posed*); it may be *turned*, without bending, in one of the four directions (*ante-, retro-, dextro-, or sinistro-verted*) or bent in the neighbourhood of the internal os (*ante-, retro-, dextro-, sinistro-flexed*); it may also be turned inside out (*inverted*) by pressure or traction of the uterus during the delivery of the placenta or by the traction of a submucous tumour. The inversions may vary in degree: in complete inversion the appendages are drawn down into the cup formed by the uterine peritoneum and the orifices of the Fallopian tubes may be seen on the exposed endometrium. Flexions and versions may be congenital (82); usually they are acquired as the result of strains or the pressure of organs or tumours, especially during the involution following labour. A congenital or acquired weakness of the fasciæ and ligamentous structures of the pelvis often leads to displacements. Complete prolapse (*procidentia*) is rare in virgins; it usually occurs as the result of injuries during child-birth, when the muscles and fasciæ get stretched and torn. Procidentia usually begins with prolapse of the vagina (*cystocele, rectocele*); the prolapsed vagina pulls upon the cervix, and stretches it so that the uterus measures four or five inches in length and the cervix is proportionately thinned. In cases of prolapse the uterus is nearly always retroverted. In procidentia the vagina is inverted, the mucous memabrne becomes dry and leather-like and often extensively ulcerated (89); it very rarely becomes carcinomatous (86, 61).

82. A section of the body of a new-born child, showing retroflexion of the uterus. The cervical canal is retroverted at an angle of 25° to the axis of the pelvic brim; the canal of the body is retroflexed at an angle of 40° to the axis of the cervical canal. The posterior wall at the seat of flexion is three times as thick as the anterior. The retroflexion appears to be due to the large descending colon, which lies between the uterus and the bladder as it comes over from the left side of the abdomen to pass down on the right side of the pelvis into the rectum. This was the only example of retroflexed uterus met with by Dr. Spencer in over one hundred necropsies of female still-born children. (Obstet. Trans. vol. xxxiv. p. 25.)

83. The body of a uterus which had become inverted, and was successfully removed by operation. The mucous membrane is shreddy. The peritoneal coat is, for the most part, normal in appearance, but here and there are small shreds of recent lymph. Bristles have been passed through the Fallopian tubes. The inner openings of these are represented by two slit-like depressions. The fimbriated extremities are not present, having been divided during the operation. From the large size of the uterus, the inversion has evidently followed labour.

84. The rectum and part of the vagina, with the uterus and its appendages. The uterus is retroflexed; it has been laid open along its anterior surface. Douglas's pouch has become almost entirely obliterated by adhesions, which have bound the fundus of the uterus to the rectum. The uterine cavity is normal. 5418

The specimen was removed from a woman, æt. 49, who had had six children, the youngest being 21 years old. For some time before death she had been under treatment for retroflexion of the uterus. She was brought into University College Hospital in an apoplectic fit, on Sept. 2nd, 1872, and died comatose.

85. A uterus and its appendages. The uterus is small; its body measures 3·5 cm. at its widest part by 2·3 cm. antero-posteriorly. The organ has been bisected. It is seen to be in a condition of extreme anteflexion, the cervix forming an angle of about 80° or 85° with the body.

The specimen was removed *post mortem* from the body of a young woman who had never complained of uterine symptoms. The uterus and appendages are healthy. 3621

The uterus is ill developed ("infantile").

86. The internal genital organs and everted vagina removed *post mortem* from a patient aged 74 who had suffered from prolapse for many years, and from irreducible procidentia for 4 months. The uterus is contained in the sac formed by the inverted vagina, which is extensively ulcerated; the upper part only of the everted vagina and a portion of the cervix being unaffected. 8947

Microscopic Structure.—The ulcer is carcinomatous.

87. A hypertrophied cervix with a strip of the anterior vaginal wall attached. The cervix shows longitudinal and excentric hypertrophy, and is deeply lacerated on both sides and posteriorly. The anterior lip projects markedly, and on its posterior surface is a superficial smooth-based ulcer; the surface of the vagina in front of the anterior lip is similarly ulcerated. 10268

88. A uterus with the vagina and bladder. The bladder has been laid open anteriorly, and the uterus posteriorly. The vagina is inverted, and has carried the cervix uteri outside the vulva, while the fundus has remained in its proper position. The vaginal portion of the cervix is greatly hypertrophied, the supra-vaginal portion greatly elongated and thinned by the traction made upon it by the vagina. The pouch of Douglas is deepened. The mucous membrane of the vagina is considerably indurated, and is superficially ulcerated, especially on the left side towards the posterior aspect. The uterine appendages on the right side are normal, but on the left the broad ligament is wider than usual, and the Fallopian tube is $5\frac{3}{4}$ inches long. The left ovary has been cut away, but the ligament remains and is much thickened. In the MS. Catalogue it is stated that "the left ovary is much enlarged," but from what cause is not mentioned. 2154

89. A specimen of inversion of the vagina. The inverted portion is rugose, and the mucous membrane is thickened and indurated. At its most dependent part it is ulcerated, presenting two oval depressed ulcers with sharply-defined margins. The bladder has been dragged down, and its walls are much hypertrophied. A piece of whalebone has been passed along the urethra, the canal of which forms

almost a right angle with the long axis of the bladder, so that there must have been considerable difficulty in micturition, the hypertrophy of the walls being compensatory. There is hypertrophy of the supra-vaginal portion of the cervix. The discoloration of the specimen is due to the growth of a fungus in the specimen before it had been properly preserved.

90. A section of the pelvis of a female, showing prolapse of the uterus. The conjugate is 9·2 cm. (3⅝ inches). The fundus uteri is 5 cm. below the level of the pelvic brim. The axis of the uterus is almost vertical. The fundus of the bladder is 3 cm. below the pelvic brim. Part of a multilocular cyst occupies the upper part of the true pelvis. The uterus is 9·3 cm. long; the body measures only 2 cm. antero-posteriorly. The anterior vesico-uterine pouch is 5·5 cm. from the fundus; the bottom of Douglas's pouch 6·75 cm. below the fundus. The anterior lip of the cervix is 1·6 cm. long; from the edge of the posterior lip to the fornix measures 4 cm. The posterior fornix reaches up 1·2 cm. above the lowest part of Douglas's pouch. The bladder, which is empty, descends 1·3 cm. below the level of the outlet, the cervix 3·5 cm. below that level. The urethra is seen in its normal position, and its bent shape can be inferred from the position of the bladder, although the incision has not passed through the whole cavity of the bladder and urethra. The anterior vaginal wall covering the bladder (cystocele) and the cervix can be seen in the cleft of the vulva.

91. Part of the os pubis, with the bladder and vulva. Projecting from the vulva is an oval mass, which is attached above by a pedicle about 1¼ inch long; the mass measures 2 inches in length and the same in breadth, and 1¼ inch in thickness. The external surface is covered with mucous membrane, which is shreddy, and the orifices of the Fallopian tubes are indicated by bristles. The pedicle is encircled by six strands of coarse thread. The tumour has been laid open anteriorly, and is seen to consist of the inverted uterus. The cavity laid open is quite smooth and lined with peritoneum; it contains part of the broad ligaments and Fallopian tubes. At the upper part of the specimen the fimbriated extremities of the Fallopian tubes and the ovaries can be seen. 4029

The specimen was from a patient, aged 27, who had been confined a year before her death, which was due to peritonitis. In the MS. Catalogue it is stated:—"There was some tugging at the navel-string, but after three tugs the placenta came away. There was not excessive hæmorrhage at the time, but more or less bleeding continued for four months. The woman did not get quite well, suffered much at the menstrual periods, and on laughing or making any exertion, something protruded from the vulva. There was an offensive discharge, not menstrual. A ligature was applied round the neck of the tumour, but as the hæmorrhage continued, another, and even a third, was used before the bleeding ceased.

The inversion was probably produced by the traction of the cord in the removal of the placenta.

92. The symphysis pubis, with the bladder, vulva, and part of the rectum, with the inverted uterus. Projecting from the vulva is a large pedunculated tumour measuring 5 inches in length, and at the upper part about 2½ inches in diameter; at the lower part it suddenly enlarges into a rounded mass 4¼ inches in diameter. This tumour has been laid open from the left side, and is seen to consist of the inverted uterus; the lower enlarged part is a mushroom-like growth seated on the fundus uteri and growing from its inner surface, and was the cause of the inversion. It is a sarcoma. The uterine wall is in some parts nearly an inch in thickness. The cavity seen inside the inverted organ is smooth, free from adhesions, and lined with peritoneum; it is the outer surface of the uterus. One of the Fallopian tubes, the right, has been opened and a bristle passed into its orifice, and another underneath it. The left tube is seen as a ridge. The right Fallopian tubes are dragged into the upper part of the funnel formed by the inversion; the end of the left Fallopian tube has been cut away. The ovaries lie at the mouth of the funnel. The outer surface of the prolapsed parts does not show marked ulceration. At the upper part of the inverted uterus

the mucous membrane is warty in appearance, and there is an internal groove which probably represents the internal os. 2871

When the patient was admitted to the hospital the mass was about three times as large as when she died. At first it was uncertain whether the mass was a polypus or a procidentia uteri. The patient died suddenly, and at the post-mortem examination it was found that there was a gastric ulcer, with "scirrhous contractions" of the pylorus, the stomach being adherent to the gall-bladder. The patient had suffered considerably from vomiting and abdominal pains, and was much emaciated.

Microscopic Structure.—The tumour is a fibro-sarcoma, parts of the growth being made up of closely placed oval cells with very little intervening stroma; other parts consisting of similar cells separated by fibro-muscular bands of varying extent.

Injuries of the Uterus.

The os uteri is usually torn to some extent during labour. The severe tears and ruptures will be described under *Rupture of the Uterus*. The cervix is usually notched and may be deeply torn in the course of natural labour, but especially as a result of operations (*e. g.*, forceps and versions), especially when the os is incompletely dilated. The tears are more frequent on the left side. A somewhat similar appearance is occasionally met with in the new-born child (congenital laceration), and this condition persisting till adult life might easily lead to the suspicion that a traumatic tear had occurred. Lacerations may also occur as a result of forcible rapid dilatation of the cervix, which often yields in the neighbourhood of the internal os before the external os tears.

Lacerations may involve the uterine artery or veins and may lead to fatal secondary hæmorrhage, or the injury may lead to aneurism.

When the cervix is torn bilaterally, the cervical mucous membrane becomes exposed (*ectropion*).

The uterus may be perforated by the sound, curette, irrigation tube (93), or even the fingers (95), especially after labour or abortion, when the tissue of the organ is sometimes extremely soft, and in cases of malignant disease. When malignant disease is present and within six weeks after labour or abortion, neither sound nor curette should be used by anyone but an expert gynæcologist, and by him only with the greatest care.

93. A uterus and appendages. The uterus measures 11 cm. long; the body 6·7 cm. wide at the origin of the Fallopian tubes, which arise 2 cm. below the level of the fundus. The anterior wall of the body has been cut away; at its thickest part, the placental site, it is 1·7 cm. thick, at the fundus 1 cm. In the posterior wall are seen two perforations, both to the right of the middle line. The lower has occurred beneath a flap of tissue in what is apparently the placental site. The upper is at the fundus. The perforations on the peritoneal surface have the appearance of clean cuts 1·5 cm. long. 7307

From a patient aged 22, who was confined on Oct. 12, 1894, and was admitted with septicæmia Oct. 23. The perforations were produced by a curved Budin's celluloid uterine tube of the size of the little finger, passed without undue force. The injury was due to the softness of the tissues of the uterus occurring in a puerperal woman suffering from uterine sepsis. Several intra-uterine douches were given daily till Oct. 31, when Budin's celluloid catheter introduced by the obstetric assistant perforated the uterus. The patient became greatly collapsed, and died a few hours later. The fluid was aspirated from the peritoneal cavity through the hole, but the patient was too ill for abdominal section, and the patient died soon after, and pyonephrosis and perinephritic abscess were found at the autopsy.

Microscopic Structure.—There is extensive mucous degeneration of the muscular fibres.

94. A uterus and appendages showing a tear at the level of the internal os in the right side, 3 cm. long. The tear penetrates the wall into the cellular tissue beneath the peritoneum. It is deepest at about the level of the internal os, and shallower above and below. It extends 1 cm. below and 2 cm. above the internal os. The uterus is enlarged (17 days after abortion); in the middle line it measures 9 cm., of which the cervix measures 3 cm. The vessels are

enlarged, and the peritoneum appears to be unaltered. The mucosa is inflamed. 7923

From a patient admitted for hæmorrhage with a temperature of 100°, 13 days after abortion, whose uterus was dilated by Hegar's dilators, which probably produced the tear. The uterus was curetted at the same time. On the second day of the operation the patient had a rigor, and subsequently three rigors occurred, the temperature rising to 106°. Death occurred from acute septicæmia on the fourth day after the operation.

95. A uterus and appendages 16 days after delivery, showing a perforation in the bottom of the lower segment of the posterior wall. The uterus measures $12\frac{1}{2} \times 8 \times 6$ cm. The appendages are normal, but they and the uterus are covered with adhesions. The portio measures $5\frac{1}{2} \times 3{\cdot}7$ cm. and is somewhat irregularly torn posteriorly, and shows the healing with slight notches in the external os. The tear is transverse, measures 3×1 cm., is mainly on the right side, and at a height of 5 cm. above the os. The tear gapes slightly, and in it is seen a blood-stained mass. The lining of the body has an irregularly nodulated surface, caused by adherent portions of placenta down to within 4 cm. of the external os. Thrombosed veins are seen in the posterior wall, and one especially just above the perforation. A large vein is seen cut across in the centre of the posterior wall of the upper part of the body. The anterior wall of the uterus is healthy. 11603

Microscopic Structure.—The nodulated surface shows destruction of the decidua, with necrosis of the tissue beneath, with extensive infiltration with leucocytes and numerous hæmorrhages.

The uterus was removed (H. R. S.) by vaginal hysterectomy about 20 hours after the uterus had been perforated by a practitioner in removing portions of placenta which had caused severe recurring hæmorrhages during the 16 days following delivery. The patient was in a state of extreme anæmia and collapse, with a temperature of 102° and a pulse of 144; she made a good recovery, and left the hospital in 39 days.

Hypertrophy of the Cervix.

Hypertrophy of the cervix is divided into *hypertrophy of the vaginal portion* and of the *supra-vaginal portion*; a third variety in which the anterior lip is inserted at a much lower level than ordinarily is sometimes called hypertrophy of the *intermediate portion* of the cervix.

Hypertrophy of the vaginal portion is usually congenital and affects both lips; rarely it may be confined to one lip (96). The vaginal portion may be three or four inches long, and may dilate and protrude through the hymen.

Hypertrophy of the supra-vaginal portion is sometimes met with. Usually the so-called hypertrophy of this portion is due to stretching, the supra-vaginal portion being lengthened, but proportionately thinned.

96. A hypertrophied posterior lip of the cervix measuring vertically 5 cm., transversely 9 cm., which was protruding from the vulva. It is roughly fan-shaped, the wider part below. Above is seen a raw surface of section. The lower part of the specimen is covered with white thickened skin; the upper part of the front surface is pitted with the orifices of mucous glands, one of which is dilated. The anterior lip was normal and not removed. 10881

Removed (G. F. B.) from a patient aged 43.

97. The uterus of a full-term still-born fœtus. The vaginal portion of the cervix (which in young children normally bears a greater proportion to the whole organ than in adult life) is very considerably elongated (1·4 cm.). The anterior lip is more hypertrophied than any other part, and on either side of its edge are two notches, the so-called congenital lacerations. In the left broad ligament, close to the outer end of the ovary, but not connected with it or the ovarian fimbria, is a small round cyst. The rugæ of the anterior column of the cervix extend to the fundus. 5438

98. A cervix uteri removed by high amputation for prolapse. It measures 7·5 cm. long; the vaginal portion is 4·3 cm. by 5 cm. At the upper part it measures 2 cm. The mucosa of the vaginal portion is wrinkled and thickened from exposure. The specimen consists entirely of cervix, the rugæ of the arbor vitæ and at the upper part some dilated cervical glands being visible. 10229

99. The vaginal portion of a cervix uteri congenitally elongated. The specimen measures 4·2 cm. × 3·7 cm. × 3·2 cm. The os is a transverse slit. The mucous membrane over the vaginal portion has assumed the appearance of skin, on account of exposure to the air. 9788

The specimen was removed by amputation from a patient aged 28.

Inflammation of the Uterus.

Inflammation of the uterus may affect the cervix (*erosion, cervical endometritis*) or the body (*corporeal endometritis, metritis*).

An "erosion" is a red inflammatory patch on one or both lips at the external os. It is covered with columnar epithelium instead of the squamous epithelium which is normally present there, and it consists of hyperplasia and dilatation of the cervical glands with small-cell infiltration between them (*glandular erosion*); often islets of squamous epithelium still remain. Sometimes the surface is beset with villous processes covered with columnar epithelium (*villous erosion*). As a result of inflammation the orifices of the cervical glands become blocked, causing red spots to become visible on the surface, or retention cysts which appear as bluish prominences on the portio or in the canal. In some cases glandular and interstitial inflammation of the cervical mucous membrane leads to a condition which may be termed a *hypertrophied erosion*, which shows itself either as nodular thickenings of the mucous membrane, or as an extensive red pitted growth leading to considerable excentric hypertrophy of the portio; both these conditions may bleed readily on examination and closely simulate cancer. The cervical mucous membrane often becomes everted (*ectropion*) in cases of laceration; it may be only reddened and show the characteristic markings of the arbor vitæ; when thickened and inflamed it may lead to a condition closely simulating an erosion, from which it may usually be distinguished by the presence on its surface of the orifices of cervical glands. These orifices are, however, visible in some cases of erosion; whether they are due to the mucosa growing over the portio or breaking through and opening on the surface is not easily decided; probably both conditions occur.

Cervical endometritis also manifests itself by redness, thickening, and prominence of the ridges of the arbor vitæ and by a thick mucoid or muco-purulent discharge (*leucorrhœa*). Small mucous polypi are also frequently met with.

Acute *metritis* occurs as a result of infection at labour or abortion, or as a result of gonorrhœa or syphilis. The uterus is thickened, œdematous, and infiltrated with leucocytes and the endometrium is congested. The most acute forms are seen after septic labours or abortions, when the endometrium may be thickened or sloughy (112), and thrombosis or suppuration may occur in the lymphatics or veins (111). The septic process may spread to the peritoneum, either by the tubal mucous membrane or by the lymphatics or through the venous system into the internal iliac or rarely into the left renal vein or vena cava (111). In more chronic forms the uterus remains thickened and is supposed by some to result in the *fibrotic uterus*, which sometimes causes very obstinate hæmorrhages.

As a result of stenosis occurring either congenitally (79, 80) or as the result of atresia of old age, injuries, cauterisation, steaming and other operations, and cancer of the cervix, fluid may collect in the uterus (*hydro-, hæmato-, pyo-metra*).

Rarely the cervix becomes destroyed by a slow ulcerative process (*corroding ulcer*, 127, 128).

100. A series of wax models, illustrating various conditions of the cervix and os uteri.

No. 1 is a healthy cervix.

The series from No. 2 to No. 7 inclusive show various stages of inflammation without ulceration. No. 3 shows the marks of scarification, and No. 7 leech-bites.

The series from No. 8 to No. 14 inclusive show various stages of inflammation with erosion.

Nos. 15, 16, and 17 show ulcerations which are syphilitic in nature.

No. 18 shows hypertrophy of the cervix. No. 19 shows congestion and hypertrophy of the cervical mucosa, the result of ectropion and laceration of the cervix.

Nos. 20 to 24 inclusive show various stages in the healing of erosions of the os, with slight puckering of the margins in some of them.

No. 25 shows a case of healed erosion with puckering and thickening of the lips of the os, and congestion of its anterior lip.

No. 26 shows a specimen in which healing has occurred after erosion.

No. 27. Model of the cervix and os tincæ, showing the condition which is frequently seen in sterile females (conical cervix).

The models were taken from nature by Mr. H. B. Tuson. 4328

101. A series of wax models illustrating various pathological conditions of the os uteri. In the labels appended to the specimens the term "ulceration" is used to indicate the condition now known as "erosion."

102. A cervix uteri measuring 4·2 cm. in diameter. The cervix is much enlarged and the mucosa at the external os is much hypertrophied, being elevated into rounded ridges separated by deep clefts radiating from the central canal. From one of these ridges, the surface of which is finely pitted and denuded of epithelium, a piece has been excised. 9619

Microscopic Structure.—The growth is a papillary erosion.

From a patient, aged 44, who had been losing blood every fortnight for 6 months. She also had pain, which was relieved by the bleeding.

103. The hypertrophied everted mucosa of the posterior lip of the cervix uteri, 4 cm. long, 3 cm. broad, 1·4 cm. thick. The surface of the exposed mucous membrane is smooth and slightly nodular and in places pitted by the orifices of glands. 9805

From a multipara aged about 40, who suffered from profuse mucous discharge and menorrhagia.

Microscopic Structure.—The surface of the mucosa is covered with thick stratified epithelium. In the subepithelial tissue are numerous glands, dilated, and containing papillary ingrowths. Some of the glands appear to open on the surface.

104. A cervix uteri removed by operation for hypertrophy of the lacerated cervix. This cervix measures antero-posteriorly 4·5 cm. It has been deeply lacerated on the left side. The exposed cervical mucosa is seen to be hypertrophied, and a small mucous polyp depends from its upper part.

The specimen shows the unsuitability of such a cervix for a plastic operation to repair the tear. 10293

105. Part of a cervix uteri showing eversion and hypertrophy of the mucosa, the result of bilateral laceration. The mucous membrane shows the ridges and furrows of the arbor vitæ more markedly than normal, and the mucosa is considerably thickened. Under the microscope, numerous glands with dilated cavities are seen, lined with columnar epithelium, the cells of which gradually lessen in height towards the orifice. Into the larger gland-cavities there are numerous papillary projections covered with columnar epithelium. The surface of the mucosa is covered with columnar epithelium in the neighbourhood of the

uterine canal, but the rest of the mucosa is covered by a thin layer of flat epithelium. 9375

106. Part of a cervix uteri removed for glandular hypertrophy with prolapse. The hardened cervix measures 4·2 cm. in both directions. The external os is widely open, the result of lacerations on either side. The anterior lip is 2·3 cm. in thickness; the posterior lip 2 cm. Two cysts of the size of peas, one on either lip, have been exposed by the removal of the thin translucent mucous membrane. Numerous little pits are seen on the inner surface of the lips; these are the orifices of glands. On section of the growth a cyst is present in the middle of the cervix at the depth of half a cm. 9288

107. A uterus showing enlarged cervix. The body measures 3·5 cm. by 4·3 cm. by 3·6 cm. The posterior wall is 2 cm. thick. The cervix is considerably enlarged, measuring 4 cm. long and 4·4 cm. in diameter; the mucosa is cystic (3 mm. in thickness), and the thickest (lowest) part of the cervical wall is 2 cm. thick. The section of the body appears to have a normal wall and endometrium. 9246

Microscopic Structure.—The cervical mucosa is covered with short columnar epithelium; there are also numerous cysts lined with columnar epithelium and containing mucus. Some of the gland-cavities have papillary ingrowths and the stroma in places is infiltrated with leucocytes. At one spot the glands appear to be slightly invading the muscle.

The uterus was removed (G. F. B.) from a woman, aged 53. The cervix was first removed by the galvano-cautery and then the body to stop hæmorrhage.

108. A cervix uteri removed by supravaginal amputation with the cautery. It measures $5 \times 4{\cdot}3 \times 4{\cdot}6$ cm. The portio vaginalis is greatly enlarged and has been slightly lacerated on either side. The transverse orifice of the canal measures 3·7 cm. wide. On either lip above and below this transverse slit is a growth, more marked on the anterior lip. The growth is of a whitish colour and consists of a lobulated surface, of which the individual prominences vary in size from that of a pin's head to that of a small pea. In each lip also a thin-walled cyst can be seen. The growth is well defined from the dark mucosa of the portio vaginalis, the surface epithelium being apparently lost, but there is no overhanging or depressed edge. On the cut section the prominences seem to be due to hypertrophied endometrium with a few cystic cavities (dilated glands). There is no new growth. The cervix itself is very vascular. 10786

Microscopic Structure.—The section shows a hypertrophic erosion. The surface epithelium has been lost in many places; the prominences mentioned consist of glands lined with a single layer of columnar epithelium, frequently showing the presence of intraglandular papillæ, with a richly cellular connective-tissue stroma showing leucocytic infiltration.

Removed (H. R. S.) from a multipara, aged about 30. The patient had dysmenorrhœa afterwards from contraction of the cicatrix, but was otherwise well several years afterwards.

109. Half a uterus after confinement. There were two old lacerations of the cervix and a firmly adherent clot occupies the body. The uterus is 17·5 cm. long, and its wall is 1·7 cm. thick. The cervix measures 4·5 cm. long. The clot is adherent to the placental site. A few small opaque patches are seen on the peritoneum, but no distinct lymph. 6682

From a patient who died of septic peritonitis and pericarditis 3 days after delivery.

Microscopic Structure.—A section shows clot adherent to the uterus, but no placenta or growth, and the usual large muscular cells of the puerperal uterus.

110. The left half of a puerperal uterus. The body of the uterus is 2·3 cm. thick; the placental site is in the upper part of the anterior wall and the vessels are seen to be thrombosed in this situation to within 4 mm. of the peritoneal surface, which is smooth. The uterine mucosa is smooth except at the placental site. The right appendages are also shown; the tube is thickened and there has been an abscess in the right ovary, which is much enlarged. 8086

The patient died of septicæmia.

111. The (bicornuate) uterus of a cat showing subinvolution and inflammatory enlargement of the right horn with thrombosis of the veins passing from it to the vena cava, which is also thrombosed. This horn measures at its greatest thickness 2 cm. in diameter. The wall is pale, œdematous, gelatinous, and with thrombosed vessels; the mucosa is yellowish white and sloughy. 10894

From a cat which died of pyæmia with double empyæma without peritonitis. Four kittens were born; the placenta of the last was retained for some hours.

112. A uterus with its appendages, from a case of puerperal septicæmia. It has been laid open from the front. The uterus is 5 inches long. The walls are much thickened, averaging ½ to 1½ inch. The whole interior of the organ presents a shaggy appearance, due to the inflammation and sloughing which have taken place. The venous sinuses in the wall are very large; into some of them small pieces of glass have been inserted. 4695

113. A uterus, together with the appendages, removed through the vagina. The organ is considerably enlarged, and the walls thickened, as the result of chronic metritis. The mucous membrane of the body is uneven, thickened, and blood-stained. Hæmorrhage has occurred into its substance. In the cervical canal several small clear cysts are seen. These are due to dilatation of the follicles (Ovula Nabothi). The peritoneum is covered with shaggy lymph. 6544

Microscopic Structure.—The section shows endometritis, the gland-spaces being lined with a single layer of columnar epithelium except at the part near the muscle, where the gland-spaces are somewhat cystic with epithelial buds projecting into them. There is no tendency to invasion of the wall, and the condition is that of metritis and endometritis.

The specimen was removed by Dr. Williams. Fifteen months before the operation the uterus had been scraped by Dr. Spencer on account of chronic metritis with menorrhagia; the latter ceased for six months after this, but then recurred. The patient was then seen by Dr. Williams; the uterus was found to be rather more enlarged than when first examined. It was quite movable, and as far as could be ascertained the lumbar glands were not involved. On scraping the body of the organ the curette went into soft tissue, which on microscopic examination was found to contain large numbers of uterine glands, the epithelium of many of which was apparently proliferating. The patient was rapidly losing flesh. The uterus was removed by the vagina; a few hours after, hæmorrhage occurred, necessitating plugging. Death from peritonitis occurred five days after the operation. Blood was found in the peritoneal cavity.

114. The body of a uterus and left appendages. The uterus measures 6 cm. by 6 cm. by 4 cm. The wall of the uterus is 2 cm. thick. The mucosa is thickened, smooth, though uneven and pitted with the orifices of glands. The ovary contains several cysts, one measuring 1·5 cm. in its largest diameter. 10572

Microscopic Structure.—The fibro-muscular tissue is dense, the vessels have somewhat thickened walls, the endometrium somewhat thickened (3–4 mm. thick), and the glands normal and without epithelial proliferation. There are no papillary projections on the surface, which is covered with short cubical epithelium.

Removed (G. F. B.) for uncontrollable hæmorrhage. The patient had had syphilis, but had suffered from menorrhagia previously.

115. A uterus and left appendages, measuring 12 cm. in length, the body being 3 cm. thick. The endometrium of the body is shaggy and discoloured, and in parts considerably thickened. The cervical canal is dilated and a few distended glands are seen. (A fibroid polypus had been removed some time previously.) 9382

Microscopic Structure.—The endometrium is extremely vascular and the stroma infiltrated with leucocytes. At one part the tissue is necrotic. The glands are normal.

From a widow, aged 43, who complained of continuous bleeding for 4 months and feeling of pressure in the lower part of the abdomen.

116. A uterus and left appendages. The uterus is 7·5 cm. long, 6 cm. broad, and 4·7 cm. thick. The wall of the body is 2·2 cm. thick. The cervix is small. The mucous membrane on the posterior wall is thickened. There is a cyst of the

size of a cherry in the outer part of the mesosalpinx just below the fimbriated extremity. The ovary contains several cysts and a hæmorrhagic patch, 1·5 cm. in diameter, with a yellowish area towards its centre. 10571

Microscopic Structure of the anterior wall.—The uterine vessels are thick-walled. The endometrium is normal, the glands showing no dilatation or tendency to epithelial proliferation.

The uterus was removed (G. F. B.) for uncontrollable hæmorrhage.

117. A fibrotic uterus, enlarged and thickened; it measures 8·7 cm. × 5·5 cm. × 4·5 cm. The posterior wall of the body being 2·75 cm. thick. It shows dense fibro-muscular structure with a normal mucosa in the body. The mucosa of the cervix is also normal, except at the lower part just within the external os, where it is slightly nodulated irregularly. The peritoneum is smooth. 9311

Microscopic Structure.—A section of the cervix at the eroded spot shows only dense fibro-muscular tissue, a few ordinary cervical glands, a few of which are dilated and lined by a single layer of epithelium. The lining of the canal is covered with short cubical epithelium.

From a patient who suffered from hæmorrhage 2¾ years after the menopause. There was a small eroded surface inside the external os, bleeding on examination, which was thought to be commencing cancer. High amputation was first performed by galvano-cautery, and then the body removed by the same means (H. R. S.).

118. An enlarged fibrotic uterus with hypertrophy of the endometrium. It measures 9 cm. long by 4·75 cm. antero-posteriorly, the posterior wall being 2·5 cm. thick. The mucosa of the body is nearly 5 mm. thick; the mucosa of the cervix has hypertrophied rugæ and a few cysts are seen in section. A few flimsy adhesions are seen on the fundus of the uterus. The base-line of the corporeal mucosa is quite even, but its surface is somewhat papillary. The cervix is enlarged, measuring 4 cm. by 4·2 cm. One lip is much thickened and presents a slightly uneven eroded and pitted surface (erosion); a translucent cyst projects above the surface. 9336

Microscopic Structure.—There is enormous hypertrophy of the glands of the endometrium of the body, with some dilatation of the cavities and numerous papillary projections covered by columnar epithelium. There is very little interglandular substance, except for a small area at the surface where the tissue is denser, and in parts the epithelium of the surface is thrown into minute papillary folds. A section of the cervix shows a dense fibro-muscular structure with a few tortuous glands lined with a single layer of columnar epithelium.

Removed by vaginal hysterectomy (H. R. S.), the cervix having been first removed and then the body by the galvano-cautery.

119. An enlarged fibrotic uterus measuring 9 cm. by 6 cm. by 4·5 cm. The posterior wall measures 2·5 cm. thick. Numerous peritoneal adhesions are seen on the fundus. The corporeal mucosa is smooth and thickened (5 mm. thick). The external os is irregular and eroded, and the mucosa on the anterior lip forms a prominence. 10272

Microscopic Structure.—The prominence on the lip of the cervix is due to a glandular "erosion."

From a patient, aged 48, who for 3 months on straining had a little hæmorrhagic discharge from the vagina. The patient had had 5 children and no miscarriage. Her mother died of cancer in the left breast.

120. A uterus and one Fallopian tube, from a case of cancer of the cervix with pyometra and pyo-salpinx. The cervix is dilated and its inner aspect, rough and ulcerated, is the seat of a malignant growth. The body of the uterus is uniformly dilated into a cyst about the size of a hen's egg. It is smooth internally, and its walls vary in thickness from 2 to 5 mm., being thinner above. The free end of the Fallopian tube is attached to the body of the uterus, and the tube is, except close to the uterus, dilated. This is well marked at the free end, where it has formed a round cyst, part of the wall of which has been removed.

It is evident that the inner orifice of the cervix was closed during life, but it has been laid open in the preparation of the specimen. The posterior surface of the uterus is covered by adhesions.

121. A section of the body of a uterus which measured longitudinally 8 cm., transversely 8·5 cm., and antero-posteriorly 6·25 cm. The wall is greatly hypertrophied, 3 cm. thick. The region of the internal os is occupied by scar-tissue resulting from high amputation for supposed carcinoma (which proved to be an erosion) and steaming of the body, nearly 3 years previously. Stenosis at the internal os resulted, and the uterus which had been steamed at the first operation had become distended with blood (hæmatometra). The upper part of the mucous membrane has not been destroyed, but the lower part of the body appears to be devoid of endometrium. There are numerous adhesions around the appendages of both sides, and on the left side is a cystic ovary containing bloody contents, the tube not being distended. The appendages of the opposite side are normal, except for adhesions. 10122

Microscopic Structure.—The mucosa is still present with its epithelium and glands.

122. A uterus and left appendages. The uterus measured 13 cm. by 10 cm. by 10 cm. The section shows closure of the lower part of the cervix, the result of steaming the uterus for hæmorrhage. Several interstitial and two submucous fibroids are seen, and very little mucosa remains visible to the naked eye. The cavity of the uterus is wider below (cervical portion) and narrower above, owing partly to the thicker and less expansile nature of the body of the uterus produced by the fibroids. This cavity contained blood. The appendages of both sides were normal. 10271

Microscopic Structure.—The section from the upper part of the body shows that the surface is sloughing and devoid of epithelium. The small submucous fibroid has no epithelium over it. The section from the lower part of the dilated cavity shows a papillary surface covered with columnar epithelium.

The uterus was removed by Dr. Frank Hinds on account of pain following steaming of the uterus for menorrhagia by an obstetric physician some months previously.

123. The body of a uterus measuring 5·4 cm. by 4·6 cm. by 4·4 cm. The wall is hypertrophied, the posterior wall measuring 2 cm. in thickness, the anterior wall 1·7 cm. The cavity is slightly distended by bloody mucus which is prevented from escaping by cicatricial tissue 4 mm. thick. Several adhesions are present on the peritoneal surface. 9167

Microscopic Structure.—The mucous membrane presents a normal appearance.

The stenosis resulted from amputation of the cervix by a surgeon in April 1901 for supposed malignant disease, which was not confirmed by microscopic examination. The patient suffered from considerable pain, for which the body was removed (H. R. S.) in March 1903, by vaginal hysterectomy, with complete relief of the symptoms.

124. A uterus removed by vaginal hysterectomy 14 days after the uterus had been curetted and steamed on account of hæmorrhage. The uterus measures 9·3 × 6·6 × 3·8 cm. The mucous membrane of the upper part of the body is intact, but has an opaque appearance due to necrosis. In the lower part of the uterine cavity the mucous membrane and a considerable part of the cervical wall has been destroyed. The necrosis of the upper part is due to the action of the steam, that of the lower part to that of the uterine cannula.

Microscopic Structure.—The endometrium of the body and part of the muscle of the lower body and cervix have been completely destroyed. (For full account of microscopic structure see Obstet. Soc. Trans. vol. 45, p. 80.)

125. Half a uterus which measured 7·3 × 5 × 4 cm. The uterine canal measures 5 cm. The mucosa of the body and cervix has been almost completely destroyed. The external os is completely closed and the cervical and lower corporeal canal is slightly distended with mucus, but two bridles from the cicatrisation of the burn are seen stretching across between the walls.

The mucosa of the body is visible (about 1 mm. thick) and opaque. Each ovary contained a small cyst—the right as big as a thrush's egg. The wall of

the body of the uterus is somewhat hypertrophied, fibrotic, and 2 cm. thick. 9826

Microscopic Structure.—The mucosa of the body is intact, but there are very few glands and some infiltration is present. At the lower part of the canal the epithelium has disappeared on one side.

Removed (H. R. S.) from a patient aged 41, after twice steaming the uterus, first without benefit, the second time with temporary relief.

126. A uterus with its appendages and the lower part of the rectum. The uterus and vagina have been laid open from the front, and part of the anterior wall of the former has been cut away. The cavity of the body is enlarged and squarish in outline, and smooth. The normal outline of the cervix is lost, and at the left side it is puckered and scarred, and is occupied by an oval opening with slightly everted edges. On the posterior wall there is a deep groove running obliquely across the cervix, near the inner orifice. The uterine vessels have been dissected out on the left side, and a bristle passed through the artery comes out at the before-mentioned opening, which is apparently an aneurism which has been laid open by ulceration of the mucous membrane overlying it. 6214

M. A. H., æt. 37, admitted under Sir John Williams, March 1886. She had been delivered of her ninth child on January 29th. The labour was easy and rapid, but attended by considerable hæmorrhage, no one attending the case until three-quarters of an hour after the birth. The placenta was removed from the uterus by the hand, and the hæmorrhage continued for two hours after. Secondary hæmorrhage occurred on Feb. 10th, the bleeding continuing for twelve hours. Since this time she had had fifteen floodings, ten being since her admission to the hospital. The loss of blood each time varied from eight to forty ounces. There is nothing of note in the menstrual history. On admission the patient was intensely anæmic. The cervix was lacerated and the os patulous. The body a little enlarged and retroflexed. On April 1st the cervix was dilated with laminaria tents: this was followed by flooding on April 19th; the tents were again used, and on the next day the curette was used and some small fragments like placenta were removed. On May 9th the dilatation and curetting were again performed. After this the cervix was plugged with iodoform wool, and the patient died on May 25th, after these plugs had been withdrawn. Death occurred in 1½ hour from hæmorrhage.

127. The pelvic organs of a woman who died of corroding ulcer of the uterus. The bladder has been bisected, and the vagina laid open anteriorly; the right half of the anterior wall of the uterus has been removed.

The case is fully reported in the Transactions of the Obstetrical Society, vol. xxvi. p. 66, Case 3:—

"The posterior surface of the uterus on the right side, at the level of the internal os, is connected to the peritoneal covering of the rectum by thin old fibrous adhesions. The greater part of the cervix of the uterus is totally destroyed; the fundus and body, together, perhaps, with the internal os, form a spheroidal mass, flattened in the antero-posterior direction, and slung between the broad ligaments; the external surface is smooth. The thickness of the wall varies from 0·5 to 1 centimetre; it presents the ordinary appearance, with a normal ring of blood-vessels, slightly interrupted here and there. The interior is a closed cavity, the internal os being apparently blocked by inflammatory adhesion. This cavity is roughly cylindrical in shape, about one inch and a quarter in length from above down, and half an inch across; it contained pus. The mucous membrane lining it is thickened, nodular, of a dark red colour on the right side, and a slaty-black colour in patches on the left side. On section it appears to be one or two millimetres in thickness.

"Of the vagina only the lower half remains. In this part the mucous membrane is smooth, otherwise normal, with the exception of a line of redness along the upper border. The whole circumference of the vagina from this point to the lower border of the uterine mass is represented by a foul ragged ulcer, the floor of which is composed in the upper and posterior two-thirds simply of sloughing subperitoneal connective tissue and fat. Close to the insertion of the vagina into the uterus there is little left of the posterior wall but the peritoneum itself, while the

anterior has been destroyed nearly to the mucous membrane of the bladder. The sloughing process is not of an active kind; the term is applied to loose shreds of tissue undergoing slow death in consequence of the ulceration around them and at their bases. The remainder, that is the lower and anterior portion of the floor, is composed of vaginal submucous tissue showing no signs of granulation. The margin of the normal vaginal mucous membrane is abrupt, its height being the normal thickness of the mucous membrane, slightly swollen on the anterior and posterior surfaces by hyperæmia. There is no induration or thickening at its base or edges.

"Douglas's pouch appeared to be perfectly normal, though on the point of being perforated by the ulcerative process.

"The cut end of the vena cava is seen plugged with an old adherent clot.

"The right ovary is small, cortex densely fibroid, scarred and puckered all over. The left is fixed downwards and backwards, and close to the side of the uterus opposite the internal orifice, by old adhesions. It is in the same condition as the right. The right Fallopian tube is connected with the ovary by numerous delicate old adhesions; its size is normal. The left tube is curved downwards and backwards, and then downwards and forwards again, so as to be in shape like an S over the ovary, the anterior surface and upper border of which it covers, and is firmly adherent to it by old adhesions. The right round ligament is normal; the left one is firmly united to the ovarian mass, but is otherwise normal." 5964

The patient from whom this specimen was removed was under the care of Sir John Williams, who first saw her in June 1883, when she complained of pelvic pain and fetid vaginal discharge. The right kidney was enlarged. There was a smooth ulcer, of the size of a florin, implicating the cervix and vagina. It bled slightly, but was not indurated. Fourteen days after uræmia set in, and the symptoms continued until August. During this time 26 ounces of clear urine were removed from the right kidney by aspiration. The ulceration in the vagina was extending. On Sept. 22nd, the hydronephrosis was again aspirated, and 25 ounces of clear urine drawn off. On the 25th the condition of the ulcer was the same as before, but its edges were surrounded by a ring of small tubercles of a dark brown colour. On Nov. 29th the patient was readmitted in much the same condition, but there was more pain in the abdomen, headache, and increasing frequency of micturition. On this day the kidney was again tapped, 26 ounces being withdrawn. After this the symptoms gradually became worse, the ulcer was extending, the hydronephrosis was tapped on two or three occasions, and eventually the patient died of uræmia in the following September.

The microscope revealed no other characters than those of a simple ulcer.

128. The pelvic organs of a woman who died of corroding ulcer of the uterus; the vagina and uterus have been laid open posteriorly; about the upper third of the vagina is occupied by an ulcer which involves the whole circumference of the tube, and measures about one inch in length. The margin of the ulcer is clean cut and sharply defined; the edge is not undermined or thickened, and the vagina round it is healthy. The floor of the ulcer is depressed and ragged. The cervix uteri has completely disappeared, and the uterus is represented by the upper inch of the body, which is markedly atrophied; its tissues are normal, and its cavity not dilated. The urethra and bladder are laid open anteriorly. The ulcer opens into the bladder a little above the opening of the ureter, to the left of the middle line. The orifice of the left ureter cannot be seen, but is probably represented by a small ulcer situated a little below the fistulous opening. The position of the right ureter is marked by a slight depression of the surface. The sigmoid flexure, indicated by the appendices epiploicæ, is adherent to the left broad ligament. A piece of the internal iliac artery is preserved, both vessels being calcified. The Fallopian tubes and ovaries were apparently healthy. Microscopically, nothing was found but those appearances common to ordinary ulceration; there was no trace of epithelium. At the post-mortem examination the organs were found to be generally healthy, with the following exceptions: the left kidney was twice its natural size from hydronephrosis; in the right kidney were eight or ten small abscesses, the largest of which was about the size of a pea; the omentum was adherent to the left broad ligament.

R. C. attended at University College Hospital in 1874 under Sir John Williams. She was complaining of pain and swelling in the lower part of the abdomen, with occasional vomiting and constipation, and a discharge of yellow matter from the vagina. The general health was good, and the patient was well nourished. The vagina was narrow, having undergone senile atrophy. The uterus was high up, small, atrophied, but movable. The cervix was puckered, and around the os on its margins was an ulcer, which bled easily but slightly on examination. The patient was seen several times up till 1877. She gained in health and put on flesh. In August 1882 she returned to the hospital, being then sixty-one years of age. The catamenia ceased at the age of forty-two; at the age of fifty-four a slight flow appeared again, and at irregular intervals for the next year. For three or four years she had complained of an offensive discharge, varying in colour from light to dark brown; it came with a gush, especially on going downstairs, or attempting to micturate. There was frequency of micturition, especially at night, and the urine was small in amount; there was no actual pain on micturition, but a curious darting sensation, as if the urine flowed over a raw surface. On examination at this time the ulcer could be plainly felt, and the fistula detected; the uterus could not be felt, the cervix having entirely disappeared. The ulcer, examined by the speculum, was found to be red, granular, and tuberculated.

Sept. 25th.—The patient had had occasional attacks of pretty severe pain; there was a free discharge from the vagina, occasionally bloody; the patient lost flesh and strength. She died August 1885. (*Vide* Obstetrical Society's Transactions, 1884, vol. xxvi. p. 60, Case 1; also 1885, vol. xxvii. p. 300.)

Tubercle of the Uterus.

Tubercle occurs rarely as a primary affection in the uterus: as a secondary condition it is common in phthisical patients. In the body it may affect the endometrium either in the form of granulations or of ulceration with yellowish uneven or warty surface (133), or as a considerable caseated mass: such a caseated mass may be met with even in young children, and may be strictly limited to the body of the organ (130); occasionally tubercles are found scattered through the muscular wall.

In the cervix tubercle occurs either in the form of chronic indolent "erosions" or of ulceration, which may be extensive and give rise to the same clinical features as cancer and syphilis of the cervix, from which it can only be distinguished by examination with the microscope.

129. The left half of a uterus with the appendages and broad ligament. The cavity of the uterus is uniformly rough and covered with shaggy papillæ. The Fallopian tube is slightly thickened and covered at its inner part with shaggy lymph. 2200

Microscopic Structure.—The mucous membrane of the uterus shows numerous tubercles.

130. The body of a uterus and appendages of a child aged 3 years. The body measures 2·8 cm. × 2·8 cm. × 1·75 cm. The uterus is distended with caseating material, the centre of which is gelatinous and in the fresh state was probably fluid. The line of demarcation between the caseating material and the wall of the uterus is clearly defined and even. The healthy muscular wall surrounding it is about 2 mm. in thickness. The uterus has been removed just below the level of the internal os. The left tube measures 4 cm., but is much curved and slightly nodulated, and at its outer part is distended by caseating material into a rounded swelling, 2 × 1½ cm. This swelling has a few adhesions on its outer surface and touches the outer pole of the ovary, which appears to be healthy and measures 2 cm. × 7 mm. × 5 mm. The right tube is shorter than the left and is similarly distended by a caseous mass and measuring 2 cm. in length by 1·5 cm. in depth. The right ovary is missing. 9304

Microscopic Structure.—The loose fibro-muscular tissue of the uterus is seen, internal to which is a layer widely infiltrated with leucocytes in which are numerous giant cells; internal to this is a mass of caseating leucocytes. At the internal os the epithelium of the surface and the few remaining glands appear to be normal. The same appearances are visible in the tubes.

From a child aged 3 years, who had caseous thoracic and cervical glands and general miliary tuberculosis.

131. The body of a uterus and the appendages. The uterus has been laid open along its posterior wall, which measures 1·5 cm. in thickness, more than half of which is occupied by caseating material, which towards the cavity has a very shaggy surface. The line of demarcation between the uterine muscle and the caseous layer is very distinct to the naked eye. There are numerous peritoneal adhesions over the uterus and appendages. The tubes appear to be normal. The ovaries are both distended with tubercle; on the right side an abscess has formed and has burst. 8349

Microscopic Structure.—Both uterus and ovaries show typical caseating tubercle with numerous giant cells.

132. Part of the pelvic viscera of a female. The uterus measures 6 cm. by 5 cm. by 4 cm. thick. The cervical canal measures 1·2 cm. only, the corporeal canal 3·5 cm. On section, almost the whole of the tissue of the body appears to be permeated by caseous material, but a very thin layer of muscular tissue remaining. There is a shallow ulcer with eroded margins on the posterior surface of the fundus, probably tubercular. The cervix and its mucous membrane appear to be healthy. The surface of the mucous membrane of the body is shaggy and granular. Both tubes are distended with tubercle and are covered with thickened tubercular peritoneum. The ovaries are embedded amongst adhesions. 7580

Microscopic Structure.—The tissue stains badly. There is extensive infiltration of the muscular wall with leucocytes, and extensive caseation. No giant cells can be seen. It is probably tubercular.

133. A uterus and appendages; the uterus measuring 11 cm. in length, the canal 9 cm., the cervical canal 4 cm. The lining of the cavity of the body is deeply furrowed and warty, but on section appears to be not more than 2–3 mm. thick. Both tubes contain caseous material. The left ovary contains a mass of caseous material; the right ovary is much enlarged, measuring 4·5 cm. in its long diameter; it has several caseous foci in it. The mucosa of the cervix appears to be normal. 7035

Microscopic Structure.—The Fallopian tube shows denudation of the epithelium from the thickened rugæ, which are infiltrated with leucocytes and caseating. A few giant cells are seen in the walls of the tube. The endometrium is caseated.

134. The pelvic and lower abdominal viscera of a female patient aged 18, who died of tuberculous pelvic peritonitis. The whole of the viscera are matted and bound together by shaggy lymph, which is especially marked on the parietal peritoneum, where it forms a layer from ·5 to ·75 cm. thick, with a very shaggy surface. The shaggy surface is seen over the parietal peritoneum, over the uterus and lower part of the intestines, but not in the upper part of the abdomen. The uterus is 5 cm. long and 2·4 cm. thick. Except for the tubercle on the peritoneum over its fundus it appears to be healthy. 9145

Microscopic Structure.—A section of the abdominal wall shows masses of caseating material, and between these some leucocytic infiltration; but no giant-cells are seen. It is probably tubercular.

From a patient aged 18. All the abdominal viscera were adherent to one another by old adhesions. There was no fluid in the peritoneum. The glands were caseous. There were tubercular ulcers in the intestines. Miliary tubercles were present in the spleen, kidneys, lungs, and pleuræ. The thoracic glands had only one small focus of tubercle. The brain was normal. (Surg. Reg. Rep. 1903, p. 44; Reg. No. 2292.)

Cysts of the Uterus.

True cysts of the uterus are rare. Cystic distensions of the cervical glands (Ovula Nabothi) are very common. Similar distension of the corporeal glands is very uncommon.

Cysts in the substance of the wall are very rare. They may be due to distension of displaced glands or of Gartner's duct. Rarely hydatid cysts are met with.

135. A uterus from a patient who died of toxæmia 40 hours after labour. The placental site is roughened and covered with small adherent blood-clots. In the posterior wall of the left cornu is a smooth-walled cyst (2½ cm. in diameter) projecting towards the cavity of the uterus, but lying in the inner layers of the muscular wall. The cyst projects 2 cm. above the level of the mucosa and its deeper layer 1½ cm. from the peritoneum. It is situated immediately to the left of the orifice of the left Fallopian tube, which is seen in a furrow to the left of the cyst. The tube is pervious. 10977

Microscopic Structure.—The cyst is lined with short columnar epithelium.

Uterine Polypi.

Polypi are stalked tumours dependent from a mucous cavity. They may grow from any part of the uterus and even from the Fallopian tube.

Mucous polypi are very commonly met with in the cervix, less commonly in the body, and rarely in the Fallopian tube. They are soft red growths of small size, rarely exceeding the size of a large grape, and consist of the structure of the mucous membrane with dilatation of the gland-cavities. They have a loose connective-tissue stroma and are covered with a single layer of epithelium which is cylindrical, cubical, or flattened, and sometimes, when it has been exposed in the vagina, stratified. A peculiar form of mucous polypus is the so-called *channelled polypus* (139, 140).

In the body mucous polypi are met with not infrequently in the mucosa of myomatous uteri.

These growths are very vascular and have slender stalks, which permits the easy removal of the growths by torsion.

Fibroid (myomatous) *polypi* usually arise in the body and somewhat rarely in the cervix, from any part of which, however, even the external surface of the portio vaginalis, they may occasionally arise.

Fibroid polypi arise from myomata in the uterine wall which gradually become extruded, pushing the mucous membrane before them. They may attain the size of a child's head and may have thick fleshy pedicles. When they grow from the fundus they may produce inversion of the organ. They are covered with cylindrical or cubical epithelium. The pedicle may be cut through with scissors or *écraseur* without any risk of hæmorrhage.

An *adeniferous fibroid polypus* ("*fibro-adenoma*") is sometimes met with containing glands lined with a single layer of columnar epithelium. It is of softer consistence and more gelatinous appearance on section than a fibroid polypus, but less so than a mucous polypus.

The specimens of fibroid polypi are included in the series of Myoma of the Uterus.

A *placental polypus* is an organised blood-clot formed on a piece of adherent placenta or decidua and assuming the polypoid form. It is usually of small size, gives rise to severe and repeated attacks of hæmorrhage, and is easily removed with the finger or with ring-forceps. It is important that "placental polypi" should be always submitted to examination with the microscope, as masses of chorion epithelioma closely resemble them in appearance.

All polypi, especially if of large size, may get their pedicles twisted and become gangrenous and thus be naturally cured. The lower part of fibroid polypi sometimes become gangrenous when the tumour is gripped by the cervix.

Sometimes polypi produce ulceration of the cervical canal and then may adhere to the raw surface, producing a condition which may simulate cancer. All malignant growths, and especially sarcomatous growths, may assume a polypoid form. They are usually easily distinguished from the above-mentioned growths by their rough surface, vascularity, and friability.

136. A mucous polypus of the cervix uteri. It measures 3 cm. × 2·3 cm. × 1·3 cm. The surface is smooth, but slightly bossed and pitted, the bosses being due to retention cysts, the pits the orifices of glands. 10391

Microscopic Structure.—The surface is covered with a thin layer of flat epithelium which in some places is wanting. Numerous glands lined with columnar epithelium, some branched, open on the surface. The stroma is made up of delicate cellular tissue with numerous, mostly thin-walled, vessels. The cysts are lined with short columnar epithelium.

137. A mucous polypus of the size of a walnut which grew from the edge of the posterior lip of the cervix by a pedicle 1 cm. in diameter. The outer surface is uneven, owing to the presence of cysts, some of which appear as thin-walled blebs, others as yellowish-white nodules. On section cysts and white masses are seen: the white masses are inspissated mucus. 8910

Microscopic Structure.—The cysts are lined with columnar epithelium and contain inspissated mucus.

138. A uterus measuring 8·5 cm. in length. It has been laid open along its anterior wall. A fibroid of the size of a cherry bulges out the left side of the body, and a smaller one has been cut through at the fundus. The body is distended by two sessile mucous polypi, the section of which is somewhat spongy, the lower of these has a free tail hanging into the cervical canal. 7454

139. Half a channelled mucous polypus of the cervix uteri, removed from a patient aged 46, who had had 5 children. In the fresh state the polypus resembled a cervix, having an external os opening into a canal, lined in its upper parts with columnar epithelium. Tubular glands open into the upper part; some of these are dilated and lined with cubical or flattened epithelium. The external surface is covered with squamous epithelium which extends up the canal for one-third of its length. (Obstet. Trans. vol. xli. p. 383, plate ix.) 8025

140. A channelled mucous polypus of the cervix uteri. The lower extremity has a transverse opening much resembling the external os; this canal passes up towards the pedicle, but is blind above. The mucous membrane of one "lip" has been removed, disclosing a cyst. 9470

141. A uterus with its appendages. Part of the uterus has been removed in order to show a small mucous polypus in the cervical canal. The pedicle of the growth is attached posteriorly just below the internal os. The tumour itself, which measures about $\frac{7}{8}$ inch long, has been laid open by an incision carried through it. It is seen to consist almost entirely of cysts, the largest of which measures nearly half an inch in diameter. The cysts have very thin walls and are smooth internally. The pedicle is almost entirely occupied by a cyst. The external os has been a good deal widened by the presence of the growth, which projects beyond it. 2878

142. A uterus which has been laid open by removal of part of the anterior wall. The ovaries have been bisected and are normal in appearance. Growing from the left side of the body of the uterus, at the angle of union of the anterior and posterior walls, is a mucous polypus measuring about $\frac{3}{4}$ inch in its longest diameter. The cut surface is spongy in appearance, owing to the presence of minute cysts. 1001

143. A uterus laid open from the front. At each angle of the fundus in front of the inner orifice of the Fallopian tube is a small mucous polypus, and there is another situated at about the middle of the cavity and on the posterior wall. In the anterior wall on the right side is a small submucous fibro-myoma, under which a bristle has been passed; at the same level outside the wall, immediately under the peritoneum, there is a similar growth about the size of a pea. It is attached by a small pedicle. 3868

144. A uterus and right appendages, the left having been removed by operation. Growing from the middle of the body and the middle of the cervix on the left side at the junction of the anterior and posterior walls are two mucous polypi, that growing from the body being the larger (2·5 cm. long). A small cyst is seen in the upper one: the lower one is furrowed on the surface like the arbor vitæ and is slightly papillary below. 7270

Myoma (Fibro-myoma, "Fibroid") of the Uterus.

A myoma or fibro-myoma of the uterus, often for convenience called in this country a "fibroid," is composed mainly of involuntary muscle (leiomyoma) and a varying amount of fibrous tissue. The fibres of the tumour have a characteristic whorled arrangement. Very rarely the muscular fibres are of the striped variety and the tumour is called a rhabdomyoma, of which there is no specimen in the Museum. The tumours are usually sparsely supplied with blood-vessels, but the capsule which surrounds them often contains large vessels, and very large veins may be seen furrowing the surface of the tumours beneath the peritoneum (224) and sometimes penetrating into the interior of the tumour (204). These veins are very thin-walled and sometimes burst into the peritoneum; very rarely an aneurism is found on the vein (260). Large veins render the patient especially liable to thrombosis and embolism, which occur both spontaneously and after operation (187). The lymphatic vessels of the uterus and adherent omentum are occasionally dilated (205).

Myomata of the uterus may be single or multiple and vary in size from that of a pin-point just visible to the naked eye to 30 lb. (202), 45 lb. (171), 70 lb. (281), or even a greater weight. Even fibroids of the cervix may weigh as much as 20 lb. (240). Most tumours over 10 lb. in weight are partly cystic.

Fibroids occur in all parts of the uterus and its extensions:—Fallopian tube, vagina, broad, round, utero-sacral, utero-vesical, and ovarian ligaments.

They are much less common in the cervix (240, 256) than the body, and most rarely met with in the portio vaginalis (188, 189). They grow beneath the peritoneum, in the wall or beneath the mucous membrane, and are called respectively "*subperitoneal*," "*intramural*," and "*submucous*" tumours. They may be "sessile" or "pedunculated"; the latter when submucous are called fibroid "polypi." The subperitoneal tumours sometimes greatly expand or raise the layers of the broad ligament ("intraligamentous" tumours) and sometimes become detached from the uterine wall, when it may be difficult to say whether they originated in the uterus or in the muscular tissue of the broad ligament. Pedunculated tumours occasionally become detached by torsion, and thus polypi may be spontaneously cured. Subperitoneal tumours when detached often adhere to the omentum or peritoneum, from which they derive their nourishment ("parasitic" fibroids). The vessels and lymphatics of adherent omentum often become enormously dilated and crown the tumour like a bundle of snakes, hence called the "caput Medusæ" (204, 205).

Fibroids readily undergo degeneration, which in tumours of considerable size is always evident on microscopic examination, and usually to the naked eye. It is of the hyaline or mucous variety and often the degenerated material forms cysts of varying size. In advanced cases the cysts may contain little solid substance ("fibro-cysts"). The cystic contents may be discharged into the peritoneum or vagina. The degenerated parts are usually of a yellowish or greyish colour, but sometimes of a brown or dusky pink colour ("red degeneration"); this occurs not unfrequently during pregnancy, but also apart from that condition, and may affect one only of several tumours. It does not differ microscopically from ordinary degeneration, and is essentially of the same nature though tinged with blood colouring-matter, due probably to hæmolysis produced by the degenerated material. Occasionally necrosis occurs as a white opaque jelly-like substance (285). Pedunculated tumours may become twisted and as a consequence separated. Subperitoneal

tumours may cause torsion of the uterus and thus produce dystocia. More commonly the torsion gives rise to congestion and peritonitis and adhesions, which apart from this cause and tubal disease are rarely associated with these tumours.

Fibroids also become calcified, especially in old age; sometimes the calcified bodies are discharged as "womb-stones" ("uterine calculi").

The cavity of the uterus is usually enlarged and often tortuous, preventing the sound from being passed to the fundus or exploring the whole of the cavity. As a consequence of this inaccessibility, caustics applied to the mucous membrane may destroy only its lower part and lead to stenosis and the accumulation of blood above the obstruction—hæmatometra (122).

The mucous membrane may be normal, hypertrophied, or atrophied. It is apt to be hypertrophied when lying in a sulcus between two tumours, and atrophied from pressure when it overlies such a tumour. Mucous polypi are not uncommon in the corporeal mucosa.

Menstruation is usually excessive and delayed beyond the age of 50. Bleeding may, though rarely, take place from the mucosa (whether atrophied or hypertrophied) years after the cessation of menstruation, and thus raise the suspicion of cancer.

Fibroids may become inflamed, suppurate, or slough, especially after labour; they may also become gangrenous from the cutting off of the blood-supply by torsion of the pedicle of a polypus or by constriction of the tumour or its pedicle by the tumour or the cervix. Suppuration is especially liable to occur in cystic cavities after labour (275), from infection from a gangrenous polypus (219) or a cancerous cervix (198). The ovaries are often enlarged from œdema, especially in the case of bulky tumours, and the tubes and round ligaments are sometimes stretched or hypertrophied.

Ovarian, tubo-ovarian, and parovarian cysts and inflammatory conditions of the tubes are not rare as a complication of fibroids which also seem to predispose to cancer of the tube and uterus.

Tubal pregnancy is rare (see under that disease).

Sessile submucous tumours and even polypi attached to the fundus are liable to cause inversion of the uterus, especially after labour or abortion. This displacement has also been caused by a fundal intramural tumour (265).

Myomata are not rare as a complication of pregnancy, being often found in manipulating the uterus in the third stage of labour. They are especially common in elderly primiparæ and often cause relative or absolute sterility. Their importance depends on their position, size, and condition. They sometimes cause abortion or premature labour. Pedunculated subperitoneal tumours growing from the anterior wall of the body, cervical tumours, or tumours impacted or adherent in the pelvis are the most serious. Submucous tumours may cause post-partum hæmorrhage or inversion of the uterus, and may become infected and cause septicæmia either by direct infection or by incarcerating the products of conception. During pregnancy the tumours hypertrophy and often become tender and degenerated. Under rest and suitable local treatment the tenderness usually subsides. When they narrow or encroach upon the uterine cavity they often produce malpresentations, and towards the end of pregnancy by pressure they may cause albuminuria or ascites. After labour and after the menopause they atrophy; rarely completely disappear. Even those tumours which are situated in the lower segment and threaten to obstruct delivery are usually drawn up out of the pelvis as labour proceeds, but cervical tumours, or adherent or impacted tumours, may call for Cæsarean section (273).

Abdominal myomectomy is rarely indicated during pregnancy, except for torsion of a subperitoneal tumour, though occasionally, owing to their bulk, very large tumours may need to be removed in this way. Rarely infection of the tumour after labour may need myomectomy or hysterectomy.

Myomata sometimes develop sarcoma (myosarcoma) and are not infrequently associated with cancer of the body and cervix.

145. A pear-shaped fibroid polypus of the body of the uterus, with a stalk 7 mm. in diameter above. The surface is rounded and slightly uneven and is covered with mucous membrane. The section of the growth shows the cut surface to consist of white fibrous bands and intervening darker muscular tissue. 7560

Removed by the écraseur from a patient, a widow, married 10 years without becoming pregnant, suffering from menorrhagia for 2 or 3 years and leucorrhœa for 6 months. At the operation another fibroid was felt in the wall.

146. A cervical fibroid polypus 6·5 cm. in its longest diameter, which runs transversely to its pedicle. The pedicle is about 1 cm. in diameter, and is situated above to one side of the middle of its long diameter. It is slightly uneven on the surface, smooth except near the pedicle, and has the usual appearance of a fibro-myoma on section. 8539

Microscopic Structure.—The tumour is a fibro-myoma which has undergone mucous degeneration. The surface is covered with stratified epithelium.

The pedicle was attached to the left side of the cervical canal, ½ inch from the external os.

147. A fibroid polypus of the cervix of the size of a walnut. The cut section shows the usual appearance of a fibro-myoma. Above is seen the divided pedicle, 5 mm. in diameter. 7723

Microscopic Structure.—The tumour is a typical fibro-myoma, at one part degenerated and having as its chief character the presence of numerous thin-walled vessels. There are traces of short columnar and flattened epithelium on the surface.

Removed from the cervix of a patient aged 45.

148. A uterus laid open along the anterior wall. It contains a large submucous fibroid 12 cm. long, growing from the posterior wall. The tumour has been laid open and its capsule separated. There is an oval cavity in its substance produced by degeneration. The cervix is seen below the growth. The walls of the uterus are much thinned, and its cavity is enlarged.

149. A large heart-shaped polypus, together with the uterus, ovaries, and upper part of the vagina. The fundus uteri is readily distinguishable, and possesses its ordinary characters, except that there are several small fibroid polypi on it. The ovaries are cystic. The lower part of the uterus is greatly dilated, and forms with the upper part of the vagina a sac, enclosing a polypus having the shape of a bullock's heart. This has a pedicle 6 cm. long and about 2 cm. in thickness, which is attached to the fundus uteri. 4242

Microscopic Examination shows the tumour to be a fibro-myoma.

150. A uterus, etc., with the bladder, the organs being laid open. Growing from the right side and fundus of the uterus is a submucous fibroid, which projects into the uterine cavity. The tumour was in a sloughy condition. There is a small subserous fibroid growing from the anterior wall of the organ near the fundus. The cellular tissue round the lower segment of the uterus is the seat of an abscess. 6396

From a patient, aged 33, who was admitted to the hospital under Dr. Spencer on Sept. 25th, 1888. She was married, but had never been pregnant. Two years before admission she had suffered from pain in the lower part of the abdomen, more severe at the menstrual periods. One year ago menorrhagia began: the bleeding was almost constant, and shreddy material was also passed. Fourteen days before admission the discharge became offensive. On admission, the temperature was 105°, pulse 120, respirations 20; the abdomen was distended, and there was hypogastric tenderness; the uterus could be felt above the pubes. On vaginal examination the finger passed into the os; a shred of fibrous tissue was removed. The uterus was enlarged and fixed; around it on both sides, and especially in Douglas's pouch, there was tenderness. The temperature remained high, and was accompanied by rigors and diarrhœa. The patient died on Oct. 6th. At the post-mortem pus was found in Douglas's pouch, but there was no general peritonitis. There was also an abscess in each broad ligament and in the right iliac fossa. *Vide* Case-book, No. 2, Ward xii. p. 217.

151. A uterus which has been laid open, part of the wall being removed. Growing into the cavity, from the posterior wall near the fundus of the specimen, is a small pedunculated growth, which has been bisected, and is seen to consist of a somewhat spongy matrix, in which are two small cysts. The growth is a mucous polypus.

Attached to the upper part of the uterus, on the left side of the specimen, is a polypoid growth measuring 7 cm. in its longest diameter. This is enclosed in a thin capsule. This capsule is about 1 mm. thick. A wedge-shaped piece has been removed from the growth, and the cut surface is seen to be traversed by coarse bundles of fibres, which have split it up into areas in which the fibres are arranged circularly. No vessels are seen on the cut surface, but bristles have been passed into the mouths of some situate just beneath or in the capsule; these, however, are very scanty.

The wall of the uterus has been laid open in order to show three fibroid tumours situate in it, which form slight oval projections into the interior. The largest of these is 3 cm. in diameter, and the smallest about 2 cm. They are distinctly circumscribed and surrounded by a capsule in which the mouths of numerous and large vessels can be seen; outside this is a layer of uterine wall 3 mm. thick.

The cut surface of the tumours presents the usual characters of fibro-myomata of the uterus. 894

In the MS. Catalogue it is stated that the patient died eight years from the first recognition of the disease. When dying, she requested that her body might be examined in order to satisfy her friends that she had been, during the early part of her disorder, the subject of unfounded suspicions and aspersions.

152. A uterus with its appendages; a large part of the posterior wall has been removed. Growing from the anterior wall is a rounded fibro-myoma, measuring about 4 cm. in its longest diameter. The tumour evidently began to grow in the substance of the wall, which, being gradually stretched round it, forms a capsule for the growth. This is plainly seen where the growth is in connection with the body, being here about 5 mm. in thickness; but at the most prominent part of the tumour it is much thinner, and the muscular substance can with difficulty be recognized. The cut surface shows that the tumour consists of two unequal lobes: it presents the common appearances of fibro-myoma. In the interior of the body, close to the orifice of the left Fallopian tube, is a small pedunculated mucous polypus.

The left ovary is in an early condition of cystic disease. One cyst, about 2 cm. in diameter, has been laid open, but a much smaller one remains intact. 4682

153. A uterus with its appendages. Part of the posterior wall of the organ has been removed; bristles have been passed into the uterine orifices of the Fallopian tubes. The mucous membrane of the interior of the uterus is normal in appearance; the cavity is elongated. Projecting from the anterior wall, in about the middle, is a flattened tumour of about the size and shape of a haricot bean. Another similar tumour forms a slight prominence on the fundus of the uterus close to the attachment of the right Fallopian tube; this has been laid open, and is seen to be of about the size of a large pea and round in shape—it is encapsuled by condensed surrounding tissue, which on the outer part consists merely of peritoneum. There is a pedunculated fibro-myoma attached by a distinct pedicle to the posterior wall a little below the Fallopian tube. The tumour is rounded in shape and about $3{\cdot}5 \times 3$ cm. in diameter. At its junction with the pedicle is a smaller growth of about the size of a pea. There is a very small mucous polypus in the cervical canal. 864

154. A uterus, with its appendages, which has been laid open from the front. Projecting under the peritoneum from the fundus, close to the right Fallopian tube, is a rounded tumour, smooth on the surface and attached by a narrow

pedicle; it measures about $\frac{3}{4}$ inch in diameter. A similar growth, but attached by a broad base, projects into the cavity from the posterior wall of the uterus. The mucous membrane at the internal os is studded with small vesicles like boiled sago-grains; these are dilated mucous follicles. In this situation also there is a pedunculated mucous polypus 2 cm. long, which projects through the external os. 5369

155. A uterus with its appendages. Growing from the posterior wall of the organ opposite the internal os is a small pedunculated fibroid. The pedicle is 3 mm. thick, and is about 1·5 cm. long; the whole growth only measures 4 cm. Its cut surface shows the ordinary appearances of fibro-myoma with commencing calcification. The right ovary is dilated into a small unilocular cyst about 2 cm. in diameter. Situate in the left broad ligament, just external to the ovary, is a smooth-walled cyst about 1·5 cm. in diameter; this has been laid open and is seen to contain laminated blood-clot, which in the palest part is calcareous. The left Fallopian tube is slightly dilated close to the fimbriated extremity.

156. A uterus with a large subperitoneal fibroid on its anterior wall. The uterus is elongated, measuring 10 cm.; and is bent laterally upon itself, the concavity being towards the right. In the upper part of the uterine cavity are two cystic mucous polypi. The right Fallopian tube is 14 cm. long. Attached to a broad flat pedicle to the right side of the uterus below the broad ligament is an irregular calcified fibro-myoma. The large fibroid growing from the anterior uterine wall completely filled the pelvis. At the post-mortem examination, a hole, about the size of a sixpence, through which pus escaped, was found in the anterior wall of the growth. The tumour was laid open by enlarging the aperture, and about three pints of pus escaped, together with a small piece of "bone," no doubt a portion of calcified fibroid. The tumour measures 20 × 17 cm. It is smooth externally, but its interior is ragged and honeycombed. The walls of the purulent cavity vary in thickness from ·5 cm. upwards, and have been extensively infiltrated with lime salts. A wedge has been sawn out of the top of the tumour showing the calcified structure of the fibro-myoma. 5399

The specimen was removed from the body of a woman æt. 69. She had had a tumour for forty years, which was supposed to be ovarian. During the last four years it had been slowly increasing in size. The patient died of bronchitis.

157. A slice of a subperitoneal pedunculated fibroid 20 × 13 cm. and 2 cm. thick. It was attached to the fundus of the uterus by the pedicle seen in a notch in which thrombosed vessels are seen. On section it shows two or three spots of degeneration. It is of brownish-red colour permeated in various directions by strands of white fibrous tissue. In the brownish-red areas are seen the gaping mouths of vessels, some of which are thrombosed. The pedicle had twisted, causing strangulation of the tumour. The uterus was removed by supra-vaginal amputation (H. R. S.), together with the appendages. The body contained numerous small fibroids of the size of an egg and downwards. The mucous membrane did not appear to be abnormal. One of the ovaries contained a small luteal cyst of the size of a small pea, but is otherwise normal. 8341

Microscopic Structure.—The section shows a fibro-myoma with hyaline degeneration and engorgement of the vessels with blood.

From a patient who was admitted with pain and slight fever. The pedicle was stitched over and dropped into the peritoneal cavity. The patient made a good recovery.

158. A uterus and appendages with numerous subperitoneal fibroids, the upper one of which is pedunculated and calcified. The cervix is virginal. There are a few peritoneal adhesions between the various fibroid nodules. The ovaries measure 2·75 × 2 × ·75 cm. 7721

From a patient aged 63, who died of bronchitis. Menstruation ceased at 43. Patient had never had any abdominal symptoms nor any excessive bleeding before the menopause.

159. A multinodular cystic pedunculated fibroid 30 × 28 × 17 cm. The surface is irregular and has a few omental adhesions. On section four large and four small cysts are seen, resulting from degeneration of a fibroid, one of them is a subperitoneal tumour, and the cysts are lined by a brownish coagulum. The smaller cysts contain gelatinous material. The raw attachment of the pedicle (2 cm. in diameter) is seen between the two largest cysts. 8127

Microscopic Structure.—A section of one of the small cysts shows that the lining is made of condensed fibrous tissue; there is no definite epithelial lining. The wall is made up of interlacing bands of fibro-muscular tissue; some parts are œdematous.

Removed (H. R. S.), together with a smaller pedunculated tumour, by abdominal myomectomy from a patient aged 49. The uterus, which also contained fibroids, was left behind, and the patient was quite well 2½ years afterwards.

160. A uterus and appendages with the vagina, measuring 20 × 16 × 9·5 cm. On the right side of the upper part of the vagina in its anterior wall is a cyst measuring 3 cm. × 2·5 cm., the long axis of which runs obliquely from below upwards and to the right. It contained a thick brownish fluid of the consistence of glue. Numerous interstitial and one subperitoneal fibroid are seen. The fibroid shows no sign of degeneration to the naked eye. The mucosa of the uterus is slightly hypertrophied (3 mm.). The Fallopian tubes are distended and covered with adhesions. 6936

Microscopic Structure.—The wall of the vaginal cyst consists of layers of involuntary muscle and fibrous tissue, containing a few capillaries, and is lined with columnar epithelium with large oval nuclei and with scattered simple papillary projections similarly covered. The mucous membrane of the fundus uteri is greatly thickened, mainly due to the loose cellular interglandular tissue which is made up of cells with fine anastomosing processes forming a delicate retiform tissue, the cells having round or oval nuclei. Delicate capillaries are present, but there is no leucocytic infiltration. The glands are not very numerous, some are dilated and slightly tortuous; they are lined with columnar epithelium which is only in a single layer. A section of the uterine end of the Fallopian tube shows that the epithelium is still present.

161. A fibroid of the left broad ligament weighing 16 lb. 1 oz., measuring 19 × 20 cm. in the cut section. Several large fibroids are seen showing extensive mucoid degeneration and the formation of cysts at the periphery, the central part of the tumour being but slightly degenerated. The broad ligament is seen to cover the upper part of the tumour and in it is seen the stretched Fallopian tube and ovary. The fundus of the uterus has been left behind. 8244 A

Microscopic Structure.—The tumour is a fibro-myoma showing mucoid degeneration.

Removed (H. R. S.) from a patient aged 47.

162. A fibroid tumour weighing 22½ lb. and measuring 32 × 26 × 14 cm., removed by supravaginal amputation with the écraseur, with extraperitoneal treatment of the pedicle. The surface of the tumour is covered by thick adhesions, and to the other half of the specimen the ovary and tube were attached; the tube was sealed at the end and was dilated (hydrosalpinx). The section of the growth shows an enormous mass of interstitial fibro-myoma surrounded by a thin shell of uterine tissue from 1 to 5 mm. thick. All stages of mucoid degeneration are seen, from a slightly spongy state of the tissue to the formation of distinct cavities. The uterine cavity is about 18 cm. long, and the mucous membrane is very thin and quite smooth everywhere. Below is seen the section of the lower segment of the uterus. 6988

Microscopic Structure.—The tumour is a fibro-myoma which has undergone extensive degeneration.

The tumour was removed (H. R. S.) by supravaginal amputation with extraperitoneal treatment of the pedicle. The patient recovered well.

163. A uterus and appendages. The uterus contains several fibroids, which are calcified. The right tube is obliterated at its outer end, but is not distended; projecting beyond its outer extremity in the mesosalpinx and into the infundibulo-

pelvic ligament is a diffuse lipoma which has been exposed by the removal of a small portion of the peritoneum. The ovary contains several cysts; in the outer part of one of these is a morular body yellowish white in colour. The cervix is 3·5 cm. long; its mucosa is normal. 8312

164. A fibro-myoma weighing 1 lb. 12 oz., measuring 14 × 11 × 9 cm. At one spot the tumour has undergone slight mucous degeneration. The tumour is covered with areolar tissue and is very rough at one place, which probably represents the attachment to the side of the uterus. 8471

Microscopic Structure.—The tumour shows hyaline degeneration and swelling and vacuolation of the muscle-cells, which gives the tissue a somewhat sarcomatous appearance, but there is no doubt that it is simply a degeneration.

The tumour was removed (H. R. S.) by enucleation from the right broad ligament in a patient aged 47. The tumour had existed for 27 years without inconvenience, but caused pain during the last six months. The patient was completely relieved by the operation and was quite well several years afterwards.

165. A uterus with the right appendages weighing 1 lb. 6 oz., measuring 13 × 12 × 8 cm. Four subperitoneal and interstitial fibroids are seen; the largest of these is grooved, and in the groove lie the right tube, ovary, and vessels; this tumour is growing in the right broad ligament, and the hypertrophied round ligament courses over its lower part. The uterine canal is 5·5 cm. and the cervical canal 2·5 cm. The mucosa of the body is slightly hypertrophied. Both appendages were normal—the right ovary measured 3·5 × 1·7 × 1 cm., the left 4 × 2 × 1·5 cm. The left contained a large corpus luteum 2 cm. in diameter. 10657

Removed post-mortem from a patient who died of perforated gastric ulcer.

166. A uterus measuring 20 × 15 × 10 cm. The wall of the uterus is 1·5 cm. thick. The uterus has been opened along its anterior wall exposing a submucous fibroid 13 × 10 cm., the lower part of which projects into the widely dilated cervix. Two small subperitoneal fibroids are also seen at the fundus. There is a large corpus luteum in the left ovary. A slice has been removed from the posterior wall of the uterus, exposing the tumour and a small interstitial tumour at the fundus. The submucous tumour is apparently suppurating and surrounded by enormously distended vessels. The surface of the tumour is irregularly lobulated and shaggy below. It appears to be a case of septic fibroid following labour. 6710

167. A uterus and appendages weighing 5 lb. 5 oz. The uterus measures 18 × 16 × 10 cm. There is a large single submucous fibroid measuring 12 cm. in diameter, and several smaller subperitoneal tumours. The lower part of the cervix has been left behind, the cervical canal being 1·8 cm. long. The mucous membrane of the body is atrophied, and the uterine cavity was filled with gelatinous mucous. The main tumour shows commencing mucous degeneration. The right tube is normal; the right ovary was distended by cysts to the size of a small orange; several of the cysts have been opened, showing the contents to consist of blood and inspissated mucus. The left ovary is considerably enlarged, 4·5 × 4 × 2 cm.; its section is gelatinous, as if it were œdematous. There were numerous adhesions on the surface of the right ovarian cyst and the adjacent part of the uterus. 10619

Microscopic Structure.—The tumour is a degenerating fibro-myoma. The left ovary shows no new growth.

Removed (G. F. B.) by supravaginal hysterectomy.

168. A cervix uteri, left after supravaginal amputation for fibroids, and part of an ovarian cyst. The portio is large, 4 × 3·5 cm.; os 1½ cm. transversely × 5 mm. At its upper part the cervix measures 3½ × 2·7 cm. and is healthy. The cervix measures 5·7 cm. in length; the canal 4 cm. The mucosa has the

structure of cervical mucosa, except for the upper 5 mm., which appears to be atrophied corporeal mucosa. The outer part of the Fallopian tube with its fimbriated extremity is bound down to the top of the stump by dense adhesions. There is part of a multilocular ovarian cyst covered with adhesions which was of the size of an orange. 10900

Microscopic Structure.—The cervical mucosa is cystic. The small remnant of corporeal mucosa contains well-developed glands with normal stroma. The cyst of the ovary is a luteal cyst. The cervical mucosa is in places papillary.

Removed (H. R. S.) from a patient aged 36. Supravaginal amputation with intraperitoneal treatment of the stump had been performed on account of a myoma eight years previously, and the left ovary was removed. Since then the patient has menstruated regularly and in moderate amount. During the last few months she has had considerable pain, owing to the development of the ovarian tumour, which was densely adherent and apparently burrowing in the broad ligament, and had to be dissected off the ureter for more than 3 inches. The patient recovered well.

169. A uterus measuring $20 \times 14 \times 10$ cm., and weighing 3 lb. 2 oz., removed by total abdominal hysterectomy. The remains of a silk ligature can be seen in the stump left after a previous oophorectomy. There are a few adhesions on the surface. The uterus contains two tumours, both of which are submucous; the lower appears to be healthy, the upper is discoloured and eroded as if by sloughing. The lower tumour has been enucleated from beneath the peritoneum. The mucosa of the body appears to be atrophied. 9052

Removed (G. F. B.) on Sept. 25, 1902, by total hysterectomy from a patient who had had oophorectomy performed in Jan. 1898. After the oophorectomy the periods continued, and the upper tumour was sloughing at the time of removal.

170. The body of a uterus removed by supravaginal amputation, weighing 7 lb. There are numerous adhesions over the peritoneum, which is thickened. One ovary, removed with the tumour, measured $1{\cdot}5 \times 3{\cdot}5 \times 2$ cm., and contained a few cysts of the size of peas, at the periphery. The uterus is enlarged by a single intramural myoma $15 \times 13{\cdot}5$ cm. on section. The surrounding uterine wall is 1·5 cm. thick. There are patches of mucous degeneration, and two small cavities are seen to be cut across in it, containing blood-clot. The upper part, 1·5 cm. only, of the cervix has been removed. Its mucosa appears normal. 9700

Microscopic Structure.—The tumour shows patches of mucous degeneration.

Removed (G. F. B.) by supravaginal hysterectomy from a patient aged 45. Menstruation began at 11 years of age, then ceased, and recommenced at 16; at 22 the uterus was examined and found to be about twice its normal size. The menopause occurred at 36. The patient recovered well.

171. A uterus removed by supravaginal amputation and weighing 45 lb. without reckoning a large quantity of gelatinous material. It measures $40 \times 34 \times 19$ cm., and presents a much lobulated appearance. In the midst of the lobules is seen the fundus of the uterus as large as a child's head, and from it passes off the right Fallopian tube, which measures 38 cm. in length and courses over a large lobulated tumour. The right ovary is much stretched, measuring about 10 cm. in length, and its ligament measures about 5 cm. The other ovary has been left behind. The greater part of the tumour is covered with peritoneum, but below the tumour is denuded of peritoneum. On this surface also the dilated uterine cavity is seen, with a submucous tumour presenting. The tumour shows, in the section, a dense multilobulated structure with large cystic cavities in the two larger lobules: the lining of the upper is smooth, of the lower rough and granular. In the wall of the lower cavity is a clot from 3 cm. to 1 mm. in thickness. 7029

The tumour was removed (H. R. S.) by supravaginal amputation with the écraseur. For 12 days the patient did well, and then was seized with acute mania, from which she died on the 16th day.

172. A myomatous bicornuate uterus and left appendages removed by total hysterectomy, measuring $13 \times 13{\cdot}5 \times 8$ cm. The tube is normal; the ovary measures $3{\cdot}5 \times 2{\cdot}5 \times 2$ cm. and contains a cyst as big as a large pea. The

peritoneum is slightly thickened and has a few adhesions. The uterus is two-horned; from the right horn grows a myoma of the size of a walnut; the left is as big as an orange and has a second fibroid 6 cm. in diameter which projects in front of the right horn. The external os is small and healthy, and in it is a mucous polypus of the size of a pea. On dividing the organ it is found that the left horn passes out almost at right angles to the cervical canal 3·5 cm. above the external os; this horn measures to the Fallopian tube 5 cm. and has a sub-peritoneal myoma of the size of a large grape at the extreme apex and to the left of the origin of the Fallopian tube. The right horn continues the direction of the cervix, is 8 cm. long, contains a myoma in its front wall 7 cm. in diameter, and another somewhat smaller myoma to the left of the main one which projects 1 cm. to the left of the apex of the left horn and measures 6 cm. in diameter. The right round ligament takes a course parallel to the axis of the horn; the Fallopian tube and ovarian ligament have been cut short. The ovarian ligament on the left side is about ·5 cm. long, the Fallopian tube 7 cm. long; the round ligament is cut short and is as thick as a lead pencil. The posterior part of the right horn with its tumours is bare of peritoneum. Two polypi grow from the posterior wall of the upper part of the cervix; the mucosa of the body is normal. 10701

Removed (G. F. B.) by total abdominal hysterectomy from a patient aged 47.

173. The pelvic viscera removed post mortem from a patient from whom on four occasions submucous tumours had been enucleated through the cervix (H. R. S.). On this occasion it was intended to perform total hysterectomy, but as a tumour was found in the sigmoid colon and several apparently malignant glands were found, the wound was closed and the patient died of pulmonary embolism on the 13th day.

The uterus contains a large mass of fibroids—submucous, interstitial, and sub-peritoneal. The sigmoid colon is adherent to the left side of the uterus and contains a "growth" which is 5×4×3·5 cm. in external measurement. On section the tumour is striated, of the colour of pale muscle, and under the microscope is seen to be composed of muscular fibres with a few gland-spaces lined with columnar epithelium. The "tumour" is a hypertrophied muscular wall. The striations radiate round a centre which is formed by the extremity of an adhesion of the two surfaces of the bowel 1·5 cm. long. Two inches below the growths the sigmoid is adherent to the uterus, and at this spot the sigmoid shows a similar but smaller thickening, the mass being only 1 cm. in diameter. The cervical canal is 2 cm., the corporeal 8 cm. long. The mucosa is everywhere atrophied, and over the greater part of the body appears to have disappeared, There are several small pedunculated tumours, looking like malignant glands, but on section found to be myomata. 9496

174. The other half of the uterus described in No. 173, showing the ureter, slightly distended, coursing over a subperitoneal fibroid, which was thought to be a malignant gland. 9496

175. A subperitoneal fibroid 25×20×16 cm. The raw surface of the pedicle, 5·5×3 cm., is seen on the surface of the tumour and there are several pieces of adherent omentum. The tumour has been converted into one large and several smaller cysts; the largest was full of straw-coloured fluid and the smaller gelatinous blood-stained mucoid material. A section has been made of the solid portion of the growth, which is firm and white, but shows early degeneration at one spot. The wall of the main cyst is smooth. The smaller cyst shows evidence of degeneration in the neighbouring wall. 9212

Microscopic Structure.—The tumour shows marked hyaline degeneration with the formation of larger and smaller cysts. The larger cysts are ragged and have no epithelial lining.

Removed (H. R. S.) from a patient aged 51 by abdominal myomectomy.

1176. A uterus weighing 1 lb. 8¾ oz. and measuring 14 × 9½ × 9¼ cm. There is a single degenerated fibro-myoma growing in the anterior right wall of the uterine body. The right broad ligament is distended by phlegmon measuring 5 cm. antero-posteriorly at its base, and the tube and round ligament are also thickened on that side. Below the uterus is mounted the right pyosalpinx filled with pus, and attached to it is the burst ovary, which was as large as a goose's egg and contained stinking pus and has two subperitoneal cysts on its surface. The tube measures 6 × 4½ cm. at its widest part. The other tube was slightly dilated with serum and was removed with the other ovary, which was normal. 11069

Removed (H. R. S.) from a patient aged 49, by total abdominal hysterectomy. The right broad ligament contained open vessels and was phlegmonous. The temperature was 102° before operation. The broad ligament and raw surface where the ovarian abscess and tube had been separated was extraperitonealized by purse-string suture and additional sutures at the side of the rectum, so that the raw surface communicated with and drained through the opening into the vagina. The recovery was uninterrupted.

1177. The body of a uterus removed by supravaginal amputation. The cut surface of the fundus with its exposed mucosa is seen below. The peritoneum is free from adhesions and has a flattened subperitoneal tumour 2 cm. in diameter. Large veins injected with wax, some nearly 1 cm. in diameter, are seen coursing beneath and raising the peritoneum. Veins are also seen cut in section in the wall of the fundus below.

There is a large fibro-myoma growing from the fundus of the uterus surrounded by a thin capsule of uterine tissue not more than 1 mm. thick above. It shows the usual fasciculated structure of a fibro-myoma. The upper third is honeycombed with cavities varying in size from a pin's head to a hen's egg. In the lower half there is a large cystic cavity 5 × 2 cm. with an irregular trabeculated wall. These cavities have resulted from degeneration, and in the centre of the tumour are patches of commencing degeneration. 6902

The tumour weighed 8 lb. 6 oz. and was removed (H. R. S.) from a patient aged 42 who had suffered from the tumour for three years, which had been increasing during the last nine months.

1178. A uterus which has been laid open anteriorly. Projecting from the inner surface of the posterior wall is a round fibro-myoma, measuring about 2 cm. in diameter. It is enclosed in a very delicate capsule of connective tissue, the mucous membrane having been removed except from the upper part of the specimen. For the most part it is quite smooth and even on the surface; but on the left side there are two or three mammillary projections. The growth has been laid open to show its structure. To the right of it is a smooth cavity, from which the tumour has been enucleated. 3809

1179. A portion of the uterus removed by vaginal hysterectomy. The uterine wall is from 1–2 cm. thick, and shows two lobules of a submucous tumour which are slightly degenerated in places. Parts of the tumour were actually cystic and some of the cystic cavities opened up in removal are seen in the upper and lower parts of the specimen. The whole organ weighed 15½ oz. 7491

Microscopic Structure.—The tumour is a fibro-myoma with patches of mucous degeneration.

The uterus was removed (H. R. S.) by vaginal hysterectomy on Oct. 29, 1895, from a patient only 23 years of age, on account of severe menorrhagia. The patient was in perfect health ten years later.

1180. Portion of a fibroid tumour of the uterus. On its external surface is a thin layer of uterine tissue with shaggy lymph upon it, which is thickest at the upper part; immediately under this is a whitish layer, varying up to 1 cm. in thickness, which is mainly composed of calcareous matter. The bulk of the growth presents the usual characters of hard fibroid tumours, being composed of coarse bundles of fibres. There are no vessels to be seen. 3412

181. A fibroid tumour of the uterus, which has been laid open. It measures 8 × 5 cm. in its longest diameter. The cut surface presents the usual appearances of fibroid tumours. The external surface is very irregular, presenting numerous nipple-like projections. On the summit of these thin calcareous plates are seen. These are irregular in shape, often cribriform, and overhang the depressions around the projections. None of these plates are seen on the tumour in the depressions between the nipple-like growths. 4139

The specimen, presented by Sir W. Jenner, was taken from a woman æt. 54, who died of cancer. "It was found loose in the cavity of the uterus, communicating, opposite the right Fallopian tube, with the cavity of a sloughing cancer, which in turn communicated by three openings with the cæcum; agglutination prevented the escape of fæces into the peritoneal cavity. The patient had noticed the swelling in the right iliac region for six months, and for that time also had occasionally a fetid discharge, which came on suddenly and was preceded by a feeling of something giving way within her. For the last two months she had suffered severe pain, and diarrhœa had been present. The section shows under the microscope the ordinary form of tissue usually found in such growths."

182. Three fibroids from the uterus. The largest one is squarish in outline, measuring 10 cm. in its longest diameter; the outer surface is coarsely nodulated, and is covered with a dense capsule of fibrous tissue. The cut surface shows that the greater part of the growth is made up of a dense calcareous matrix, closely resembling true bone in appearance. The rest of the tumour consists of gelatinous-looking fibrous tissue. A second smaller tumour is attached by a broad band to the outer surface of the one described; the band is 11 cm. long, and 2·5 cm. broad at its narrowest part; it is composed of fibrous tissue and muscular fibres. This tumour, which was floating in the abdominal cavity, is not so nodulated on the surface as the other, and contains less calcareous and more fibrous tissue, as is seen on the cut surface. A third small tumour, attached loosely to the largest one, is smooth on the surface, and the calcareous material in it is very scanty.

183. A calcified fibroid tumour of the uterus. It is oval in shape, and of the size of a hen's egg. It is extremely dense and hard. The tumour has been bisected, and it is seen that the densest part is about 3 mm. thick at the circumference. This is a specimen of the so-called uterine calculus of older authors.

184. A calcareous mass 2 cm. in diameter, removed from beneath the peritoneal coat of the fundus uteri. It is almost spherical, and is excavated on the surface into numerous pits, which give it a honeycombed appearance. The structure is dense, and resembles, to the naked eye, true bone, but it is a calcified fibro-myoma of the uterus. 488

185. A large mass of calcified material, said to have been removed from the uterus. It is a calcified "fibroid." It is very dense and irregular on the surface, presenting a honeycombed appearance. The flattened surface, which was probably the attached one, presents larger excavations than the rest of the mass. At the bottom of the bottle are several other pieces broken off. 3713

186. Several calcareous nodules which, according to the MS. Catalogue, were "discharged during life from an osteo-fibrous tumour of enormous size, involving the uterus and ovaries." The history has been lost, and therefore it is impossible to say what was the precise nature of the case, but it was probably a fibro-myoma or fibro-sarcoma which had become calcified in parts, and the nodules here shown may possibly have been passed *per vaginam* owing to sloughing of part of the growth. 2714

187. A uterus with the kidneys, ureters, and large veins. The uterus measures 22 cm. in length; it contains a flat subperitoneal fibroid of the size of a half-penny, and several intramural fibroids, the largest of which has undergone

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marked mucous degeneration. The peritoneum of the uterus is normal and the pedicles, tied with thick silk, are free from adhesions. The left common, external and internal iliac veins and their branches, and the left ovarian vein, are thrombosed; the clot can be seen extending to the hilum of the kidney. The right common iliac vein contains a clot, which extends into the vena cava. 7234

Microscopic Structure.—The tumour is a degenerated fibroid: some of the muscle-cells cut across closely resemble sarcoma. The kidneys show dilatation of the Malpighian capsules and many of the tubules, with cloudy swelling of the renal cells in part.

188. A fibroid of the portio vaginalis, $5 \times 4{\cdot}5 \times 4$ cm., which grew in the right lip of the cervix, from which it was enucleated after making a circular incision. Below is the mucous membrane of the portio greatly stretched, above is a raw surface exposed by the enucleation. 8882

Microscopic Structure.—The surface is covered with stratified epithelium which it thrown into a wavy outline, on to which, in one place, a gland lined with columnar epithelium opens. The tumour is an ordinary fibro-myoma.

Removed (H. R. S.) from a patient aged 50.

189. Half a tumour similar to the last, measuring 6×5 cm. on section. The mucous membrane of the portio vaginalis and the subjacent tissues overlying the tumour vary in thickness from 3 to 10 mm. 8420

Microscopic Structure.—The surface consists of stratified epithelium. At one edge are a few cervical glands. At one spot are cervical glands lined with fine columnar epithelium. The tumour is a fibro-myoma with marked hyaline degeneration.

Removed (H. R. S.) from a patient aged 44, who was delivered of a dead child by forceps 15 months before operation.

190. Half a fibro-myoma of the cervix of the size of a pea. The section shows the usual whorled arrangement of a fibro-myoma and its surface is slightly uneven. 8607

Microscopic Structure.—It is a fibro-myoma with considerable leucocytic infiltration beneath one surface.

The tumour was enucleated from the cervix near the external os.

191. A tumour of the size of a billiard-ball, on one side covered by mucous membrane, which has been torn by the forceps, on the other side raw where it was enucleated from its bed. 9189

The tumour grew from the posterior cervical wall, being attached from the internal os, which was of the size of a pencil, to within half an inch of the external os. It was enucleated (H. R. S.) after bisection from a patient aged 27.

192. A cystic fibroid of the cervix, measuring $12{\cdot}5 \times 10 \times 8$ cm. The wall is about 1 mm. thick below and 1 cm. above. The outer surface is rough with fragments of torn areolar tissue, and below is a piece of the thickened mucosa of the portio vaginalis. The cavity has been formed by degeneration, which is still visible on the inner edge of the cut section above, and the lining of the cavity is somewhat smooth below, roughened and irregular above. The tumour contained turbid yellow, slightly blood-tinged fluid, which coagulated on standing. 9103

Microscopic Structure.—The tumour is a degenerated fibro-myoma.

The tumour grew in the right half of the cervix and could be felt $3\frac{1}{2}$ inches above the pubes. It was enucleated *per vaginam* by the finger and the cavity drained (H. R. S.).

193. A fibro-myoma of the intra-abdominal portion of the round ligament, weighing 6 lb., measuring $20 \times 15 \times 13$ cm. It has the typical appearance of a fibro-myoma on section. The outer surface is covered by areolar tissue, in which a tag of tissue which represents the pedicle is seen. This pedicle was the round ligament, which was cut short close to the tumour to avoid slipping of the ligature. 8060

Removed (H. R. S.) from a patient aged 24, who had complained of abdominal swelling for 3 months and pain there for a year. The tumour had lifted up the anterior layer of the

broad ligament, so that the reflection from the abdominal wall was about 4 inches above the pubes. The peritoneum was incised and the tumour enucleated down to its pedicle, which was found to be the right round ligament as thick as a lead pencil. The patient was well five years later. (Obstet. Soc. Trans. vol. xlvi. p. 26, where previous cases are described.)

194. Three uterine fibroids removed by enucleation. The smallest is of the size of a small orange, the largest of the size of a cocoa-nut. The large ones have been sewn up, having been removed in several pieces. They are in some places ragged on the surface, in others smooth with a covering of areolar tissue. On section they are dense in structure and show no signs of degeneration. The weight of the three tumours is 2 lb. 14 oz. 9532

Removed (H. R. S.) by enucleation through the cervix from a virgin aged 30, March 1904, on account of menorrhagia. One of the large tumours was removed from the anterior cervical wall; the others from the body. The patient recovered well, and in May menstruated with slight loss for three days. The middle-sized tumour was growing in the left lip of the cervix.

The patient was seen in Nov. 1910, the uterus was small, freely movable, the sound went in for 2½ inches. She menstruated for four days, using six diapers. She looked and felt well.

195. A uterus measuring $13 \times 5\frac{1}{2} \times 6$ cm. In the front wall are seen two calcified subperitoneal fibroids, and in the posterior wall a dense subperitoneal fibroid of the size of a hen's egg. The uterus and upper part of the vagina have been laid open, and the right side and posterior wall of the cervix are seen to be extensively infiltrated and eroded by new growth. The mucosa of the body is atrophied. 7310

Microscopic Structure.—The tumour consists of very dense fibro-myomatous tissue which in places has undergone hyaline and mucous degeneration. The growth in the cervix is a glandular carcinoma.

From a patient on whom double oophorectomy was performed by Sir John Williams in June 1886, on account of a myoma, which at that time reached up to the umbilicus. Menstruation ceased for eight years, and then hæmorrhage recurred as the result of the carcinoma. The patient died at the age of 47 of bronchitis and diffuse interstitial nephritis a few days after admission to U. C. H. (Obstet. Soc. Trans. vol. xxxvii. p. 213.)

196. A cervical fibroid which has been removed piecemeal and the pieces sewn together. It is globular, 10×11 cm. One portion of it is smooth, but covered by areolar tissue, where it has been enucleated. Its weight is 1 lb. 6 oz. Projecting from the lower end is a cylindrical piece which was removed by the "cutting tube." 9435

Removed in Nov. 1903 (H. R. S.) from a patient aged 43 who had had six children, the last in 1894. During her pregnancy she had always had a "show" three weeks before delivery. The patient made a good recovery.

197. Half a uterus removed by supravaginal hysterectomy. The tumour weighs 5 lb. 13 oz. and measures $25 \times 12 \times 15$ cm. Three fibro-myomata grow, one from the fundus, the others from the anterior wall. The upper of these is much degenerated, being covered in parts merely by peritoneum, which is cracked in places. There are no adhesions. The Fallopian tube is normal; the ovarian ligament thickened; the ovary contains two cysts, 1–2 cm. in diameter. The cervix has been divided high up, 1·3 cm. below the internal os. The cervical mucosa is cystic. Corporeal canal 10 cm. long. Mucosa somewhat atrophied, except at the fundus. Two small myomata are seen in the anterior wall. 10152

Removed (G. F. B.) by supravaginal hysterectomy from a patient aged 47. The abdomen contained two pints of ascitic fluid.

198. Half a uterus which measured $30 \times 25 \times 13$ cm., weighing 7 lb. 10 oz. without the pus. The whole of the front of the uterus is covered with thick masses of adherent omentum and false membranes. A rounded fibroid of the size of an orange arises from the right side of the body. The greater part of the uterus

consists of a large fibroid growing from the fundus, which measured 25 × 16 × 13 cm. In front of this, between it and the abdominal wall, is a large cavity which contained several pints of pus; only the extreme left of this cavity is seen in this half of the specimen. Below the large fibroid is a smaller one 5 cm. in length. The portio vaginalis is eaten away by growth, which extends 1·5 cm. up the canal, evidently carcinoma. The large fibroid is capped by a piece of omentum ½ inch thick, between which and the fibroid is a cavity containing pus. The large fibroid has a large anfractuous cavity, the walls being 1–2 cm. thick. It contained pus. Throughout the uterine wall the vessels are very large. The mucosa of the body is atrophied. The carcinoma has evidently led to suppuration in the fibroid, with subsequent formation of peritoneal abscesses. 9377

Microscopic Structure.—The cervical growth is a carcinoma, consisting of solid masses of epithelial cells.

From a patient aged 44, who was admitted to U. C. H. suffering from septicæmia, with carcinoma of the cervix and suppurating fibroids. A large abscess was opened and several pints of pus were evacuated from the peritoneum. The patient died.

199. A ragged mass of fibro-myomatous tumour calcified at its lower part. 10564

From a patient aged 55, who fourteen years ago (1893) had double oophorectomy performed (H.R.S.). The uterus at that time was larger than a fœtal head. In March 1907 hæmorrhages recurred, and the tumour was removed (H. R. S) after dilatation with a tent with difficulty, owing to the calcification of its lower part. The patient rapidly recovered. Sections removed with the curette showed the corporeal mucosa to be atrophied. (Obstet. Soc. Trans. vol. xlix.)

200. A uterus removed by supravaginal amputation. The half of it weighs 3 lb. 1 oz. It consists of a pedunculated subperitoneal tumour of the size of a cocoa-nut, growing from the right side of the fundus; and an intramural tumour growing in the fundus. This tumour measures 10 × 8 cm. in section and bulges down the mucosa of the fundus. The mucosa is smooth and of normal thickness over the bulging portion, slightly atrophied at the fundus itself. Over the submucous portion the uterine wall is 7 mm. thick, at the top of the specimen 3 mm. The intramural tumour has the normal appearances of a fibroid below, but in the upper half it is very elastic, even in the hardened specimen, and somewhat granular, with interlacing bundles of apparently unaltered fibro-muscular tissue. In spite of this marked change, which is unlike anything we have met with previously, there is a total absence of degeneration or cystic formation visible to the naked eye. The left ovary is enormously enlarged, 8½ × 3 × 1½ cm., and contains three blood-cysts. The peritoneum is smooth. There is no sign of any new growth in the ovary. The subperitoneal fibroid is hard, except at one spot, where it is degenerated and has the usual appearances of a fibro-myoma. 7516·

Microscopic Structure.—The tumour is extensively degenerated, but shows no sarcomatous change.

Removed (H. R. S.) by supravaginal amputation from a patient aged 44, who suffered from menorrhagia and metrorrhagia, and was sterile after ten years' married life.

201. Half a calcified fibro-myoma, which measured 8 × 9 × 3 cm. The free surface is somewhat thickened and ulcerated; the raw white surface was attached to the posterior lip. The section shows fibro-myomatous tissue with spots of calcification. 9232

Removed (G. F. B.) from the posterior lip of the cervix of a patient aged 77.

202. Part of a uterus and appendages of one side, removed by supravaginal amputation, which weighed 30¾ lb.; the solid part weighed 19¼ lb. and a large cyst contained 12½ lb. of blood. It measured 26 × 25 × 12 cm. in the hardened state. The tumour consists of an extensive fibro-myoma growing beneath the peritoneum of the right broad ligament. The Fallopian tube, 13½ cm. long, with

an accessory ostium 5 mm. from its extremity, the round ligament and ovarian ligament are raised up and separated by the growth of the tumour. The lower part of the tumour is devoid of peritoneum. The section of the tumour shows it to be extensively infiltrated with blood. It is degenerated towards the periphery, and the cysts contain blood. The left cornu of the uterus has been removed with the tumour. The ovary measures $6 \times 2\frac{1}{2} \times 2$ cm. and contains a cyst at its inner extremity as big as a grape. 7824

Removed (H. R. S.) by supravaginal hysterectomy, with extraperitoneal treatment of the pedicle, on May 30, 1897. At that time the tumour reached up vertically for $12\frac{1}{2}$ inches above the pubes and measured $11\frac{1}{2}$ inches transversely. The girth was 44 inches. In 1893 the tumour was $9\frac{1}{4}$ inches above the pubes and the girth 35 inches. There was no menorrhagia, the tumour giving rise to cramp-like pains in the legs by its weight. At the beginning of 1897 the tumour rapidly increased in size, and hæmorrhage occurred into the cystic portion, as shown by the sudden increase in the size of the abdomen while walking and syncopal attacks. The patient recovered well and was known to be well several years afterwards.

203. A uterus and appendages removed by total hysterectomy. The uterus measures $11 \times 9 \times 7$ cm. and contains a single intramural fibroid. Portio normal. Cervical canal $2\frac{1}{2}$ cm. Mucosa normal. Corporeal mucosa atrophied. The left ovary is converted into a large cyst with papilloma in it; the right ovary also has several cysts and is adherent to the left. The ovarian cysts are adherent to and almost incorporated with the fundus of the uterus. There are numerous adhesions all over the uterus and the base of the ovarian tumour. The fibroid is not degenerated. 9123

Microscopic Structure.—The corporeal mucosa is somewhat atrophied, with for the most part only two or three glands cut across. The epithelium of the surface is short columnar.

Removed by total abdominal hysterectomy and ovariotomy (H. R. S.).

204. Half a uterus weighing 14 lb. 6 oz., removed by supravaginal hysterectomy. The surface of the section measures 20×18 cm., and several large injected veins are seen at one spot, and there are patches of commencing degeneration. Below, on the other half of the specimen, was a raw surface by which the tumour was attached to the fundus. The lower surface of the peritoneum is marked by a round shallow pit. Adherent to the top of the tumour is the great omentum with enormously dilated veins (caput Medusæ). 8586

Removed (H. R. S.) from a patient aged 45, by supravaginal hysterectomy, with intraperitoneal treatment of the stump. The patient died of intraperitoneal hæmorrhage, from relaxation of the ligature which still remained in place.

205. The great omentum from the last case with the arteries (red), veins (blue), and lymphatics (yellow) injected. The veins are enormously distended up to 1 cm. in diameter, the lymphatics to $1\frac{1}{2}$ cm. 8586

206. A fibro-myoma which weighed 11 lb. and measuring 25×24 cm. in section. The peritoneum is smooth, except for one or two slight adhesions. The tumour is a multi-nodular fibro-myoma with a capsule of 1–2 cm. in thickness, and throughout the section are seen areas of reddish tissue slightly pitted in places. Some of these red areas are collections of cysts, the red colour being due to the contents; the cyst-walls are smooth. The raw surface at the lower end of the tumour is where the fundus was cut off. 7248

Microscopic Structure.—There are numerous rounded and slit-like spaces scattered throughout the tumour, some of which are clearly vessels, others appear to be due to degeneration, though the muscle in the neighbourhood is but little affected.

Removed (H. R. S.) from a patient aged 49, by supravaginal hysterectomy, with extraperitoneal treatment of the stump, only the fundus of the uterus being removed. The patient recovered well.

208. Sales

209 Sarah Davis

210 Mitchell

207. A fibroma weighing 12 lb. 15 oz., enucleated from the broad ligament, the anterior layer of which was raised up 5 inches above the pubes. The tumour measures 26 × 17 cm. in section, and is extensively degenerated with mucoid cysts, and throughout are patches of yellow staining. The outer surface is covered with loose tags of areolar tissue, the result of enucleating it from the broad ligament. 7918

Microscopic Structure.—The fibro-muscular tissue is degenerated, being hyaline, with swelling of the muscular nuclei, and slight leucocytic infiltration in the neighbourhood of the vessels. Throughout the tumour are many areas of tissue having the appearance of fat. By careful observation all stages in the formation of these "fat-globules" can be traced. These areas are due to degeneration.

Removed (H. R. S.) with the écraseur applied to the stump, which grew from the anterior surface of the fundus after enucleation of the tumour from the raised broad ligament. The patient recovered and remained well several years afterwards.

208. A uterus removed by total hysterectomy, together with one of the ovaries 15 × 15 × 8 cm. The uterus is very small and thin, its cavity being only 6 cm. in length. The weight of the uterus is 2 lb. 4 oz. The wall of the cervix varies from 3 to 5 mm. in thickness; the mucous membrane appears to be healthy, except for slight hypertrophy at the upper part. There are numerous shaggy adhesions over the uterus and tumour, and to the right of the fundus a raw surface looking like an abscess-cavity is exposed. Several interstitial fibroids of the usual appearance are seen in the section. The tumours are confined to the posterior wall of the body, though the larger tumour extends for 7 cm. below the level of the cervix. The ovary measured 4 × 2·5 × 1·5 cm., and on section appeared normal; the tube also was normal. 8378

Microscopic Structure.—The surface of the mucosa of the fundus is covered with columnar epithelium; the glands are increased in number, racemose, have papillary projections, and are lined with columnar cells. They are in many places dilated and filled with degenerated epithelium. There is no epithelial proliferation.

Removed on Dec. 19, 1899 (H. R. S.), from a woman aged 38.

209. A uterus weighing 2 lb. 6 oz., and measuring 18 × 11 × 13 cm. The cervix is slender, the portio vaginalis small and virginal; the cervical canal is about 4 cm. long, the whole uterine canal being 13 cm. long. Several subperitoneal and interstitial fibroids are seen; the lower of the two seen in section is degenerated and stained of a reddish colour. A cord is seen to be coming off from the top of the uterus, which looks like the Fallopian tube; a portion has been cut off from it; it contained cretaceous nodules. The mucosa of the uterus is normal. There are numerous peritoneal adhesions. The right ovary contained a small dermoid of the size of a walnut. 8547

Removed on July 17, 1900 (H. R. S.), from a patient, aged 42, who had had amenorrhœa for 3 months, and on several occasions previously had ceased menstruating for 2 months. There was considerable pain and difficulty of micturition every day for the last 12 months. The left ovary was not removed.

210. A uterus with cervical fibroid, removed by total hysterectomy, weighing 8 lb. 15 oz., and measuring 23 × about 17 × 15 cm. The right ovary contains two cysts, the largest 3 cm. in diameter. The tumour grows from the anterior lip, which is greatly enlarged. The edge of the posterior lip is seen on the section. The mucous membrane of the anterior lip, enormously stretched, has been scored in places by the knife. An enormous tumour has grown beneath the peritoneum very extensively, so that the anterior reflection of the peritoneum is 20 cm. above the edge of the lip. The tumour has the ordinary structure of a fibro-myoma, but has spots of commencing degeneration. The anterior wall of the cervix is 9 cm., the posterior 18 cm. long; the mucosa is atrophied. The canal of the body is 3 cm. long, the mucosa of the posterior wall slightly hypertrophied (5 mm.). 8613

Microscopic Structure.—The mucosa of the body is thickened, the glands slightly dilated; the deeper parts of the stroma are dense, the superficial parts delicate and infiltrated with blood.

Removed on Dec. 1, 1900 (H. R. S.), by total abdominal hysterectomy from a virgin aged 43. The patient recovered well. In 1893 the tumour reached 5½ inches above the pubes, and the sound passed 4½ inches. (The canal of the uterus now is 4¾ inches.) In November 1900 the tumour reached 9 inches above the pubes. (Obstet. Soc. Trans. vol. xliii. p. 5.)

211. A uterus removed by total hysterectomy, measuring 18 × about 15 × 11 cm., and weighing nearly 4 lb. The peritoneum is smooth. There is a single intramural tumour growing in the posterior wall, 11 × 7 cm., showing marked mucous degeneration, with a cystic cavity at the top and in the centre with gelatinous contents. The thickness of the wall around the tumour is from 7 to 10 mm. Thickness of the anterior wall of uterus 1·5 to 2 cm. Cervical canal is 3·5 cm. Slight erosion at the external os and a small mucous polypus. Corporeal mucosa atrophied, except for the upper 2·5 cm., where it is of normal thickness; corporeal canal about 11 cm. long. 8681 A

Microscopic Structure.—The tumour is a fibro-myoma which has undergone extensive mucous degeneration.

Removed in March 1901 (H. R. S.) by total hysterectomy from a patient who was quite well in April 1905.

212. A subperitoneal fibroid weighing 5 lb. 2½ oz. The surface is irregularly nodulated and covered with peritoneum, which is in places covered with small patches of lymph. On one side is seen the raw surface of the cut attachment. The cut section shows the usual fibro-muscular appearance of a multinodular fibroid, with marked degeneration at the periphery of the two poles and two smaller cystic cavities with smooth lining in the substance. The colour of the tumour is pink, except at the degenerated spots, where it is white and at one part granular. Surrounding the larger of these degenerated areas is a smooth fleshy membrane, in places 2 mm. thick, which is continuous with the surface of the tumour and forms the wall of a cystic cavity. 8727

Microscopic Structure.—The tumour is a fibro-myoma with hyaline degeneration. In some parts the degeneration of the cells and fragmentation of their nuclei gives an appearance somewhat resembling sarcoma.

Removed on May 25, 1901 (H. R. S.), together with the uterus, by total abdominal hysterectomy; the cystic tumour had burst before the operation. The patient, aged 33, remained quite well nearly six years afterwards.

213. A uterus removed by hysterectomy, showing several interstitial and one subperitoneal fibroid growing from the fundus uteri. The cervical canal is 4 cm. long and the whole uterine canal about 9 cm. The mucous membrane of the cervix is normal, that of the body is slightly thinned and in parts shaggy. The subperitoneal tumour is rather darker in colour than the others. The external os is virginal and healthy. The wall of the uterine body at one spot at the upper part is only 1 mm. thick, and the cavity has actually been entered by the knife in removing the uterus. The uterus is of the size of a fist, and the subperitoneal tumour in it is of the same size. There is no sign of degeneration in the tumours. The tubes and ovaries are normal. 8729

Removed on June 1, 1901 (H. R. S.), by total hysterectomy from a patient aged 41.

214. A uterus weighing 1 lb. 6 oz., and measuring 14·5 × 11 × 11·5 cm. The cavity measures 11·5 cm. There are numerous adhesions in the peritoneum, and a small subperitoneal tumour is seen of the size of a walnut. The cervix is thickened and lengthened (5 cm.); the mucous membrane of the cervix and body is normal. The section shows a single interstitial fibro-myoma, not showing any evidence of degeneration. The wall of the uterus around it varies from 5 mm. to 15 mm. in thickness. The portio vaginalis is normal, except for a very small erosion at the external os. 8927

Removed on Feb. 11, 1902 (H. R. S.), from a patient, aged 43, who was anæmic from rather profuse bleeding at the periods, but the indication for operation was constant pain day and night for twelve months. The patient lost all pain after operation and was discharged well.

111 Burdett. Small mucous polypus removed in Oct 1911 in L.C.H.
Patient with scar sound: unable to get married.

112. H. Hodge

114. Stratton

215. Clara Meyers

216 Layton

217 Alice Train

218 Kempe

215. A uterus removed by total hysterectomy, weighing 1 lb. 2 oz. and measuring 13 × 7 × 10 cm. The lower half of the tumour and uterus are denuded of peritoneum, only a triangular flap covering the uterus posteriorly. A number of interstitial and subperitoneal fibro-myomata are seen, the largest having a diameter of 8 × 7 cm. This tumour reaches upwards to beyond the level of the fundal canal and downwards almost to the level of the portio, but the arrangement of the fibres shows that it has grown from the body of the uterus. The canal of the uterus is 9 cm. long; the canal of the body is 5 cm., that of the cervix 4 cm. A few small cysts are seen beneath the mucosa below the internal os. The mucosa of the body is for the most part normal, but at its upper part it is hypertrophied. 8942

Removed on March 8, 1902 (H. R. S.), by total abdominal hysterectomy from a single woman aged 38.

216. A uterus removed by total hysterectomy, and weighing 7 lb. It measures 28 × 20 × 13 cm. Numerous craggy fibroids are seen on the surface and on the section. They are all extensively calcified. The cervix measures 9 cm., the body about 6 cm. The mucosa is atrophied. 9000

Removed on June 14, 1902 (H. R. S.), from a virgin, aged 57. The patient also had at the time of the operation a ruptured parovarian cyst of the size of a cocoa-nut, with "papilloma" in it and bloody contents. This was removed at the same time with the uterus. The patient recovered well from the operation, and was quite well in December 1903, but soon afterwards had pain below the right costal margin. After some months a growth was detected there, attached to the ribs; this gradually increased in size, and the patient died of exhaustion about two years after the operation. Although the tumour was ruptured, there was nothing to lead one to suppose that the papilloma was malignant. No post-mortem examination was made.

217. A uterus, removed by total hysterectomy, weighing 1 lb. 12 oz. and measuring 19 × 11·5 × 8 cm. An intramural fibroid is growing in the anterior part of the fundus uteri, measuring nearly 8 cm. in diameter. The muscular wall, which is thick below, and gradually diminishes towards the top, has squeezed out the contents through the muscular shell above, so that the tumour appears there on the surface as a bleb with gelatinous contents, only covered by peritoneum, which is cracked at one spot. The process of extrusion would have gone on until, in a short time, the peritoneum would have burst, and peritonitis would have resulted. There are numerous spots of degeneration with the formation of small cysts. The peritoneum is smooth. The cervical canal 3·5 cm.; portio virginal; mucosa normal; corporeal canal 3 cm.; the mucosa hypertrophied. Uterine muscular wall of body 2 cm. thick. 9035

Microscopic Structure.—The tumour is a fibro-myoma which has undergone mucoid degeneration. The mucosa of the body is hypertrophied. (Obstet. Soc. Trans. vol. xlv. p. 378.)

Removed on July 26, 1902 (H. R. S.), by total abdominal hysterectomy from a patient, aged 39, who complained of menorrhagia and pain in the abdomen when she lay down.

218. A uterus removed from a patient aged 52. The tumour weighed 6 lb.; it measures 22 × 16 × 12 cm. It has been bisected through the uterine cavity, which on the section measures 19 cm., and its walls are slightly separated by blood. There are two tumours, one above and one below the uterine cavity; the lower of them is sharply demarcated from the uterine muscle, but the upper tumour, though having the characteristics of a fibro-myoma, is less distinctly encapsuled than the lower tumour. The mucosa of the body is normal in the upper part and atrophied below. The cervix measures 4 cm. in length, and its mucosa is normal. There is no sign of polypus or hypertrophy of the mucosa of the other half of the uterus. 9078

Removed in November 1902 (H. R. S), on account of severe menorrhagia, by total abdominal hysterectomy, from a patient, aged 52, from whom a parovarian cyst had been removed (H. R. S.) in October 1894, at which time the fibroid was of the size of a tennis-ball. Some years subsequently to the first operation the tumour became incarcerated in the pelvis and caused retention of urine. The tumour was pushed up and a pessary inserted, which gave complete relief for several years. The patient was in excellent health in October 1909.

219. A uterus removed by hysterectomy, weighing 13 lb. and measuring 31 × 31 × 18 cm. The uterus itself is of the size of a cocoanut, and contains a submucous fibroid with a gangrenous tongue hanging down to the internal os. From the posterior wall of the body is growing an enormous myomatous tumour which has a ragged cavity which contains pus. This cavity has resulted from degeneration, and has evidently become infected from the gangrenous submucous tumour. Nearly the whole of this tumour had to be enucleated from the cellular tissue before the hysterectomy could be effected. The right ovary is considerably enlarged by a cyst (5·5 × 4·5 × 2·5 cm.); it contains a single cyst. The mucosa of the cervix is normal; that of the body is atrophied. 9289

Removed on May 21, 1903 (H. R. S.), by total abdominal hysterectomy, from a single patient, aged 49, who had been in the hospital in 1889, when the fibroid was much smaller. The tumour pressed upon the right ureter, which was as thick as the little finger. The patient recovered and remained well in April 1911.

220. A uterus removed by total hysterectomy, weighing 18¼ oz. and measuring 15 × 10 × 9·5 cm. The peritoneum is smooth; the uterus contains two interstitial fibroids, one in the anterior wall of the size of an orange, the other of the size of a marble in the posterior wall. The tumours are not degenerated. The raw surface of broad ligament is 5 cm. broad on the left side, 4 cm. on the right; os virginal, healthy. Cervix slender, 5 cm. Mucosa normal; there is a cyst of the size of a pea in the posterior wall. Corporeal cavity 5·5 cm. long. Mucosa normal in thickness, but slightly uneven on the surface, as shown by removing a quadrilateral piece of the uterine wall. 9324

The patient was about 40 years of age, and had suffered from dysmenorrhœa for many years, for which dilatation was performed at the age of 26, and relieved the patient of pain for several years. For some years before the operation the pain was severe, lasting for some days, and the menstrual loss was excessive. The patient had congenital obstructive mitral disease. The uterus was removed (H. R. S.) by total abdominal hysterectomy with complete success on July 4, 1903, the patient being quite well seven years afterwards.

221. A uterus removed by total hysterectomy, weighing 4¾ lb. and measuring 23 × 18 × 11 cm. On the anterior wall of the body is a large sessile subperitoneal fibroid, which forms the main part of the tumour. Several small fibroids are also seen in the section. The uterus is about normal in size; the portio vaginalis normal; cervical canal 4 cm.; mucosa normal; corporeal canal 4·5 cm.; mucosa normal or slightly hypertrophied; the peritoneum over the tumour is thickened, but free from adhesions. An enormous vein is seen coursing over the surface of the tumour, 11 mm. in diameter. On the section large veins are seen filled with injection, surrounding two-fifths of the capsule of the tumour, which is extremely thin and above consists of peritoneum only. The corporeal wall is not thickened (2 cm.). The fibroid is not degenerated. 9332

Removed in July 1903 (H. R. S.) by total abdominal hysterectomy from a patient aged about 40, who suffered from pain and menorrhagia and Raynaud's disease. The tumour had grown slowly during the last two years. Many small vessels in the cellular tissue oozed after the removal of the uterus, requiring ligatures. This may be connected with the dilated condition of the veins, as shown in the specimen, or possibly with the Raynaud's disease. Patient recovered, and was quite well two or three years afterwards.

222. A uterus removed by total hysterectomy, weighing 2 lb. ¾ oz. The tumour measures 11 × 17 × 8 cm. The uterus is apparently not enlarged, of normal shape, and lies to the left of the tumour, which has its long axis antero-posterior, the larger part, about two-thirds, being behind, and the smaller part, one-third, being in front of the cornu of the uterus. The fore part of the tumour is bare of peritoneum, having been enucleated from the broad ligament, the edge of which, with the Fallopian tube and round ligament, is seen containing muscular uterine tissue, and being 1 mm. in thickness. On cutting into the tumour it is found to show mucous degeneration with the formation of cysts. The tumour

119 Sarah Edwards

120 Haynes

121 Forbes

122 E. Hampton

123 Ellen Denton

124 Jessie Hinds. Quite well April 1911, and in Oct. 1930.

125. H. Palmer

has originated from the upper part of the right side of the body of the uterus and has grown into the broad ligament. There are no other fibroids. Mucosa of body slightly hypertrophied. 9343

Removed on July 28, 1903 (H. R S.), by total abdominal hysterectomy from a single patient aged 38. In July 1906 patient was very depressed, and complained of severe headache; in 1910 the patient was in good health.

223. A uterus removed by total hysterectomy, and measuring 23 × 15 × 11 cm., and weighing 4 lb. 1oz. The peritoneum is smooth, but has numerous linear keloid-like fibroids. On section are seen numerous myomatous nodules, of which over two dozen can be counted on the section. They have not distorted the surface of the uterus, and the wall outside them is about 5 mm. thick. On the other hand, they have rendered the corporeal canal extremely tortuous from the bulging and interlocking of the tumours. The mucosa of the body is atrophied; the canal is 13 cm. long; cervical canal 7 cm. long; external os healthy and portio virginal. The fibroids are not degenerated. The mucosa of the cervix at its lower part, for a distance of 2 cm. from just above the external os, contains a finely papillary growth of very unusual appearance and is quite different from that higher up, which is normal. 9386

Microscopic Structure.—The cervical mucosa shows long slender processes, some single, some clubbed and branched at the end, consisting of the fibro-muscular tissue of the cervix covered with a single layer of columnar epithelium. A few glands are present, also with a single layer of columnar epithelium. There is no round-cell infiltration, and the growth is a papillary hypertrophy of the mucosa.

Removed in Oct. 1903 (H. R. S.), by total abdominal hysterectomy, from a patient aged 46.

224. A uterus removed by total hysterectomy, weighing 9 lb. 3 oz. and measuring 25 × 21 × 16·5 cm. The peritoneum is smooth, but has enormous veins, one of which has been laid open, crossing under the peritoneum. Growing from one wall of the fundus is an intramural fibroid, for the most part normal, but with a central spot of commencing degeneration. The cervix is slender, virginal; its canal 6 cm.; its mucosa slightly hypertrophied and papillary. The corporeal canal 6·5 cm. in the section; its mucosa atrophied (1 mm.). A small mucous polypus (3 mm. in diameter and 1·5 cm. long) is present, growing from the mucosa at the upper part of the body. 9419

Microscopic Structure.—The papillary surface of the cervical mucosa is covered with columnar epithelium. The glands are lined with columnar epithelium and are actively secreting and distended with mucus.

Removed in Nov. 1903 (H. R. S.), by total abdominal hysterectomy, from a virgin, aged 45, for anæmia, wasting, and the weight and rapid growth of the tumour. The patient recovered well, and was in excellent health years afterwards.

225. A uterus removed by total hysterectomy, weighing 3 lb. 4 oz. and measuring 18·5 × 15 × 11 cm. The peritoneum is smooth, but finely tuberculated in many places by small sessile subperitoneal fibroids. On section an enormous number of small fibroid nodules are seen; the largest is submucous, and of the size of a hen's egg. The capsule around the multiple nodules is, on the average, ·5 cm. thick. The subperitoneal fibroids are covered by peritoneum only. The portio is small, with a minute erosion at the external os. The cervical canal is 5 cm., and has a few dilated glands; otherwise normal. The corporeal canal, tortuous from projecting fibroids, is 12 cm. in direct measurement. The upper part of the corporeal canal has its mucosa atrophied, scarcely visible, but the lower 4 cm. has the mucosa thickened. 9530

Microscopic Structure.—The hypertrophied mucosa shows tortuous glands, with the surface covered with columnar epithelium and the stroma somewhat scanty and denser towards the surface.

Removed in March 1904 (H. R. S.), by total abdominal hysterectomy, from a patient, aged 41, who complained of unbearable pain at the monthly periods and excessive bleeding at the monthly periods.

226. A uterus removed by total hysterectomy, measuring 16 × 16 × 11 cm. and weighing 2 lb. 14½ oz. The uterus itself measures only 10 cm. in length, but in the fundus grows a degenerated fibroid measuring 8¾ cm. in diameter. The wall of the body is hypertrophied (3 cm. thick); the mucous membrane of the body and cervix is normal. The portio is conical, virginal. From the right upper angle of the uterus depends a lobulated fibro-myoma covered with peritoneum, except at its lower extremity. The uterus is ridged at the origin of the tumour, and this ridge can be traced to the Fallopian tube, the outer extremity of which is free, while the inner half has the mesosalpinx greatly distended by the tumour. A wedge has been cut out, showing that the tumour displaces but does not originate in the wall of the Fallopian tube. By making various sections through the tumour, it is found that the lobulated tumour is a composite tumour made up partly of a lobule of the fundal myoma which invades the broad ligament, and partly of a cornual myoma which invades the mesosalpinx. A piece of glass has been introduced into the section of the Fallopian tube. Both ovarian and round ligaments are seen. 9582

Microscopic Structure.—The lobulated tumour is a degenerated fibro-myoma; the tubal epithelium is normal.

Removed in May 1904 (H. R. S.) from a patient, multipara, aged 34, who suffered from recent syphilis. There was no menorrhagia; she complained of swelling of the abdomen, flatulence, and palpitation.

227. A uterus removed by total hysterectomy, weighing 2 lb. 2½ oz., measurement 15 × 11 × 13 cm., containing two subperitoneal fibroids of the size of a hen's eggs in its anterior wall, slightly pedunculated, and a large myoma, 9 cm. in diameter, growing in the posterior wall. This tumour is of a dark brown-pink colour ("red degeneration"). The cervix is slightly eroded at the external os. Cervical canal 7 cm., corporeal 9 cm.; mucosa atrophied in lower two-thirds from pressure, normal above. In the posterior wall above this tumour is a small white fibroid; the two subperitoneal tumours are also normal on section, but were slightly degenerated in the centre of the other half of the tumour. The muscular wall around the tumour is 6 mm. to 1 cm. thick, and there is staining of the adjacent part of the capsule for 2 or 3 mm. The peritoneum is smooth. Some vessels are seen cut across at the periphery just beneath the capsule of the red tumour. 9616

Microscopic Structure.—The muscle shows but slight evidence of degeneration. The vessels are distended with blood and the muscle-cells are swollen, and blood-pigment can be found in small quantities throughout the tissue. The red colour is evidently due to the colouring-matter of the blood which has escaped from the engorged vessels.

The tumour was removed in July 1904 (H. R. S.), by total abdominal hysterectomy, from a patient aged 33.

228. A uterus and appendages, removed by total hysterectomy, containing numerous subperitoneal fibroids, weighing 1 lb. 7 oz. and measuring 16 × 17 × 14 cm. In the posterior wall of the body is a fibroid 6 cm. in diameter, with a very thin capsule towards the peritoneum, and two small ones of the size of a pea. In the anterior wall are nine fibroids, the largest of which (5 × 4 cm.) is degenerated in its centre, but not cystic. In the cavity is a submucous fibroid of the size of an almond growing from the anterior walls. Half of this is mounted below the specimen. By pressure it has produced atrophy of the mucosa, which measures less than 1 mm. in thickness, whereas above and below it measures 5 mm. Mucosa of cervix normal. Portio somewhat enlarged, 4 × 4 cm. Length of cervical canal 5 cm.; mucosa normal. Corporeal canal 6 cm. The tubes are normal. The right ovary is irregular on the surface, 4 × 3 × 1 cm. It contains a large luteal cyst. The left 3 × 2 × 1 cm., also much corrugated, normal on section. Peritoneum smooth, but irregular from the projection of some of the smaller tumours. 9628

Microscopic Structure.—A section at the junction of the atrophied and hypertrophied portions shows the hypertrophied portion slightly papillary and covered with short columnar epithelium. The deeper parts of the glands are convoluted and dilated. It has a rich cellular

11:26 Ada Ironlan.

11:7. Buchanan.

229. Eliz. Blake

230 Emma Chambers

231 S. Willingham.

stroma. The glands run vertically to the surface. The epithelium is normal. The mucosa pressed upon is thin, has lost its epithelium, and the glands run parallel to the surface and the stroma is much smaller in amount.

Removed in Aug. 1904 (H. R. S.) by total abdominal hysterectomy.

229. A uterus removed by total hysterectomy, weighing 3 lb. 6oz., containing a subperitoneal fibroid in the posterior wall 1·6 cm. in diameter, and two intramural fibroids in the upper anterior cervical wall, the larger being as big as a pea. The uterus is mainly enlarged by a submucous fibro-myoma 11·5 × 12 cm. in diameter. This tumour is in a state of marked mucous degeneration, showing irregular cavities all over its cut surface. The cavity of the body was in the fresh state distended by blood to the extent of 2 cm. in sagittal section. The mucous membrane is thin and atrophied, appearing as a mere line on section. The surface is deeply stained in places, probably by imbibition of blood from the cavity. The cervical canal is about 3 cm. long; mucosa and portio normal.

9711

Microscopic Structure.—The mucous membrane is represented by a dense layer of cells with oval and spindle-shaped nuclei. The surface epithelium is cubical or flattened, and in places has disappeared. Only two glands were found in a ¼ inch of mucous membrane.

Removed in Dec. 1904 (H. R. S.) from a patient aged 62, in whom the menopause occurred at 44, on account of severe bleeding lasting a month. Six years ago patient had an attack of hæmorrhage, and several times during the last seven years lost a "spot" of blood. (Obstet. Soc. Trans. vol. 48, p. 333, Case I.)

230. A uterus removed by total hysterectomy, weighing 1 lb. 1 oz., and measuring 11½ × 9 × 9 cm. The peritoneum is smooth; the broad ligaments are both opened out for 6 cm. There are two or three subperitoneal nodules; and the uterus is enlarged by a tumour 7½ × 6 cm. growing in the posterior wall; it is surrounded by a layer of muscular wall 7 mm. in thickness, the inner part of which forms a loose capsule to the growths; the tumour is slightly degenerated. The lower end of the tumour comes down within 1 cm. of the posterior lip of the cervix. The portio is normal, cervical canal 4½ cm.; cervical mucosa is normal except for a small mucous polypus and one cyst; corporeal canal 5½ cm., the internal os being about 1 cm. below the middle of the tumour. The corporeal mucosa atrophied where pressed upon; hypertrophied 4 mm. at the upper part.

9748

Microscopic Structure.—The mucosa of the body is thin, covered with a single layer of cubical epithelium, contains few glands, slightly dilated, and a dense stroma. At one part the glands have entirely disappeared.

Removed in Jan. 1905 (H. R. S.), by total abdominal hysterectomy, from a patient, aged 51.

231. A uterus and left ovary removed by total abdominal hysterectomy. The uterus measures 14 × 9 × 6·25 cm. The peritoneum is thickened and uneven and translucent, showing the degenerated subjacent tumour. The cervical canal is 4 cm.; the mucosa of the upper half cystic; the body-canal 4·5 cm., its mucosa slightly atrophied. There is a fibroid growing from the anterior wall measuring 6·25 × 7·5 cm., with slight mucous degeneration of its periphery and at one spot towards the centre, and two small ones of the size of a walnut in its posterior wall. The external os is virginal, healthy. Attached to the uterus is a fibroid of the ovary larger than an adult head covered with adhesions and showing a large peritoneal cyst. The ovarian fibroid contains one large and two or three smaller cysts and a mass of undegenerated fibro-myomatous tissue 6 × 12 cm., with a few vessels and some hæmorrhage. 9787

Removed in Feb. 1905 (H. R. S.), by total abdominal hysterectomy, from a patient aged 64, who had been under observation for many years and who had suffered for 4 years from thrombosis of the femoral vein, from which she completely recovered several years before operation. She had been known to have a fibroid on the left side of the pelvis for many years. She had marked arterial degeneration. She recovered well from the operation. (See Dr. Spencer's notes U. C. H. extending over many years.)

232. A uterus removed by total hysterectomy, weighing 2½ lb. Four pieces of intramural tumour, each as large as a small orange, growing in the posterior wall had to be enucleated before the tumour could be drawn up and the vagina opened. The cervix is slender, not lacerated. There is a mass of undegenerated fibroids growing in the posterior wall. The cervical canal 3½ cm. long, mucosa normal; corporeal canal 9 cm. long, mucosa slightly congested, otherwise normal. The peritoneum is free from adhesions. 9906

Removed in May 1905 (H. R. S.), by total abdominal hysterectomy, from a patient aged 37, who had had one child and who suffered from menorrhagia. The patient was in good health five years later.

233. A uterus removed by abdominal hysterectomy after closing the cervix by the vagina. The uterus is slightly enlarged, its walls thickened (1·5 cm.). On the right side of the lower segment is an interstitial fibroid of the size of a walnut seen in the lower specimen. The peritoneum is smooth; portio vaginalis normal. The cervical canal has not been opened except at the lower end: in the corporeal canal is the hypertrophied cystic endometrium, 5 mm. thick. 9926

Microscopic Structure.—The endometrium is hypertrophied and cystic.

Removed in June 1905 (H. R. S.) from a single patient aged 50, who complained for 12 months of supra-pubic pain and yellow discharge, sometimes offensive and stained with blood. Menstruation ceased four years ago. (Obstet. Soc. Trans. vol. 48, p. 334, Case 2.)

234. A uterus removed by total abdominal hysterectomy, weighing 9 lb. 10 oz. It measures 22·5 × 23 × 21 cm. The peritoneum is smooth. There are two small subperitoneal fibroids, one as large as a walnut, the other of the size of a filbert. The uterus is enlarged by a single intramural tumour growing in the anterior wall, 19 × 13 cm. on section. The tumour has raised the peritoneum anteriorly for a height of 10 to 15 cm. above the external os. The tumour is slightly degenerated towards the periphery at one spot, and contains in the middle of its lower half three large vessels filled with clot, the largest of which is 2·5 × ·5 cm. The portio vaginalis is healthy; the cervix 3 cm. long; the canal of the body is on the section 8 cm. long; its mucosa extremely atrophied, being only visible at the upper half-inch, and there not more than ·5 mm. in thickness. The mucosa of the cervix is normal on the posterior wall, but is striated or cystic on the anterior wall, where it is 7 mm. thick. The anterior wall of the cervix is stretched and bulged down by the growth of the tumour. 10067

Microscopic Structure.—The mucosa of the body shows a single layer of flattened epithelium and no glands. The cervical mucosa shows a layer of stratified epithelium with cysts lined with columnar epithelium beneath it. The epithelium grows down into the tissues and forms masses of squamous cells (typical squamous carcinoma), from the centre of some of which the epithelium has fallen out. The epithelium of the glands is also proliferated, forming large masses of epithelial cells. The papillary projections causing the striated appearance are very vascular, and are covered with squamous epithelium which has desquamated in places.

Removed in Dec. 1905 (H. R. S.), by total abdominal hysterectomy, from a patient aged 49. The growth in the cervical canal was not suspected; the patient, who had heart disease, made a good recovery, but died of syncope within a year of the operation.

235. A uterus removed by total hysterectomy, measuring 14·5 × 11 × 10 cm., and weighing 13 oz. The peritoneum is smooth. The right broad ligament had been distended by the single tumour (7·5 × 7 cm.) growing in the anterior wall of the body. The cervix is 4·5 cm.; the portio vaginalis normal; the mucosa of the cervix normal. The body-cavity is 10 cm. long; the mucous membrane is slightly hypertrophied just above the internal os, at other places atrophied, except at three spots at the upper part of the left side of the body, where there are three mucous polypi flattened by pressure (the wall of the uterus has been removed to show these). 10075

Removed in Dec. 1905 (H. R. S.), by total abdominal hysterectomy, from a nullipara aged 42.

132. Waymouth.

133. E. Wickes

134. M. Crumpler

135. Cooper

236. Annie Smith

237. C. Leggatt.

238. E. A. Eve

239. Simmons.

236. A uterus removed by total hysterectomy, weighing 3 lb. 10½ oz. It measures 20 × 14 × 12·3 cm. The peritoneum is smooth. The right ovary was also removed and contained a luteal cyst of the size of a walnut. The tumour is a single intramural fibroid growing from the fundus: the capsule above is extremely thin; the lower part over the internal os has a capsule about 3 mm. thick, and immediately above the internal os the mucosa over the tumour is atrophied, but on either side of this spot it is slightly thickened and ends in an abrupt rounded edge. The tumour shows mucous degeneration in several places with the formation of a few small cysts. The cervical canal is 4·5 cm. long; mucosa normal, except for two minute cysts; the portio vaginalis is perfectly normal. 10106

Microscopic Structure.—The tumour is a fibro-myoma showing extensive hyaline degeneration.

Removed in Jan. 1906 (H. R. S.), by total abdominal hysterectomy, from a patient aged 34.

237. A uterus removed by total hysterectomy. It measures 20 × 13 × 11 cm. It weighs 2 lb. 12½ oz. It contains a single intramural fibroid. The fibroid has a thick muscular capsule below, but only a thin one above. At the upper part the muscular wall is less than 1 mm. in thickness, whilst below it measures 7·5 mm. The lower part of the tumour shows a granular and gelatinous surface due to mucous degeneration. The cervix measures 4 cm. in length, and, with the exception of two slender polypi in its upper part, is healthy. The corporeal mucosa was thinned. 10178

Microscopic Structure.—The tumour is a fibro-myoma and contains an unusually large number of microscopic vessels.

Removed in March 1906 (H. R. S.), by total abdominal hysterectomy, from a patient aged 41.

238. A uterus removed by total hysterectomy, measuring 20 × 16 × 14 cm. Its weight is 4 lb. 14 oz. There are no subperitoneal fibroids, but on section an intramural fibroid 13 × 11 cm. with a somewhat irregular outline is seen, showing mucous degeneration in several places. In the lower part is seen a tumour which has been entirely converted into gelatinous material. The mucous membrane of the body is greatly hypertrophied, measuring 1·25 cm. in thickness; but the part lying next the tumour is the thinnest, not more than 1-3 mm. in thickness. The cervix is healthy: length 5 cm., breadth 3 cm., thickness 2·5 cm. at its thickest part. Two or three small cysts (dilated glands) are seen. There is no opening up of the broad ligament. 10177

Microscopic Structure.—The tumour is a degenerated fibro-myoma. The mucosa of the body is greatly hypertrophied, showing long tortuous glands lined with columnar epithelium, with dense fibro-cellular stroma.

The uterus was removed in March 1906 (H. R. S.) by total abdominal hysterectomy.

239. A uterus removed by total hysterectomy, weighing 19 oz. and measuring 14 × 8·5 × 9 cm. Only the upper part of the tumour is covered with peritoneum, the larger fibroid invading the right broad ligament. There are no peritoneal adhesions. On the section two fibroids are seen: the larger and lower 9 × 7·5 cm. is made up of numerous closely packed nodules, not degenerated. There is a capsule of muscle around it 4 mm. in thickness. The upper tumour is 4 × 3 cm., and though surrounded by muscle on three sides is beneath the mucosa below for about 2 cm. At this point the mucosa of the body is pressed upon and atrophied; above and below this it is somewhat hypertrophied, and at the fundus is a mucous polypus. The mucous membrane of the lower part of the body is also atrophied from pressure of the larger tumour. The cervix measures 4 cm., and its mucosa is normal. The body-cavity measures 8 cm. Three small vessels are seen in the capsule of the larger tumour. 10281

Microscopic Structure.—The mucosa where pressed upon is very thin, covered with a single layer of flat epithelium, and there are few glands: the part not pressed upon is covered

with columnar epithelium, there are numerous glands, and there is some leucocytic infiltration of the interglandular tissue. The mucous polypus is covered with cubical epithelium: there are numerous glands, some dilated and tortuous, and a rich cellular stroma.

Removed in July 1906 (H. R. S.) by total abdominal hysterectomy from a patient aged 42, who had suffered from bleeding and pain and had enlarged parotids from double parotitis, lasting for 12 years. The parotids slightly increased after the operation, but a year afterwards were nearly of the same size as before.

240. A uterus with large cervical fibroid removed by total hysterectomy, weighing 20 lb. after hardening, and measuring $40 \times 26 \times 20$ cm. The tumour is divided into three lobes, the lower of which is transversely wrinkled and together with the lower half of the other two lobes is devoid of peritoneum. Between the upper two lobes, which are larger than an adult head, is situated the body of the uterus, which is of normal size, measuring $6 \times 2{\cdot}7$ cm. The corporeal canal measures 2·5 cm., its mucosa is normal. The cervical canal measures $6\frac{1}{2}$ cm., and forms an angle of about 130° with the canal of the body. Mucosa of cervical canal slightly atrophied and canal dilated. The tumour has grown from the left side of the cervix, reaching from the external os below. The body of the uterus is quite free, the anterior pouch being 2·7 cm. deep, the posterior pouch 3·7 cm. The larger tumour shows a patch of degeneration, with gelatinous contents, near the periphery. There is a small cystic fibroid situated just in front of the left round ligament. 10283

Microscopic Structure.—The tumour is a fibro-myoma, extensively degenerated. In the centre of one of the degenerated patches is some mucoid material. The cavity has no epithelial lining.

Removed in July 1906 (H. R. S.), by total abdominal hysterectomy, from a patient aged 48. The patient made a good recovery.

241. A uterus and appendages removed by total hysterectomy. The uterus is of the size of a small fist and contains a large number of fibroids, one of which, $5 \times 1\frac{1}{2}$ cm., is submucous and is attached by a pedicle 1 cm. thick to the anterior wall: this growth is surrounded by blood-clot. The blood-vessels are distended and slight hæmorrhages have occurred into the capsule of two of the tumours. The left tube is distended by blood to the size of the little finger. The right appendages are normal. The endometrium is atrophied and slightly cystic. 10290

Removed in July 1906 (H. R. S.) from a single woman aged 60, who complained of abdominal pain and uterine hæmorrhage for a fortnight. Menstruation ceased 6–7 years ago, but for several years patient had occasionally noticed brownish stains on her linen. (Obstet. Soc. Trans. vol. 48, p. 335, Case III.)

242. A uterus with appendages removed by total hysterectomy. The canal of the uterus measures 11 cm. in length; the cervix being 5 cm. in length and very slender; the mucosa is normal. There are numerous adhesions on peritoneal surface. Numerous interstitial fibroids are seen in the section, the largest 7×8 cm. The uterus measures $14 \times 10 \times 11$ cm. A tumour 2×1 cm. in section is seen beneath the mucosa of the body, producing thinning of the mucous membrane; above this the mucosa is considerably hypertrophied, measuring 5 mm. in thickness. On the left side there is what appears to be a greatly thickened Fallopian tube, which is in reality the horn of the uterus, and from this point the tube gradually dilates into a retort-shaped cyst, part of which is formed in fact by the tube and part by the ovary, as shown by the presence of cysts and corpora fibrosa in the part of the cyst adjoining the ovary. On the right side the horn was similarly distinct, but on section contained several cysts, one as large as a pea. The tube is expanded at its end into an abscess-cavity with thickened walls; below this is seen the ovary which has formed part of the abscess-cavity. 10338

Microscopic Structure.—The mucosa of the body is slightly hypertrophied; the epithelium has fallen away from the surface; the glands are numerous, slightly tortuous, and lined with

240. R. Larrat

241. M. Charlton

242. Tucker

243. Elj. Webb.

244. Elj. Bishop.

245. F. Goldstein

246. Ellen Waldron

columnar epithelium. A section of the horn shows the cavity lined with columnar epithelium and surrounded with glands, which, on the right side, are in many cases dilated into cysts with columnar or cubical epithelium.

The uterus was removed (H. R. S.) by total hysterectomy on Oct. 13th, 1906. There was an abscess around the Fallopian tube at the bottom of Douglas's pouch. A purse-string suture was passed above the level of the abscess shutting off the abscess cavity from the general peritoneum. The vagina was left open. The patient recovered and was quite well a year afterwards without drawback.

243. A uterus and left ovary removed by total hysterectomy, weighing 3 lb. 1 oz. and measuring $17 \times 15 \times 13$ cm. The peritoneum is smooth, but only exists over the upper part of the tumour, a fibroid extensively distending the left broad ligament. The left ovary measures $4{\cdot}3 \times 2{\cdot}5 \times 2$ cm., and contains a recently ruptured Graafian follicle $1{\cdot}5 \times 1$ cm. in size. Otherwise the ovary is whiter and denser than normal. The left tube is normal. Part of the tumour consists of an intramural fibroid of the size of a cocoanut; on its surface is a fibroid of the size of a hen's egg. On section are seen 4 intramural fibroids; the largest of the size of a walnut has a darkish grey colour and is surrounded by thrombosed vessels, and is not softened. The corporeal wall is thickened (3 cm.). The portio vaginalis is slightly enlarged, patulous, without erosion. Cervical canal 4 cm. long with a few dilated glands, mucosa otherwise normal. Corporeal cavity 8 cm. long: mucosa hypertrophied, ·5 cm.: at one spot it is thicker and appears to be a little papillary. 10348

Microscopic Structure.—The corporeal mucosa shows glandular hypertrophy. Towards the surface it is somewhat dense and has lost its epithelial covering.

Removed in Oct. 1906 (H. R. S.), by total hysterectomy, from a patient aged 43.

244. A uterus with the appendages removed by total hysterectomy, and weighing altogether 14 oz. It measures $12{\cdot}5 \times 10 \times 7$ cm. The left tube is distended with pus and measures $6 \times 4 \times 2$ cm. The left ovary is cystic and contains a corpus luteum. The right ovary contained an abscess, and the right tube is 7·5 mm. thick and is also distended with pus. The right ovary is not present. The cervix is virginal, small; the portio healthy; the cervical canal 4·5 cm. long; its mucosa normal, except for a few cysts at the upper part. The mucosa of the body is atrophied, but blood-stained. There are numerous adhesions around the tube and ovary. Five intramural fibroids are seen in the section, the largest of which has its lower part submucous. 10370

Microscopic Structure.—The tumour is a fibro-myoma. The mucosa of the body is normal; the epithelium of the mucosa of the submucous tumour is cubical.

Removed in Nov. 1906 (H. R. S.) by total hysterectomy, for menorrhagia and pain, from a patient aged 42. The patient recovered well.

245. A uterus removed by total hysterectomy from a patient aged 22. The uterus measured $19 \times 15 \times 19$ cm., and weighed 7 lb. 7 oz. The peritoneal surface is smooth. The tumour distends the right broad ligament. The portio is virginal. Cervical canal $2\frac{1}{2}$ cm., mucosa normal. Corporeal canal 20 cm., mucosa atrophied, except at the fundus, where there was a polypoid hypertrophy (not seen in the specimen), but is otherwise of normal thickness. The section of the tumour shows mucous degeneration, but no cysts. The right cornu is seen in section, owing to the obliquity of the division. 10405

Microscopic Structure.—The mucosa of the fundus is 5 mm. thick, the surface covered with short columnar epithelium; considerable glandular hyperplasia; the glands are normal. The stroma of the surface is congested; the deeper parts are somewhat dense and more cellular.

Removed in Dec. 1906 (H. R. S.), by total abdominal hysterectomy, from a patient aged 22. The tumour closely resembled a pregnant uterus in size, shape, and consistence, but was diagnosed as an ovarian tumour before operation. (Obstet. Soc. Trans. vol. 49.)

246. A uterus with the appendages removed by total abdominal hysterectomy. The uterus measures $11 \times 7 \times 7$ cm. There are adhesions on the peritoneum,

and a subperitoneal fibroid of the size of a hen's egg grows from the right side of the lower half of the uterus and does not invade the broad ligament. A submucous fibroid of the size of a pigeon's egg is seen on the section. The cervix is large, measuring in length 4·5 cm. and 3·5 cm. in diameter. There is an erosion at the external os. The mucous membrane of the cervix is normal—the upper part is not seen in the section. The mucosa of the body is only 1 mm. thick, except at the lower part, where it is 2 mm. The left ovary is transformed into a multilocular cyst of the size of a fist. There are numerous adhesions binding the cyst to the posterior surface of the uterus. Only the stump of the left tube is present. The right tube is thickened and adherent to the ovary; on section the wall is considerably thickened (interstitial salpingitis). 10459

Microscopic Structure.—The mucosa is hypertrophied and shows glandular invasion of the muscular wall for some considerable depth. The glands are quite simple and lined with a single layer of columnar epithelium.

Removed in Feb. 1907 (H. R. S.) from a patient aged 46.

247. A uterus removed by total hysterectomy. It measures 16 × 11 × 12 cm., and weighs 1 lb. 12 oz. The tumour is slightly irregular on the surface, but free from adhesions. A subperitoneal tumour of the size of a walnut projects from the posterior surface of the body on the left side. The main tumour has extensively invaded the left broad ligament, as shown by the gap in the peritoneum. On section a large tumour is seen growing in the anterior wall of the body, surrounded by a layer of muscle 2 mm. thick anteriorly and posteriorly 5 mm. The canal of the body measures 9 cm., of the cervix 3·5 cm. The tumour shows traces of degeneration. The mucosa of the cervix is normal, as is also that of the body, except in the upper 3 cm., where it is somewhat hypertrophied, and from its upper part depends a mucous polypus. The portio vaginalis is normal and the external orifice round. 10472

Microscopic Structure.—There is well-marked hyaline and mucous degeneration.

Removed in Feb. 1907 (H. R. S.), by total abdominal hysterectomy, from a patient aged 41.

248. A uterus removed by total hysterectomy, measuring 15·5 × 10·5 × 8·5 cm. The peritoneum is quite smooth, but slightly uneven from subperitoneal growths. On section two interstitial fibroids are seen growing in the wall of the fundus and separated by a layer of uterine tissue from 1–4 mm. in thickness. The cavity of the uterus is dilated by two adenomyomatous polypi of the size of almonds. One of these rests on the upper end of the cystic mucosa of the cervix, which at this spot is 6 mm. thick and is permeated by cysts in its upper half varying from the size of a pin's head downwards. The mucosa of the body is atrophied and cannot be seen by the naked eye. The cervical canal measures 5 cm. The portio vaginalis is normal and the os is circular. 10482

Microscopic Structure.—The mucosa of the body is atrophied, only one layer of glands being seen under the epithelium in places, in others there are two or three layers. The glands are cystic and the stroma dense, composed of closely packed cells with round and oval nuclei. The polypi are made up of a dense fibro-muscular stroma thickly strewn with glands lined with a single layer of columnar epithelium; some of the glands are dilated. The epithelium on the surface is columnar or short cubical (adenomyomatous polypi).

Removed in March 1907 (H. R. S.) from a patient aged 48.

249. A uterus removed by total abdominal hysterectomy and weighing 4¾ lb. It measures 20 × 12 × 13 cm. Projecting below the widely dilated and lacerated cervix is a large lobulated tumour, which projects 6 cm. below the edge of the cervix, and during life distended the vagina. On the section the tumour is seen to be submucous and growing from the wall of the uterus, and having a pedicle 7·5 cm. in diameter. The uterine canal is 16 cm. long, of which about 6 cm. is cervix. The mucous membrane over the lower part of the body is atrophied, and the upper part has a mucous polypus. The wall of the uterus is greatly hypertrophied, viz. 3·5 cm. in the posterior wall and 3 cm. in the anterior wall.

447. A. Knight

446. E. James

449. Brookes

250. Bella Forsyth.

251. F. Dunham

252. Seymour

The dilated cervix shows the marks of the arbor vitæ, and has a skin-like appearance. Attached to the everted surface are to be seen two mucous polypi. The posterior lip of the cervix is not seen in the section, as it was torn at the operation in order to permit the dragging of the large tumour up into the abdomen during the hysterectomy. The posterior wall of the peritoneum is covered with dense shaggy adhesions. 10501

Microscopic Structure.—The mucous polypus of the body consists of numerous tortuous glands in a richly cellular stroma in which muscle-cells are present in places. There are remains of columnar epithelium on the surface. The cervix is lined with columnar epithelium, and has a few dilated glands opening in its surface and some leucocytic infiltration beneath the epithelium.

The tumour was removed in March 1907 (H. R. S.) from a virgin aged 50, who was extremely anæmic from constant hæmorrhage which had lasted 2 years. Attacks of severe labour-pains had occurred during the last few months. There was an extremely offensive discharge. Patient recovered well.

250. A uterus removed by total hysterectomy, weighing 1 lb. 13 oz. after being 5 months in formalin, and measuring $16 \times 11 \times 10$ cm. The greater part of the mass has burrowed beneath the peritoneum. Numerous subperitoneal and interstitial tumours are seen. On the section seven tumours are seen, one of which is extensively calcified. The uterine cavity, as seen in the section, measures 8 cm., the cervical canal 4·5 cm. The mucosa of cervix and body is normal. The peritoneum is smooth. 10546

Removed by total hysterectomy in May 1907 (H. R. S.) from a patient aged 34.

251. A uterus, weighing 2 lb. 14 oz., removed by total hysterectomy. It measures $20 \times 13 \times 11$ cm., and contains numerous small subperitoneal fibroids and numerous intramural fibroids. On section numbers are seen completely surrounding the cavity. The uterine canal is 17 cm. long, the cervical canal 5 cm. The mucous membrane of the cervix is cystic in the upper part, one cyst occupying nearly the whole thickness of the posterior wall. The canal of the body is tortuous—of the lower two-thirds the walls are apposed and there the mucosa is atrophied; in the upper part the walls are separated by gelatinous mucous, and there the mucosa is somewhat thicker than below. The cervix is healthy. The muscular wall outside the interstitial fibroid varies from 2 mm. to 6 mm. There are no peritoneal adhesions and no invasion of the broad ligament, though the layers are separated by the side of the tumour. 10568

Microscopic Structure.—The tumour is a fibro-myoma and the mucosa is normal.

Removed in May 1907 (H. R. S.) from a patient aged 41.

252. A uterus, weighing 10½ oz., removed by total hysterectomy, and measuring $12 \times 7 \times 8$ cm. The peritoneum is smooth and the uterus is uniformly rounded. The section shows several fibroids growing in the anterior wall and smaller ones in the posterior wall, the largest being of the size of a hen's egg. The posterior wall of the uterus is 1·5 cm. thick; the anterior wall in front of the fibroid is 7 mm. thick. The external os is virginal, the os is rounded, the cervical canal is 4·3 cm. long: and the mucosa of the canal hypertrophied, body 5·5 cm. long; mucosa hypertrophied above (4 mm.), atrophied where a fibroid of the size of a nut presses upon it, and normal below. There are no adhesions and the fibroid is not degenerated. 10591

Microscopic Structure.—The atrophied portion of the mucosa is covered with a single layer of flattened cells, with one gland (lined with short epithelium) with its axis parallel with the mucosa, and a very delicate stroma. The hypertrophied portion is covered with large columnar cells, and the glands are enormously increased in number, and tortuous and dilated with intracystic papillæ. The stroma in moderate amount is infiltrated with leucocytes, especially towards the surface. The myoma beneath the mucosa is not degenerated.

Removed in June 1907 (H. R. S.) from a patient aged 38. The patient, who had married since the operation, was in excellent health three years later.

253. A uterus and left appendages, weighing 2 lb. 15¾ oz., removed by total hysterectomy. It measures 16 × 12 × 12·5 cm. The peritoneum is smooth over the left part of the tumour, except in its lower half where it burrowed under the peritoneum. The anterior two-thirds of the other half of the tumour, were subperitoneal. The uterus is enlarged by a single intramural tumour, 12·5 × 10 cm.; about 3 sq. inches of this tumour are submucous below. The capsule is well defined (3 mm. to 1 cm. in thickness): the tumour is slightly degenerated and discoloured (grey and red). The canal and its mucosa are normal, 3 cm. long. The mucosa of the body is atrophied. The left ovary had a unilocular cyst as big as an orange growing from its outer pole: the wall of the cyst was thin and parchment-like, and contained several masses of papilloma in its inner wall near the ovary, and hard brownish gelatinous contents. The cervix is small, but otherwise normal. 10596

Microscopic Structure.—The mucosa is lined with a single layer of columnar epithelium. The glands are very scanty, only four in 5 mm. There are patches of hyaline degeneration in the tumour, beneath the mucosa; and a very extensive degeneration in other parts.

Removed in June 1907 (H. R. S.), by total abdominal hysterectomy, from a patient aged 56, who died with growth in the pelvis and lungs within a year of the operation.

254. A uterus, weighing 3 lb. 13 oz., removed by total abdominal hysterectomy. It measures 20 × 15 × 13 cm. There is a slight erosion round the external os. The cervix is small and slender: its canal 3·5 cm., that of the body 5·5 cm. The cervical mucosa is normal: corporeal mucosa hypertrophied, 3–4 mm. in diameter above, less than 1 mm. below, where it is pressed upon by an interstitial fibroid 5 cm. in diameter. The tumour is uniformly enlarged and the broad ligament not invaded, though its layers have been separated and large venous trunks have been opened. Enormous veins are seen in the wall of the uterus outside the interstitial fibroids. The fibroid is slightly degenerated at its upper part. The wall of the uterus is 5 mm. to 1 cm. thick. There are no peritoneal adhesions. 10598

Microscopic Structure.—The endometrium is hypertrophied, the glands slightly dilated and tortuous, the stroma a delicate retiform connective tissue; the epithelium columnar, with a few blunt papillary projections. The erosion of the os shows papillary projections covered with what appears to be the Malpighian layer of the epithelium; the subjacent glands are tortuous, slightly dilated, containing a few papillary projections, and lined with a single layer of columnar epithelium.

Removed in July 1907 (H. R. S.) from a patient aged 41, who suffered from epilepsy.

255. A uterus removed by total hysterectomy. Its weight is 2 lb. 12 oz., its measurements 17 × 11 × 13½ cm. The peritoneum is smooth, except for a few tags of lymph, the tumour is growing in the anterior wall of the body, is single, slightly degenerated, with a capsule of 3 to 6 mm. thick. The peritoneum covers only the upper third of the tumour, the lower two-thirds being subperitoneal. The portio vaginalis is normal; cervix 2 cm. in length, mucous membrane normal. The posterior wall of the body has been removed, showing the mucosa extremely thin at the lower part; thin, shaggy, and slightly pigmented at the upper part. The mucosa at the lower part is stretched by the tumour, which possibly accounts for the thinning. The Fallopian tubes (which are preserved among the specimens of tubal disease, 403) have their fimbriæ distinct, but are closed behind them, and are distended to a thickness of 2 cm. at the widest part, the isthmus being of normal size and appearance; on section one tube, the left, is found to be full of yellowish growth, which on opening the tube is found to be thickening of the longitudinal rugæ. They measure as much as 3 mm. across and even more towards the ampulla, and the wall at the upper concave part is extremely thin. A small amount of mucus has been removed from that tube. The ovary of the same side measures 3·5 × 2 × 1·5 cm.; on section it has some small cysts of the size of No. 1 shot, but is otherwise normal. The other tube shows an earlier stage of thickening of the rugæ and is filled with jelly-like secretion. There was no pus in either tube. 10605

2153. L. Pulman

3154. J. Mailes

2156: C. Sayers

256. K. Greig.

257. Lewis

Microscopic Structure.—The uterine end of the Fallopian tube shows hypertrophy of the outer coat. The epithelium is intact, but beneath it is a small-celled infiltration. The middle portion of the tube shows glandular structures beneath the whole of the epithelial covering, and extensive development of the glandular structures in the rugæ. The glands are lined with a single layer of columnar epithelium. Towards the fimbriated extremity the growth fills the whole tube as a solid mass. It still retains its tubular character and in places has but a thin covering of muscular tissue, which, however, is nowhere definitely invaded. There is very dense infiltration of the intertubular tissue with leucocytes.

Removed (H. R. S.) on July 23, 1907, by total abdominal hysterectomy, from a virgin, aged 41, who had been menstruating 24 hours. The patient was seen and said she was quite well in October 1909.

256. A uterus with a large cervical fibroid removed by total abdominal hysterectomy, weighing 16 lb. 1 oz. and measuring 25 × 27 × 18 cm. The peritoneum is present over the back of the specimen for a distance of 25 cm. from the fundus, and transversely for a distance of 19 cm. The rest of the specimen has a raw surface, with large vessels coursing in the substance of the tumour. The cervix is considerably dilated by the lower end of a cervical fibroid growing in the posterior lip, the measurement of the fibroid being 23 × 17 cm., and the posterior lip of the cervix is enormously stretched so that it measures 27 cm. in length. The fundus of the uterus is distinct on the top of the specimen, is not enlarged, and has three pedunculated subperitoneal fibroids growing from it of the size of large grapes.

On section the tumour is a fibro-myoma showing patches of degeneration towards its centre. It occupies the posterior lip and has for the most part a merely linear capsule. The body of the uterus is triangular in section, the walls being 1·8 cm. long, the mucosa atrophied. The anterior lip of the cervix is 4 cm. long; the mucosa is atrophied. The edge of the anterior lip was cut at the operation, and the remainder of it (about 1 cm.) was dissected off after the operation. 10634

Microscopic Structure.—The tumour is a fibro-myoma with mucous and hyaline degeneration. The cervical mucosa is covered with a single layer of flattened epithelium; some of the glands are dilated into cysts. The vessels are fibroid and hyaline.

The specimen was removed in Oct. 1907 (H. R. S.), by total abdominal hysterectomy, from a patient aged 59. The patient died (see 257).

257. The pelvic contents removed post-mortem from a patient upon whom total abdominal hysterectomy had been performed six days before. The peritoneum is quite smooth and free from adhesions. The ovaries are somewhat enlarged; the uterine end of the Fallopian tubes and ovarian ligaments are firmly united in the centre of the cavity, leaving the peritoneum quite smooth. The ureters, which course round the dilated vagina, are considerably dilated, the right 8 mm. in diameter. There is advanced atheroma of the pelvic vessels. 10642

The patient had had the tumour for many years and had suffered from uræmic symptoms with convulsions before the operation. She died of uræmia on the sixth day after the operation. At the post-mortem examination the peritoneum was found to be perfectly healthy; the ureters were dilated, the kidneys granular, and the heart hypertrophied.

The tumour is preserved in No. 256.

258. A uterus removed by total hysterectomy weighing 1¾ lb. It measures 14 × 12 × 10 cm. There is a fibroid growing from the uterus, distending the right broad ligament; a few adhesions are seen over the peritoneum. Near the fundus the peritoneum gapes, showing the trabeculated tissue of the uterine wall. Marks of the forceps are seen where the tissue has been torn away. On section is seen the originally red interstitial tumour, of the size of an orange, containing a cavity towards its lower part with a smooth lining. A small fibroid polypus of the size of an almond growing from the posterior wall is hanging with its lower extremity resting on the internal os. The mucosa of the body is extremely thin where it is pressed upon by the polypus. The cervical canal is

3 cm. in length, the mucosa normal. The portio vaginalis measures 3·2 × 2·5 cm. and has a small erosion at the external os. The length of the uterine cavity is 11 cm.; the wall of capsule over fibroid 1–1·5 cm. 10658

Microscopic Structure.—The mucosa is not markedly altered, except where pressed upon. The fibro-myomatous polypus has a covering of short columnar epithelium, with, in one place, a few glands.

Removed in Nov. 1907 (H. R. S.), by total abdominal hysterectomy, from a patient aged 30, who had had severe pain and hæmorrhage for a fortnight, but had previously suffered from anæmia and slight menorrhagia.

259. A uterus removed by total hysterectomy, weighing 1 lb. 2 oz. It measures 14 × 10 × 8 cm. The cervix is distended, measuring 5½ cm. in diameter. The external os is 1½ cm. in diameter, and shows the lower end of a fibroid projecting into it. The peritoneum is smooth. On section there is a myoma in the posterior wall, bulging it backwards and reaching within 6 mm. of the surface, and measuring 7 cm. (from before back), and in length 12½ cm., more than half of it being a cylindrical prolongation 3–4 cm. in diameter, which reached to the external os. This prolongation is deeply discoloured brown. The mucous membrane of the body is atrophied, that of the cervix is normal. The upper part of the tumour near the corporeal cavity has undergone mucous degeneration.

The appearance of the section shows that the tumour is an interstitial tumour which has perforated the inner wall which covered it and then has grown in a mushroom shape into the uterine cavity. 10768

Microscopic Structure.—The tumour has undergone hyaline degeneration. The corporeal mucosa is thin, covered with cubical epithelium, covered with leucocytes; the glands are very few in number and lined with cubical epithelium.

Removed in March 1908 (H. R. S.), by total abdominal hysterectomy, from a patient aged 27.

260. A uterus with multiple fibroids weighing 3 lb. 4 oz. The right tube is thickened, and it and the ovary and the upper and back part of tumour and uterus are covered with adhesions. The ovary contains a corpus luteum 2½ cm. in diameter. The uterus itself measures 14 × 7 × 9 cm., and its body has numerous subperitoneal fibroids projecting from it; some of these vary in size from marbles to walnuts or to a small orange, but a very large one projects from the posterior aspect of the body with a base of attachment of 6 cm. and measures 17 × 11 × 10 cm. On the surface of this tumour are seen two thin-walled veins about 3–4 mm. in diameter, and the trunk of upper of these, close to the cut left Fallopian tube, is dilated into a venous aneurism 13 × 10 mm. in diameter, with its long axis in the direction of the vein. The external os is normal, the cervical canal is 6 cm. long, of the body 6 cm. long, and the mucosa of the body is hypertrophied. The largest tumour shows patches of mucoid degeneration. 10976

Microscopic Structure.—The tumour is a fibro-myoma which in some places has undergone hyaline degeneration.

Removed in Oct. 1908 (H. R. S.), by total abdominal hysterectomy, from a woman aged 32. (See Proc. Roy. Soc. Med. Obstet. & Gyn. Section, 1909, vol. 2, p. 177.)

261. A uterus with a subperitoneal fibroid growing from the lower segment and cervix. The tumour weighed 3 lb. 4½ oz., and measured 22 × 16 × 9 cm. The uterus, lying behind the tumour, measures 13½ × 6 × 5·3 cm. On section the uterus shows a small myoma 1 × 1½ cm. in the posterior wall of the body; the corporeal canal is 5·3 cm. long, the mucosa normal or slightly atrophied. The cervical canal, 6 cm. long, shows several cysts in the mucosa, of which the largest is as big as a pea. In front of the uterus is seen a degenerating fibro-myoma, which descends to a distance of 4 cm. below the level of the external os and reaches to a similar distance above the fundus uteri. This tumour is covered with smooth peritoneum as far down as 2·5 cm. above the internal os and 5 cm. below the fundus. The lower two-thirds of the surface are bare of peritoneum. The tumour is growing from the lower segment of the uterus just above the internal

1857 - D. Barnes

1850 - Julia Cronin

1851 - Sherborn

262 - Mr. Johnson

265 Name? Initials M.B.

266 Rix

os, and from the posterior aspect of the cervix down as far as the level of the posterior fornix. The section of the tumour shows a fibro-myoma, which has undergone extensive mucous degeneration, especially at its upper part, where a continuous layer of jelly-like degenerated tissue 1½ cm. thick is seen. 10981

Microscopic Structure.—The tumour is a fibro-myoma, hyaline and œdematous.

Removed in Nov. 1908 (H. R. S.), by total hysterectomy, from a patient aged 46, who had suffered from great frequency of micturition (every few minutes) for some months. The patient was quite well in March 1911.

262. A sloughy fibro-myoma measuring $5\frac{1}{2} \times 5 \times 3\frac{1}{2}$ cm. The mucosa is blackish, eroded, and torn. There is a raw flattened surface by which it was attached to the fundus. 9606

Microscopic Structure.—The tumour is extensively degenerated, but there is no sarcomatous change. It is a fibro-myoma.

Removed (H. R. S.) from a patient aged 41, who had had 2 children, the last 12 years before. The tumour caused inversion of the uterus. The uterus was replaced and the patient recovered.

263. A submucous fibroid, $23 \times 14 \times 10$ cm., with the fundus of the uterus inverted, measuring about 6 cm. in diameter, to which the fibroid is attached and from which it is separated by a well-marked groove. The tumour resembles in shape an elongated bullock's heart; it is sloughy and gangrenous on the surface. The body of the uterus is completely inverted, its mucous membrane thickened and skin-like. 10118

The specimen was removed by operation in a suburban Infirmary, the patient dying of septic peritonitis five days later. The patient was 41 years of age, had four children, the last 7 years ago; menstruation on the whole had been regular, but lately once a fortnight. The tumour came out of the vagina three days before operation and reached nearly down to the patient's knees. It was removed with the knife and the pedicle ligatured. (See No. 264.)

264. The cervix, vagina, and uterine appendages from the previous case. The vagina is distended, its walls thickened (·5 cm.); at its upper end is seen the cervix 6 cm. × 3 cm., and in the os is a brownish sloughy area which is the lining of the lower cavity. The ovaries are enlarged and the left one contains a cyst with gelatinous contents; the right one contains a corpus luteum with sloughy walls. The tubes and ovarian ligaments have been cut across and are adherent to the raw surface of the uterine stump, which has become retracted into its natural position, the raw surface measuring $3\frac{1}{2} \times 3$ cm. There is lymph on the peritoneum around the opening. 10118

265. A tumour measuring $8 \times 7 \times 6$ cm. Its lower portion is covered by irregular ragged, ulcerated mucosa. Above it has a truncated conical shape and is raw where it has been enucleated. 9506

Microscopic Structure.—The tumour has undergone extensive mucous and hyaline degeneration, some of the hyaline part is extensively infiltrated with leucocytes which surround the vessels.

Removed (H. R. S.) by enucleation from the fundus of the uterus, which was inverted owing to the presence of the tumour. The patient, aged 43, had had several children and miscarriages. The tumour was gangrenous and simulated cancer. The uterus was replaced and the patient recovered.

266. A cystic fibro-myoma of the uterus of the size of a small lemon. The surface shows a fibroid pedicle at the upper part and loose areolar tissue over it. The wall varies in thickness from that of a membrane to 5 mm. The inner wall is irregular and the contents were pultaceous, closely resembling that seen in dermoids. 8619

Microscopic Structure.—The tumour is a fibro-myoma, degenerated on its inner surface.

The tumour was removed (H. R. S.) by posterior colpotomy from a patient aged 36, who had had one miscarriage and two labours which had been rendered difficult by the presence of the tumour in the pelvis. It was thought at the operation to be a dermoid tumour and

was enucleated from the posterior aspect of the uterus. In spite of iodoform gauze packing through the colpotomy wound, intraperitoneal hæmorrhage occurred to the extent of about ¾ pint, necessitating abdominal section 11 hours later and ligature of two veins. The patient recovered well and subsequently had a child without any difficulty. (Obstet. Soc. Trans. vol. 43, p. 110.)

267. A reniform subperitoneal fibroid tumour of the uterus weighing 1 lb. and measuring 11·5 × 9 × 6·5 cm. At one pole below the hilum is a raw surface, the pedicle, 5 cm. in diameter. There are a few filmy adhesions on the surface. A section shows a slight translucent appearance as if from commencing degeneration. 10199

Microscopic Structure.—The tumour shows extensive hyaline degeneration over wide areas, nothing being left in some places except nuclei. There are numerous vessels.

Removed by myomectomy (H. R. S.) a few weeks after a miscarriage at the fifth or sixth week of pregnancy. Peritonitis occurred after the miscarriage, and as the ovum had not been carefully examined it was thought that the tumour was probably an extrauterine hæmatocele. After the peritonitis had cleared up a hard tumour was found in front of the uterus which was thought to be either an ovarian dermoid or a pedunculated fibroid. The pedicle was attached to the left of the origin of the right round ligament; it was not twisted, but had pregnancy continued it would probably have become so owing to its kidney-shape and the site of its attachment. The ovaries and tubes were normal. The patient made a good recovery.

268. The body and both ovaries and tubes of the uterus at about the third month of pregnancy, with a pedunculated and degenerated myoma attached to the posterior wall. In the right ovary is a large corpus luteum. The membranes are seen through an opening which has been made in the anterior wall of the uterus, and also project from the cavity below. There is a myoma measuring 18 × 11 cm. on section, with two smaller subperitoneal nodules on its surface. The tumour is attached by a pedicle to the anterior wall of the uterus and shows mucoid degeneration and cysts with irregular walls. 7908

Removed (G. F. B.) by supravaginal amputation with intraperitoneal treatment of the stump, in the third month of pregnancy.

269. A subperitoneal fibroid 13·5 cm. long and weighing 1 lb. 2½ oz. Its outer surface, except at an oval area where it was attached to the uterus, is smooth. The section shows that the tumour is degenerated, and at one part a cystic cavity with ragged walls is seen and a portion of the fibro-muscular tissue is lying free in the cavity. 10324

Microscopic Structure.—The tumour is a degenerating fibro-myoma.

The tumour was removed (G. F. B.) from a woman, aged 30, in the fourth month of pregnancy, who was delivered normally at term (living child). The patient had symptoms suggesting a twisted pedicle.

270. A kidney-shaped subperitoneal fibroid weighing 9 oz., measuring 11½ × 7 × 5 cm. The raw surface of attachment is seen in the middle of one side. One extremity is covered with lymph. The section shows numerous hæmorrhages into the tumour and green patches near the surface. There is a small tag of lymph on the surface. 10188

Removed (H. R. S.) from a patient aged 27, four months pregnant, who had symptoms of twisting of the pedicle of the tumour, which was attached to the uterus to the right of the insertion of the left round ligament. There was a small amount of thin pus around the tumour at the time of the operation. The patient did fairly well for two days, then got suppression of urine, secreting only about 1½ oz. in 16 hours, containing ⅓ albumen and bile. She died on the third day.

271. A section of a circular tumour of the uterus (cystic fibroid) 1 ft. in diameter. It is slightly lobulated on the surface and free from peritoneum, being covered with loose areolar tissue. It shows numerous anfractuous cavities, due to mucous degeneration of the tumour. At one spot hæmorrhage has occurred

667 Mackarness, She subsequently had 2 children, a boy and a girl, and was quite well in Jan. 1920

670 Sheldrake

671 E. Billington

272. Buck

273 M. Nichols

into a degenerated patch. The tumour weighed, after the fluid had escaped, 17 lb. 14 oz.; but several pints of straw-coloured and jelly-like fluid escaped on incision at the operation. 8713

Microscopic Structure.—The cavities resulting from degeneration show no epithelial lining.

The tumour was enucleated (H. R. S.) from the broad ligament from a patient during pregnancy. Natural delivery took place 9 hours later. The child was dead, apparently before the labour commenced. The pregnancy had advanced beyond the full term, 284 days from the last day of the last menstruation. The patient recovered. (Obstet. Soc. Trans. vol. 46, p. 122.)

272. A uterus removed by total abdominal hysterectomy after Cæsarean section. It weighs 6½ lb. and measures 28 × 23 × 16·5 cm. The Cæsarean section wound (11·5 cm. long) is seen on the front wall and inclines obliquely downwards and to the left to avoid a fibroid in the anterior wall, which is shown by removing the part of the anterior wall to the right of the wound. The uterine wall here is greatly hypertrophied, measuring 4½ to 6½ cm. The wall to the left of the wound is nearly 4 cm. thick. Between the upper end of the incision and the right round ligament is a subperitoneal tumour 12 × 10 × 9 cm., the pedicle of which is 15 cm. in circumference and is twisted. The fibroid in the wall showed a red discoloration, except at its central part, and the capsule is partly calcified. Another subperitoneal fibroid, as big as a small orange, is seen on the right side of the posterior aspect of the uterus; there are some filmy adhesions on it and in its neighbourhood. Between the two subperitoneal tumours is seen the Fallopian tube and ovary with some adhesions around them. At the junction of the outer and middle thirds the right Fallopian tube is distended to the size of a thrush's egg by a tubal mole which presents as a brown-red tumour through an aperture 5 mm. in diameter. This mole on microscopic examination showed numerous chorionic villi, some of which were degenerated. 9825

Removed from a patient aged 28, who after 5 years of sterile married life ruptured the right pregnant tube (February 14th, 1904) at the sixth week of pregnancy, with the effusion of a considerable quantity of blood into the abdomen, from which she recovered completely without operation in the course of three weeks.

On July 4th of the same year she became pregnant in the uterus, and on March 19th, 1905, the membranes burst spontaneously; the os was of the size of a shilling, and a foot presented. The urine contained large quantities of albumen, and in the abdomen were three pints of opalescent ascitic fluid. Cæsarean section and total abdominal hysterectomy were performed (H. R. S.); the patient and child did well and were in excellent health two years afterwards. (Obstet. Soc. Trans. vol. 48, p. 240.)

273. A uterus with the placenta removed by total abdominal hysterectomy following Cæsarean section during labour for retroflexion of the gravid uterus at term. The uterus with the placenta weighs 5 lb. 12 oz. The uterus is retroflexed at a right angle (the posterior wall at the internal os forming a sharp spur) by a myoma 12 × 8 × 9 cm. which is attached by a pedicle measuring 5 × 3½ cm. to the posterior surface of the fundus. The lower end of this tumour was adherent in Douglas's pouch (lymph seen on the surface). There are numerous small myomata on the left side of the fundus and in the anterior wall. On the front wall is the Cæsarean section wound, now contracted to 7½ cm. The peritoneum is loosely attached as high as the upper extremity of the incision, which measures 13 cm. above the external os, its lower extremity being 5½ cm. above the external os. From the upper extremity, over the uterus to the middle of the fundus, measures 21 cm.; so that the whole of the anterior wall of the uterus from the external os measures 34 cm. The whole of the posterior wall measured similarly from the middle of the fundus of the uterus measures 18 cm. The cervical canal contains mucus; it measures 6½ cm., the Cæsarean section extending 1 cm. below the internal os; the rim of the cervix has been torn off and stitched on again. On the section, in addition to the fibroid at the fundus, four other smaller fibroids are seen in the anterior wall.

The anterior wall of the cervix and lower segment has been much stretched, being only 7 mm. thick. The anterior wall of the body also varies from 12–15 mm.; the posterior is about 2 cm. thick. The anterior wall of the cervix is only 1 cm. thick; the posterior wall at its upper part is 3 cm. thick. The placenta is partly detached, its point of attachment being in the posterior wall from 1 cm. above the internal os to just above the mid-point of the fundus. The upper two-thirds of it, however, have been detached and the space is occupied by a retro-placental clot. The decidua has a greenish tinge. 10778

Microscopic Structure.—A piece of the fibroid tumour shows hyaline degeneration.

Removed in March 1908 (H. R. S.) by total abdominal hysterectomy during labour at term. The child was already dead and the patient in strong labour, with the fibroid fixed in Douglas's pouch. During life the peculiar feature was the great stretching and thinning of the lower anterior segment and during the operation the inaccessibility of the broad ligaments. The bulging of the stretched anterior wall somewhat resembled a distended bladder, through which, however, the lower limbs of the fœtus (breech presentation) could be felt. (Proc. Roy. Soc. Med. Obstet. & Gynæc. Section, vol. ii. p. 74, 1908–1909.)

274. A section of a fibroid of the uterus measuring $5 \times 2{\cdot}5$ cm. The surface is irregular, having been enucleated; but at its lower part is a darker irregular area due to a layer of adherent placenta, the spongy tissue of which is seen in the section. 7835

Microscopic Structure.—The hypertrophied muscle is seen with decidua containing dilated glands and adherent chorionic villi.

Removed by enucleation immediately after labour from a patient aged 41, who had had 12 children and two miscarriages. The patient was anæmic and had lost blood during the pregnancy. Labour was natural, except that the membranes were retained after the placenta was expelled. A piece of placenta with the membranes was found to be adherent to the rounded tumour projecting on the posterior wall. The patient recovered well.

275. A uterus with a suppurating degenerated subperitoneal fibroid. The uterus is slightly enlarged, even for a puerperal uterus, and has a discoloured submucous fibroid of the size of a nut near the fundus. There is a subperitoneal tumour as large as a cocoa-nut, which has been laid open and shows a very irregular cavity with white coral-like projections into it. This cavity contained stinking pus. Probably the infection of the degenerated fibroid occurred at labour through injury to the submucous tumour on removing the placenta. 11264

Removed by Dr. Philip Turner, sixty-three hours after delivery. An exploratory operation had been undertaken at the eleventh week of pregnancy, but as it was thought that enucleation would cause abortion, the abdomen was closed and the pregnancy continued, a living child being born at term. The uterus was removed by Doyen's total abdominal hysterectomy, and the patient made a good recovery. (Proc. Roy. Soc. Med. Obstet. Gyn. Sec., vol. 3, p. 61.)

276. A fibroid tumour, $4{\cdot}7 \times 3{\cdot}3 \times 3{\cdot}3$ cm. It is ragged on the surface, except at one pole, where it is blood-stained and covered by thickened mucosa. On section, the fibroid is degenerated. 10072

Microscopic Structure.—The tumour is extensively degenerated and in parts it is inflamed, giving to those parts a rich cellular appearance closely simulating sarcoma.

The tumour was submucous and was enucleated one month after labour, from a woman aged 36.

Adeno-myoma of the Uterus.

Embedded in the substance of myomata, glands are sometimes found; tumours with these glandular inclusions may be called "*fibro-adenomata*" or "*adeniferous myomata*" (279). The glands resemble, and probably arise from, the glands of the mucous membrane. More rarely a patch of glandular tissue surrounded by a prolongation of the stroma of the mucous membrane is found in some part of the uterus, or the whole of the body of the organ may be affected with such a tumour (*diffuse adeno-myoma*). Rarely the glandular structures may originate in Gartner's duct. Papilloma may occur in the dilated gland-cavities (281).

1273. Nicholls. This patient had a nodular sarcoma (as big as a cricket's head) in the left ovary in 1919. Removed in U.C.H. Since then she has been having X-ray treatment. In July 1923 she had a large recurrent mass over the sacrum as big as a double fist. There is also a mass as big as a duck's egg on the left side at the site of the removed ovarian sarcoma. She is very well generally. In 1920 wt. 8 st. 10 lbs; in 1922 11 st. 7 lbs & in July 1923 10 stone. She is to go on with X-ray treatment. She is now (1923) 53 years of age.

1274 (7835) Birchmore

1366 (10072) S. White

277. A fibro-adenomatous polypus, the lower end of which measures 22 × 22 × 14 mm. and the stalk 18 mm. in length. On its lower surface, situated somewhat excentrically, is a small depression 3 mm. across. The tumour was removed from the anterior lip of the cervix.

Microscopic Structure.—The tumour is mainly composed of fibro-muscular tissue; the free surface consists of a layer of stratified epithelium. The tumour contains a large number of blood-vessels and cystic spaces lined with a single layer of columnar epithelium. (Obstet. Soc. Trans. vol. 41, p. 374.)

278. Two fibro-adenomatous polypi from the same patient. The larger is irregularly bossed and pitted on the surface, and on section shows solid stroma with small blood-stained cysts in it. The smaller polypus shows larger cysts and less stroma. Both polypi are from the cervix of the same patient. A third polypus, of the size of a pea, was removed at the same time. 8881

Microscopic Structure.—They show the structure of myomata with gland-spaces lined with a single layer of columnar epithelium. The epithelium has for the most part been lost from the surface, but where present it is short columnar. Extensive mucoid degeneration has occurred in places. Many of the glands are dilated.

From a patient aged 49.

279. Half a fibro-adenoma, 2 × 1½ cm. The surface is slightly nodular, in parts smooth and in parts rough and blood-stained. On section it has the usual appearance of a fibro-myoma with several small, irregular, cystic cavities near the surface. 9800

Microscopic Structure.—The tumour is a fibro-myoma containing within it several glands lined with a single layer of columnar epithelium. The surface is covered with short columnar epithelium.

The tumour was enucleated from the left and posterior walls of the cervix of a patient, aged 52, who had suffered from menorrhagia for the last eight or nine months. Previously the flow had been scanty, but always accompanied by pain. Her grandmother, aunt, and father died of cancer. The lower attachment was a quarter of an inch above the external os.

280. A cystic adeno-myoma of the uterus weighing 1 lb. 15 oz., with one ovary containing a small dermoid of the size of a walnut. The other ovary was normal. The tumour consists of several lobes, some of which are cystic, but the central mass is hard, spongy on section though firm in consistence, and shows several cavities filled with blood. The surface of the tumour has a few adhesions; no cut pedicle can be seen. 10525

Microscopic Structure.—The tumour is a fibro-myoma with numerous glands, mostly distended and lined with a single layer of columnar epithelium.

At the operation for removal (G. F. B.) the tumour was found to be adherent to the omentum, floor of pelvis, and back of uterus.

281. An enormous cystic adeno-myoma of the uterus, the weight of which in the fresh state was nearly 70 lb. It is found to be a tumour growing in the left broad ligament. The round ligament, the ovarian ligament, and ovary, which is greatly stretched (10 cm. in length), are seen in the surface of the tumour. The Fallopian tube measures 27 cm. in length. The right ovary was small and was not removed. The greater part of the tumour consists of an enormous cyst the lining of which is smooth and wrinkled, looking like skin. This cyst is now 33 cm. in diameter, but has shrunk enormously since the contents were evacuated and its preservation in spirit. Between the cyst and the peritoneum is a more solid fibro-cystic tissue, nearly 2 inches thick, and on the left side is a solid lobe, 18 × 6 cm., consisting of dense fibro-myomatous tissue with some small smooth-walled cysts in its deeper portions. Another cyst has been opened communicating with the main cyst, and has also a similar smooth lining. Dependent from the left side of the body of the uterus, and growing into the broad ligament, from which they were enucleated from deep down in the pelvis, are two solid lobes 20 × 7 cm. in diameter. These are lobulated structures, and on section they have a more homogeneous appearance than fibroids, and the tissue of some of

them is spongy. The cyst, during life, contained a huge quantity of colloid material. 6933

Microscopic Structure.—The tumour is an adeno-myoma, consisting of dense fibro-muscular tissue in which are gland-spaces, lined with a single layer of columnar or cubical epithelium. Slight patches of calcification are seen in the fibro-muscular tissue, which is slightly invaded with leucocytes. The glands have no stroma like that of the endometrium. A section from one of the two pelvic lobes mentioned shows closely apposed tubules lined with columnar epithelium, and in some places separated only by a single layer of cells resembling those of the walls of capillaries. The cells of most of the spaces are only two layers thick, but in some parts masses several layers thick are seen, in some places so extensive as to produce an appearance of carcinoma, but a fine reticulum seen in places shows that they are almost certainly papillomatous.

Removed (H. R. S.) by supra-vaginal hysterectomy, with extraperitoneal treatment of the stump, from a patient aged 43, who was quite well fifteen years afterwards.

282. Half a uterus with diffuse adeno-myoma which measured $9{\cdot}7 \times 5 \times 4$ cm. The peritoneum is smooth. Cervical canal measures 3·5 cm.: corporeal 5 cm. The cervical mucosa appears atrophied and slightly cystic. The mucosa of the body is also atrophied, and at the upper part between two fibroids it has disappeared. The lower centimetre of the body is normal, but the whole of the rest of the corporeal mucosa is surrounded by a uniform layer of fibroids, from 1 to $1\frac{1}{2}$ cm. in thickness, immediately subjacent to the mucosa (except at the upper part, where the mucosa has disappeared), and surrounded by a layer of normal muscle from 4 to 6 mm. in thickness. This fibroid mass appears to occupy the submucous tissue. The encapsulation of the tumour is in parts very indistinct. The external os is healthy. The transverse section of the other half showed the fibroid similarly surrounding the mucosa. 10855

Microscopic Structure.—The growths are adeno-myomata; the glands surrounded by a typical endometrial stroma, penetrating the fibroid layer to about two-thirds of its depth.

Removed (H. R. S.) by vaginal hysterectomy from a patient aged 38, on account of hæmorrhage which persisted in spite of curetting and of subsequently steaming the uterus for one and a half minute.

283 (*bis*). A uterus with diffuse adeno-myoma removed by total hysterectomy, weighing 3 lbs. $15\frac{1}{2}$ oz. and measuring $18 \times 14 \times 12{\cdot}5$ cm. Portio virginal, normal; cervical canal 4 cm.; mucosa cystic at upper part, otherwise normal. In the anterior wall of the lower segment is a fibroid of the size of a hen's egg, having the normal appearance of a fibro-myoma on the surface; and one of the size of a filbert projects on the surface in this situation. Two small fibroids are also seen in the section at the top of the posterior wall. The cavity of the body is surrounded by a tumour measuring 10×10 cm., which consists of an irregular network of white fibrous tissue containing somewhat gelatinous and granular substance in its meshes. Some of these areas have small lumina. This tumour is surrounded by normal uterine wall 1·5 cm. thick, which is clearly differentiated, though there is no marked capsule. The uterine canal is straight, 10 cm. long, and runs slightly behind the middle line of the tumour. The corporeal mucosa is slightly thickened, especially below (4 mm.), and has a waxy appearance. The cavity is slightly distended with clear gelatinous mucus. At the back of the left part of the uterus is a fibroid as large as an orange, of the usual appearance. Two minute subperitoneal fibroids are seen on the top of the uterus. 8969

Microscopic Structure.—A section has been taken through the whole of the uterine wall, which measures 58 mm. in thickness at that spot, and examined under the microscope it shows that the lining of the corporeal mucosa is mostly lost, but, when present, consists of short columnar epithelium; the stroma beneath is made up of large, degenerated, vacuolated cells with rounded and oval nuclei. This stroma and its contained glands can be traced from the mucosa in strands through the uterine muscle to within 16 mm. of the surface. The collections of glands become more extensive towards the middle of the section. The surrounding stroma consists of short, stout spindle-cells, differing markedly, in general, from the adjacent muscular cells, but apparently transitional forms between the two are met with. The columnar epithelium lining the glands nowhere shows proliferation.

403 allen

Removed in May 1902 (H. R. S.), by total abdominal hysterectomy, from a patient aged 53. She recovered well, but in February 1905 the breast was removed for carcinoma and the patient died from recurrence in the spine in December 1906.

284. Half a uterus which measured $11\frac{1}{2} \times 8 \times 6\frac{1}{2}$ cm. A small interstitial fibroid of the size of a pea is seen at the upper part, and three others, slightly larger, were situated in the lower segment of the other half. Surrounding the endometrium of the body is seen a tumour (adeno-myoma) 5×4 cm. in diameter, made up of interlacing white bundles enclosing small dark grey areas. 11545

Microscopic Structure.—The mucosa of the body is covered with columnar epithelium, and the glands are somewhat increased in number and show papillary projections of their inner walls, and the epithelium is somewhat swollen. The glands are set in a highly cellular tissue, which is seen to penetrate between the fibro-myomatous bundles in various directions, carrying with it the glands lined with normal epithelium.

Removed (H. R. S.) from a woman aged 48 by vaginal hysterectomy.

285. A uterus weighing 1 lb. 10 oz., measuring $16\frac{1}{2} \times 9 \times 11$ cm. Portio normal, the cervical canal with cystic mucosa, $6\frac{1}{2}$ cm.; corporeal canal 3 cm. long. On the section four myomata are seen—three smaller, healthy; the larger (8×9 cm.) has at the periphery a white healthy appearance, at the central part a yellowish-white, granular, and somewhat waxy appearance, resembling a sarcoma over an area $2\frac{1}{2}$ cm. across. There are several small subperitoneal nodules, the largest of the size of a walnut. 11658

Microscopic Structure.—The tumours are myomata and the large tumour shows that the granular and waxy portion is necrosed, only the cells surrounding the small blood-vessels staining.

Removed (H. R. S.) from a patient aged 45.

Lipoma of the Uterus, Broad Ligament, and Retro-peritoneal Tissue.

Lipoma of the uterus is rare. Fatty degeneration of myomata sometimes closely simulates it. Occasionally fatty tumours are met with in the cellular tissue of the broad ligament, and enormous tumours may be met with in the retro-peritoneal tissue of the abdomen, the removal of which, owing to their intimate connection with large vascular and nervous structures, is attended with considerable risk.

Specimens of lipomata of the mesosalpinx and broad ligament are described under Nos. 163 and 431.

286. The left half of a uterus with broad ligament and appendages. The section has divided the cervix slightly to the left of the external os. The uterus measures 6 cm. in length by 2 in thickness. The mucosa is somewhat atrophied. There is a slender polyp in the upper cervical canal. The Fallopian tube is 12 cm. in length, and it and the ovary have numerous adhesions between them covering in the ovary. In the posterior wall of the left side of the cervix is a lipoma $4\frac{1}{2} \times 4{\cdot}3$ cm. on section. At its outer part it is covered by peritoneum and a very thin capsule, which, above, is seen to increase in thickness and to be the muscle of the wall of the uterus. The broad ligament is quite thin and translucent and is $2\frac{1}{2}$ cm. deep between the ovary and the tube. The tumour is a lipoma of the cervix, not invading the broad ligament. 10736

Microscopic Structure.—The tumour is a lipoma. There is no history to the specimen.

Sarcoma and Endothelioma of the Uterus.

Sarcoma of the uterus occurs in the body and much more rarely in the cervix. It is a disease of advanced life, being most frequently met with after the menopause, but has occurred at all ages, from infancy up to extreme old age. It may arise from the muscle-cells of the uterine wall or in myomata, and may closely simulate those tumours clinically. It usually commences in the wall; much more rarely it arises

in the mucous membrane either as a diffused or polypoid tumour. A peculiar form of the growth is the so-called grape-like sarcoma, which occurs mainly in young women or even infants. A sarcoma sessile on the inner wall of the fundus may lead to inversion. The tumours may often attain a great size without causing serious symptoms; they then have probably originated in myomata. On the other hand, a very small growth resembling a submucous fibroid may deeply penetrate the wall even to the peritoneum. Pedunculated sarcomata projecting through the cervix may be mistaken for fibroid polypi.

The most important point about sarcoma is the necessity of distinguishing them from myomata, to which they bear a close resemblance, both clinically and to naked-eye examination. They lack the white whorled arrangement of the latter, are less distinctly encapsuled, and on section have a waxy or a granular surface. Less important is the distinction between carcinoma and sarcoma of the uterus. In some cases a carcinoma with abundant epithelial proliferation and scanty stroma closely resembles a sarcoma under the microscope (carcinoma sarcomatodes). In rare cases carcinoma and sarcoma exist side by side in the same uterus ("carcino-sarcoma").

Microscopically the tumours are of the round-cell, mixed, or spindle-cell variety: in all forms large cells with large nuclei are common. In some cases in which the occurrence of metastatic growths proves their malignant nature, the tumours do not differ much microscopically from myomata. Sarcoma of the uterus is extremely malignant. A rare form of growth originating in proliferated vascular endothelium ("*endothelioma*") is sometimes met with. This growth infiltrates the neighbouring parts, but does not show much tendency to produce metastases.

287. The right half of a uterus which measured 15×14×11 cm.. removed by supravaginal amputation. The peritoneum is smooth. The uterus has been divided at the lower segment, exposing the mucous membrane of a submucous and intramural tumour occupying the whole of the body. On section the tumour is surrounded by the uterine wall varying from 2 mm. to 1 cm. in thickness. The margin is a little irregular, particularly above, where, at one spot, it has penetrated nearly to the peritoneum. The tumour is divided up by fibrous strands like those met with in a fibro-myoma. The central part of the tumour has a somewhat hyaline appearance; the rest is somewhat granular, and in it smooth-walled cysts and numerous orifices of vessels are seen. On the surface of the posterior wall is seen a subperitoneal tumour having the usual appearance and showing microscopically the structure of a fibro-myoma. 8298

Microscopic Structure.—A section was made through a fibroid strand in the tumour and the surrounding growth. The fibroid tissue shows fibro-myomatous tissue, some parts of which do not differ markedly from ordinary fibro-myoma; but other parts show the muscle-cells and their nuclei increased in size and less fasciculated in arrangement. Scattered among the muscle-fibres are small round cells. On the edge of the non-fibroid portion of growth the cells become very large, some being giant-cells and having an irregular arrangement, some are round, and a few leucocytes are seen scattered through the tissue. It is a mixed-cell sarcoma arising from the transformation of the cells of a fibro-myoma.

Removed (H. R. S.) by supravaginal hysterectomy, July 12, 1899, from a single woman, aged 47, who had had menorrhagia lasting 12–14 days. She had suffered from excessive bleeding at the periods for the last 10 months. She had always been thin and delicate. No increase in the size of the tumour was noticeable during the last 4 months, and the patient did not suffer from pain. She had slight pleurisy at the time of the operation due to growth in the lung, for which tapping was performed a few months later and bloody fluid was withdrawn. Recurrence also occurred in the vulva and vagina and the patient died from cachexia. Microscopically the secondary growth in the vulva has also the structure of a spindle-cell sarcoma.

288. A uterus removed by vaginal hysterectomy for sarcoma. The uterus has been lacerated in process of removal and the tissues have been hardened in an everted position, exposing a ragged growth which is seen on the surface of the section growing from the wall of the uterus, presenting a more homogeneous structure

2:87. Mrs Farrant

2:88. Ellis

289 a. Sallo

291. M. Graham

than the uterine tissue, from which it is separated by a distinct line of demarcation. In the upper half of the specimen it is seen to be in close proximity to a small fibro-myoma, which has a normal appearance. Several pieces of growth are missing. 8402

Microscopic Structure.—The tumour is a round-cell sarcoma with practically no stroma, except that formed by the capillaries. It is extensively infiltrated with leucocytes. Scattered through the tumour are large cells with large nuclei. The adjacent fibro-myoma shows the typical structure of that form of tumour and shows no evidence of sarcomatous change.

Removed (H. R. S.) by vaginal hysterectomy with the cautery from a patient aged 59. The patient recovered well from the operation, but after a few months the growth recurred in the pelvis, from which the patient died about a year after the operation.

289. Part of a uterus removed by hysterectomy, measuring $19 \times 19 \times 11\frac{1}{2}$ cm. The section shows that the whole of the body of the uterus is occupied by a tumour which extends nearly to the peritoneum. There is a distinct capsule to the tumour, well seen below; the upper part of the tumour is, however, continuous with the uterine wall. The lower part of the tumour is slightly granular, and at the same time shows indications of a fibrous reticulum. The upper half of the tumour is of waxy homogeneous appearance. The peritoneum is smooth and shows no growth. The uterus has been divided just above the internal os, exposing the uterine mucosa which is smooth and bulges slightly as it would from the presence of a submucous fibro-myoma. 7543

Microscopic Structure.—The tumour is a mixed-cell sarcoma evidently arising in a fibro-myoma, for at the periphery of the tumour the general appearance is that of the fasciculated arrangement of a fibro-myoma, the muscle-cells and nuclei of which are large, with an occasional very large cell. Towards the central part of the tumour the structure is that of a typical large round- and spindle-cell sarcoma.

Removed (H. R. S.) by supravaginal amputation March 30, 1896, from a patient aged 50. The growth recurred in the lungs (1897) and in the pelvis and the hip (1898), and the patient died on August 18, 1899.

290 (*bis*). A sarcoma of the vagina involving the cervix and vagina. At one side of the specimen is seen the uterine body with the appendages. The tumour, as may be well seen in one of the specimens, where a flap of vagina has been reflected, consists of a lobulated polypoid growth—the so-called "bunch of grapes" sarcoma. It grows from the cervix uteri and involves both vaginal walls, but especially the anterior. There are numerous adhesions on the outer surface of the distended vagina. 9269

Microscopic Structure.—The growth is a mixed spindle- and round-cell sarcoma.

Removed by Mr. H. J. Curtis by abdominal hysterectomy from an infant 12 months old, in whom had been noticed a large swelling in the abdomen and a discharge from the vagina for a period of 5 or 6 weeks. The child died 22 hours later. At the autopsy a secondary growth was found in a left iliac gland, the left iliac artery at its bifurcation being completely embedded in the growth. No other growth was found in the body. The pelves of the kidneys were dilated (from pressure on the ureter). (For full account and literature, see Obstet. Soc. Trans. vol. 45, p. 320, where it is described as a grape-like sarcoma of the cervix.)

291. A uterus removed by abdominal hysterectomy, measuring $11 \times 7 \times 6$ cm., the body of which is dilated and completely filled with growth. The portio is normal and open for half a cm. The upper part of the cervical canal is dilated by a cone-shaped protrusion—a prolongation of the corporeal tumour. The growth in the body arises from the whole of the anterior wall and fundus and the upper half of the posterior wall. It infiltrates the muscular wall at the fundus to within $\frac{1}{2}$ cm. of the peritoneum, the line of demarcation between the two being slightly irregular but well marked. The structure of the growth is for the most part homogeneous, with some striation in the middle part. The lower part of the tumour is broken up, probably by the introduction of sounds. The peritoneum is smooth. There is no sign of any fibroid tumour in the uterus. 9422

Microscopic Structure.—The tumour consists of rounded or oval cells, with scanty narrow strands of stroma, some of which are degenerated. The tumour is a small round-cell sarcoma.

Removed (H. R. S.) on Nov. 5, 1903, from a woman aged 60, who complained of intermittent pain in the abdomen for 3½ months. She had had continuous watery discharge for 4 months and before that a continuous red discharge for 3 months. The patient recovered and remained well till Dec. 27, when bleeding and bloody discharge occurred, and she died with recurrence of the growth on Feb. 29, 1904.

292. Half a uterus which is but slightly enlarged (7½ cm. × 3 cm. thick). There are some adhesions on the surface. The cervix is 3 cm. long; its wall 3–6 mm. thick, its mucosa normal. The wall of the uterus is 1 cm. thick; mucosa atrophied. In the anterior wall of the fundus is a ragged hole, and the remains of a yellow growth are seen infiltrating the wall nearly to the peritoneum. In the anterior wall, about 1½ cm. above the internal os and 1 mm. below the peritoneum, is an oval growth about 2 by 1½ mm. and above this a still smaller nodule. The loose, torn mucosa is seen behind the ragged cavity left by removal of the growth. 9739

Microscopic Structure.—The growth is a mixed round- and spindle-cell sarcoma. A few cells are met with having enormous oval nuclei, containing one or two vacuoles. The secondary nodule has a similar appearance. The growth is clearly demarcated from the uterine wall, and there is a considerable amount of hæmorrhage in the surrounding tissues.

Removed in January 1905 (H. R. S.) by vaginal hysterectomy from a patient aged 65, who complained of hæmorrhage, which first occurred 6 weeks before. On introducing the finger into the uterus a rounded projection of the size of a marble was felt at the fundus; part of the surface of this tumour was quite smooth and the rest rough and papillary. It was thought to be a submucous myoma with carcinoma on its surface. It was avulsed with a volsella, and a sound introduced into the uterus showed that the peritoneal cavity had been opened. The uterus was removed immediately by vaginal hysterectomy. The patient had recurrence in May and died July 1907.

293. A sarcoma of the fundus uteri (9 × 8 × 5½ cm.) removed by the écraseur. The specimen is smooth, but lobulated on its surface. The point of insertion of the pedicle is cupped, in consequence of the growth having grown around it. A segment of the tumour has been removed, showing the myomatous pedicle with the more gelatinous sarcoma growing from its periphery. The woman was forty-two years of age; and the growth projected through the cervix, hanging by a pedicle.

(*Vide* Dr. Williams's *Case-books*, 1889.) 6847

Microscopic Structure.—The tumour is a mixed round-cell and oval-cell sarcoma, the round cells predominating.

294. A sarcoma (6½ × 6½ × 4 cm.) of the fundus uteri removed by the écraseur. The growth is mushroom-shaped, the pedicle of attachment being incorporated with the muscular tissue of the fundus uteri. The specimen is similar to the preceding. A segment has been cut out, showing the muscular wall of the fundus, having the normal fasciculated appearance and surrounded on the section by a homogeneous white layer with a blood-stained band near the periphery.

Microscopic Structure.—A section of the pedicle shows the structure of an ordinary fibromyoma. The tumour gradually becomes more and more vascular and more cellular until it is made up of large round and spindle cells with large nuclei, with extravasation of blood. As the change takes place gradually from the pedicle outwards, it is probably a sarcomatous degeneration of a fibroid.

295. Part of a sarcomatous uterus removed by supravaginal amputation, with an ovary and tube which are smooth and atrophied but otherwise normal in appearance and on section. On one surface of the slice is seen the uterine wall, which measures from 1·5 to 2 cm. in thickness. In it is seen the slit-like uterine cavity cut across and filled with mucus, and below it a fibro-myoma 2 to 1½ cm. Growing from the inner surface of the wall is a growth, waxy on section and irregularly eroded on the surface. Below, it has penetrated nearly to the

.292. E. White

296 Devereux

peritoneum, and is occupied by an irregular cavity with greenish walls which evidently contained pus. The appendages of the other side were similar to those in the specimen. 10541

Microscopic Structure.—The endometrium is somewhat cystic and densely infiltrated with small cells. The tumour is a sarcoma containing an immense number of giant cells with deeply staining nuclei. There are also between the giant cells numerous irregular and spindle cells and numbers of leucocytes. The fibro-myoma has the ordinary structure of that growth and no sign of sarcomatous change; it has in places undergone hyaline degeneration.

Removed, April 1907 (G. F. B.), from a patient aged 42, who remained well in May 1911.

296. The pelvic viscera with the uterus, measuring $12 \times 10 \times 8$ cm. The vagina and portio are normal (virginal), as is also the cervical canal for a length of 2 cm. The whole uterus is filled with a mass of growth, in the anterior wall 4 cm. thick, growing from the whole of the corporeal mucosa and distending the anterior wall of the cervix to within 7 mm. of the portio. The growth forms irregular lobulated masses on the surface and has penetrated the fundus anteriorly, and around the perforation is a roughened surface covered with lymph. Douglas's pouch is occupied by a multilocular ovarian cyst without any solid growth in it; the right ovary was not seen, having been apparently invaded by the growth from the uterus. 10353

Microscopical Structure.—The growth is a small round-cell sarcoma.

Removed post mortem from a single patient aged 54, who had suffered from pain in the abdomen and lower part of the back, thick yellow, not offensive discharge, wasting, and occasional bleeding from the uterus for 5 months. The diagnosis of cancer of the body probably complicated with fibroids was made and an exploratory operation undertaken (H. R. S.) on Oct. 18, 1906. The tumour had grown through the fundus and was adherent to the parietal peritoneum. This adhesion was separated, so as to permit of a more thorough exploration. Septic infection occurred, no doubt from the uterine cavity, and the patient died with an abscess over the fundus uteri on Oct. 21, 1906.

297. A uterus measuring $16 \times 10 \times 8$ cm. The surface was irregular on its anterior wall, owing to growths beneath the peritoneum; one flat growth 1 cm. in diameter was attached by membrane only. The left tube is distended with blood, the right normal. The left ovary is small ($2\frac{1}{2} \times 1\frac{1}{2} \times 1$ cm.); it contains a small cyst, but no growth: the right ovary is not present. There is a rough dark surface over the back of the lower segment, due to the penetration of the growth. The section shows the uterus distended with a growth varying in colour from white to pink and even greenish red. The tumour grows from the posterior wall from 1 inch below the fundus down to the level of the internal os. It has penetrated the wall of the lower half of the uterus, and forms anteriorly a polypoid mass, smooth on the surface as seen in one half, from which the anterior wall has been removed. There are several secondary growths in the anterior wall, which varies from 7–8 mm. in thickness. 10896

Microscopic Structure.—The growth is a mixed round- and spindle-cell sarcoma with numerous giant cells with large deeply staining nuclei.

Removed by total abdominal hysterectomy (G. F. B.) from a patient aged 51. The patient died 2 months after the operation with secondary growths in skin, bowel, peritoneum, liver, visceral pleura, but not in lungs.

298. A uterus removed by supravaginal hysterectomy. The uterus measures 10 cm. long. The surface is covered with adhesions. The wall is enormously thickened ($2\frac{1}{2}$ cm. at the fundus) and apparently fibrotic. The cervix is 2 cm. long; its canal dilated, but healthy. Stitched to it is a fibroid polypus of the size of a hen's egg. On the posterior wall of the body extending 4 cm. downwards from the fundus is a whitish uneven surface, where the polypus was attached. The left side of the uterus is distended into an irregular cavity with walls 1–2 cm. in thickness, which contained pus. A transverse incision has been made in the front of the left half of the uterus, extending into the suppurating cavity. The deeper part of the wall up to within $\frac{1}{2}$ cm. of the surface is of somewhat more

homogeneous appearance than the outer part. The lining of the cavity is somewhat uneven and granular on the surface. 7814

Microscopic Structure.—The polypus is a fibro-myoma which has undergone hyaline degeneration. The right side of the uterus is invaded with an adeno-myoma, which consists of glands lined with columnar epithelium embedded in a tissue consisting of oval and short spindle cells. This tissue permeates the fibro-myomatous wall. The suppurating tumour in the left wall is a round-cell sarcoma.

total abdominal

Removed (H. R. S.) by ~~supravaginal~~ hysterectomy from a patient aged 46, who had been in a hospital for women with fever, and had been told that she would get better at the menopause. She was admitted to U. C. H. with fever and occasional rigors. The polypus was removed and a large quantity of pus evacuated from the cavity, and the uterus removed by the abdomen. The patient died, and several secondary growths were found in the left kidney. (See Medical Series.)

299. A uterus and appendages, removed by total hysterectomy, measuring $13 \times 10 \times 7$ cm. The cervix is hypertrophied and dilated, measuring 5×5 cm., and the ridges of the arbor vitæ hypertrophied; length of canal 5 cm. The peritoneum is smooth; the left broad ligament distended, 6 cm., the right 4·5 cm. The tubes are normal; the left ovary measures $5{\cdot}5 \times 3{\cdot}5 \times 2{\cdot}5$ cm. and contains two cysts—one of the size of a grape with clear contents, the other somewhat smaller with sanguineous mucoid contents. The right ovary ($4 \times 3 \times 1$ cm.) is normal. Growing from the anterior border of the right ovarian ligament is a fibroid of the size of a bean. Growing in the left wall of the uterus is a tumour (6×4 cm.) divided into segments, two of which hang free in the corporeal cavity, having burst through the mucosa. The tumour is somewhat yellowish and homogeneous in appearance, like a sarcoma, and not striated as a fibroid. In places it is slightly stained with blood. The corporeal cavity is 6·5 cm. long; the mucosa slightly hypertrophied at the fundus, elsewhere atrophied. The tumour is distinct from its capsule, which is slightly wavy, except at two spots, where it appears to be invading the muscle; the layer of uterine wall surrounding it is about 7 mm. in thickness. The fundus and right wall are somewhat hypertrophied, 2 cm. thick. 10061

Microscopic Structure.—There is some hyperplasia of the glands with well-marked cellular stroma. The tumour consists of bundles of elongated cells, the nuclei of which stain well, infiltrated with leucocytes and slight hæmorrhages. The tumour has the appearance of an inflamed and degenerated myoma. In one or two places are collections of rounded cells with abundant protoplasm and deeply staining nuclei, evidently sarcomatous. There is a second small tumour of the size of a pea, quite distinct from the main tumour, which also has the appearance of a small spindle-cell sarcoma. The growth is a fibro-myoma, which is degenerated and has become sarcomatous.

Removed (H. R. S.), Nov. 1905, from a married woman aged 50 by total vagino-abdominal hysterectomy, the ovaries also being removed owing to the suspicion of sarcoma. A fortnight before operation a polypoid mass was found protruding through the cervix, and was removed piecemeal from the body of the uterus. The mass was larger than a fist; it was much softer than an ordinary fibroid and broke down readily under the fingers; was pinkish white in section, and was pronounced by the hospital pathologist to be undoubtedly sarcoma (round and oval cells entirely). The patient had had pain in the left side and bleeding for one month before the operation, and faintness. She had been married for 30 years and had had 5 children, the last 22 years ago. Four and a half years ago, 3 years ago, and one year ago "fibroid polypi" had been removed from the uterus. On admission the uterus reached 4 inches above the pubes, the os was open, and through it a tumour could be felt, and a portion removed was pronounced by the hospital pathologist to be sarcoma. The patient recovered and was well in May 1911.

300. A uterus and appendages measuring $14\frac{1}{2} \times 13\frac{1}{2} \times 9$ cm. The cervix is small and virginal, 3 cm. long. The surface of the tumour is knobby from the presence of subperitoneal fibroids. The appendages are normal. On the cut section are seen several small intramural myomata. The whole of the cavity of the uterus is occupied by a growth attached to the anterior wall and measuring 9×4 cm., which is somewhat irregular on the surface, but is closely moulded to the uterine cavity and is in part degenerated. At the upper part of the cavity is a cystic mucous polypus. 11550

299. P. Wanis or Harris?,

Add 4 cases of Sarcoma of Uterus

Julia Lodge (Cho. Alb.) aged 65 Total abdominal Hysterectomy May 22 1920 by D. Herbert Spencer: patient quite well in Feb 1931, nearly 11 yrs after operation. This is the only case of Sarcoma which he has met with which has not recurred. The specimen is in the W.H. Museum.

Sarcoma of Uterus - Add Lorena Allen Reg 4314. (1917) admitted to Ward 3 under Dr. Spencer Nov 1917 died Jan 4 1918 under care of Dr P. Martin.

Microscopic Structure.—The tumour is a large oval and spindle-cell sarcoma, probably originating in a submucous fibroid.

Removed by abdominal hysterectomy (G. F. B.) from a single woman aged 62, Nov. 23, 1910, who died of pulmonary embolism on Jan. 23, 1911.

301. Half a uterus removed by supra-vaginal amputation. It measures $8\frac{1}{2} \times 7 \times 7$ cm. The tubes were normal. The right ovary measured $5 \times 3 \times 2$ cm. The left ovary measures $4 \times 3{\cdot}5 \times 2\frac{1}{2}$ cm. and contains a large hæmorrhage. Growing from the anterior wall and fundus is a tumour, with a waxy surface on section. At the base of the tumour is a large area of degeneration. 11624

Microscopic Structure.—The growth is a small spindle-cell sarcoma.

Removed by Mr. Douglas Drew from a patient aged 25, who nearly three years previously had had a cystic "submucous fibroid" incised through the (dilated) cervix.

Carcinoma of the Uterus.

The uterus is more frequently affected with cancer than any other organ in the body. The disease varies in its age-incidence, in its relation to previous child-birth, in its progress, and in its curability according as it affects the body or the cervix, in both of which three pathological varieties of cancer are met with, viz.: *squamous carcinoma*, *adeno-carcinoma*, and a form resembling adenoma in its structure and cancer in its progress, which has been called *adenoma malignum*, but which would be more properly called *carcinoma adenomatodes*. This last variety is rare (345). Squamous-cell carcinoma is common in the cervix, very rare in the body; adeno-carcinoma is common in both parts of the organ. Squamous-cell carcinoma in the cervix usually starts in the portio vaginalis at the external os, rarely it begins in the canal (234); it has the usual microscopical appearances of that growth in other parts, though cell-nests are often few or absent. True squamous-cell carcinoma of the body may arise from the surface epithelium of the endometrium which has undergone "metaplasia"; in many cases, however, the growth is an adeno-carcinoma in which the superficial parts of the growth have been converted into squamous-cell carcinoma by "metaplasia," while the deeper parts of the growth preserve the appearance of adeno-carcinoma.

Adeno-carcinoma, both in the body and cervix, is made up of glandular spaces lined with columnar epithelium usually in a state of proliferation, which is often so great as to form large tracts or masses of epithelium. The stroma is infiltrated with lymphocytes and varies in amount in different cases: when the stroma is scanty the resemblance to sarcoma may be close. Adeno-carcinoma is sometimes associated with sarcoma in the same uterus: the condition is then called *carcino-sarcoma* (382).

Adenoma malignum, Carcinoma adenomatodes (345), is characterised by tubular and acinous spaces lined with a single layer of columnar epithelium closely resembling the natural glands and showing no tendency to proliferation. It is only by its clinical features and its invasion of the healthy tissues that this growth can be distinguished from normal glands.

Carcinoma of the Portio vaginalis, Squamous-cell Carcinoma.—The disease appears usually as a papillary growth at the external os on one or both lips; it has an overhanging edge and is of friable structure, and during life bleeds readily on examination. It tends to grow over the portio to the vaginal fornices and to some extent up the canal, but does not deeply invade the substance of the cervix in the early stages of the disease. Large mushroom-shaped growths and ragged, hard, excavated ulcers are also met with in this variety.

Usually the glands (iliac and obturator) are not affected in the early stages, but rarely extensive glandular infection takes place while the cervical growth is small (308) and while the cellular tissue is unaffected.

Adeno-carcinoma of the Cervix, Columnar-cell Carcinoma.—Adeno-carcinoma arises in the cervical glands, and may advance to a considerable extent, while the portio

vaginalis is intact and normal in appearance (348). Usually, however, it leads to ulceration at the external os sufficient to admit the tip of the finger and reveal the friable growth within. As the growth develops it causes distension of the supra-vaginal cervix, often best felt through the rectum, and before long it breaks through into the parametrium and ulcerates into the vagina: the growth may also extend beneath the stratified epithelium into the substance of the vaginal wall, which may appear superficially healthy.

In advanced cases the distinction between squamous-cell carcinoma of the portio and adeno-carcinoma becomes lost both from the clinical and microscopic point of view. The growths may block the uterine canal, lead to pyometra, or invade the surrounding organs, leading to fistulæ. The ureter becomes compressed by the growth in the parametrium and becomes dilated (322), leading to hydro- and pyo-nephrosis and frequently causing the death of the patient from uræmia.

Cancer of the cervix occurs for the most part in multiparæ, especially in those who have had a large number of children, and is most commonly met with between the ages of 40 and 50; it is not very infrequently met with in women as young as 26 (314) and quite commonly after the 28th year. It is somewhat rare as a complication of pregnancy, when it may lead to abortion and septicæmia (326), to rupture, or to dystocia calling for Cæsarean section: if the whole of the cervix is not affected the unaffected part may dilate and permit the passage of the child.

The lymphatic glands may be affected with cancer, while the parametrium is still unaffected. The glands first affected are the iliac and obturator glands. In rare cases the glands throughout the body may be secondarily affected, even when the primary growth is small and the parametrium healthy. The ovaries also sometimes contain secondary growths, even although they may appear normal to the naked eye. In considering the question of glandular metastases it must be remembered that it has been shown by Ries, Mayer, and Wertheim that the glands often contain tubules lined with a single layer of columnar epithelium which have nothing to do with cancer; they are supposed to be of Wolffian origin.

Carcinoma of the cervix may coexist with myoma uteri (346) and may follow supravaginal hysterectomy, even after an interval of several years.

Carcinoma of the Body of the Uterus.—Carcinoma of the body of the uterus (*corpus uteri*) is much less common and less malignant than carcinoma of the cervix.

It also does not usually occur at such an early age, being very rarely met with before the 42nd year, though the museum contains specimens from patients aged 29 and 36 (360, 362). It differs also from carcinoma of the cervix in occurring most frequently in virgins and nulliparæ.

The tumour grows from the mucous membrane towards the cavity and often attains a considerable bulk before the wall is extensively infiltrated. Rarely extensive infiltration is a marked feature (378): it may be advanced to the extent of showing nodules beneath the peritoneum or even penetrating that membrane. The growth usually occupies an extensive area of the cavity, though it may be very limited. Its surface is irregular or papillary or shaggy, friable, and on section of the hardened specimen the cut surface is either granular or waxy in appearance. When extensive ulceration has taken place a harder craggy cavity may be left. Corporeal cancer is not uncommon as a complication of uterine fibroids, indeed with a frequency which suggests a causal relationship. In some instances (363, 379) the growths appear to have been set up by the pressure on the endometrium by the underlying myoma.

Usually the ovaries are free from secondary growths, which usually occur first in the lumbar glands: in some cases the inguinal glands may be affected through the lymphatics of the round ligament.

Carcinoma sometimes affects one cornu of the body, producing a marked asymmetry of the organ: sometimes this is due to growth in a horn of a bicornuate uterus. Occasionally the growth extends into the cervix, and isolated growths secondary to cervical carcinoma have been met with in the body.

Microscopically the growth is in the great majority of cases an adeno-carcinoma. The organ is rarely larger than a fist. When the growth is of considerable size necrosis is frequently met with. In rare cases (364) caseation is seen when the growth is large.

CARCINOMA OF THE CERVIX OF THE UTERUS.

302. A cervix uteri removed by the high amputation with the cautery for squamous carcinoma. It measures $5\frac{1}{2} \times 4 \times 3$ cm. At the external os a ragged growth is seen, extending at one part to within 5 mm. of the cut end of the vagina. The growth consists of elongated processes, some acuminated, some with enlarged and nodular ends. It extends for 3 cm. up the canal, the upper $2\frac{1}{2}$ cm. being smooth and healthy. The external surface of the specimen is much charred by the cautery. 8202

Microscopic Structure.—The growth is a carcinoma, consisting of large masses of epithelial and apparently squamous cells with abundance of round-cell infiltration in the tissue between them.

Removed (H. R. S.) on March 23, 1899, by high amputation with the cautery from a patient aged 63, who had a discharge, very faintly coloured, for 5 or 6 months, but no bleeding or pain. The discharge was occasionally offensive. Patient had had three children, and had been a widow for some years. The menopause occurred at 50. The patient weighed 17 stone and had not lost flesh. She recovered well, and when seen eleven and a half years subsequently and examined by Dr. Spencer, she stated that she had never had any pelvic pain or discomfort since the operation, and was in perfect health. The vaginal scar was quite healthy. (See Proc. Roy. Soc. Med., Obstet. Gyn. Sec. vol. ii. p. 335.)

303. A cervix uteri removed by high amputation with the cautery, measuring $4{\cdot}3$ cm. $\times 2\frac{1}{2} \times 2\frac{1}{2}$. On one lip of the cervix is a warty raised growth 2 cm. by 1 cm.; it has a distinct overhanging margin, and on section shows a malignant growth which at its upper edge is 2 mm. in thickness, but gradually increases in thickness as the external os is approached, where it is about 5 mm. thick. The posterior lip appears to be unaffected. 7811

Microscopic Structure.—The growth is a typical squamous carcinoma.

Removed (H. R. S.) by high amputation with the cautery, from a patient aged 28, who had had one child and a miscarriage (3rd month), in August 1896. Three or four weeks after the abortion she was told by a Russian doctor that she had a small sore of the size of the tip of a finger at the mouth of the womb, but that it was of no importance. Since that time she had offensive discharge and bleeding, especially on coitus, more marked during the last few weeks. The patient was in good health, but suffered from dysmenorrhœa, about a year afterwards.

304. A cancerous cervix, removed by high amputation. Laid open, it measures 10×7 cm. It is extensively infiltrated all round with a large shaggy growth up to within (in one or two places) 2 mm. of the cut surface. The growth has extended upwards to within 2 cm. of the line of amputation. 7664

Microscopic Structure.—The growth is a squamous carcinoma, with the stroma extensively infiltrated with round cells.

Removed (H. R. S.) from a patient aged 44, complaining of menorrhagia and metrorrhagia for 12 months, and loss of flesh for 6 months. There is no history of discharge or pain. The broad ligament was not affected, but the growth had extended nearly to the vaginal wall.

305. A cervix uteri removed by high amputation for carcinoma. It measures 5 cm. in length, 3 cm. in. diameter. The portio measures $3{\cdot}7 \times 3{\cdot}5$ cm., and has a growth of the size of a shilling on one lip with raised uneven surface peripherally, lobulated, ragged, and slightly papillary towards the cervical canal. The incision is at least 5 mm. from the edge of the growth. 7735.

Microscopic Structure.—The growth is a columnar-cell carcinoma, but some of the cells of the epithelial masses are very swollen and granular, and somewhat resemble squamous cells.

Removed (H. R. S.) by high amputation from a patient aged 28, who had had three children.

306. A cervix uteri removed by high amputation for carcinoma. It measures $6\frac{1}{2}$ cm. long: the portio $3 \times 3\frac{1}{2}$, the upper cut extremity $3 \times 1\frac{1}{2}$ cm. The mucous membrane of the portio is smooth, and projects from the growth beneath it in one lip. The external os is slightly open, and a little rough ulcerated surface can be just seen. On section a growth is seen to invade the wall of the cervix to a height of about $1\frac{1}{2}$ cm., and to within about 2 mm. of the cut surface. A little growth is seen just within the os, in the opposite lip. The whole growth is not more than $1\frac{1}{2}$ cm. long $\times$ 1 cm. thick. 8231

Microscopic Structure.—The growth is a carcinoma, made up of considerable masses and columns of epithelial cells of the squamous type.

Removed (H. R. S.), Dec. 1898, by high amputation with the cautery from a patient aged 47, who had had hæmorrhage for 2 months, and bled readily on examination. The menopause occurred 11 years previously. The patient died in 1899.

307. A cervix removed by high amputation with the cautery for carcinoma. Laid open it is 7 cm. long $\times$ 9 cm. across. An extensive ragged growth occupies the wall up to within 2 cm. of the upper end of the specimen. 8162

Microscopic Structure.—The growth is a carcinoma, made up of large masses of epithelial cells, apparently of the columnar type. There is a moderate amount of round-cell infiltration; numerous capillary channels permeated the growth.

Removed (H. R. S.) by high amputation with the galvano- and Paquelin's cautery, from a patient aged 40, who had had one child 18 years previously. She had pain in the back for 4 months and discharge for 2 months, and later clear and slightly offensive.

308. A cervix uteri removed with the galvano-cautery, measuring 3 cm. long. The portio is $4{\cdot}2 \times 4$ cm. On the anterior lip is a flattish growth, slightly ulcerated, and measuring $3{\cdot}2 \times 2{\cdot}5$ cm. There is a slight ulceration also at the margin of the os posteriorly. On laying open the cervix the growth is found to creep up the cervical wall, almost if not quite to the line of section. 9673

Microscopic Structure.—The cut edge shows the stratified epithelium thickened, with leucocytic infiltration of the corium. The growth itself is a squamous carcinoma, consisting of large columns of cells. There is extensive leucocytic infiltration, and the vessels of the tissues are much engorged, and growth is seen in the lumina of some of them.

Removed (H. R. S.) by the galvano-cautery from a patient aged 37. Rapid recurrence occurred in the pelvic glands and in other glands throughout the body. The patient died in Feb. 1905. Growth was found in the cervical, bronchial, and tracheal glands, the lungs (see specimen No. 310), the retroperitoneal glands, the mesenteric, iliac, and right femoral glands; there was no growth in peritoneum, liver, spleen, pancreas, or kidneys, but there was growth in the hilum of the left kidney. The aorta was encased with growth, which did not invade it.

309. The uterus, vagina, and appendages removed post mortem from a patient from whom the cervix (see No. 308) had been removed with the galvano-cautery (high amputation) four months previously. The vagina is healthy. Its anterior wall measures 7 cm., its posterior 9 cm. Its mucosa is smooth, and at the top of it is a transverse cicatrix perfectly smooth and healthy. Body 5 cm. in breadth, $3\frac{1}{2}$ in thickness, length 6 cm. The upper cervical cavity is represented by a linear canal, on either side of which the tissue is somewhat fibrous, but there is no sign of growth anywhere. The broad ligament is soft without any growth. The ovaries and tubes are normal, except for a blood-cyst in the right ovary and a small one in the left. There is a small subserous cyst beyond the outer end of the left ovary. 9796

Microscopic Structure.—The scar at the top of the vagina is covered with a thin layer of stratified epithelium, is quite healthy, and not infiltrated with leucocytes. There is no growth in the lower part of the uterus. The tissue in the neighbourhood of the canal is very dense and contains a few glands; there is a layer of flattened epithelium on the surface of the canal. The ovaries have corpora fibrosa, and both of them show numerous deposits of epithelial cells in the lumina of vessels. Small deposits of growth are also seen in the vessels of the cellular tissue round the uterus.

From the same case as the preceding specimen.

310. The inner half of the right lung from the same case as No. 308. There is a sloughy cavity at the upper part of the lower lobe. The rest of the lung is consolidated and permeated with numerous small growths, none of which is as large as a pea. These growths are in many places arranged round the bronchioles; in other places they occupy the lung tissue. 9797

Microscopic Structure.—The growth is a squamous carcinoma.

311. A cervix removed by the vagina with the cautery for carcinoma. It measures 4·5 cm. long by 4·2 cm. × 3·7 cm. across the portio. To one side of the os, which is slightly eroded, is a large ulcer with ragged growth projecting from it; the section made by the cautery is ½ cm. from the edge of the ulcer, which is slightly raised. 8733

Microscopic Structure.—The squamous epithelium of the portio is slightly thickened; the corium beneath the Malpighian layer is œdematous and infiltrated with small round cells. The cancer cannot be traced to be continuous with the squamous epithelium. It is a carcinoma consisting of large masses of epithelial cells, some of which are elongated, but the majority of which are flattened. It is probably a squamous carcinoma. There is much round-cell infiltration.

Removed (H. R. S.) by high amputation with the cautery on June 7, 1901, from a multipara, aged 30. There was a large recurrence in the right iliac fossa in Nov. 1901.

312. A cervix and core of the body containing the endometrium removed by galvano-cautery for carcinoma of the cervix. There is an old tear at one side of the cervix, and the rest of the cervix is occupied by a ragged tuberculated growth. From the edge of the cervix a wedge has been removed, the apex of which is just below the line of section, and under the microscope cancer is found to have penetrated almost to the extreme apex. 9132

Microscopic Structure.—The growth is a squamous carcinoma consisting of large masses of epithelial cells. The stroma is densely infiltrated with small round cells.

Removed (H. R. S.) on Dec. 20, 1902, by the galvano-cautery from a patient aged 53. The core of the body was excised in order to prevent dysmenorrhœa. The patient recovered, but died at an unknown date probably from recurrence.

313. A cervix removed by high amputation for carcinoma. It is 6 cm. long and 7 cm. across. It has been torn open in removal. The periphery of the portio is covered with intact epithelium, but the whole of the substance of one wall up to within 1·7 cm. of the top of the cervix is infiltrated by a growth ragged on the surface. It has also partly undermined the portio on the opposite lip. 8306

Microscopic Structure.—The growth is a carcinoma consisting of large masses of epithelial cells with a small amount of stroma infiltrated with a moderate amount of small round cells. The cells are large, and some are rounded and others elongated, and it is doubtful whether it originated in the glandular or squamous epithelium.

Removed (H. R. S.) by high amputation with the Paquelin cautery from a patient aged 58. The patient died 4½ months afterwards with recurrence.

314. A cervix uteri with squamous carcinoma removed by high amputation with the Paquelin cautery; it has been laid open. On the anterior lip is a lobulated and somewhat papillary growth consisting of coarse club-shaped processes and masses, with an overhanging edge separated from the cut vaginal mucosa by only ⅛th inch. The cervix removed measures 5½ cm. in length. 8680

Microscopic Structure.—The growth is a squamous-cell carcinoma with the formation of nests.

Removed (H. R. S.) on March 5, 1901. The patient, aged 26, recovered and was in excellent health in May 1911. The patient suffered, after the operation, from slight dysmenorrhœa, which was easily controlled by 5 grains of antipyrin. In the beginning of 1911 she was found to have a large pyosalpinx with blackish putrid contents, and the remains of the uterus and appendages were removed (H. R. S.) on March 9, 1911. The patient made a good recovery (see next specimen). (See Proc. Roy. Soc. Med., Obstet. Gynæc. Sec. vol. i. p. 31.)

315. The body of the uterus from the same case as the preceding specimen. The uterus is covered with adhesions. It measures $3\frac{1}{2} \times 4 \times 2{\cdot}7$ cm. Attached to it at the lower end is a fibrous cord of the size of the end of the little finger. The body is not distended, and the mucosa is normal. The anterior wall is thickened ($1\frac{1}{2}$ cm.). The left ovary is small and fibrotic, and contains some corpora fibrosa. The left tube is thickened and contained pus. The right ovary measured $4\frac{1}{2} \times 3\frac{1}{2} \times 3$ cm., and contained several small cysts and two abscesses, and is very dense and fibrotic. The right tube was converted into a pyosalpinx larger than a fist, and lined with a greenish pyogenic membrane. 11646

Microscopic Structure.—The tube shows leucocytic infiltration of the mucous membrane and the wall. The lower part of the uterus shows dense fibro-muscular tissue with hyaline degeneration and leucocytic and hæmorrhagic infiltration (probably due to the cautery). There is no new growth.

316. The edge of the anterior lip of the cervix removed from specimen No. 317. It is covered with a raised granular and, as seen by the lens, finely papillary surface. The upper edge especially is very finely papillary. Towards the os the lobulations, though still small, become coarser, and in places there are small patches of smooth white tissue (leukoplakia) which were opaque white during life and of about the size of pins' heads, adherent and harsh to the touch. A wedge-shaped piece has been removed from this lip, and with a lens it is seen that the epithelium is thickened (2 mm. at its thickest part). Its upper edge is slightly raised and distinctly marked from the normal mucosa beyond. At a distance of 1 cm. from its upper margin the epithelium is seen to penetrate into the subjacent tissue. 10728

Microscopic Structure.—The epithelium is thickened to about 3 times its normal thickness and the horny layer heaped up. There is considerable leucocytic infiltration beneath this thickened epithelium, which, towards the external os, burrows into the tissue of the cervix, forming typical squamous carcinoma with cancerous cell-nests.

317. The uterus, removed in two portions, from the same case as No. 316. It measures $9\frac{1}{2}$ cm. long. The cervix is $4\frac{1}{2} \times 3\frac{1}{2} \times 3{\cdot}7$ cm. The posterior lip has been torn, but is healthy. On the anterior lip is a raw surface, from which the specimen No. 316 was removed, measuring 2 cm. across. At the margin are marks of sutures. The mucous membrane and substance of the cervix appear to be normal, and there is no sign of growth in it. The body of the uterus is covered everywhere with flocculent adhesions, particularly posteriorly: it measures $6 \times 5\frac{1}{2} \times 5$ cm. There is a small fibroid, of the size of a pea, on the surface of its anterior wall, which measures 2·3 cm. in thickness, and several others in the posterior wall. The mucosa of the body is slightly hypertrophied at the upper part, but is otherwise normal. 10739

Microscopic Structure.—A section through the raw surface left by the removal of specimen No. 316 shows a cystic mucosa, the cysts being lined with a a single layer of cubical and cylindrical epithelium. One or two of the gland-cavities show proliferation of the epithelium into several layers, and some of them are completely filled with epithelial cells.

Removed (H. R. S.) with the galvano-cautery from a patient aged 36, who had had eleven abortions. She had had Alexander's operation performed, and a curious growth had been noticed on the edge of the cervix by an American gynæcologist in the summer of 1906. This was treated with boro-glyceride tampons. The growth was scarcely raised, was hard, and like the surface of a wart to the touch, and had several white (leukoplakial) patches on it. As the condition did not improve Dr. Spencer excised the growth with the view of preventing the occurrence of carcinoma, but on examination it was found that this had already occurred, as above described, and the uterus was therefore removed by the galvano-cautery in Feb. 1907. The patient recovered.

318. The cervix and body of a uterus removed in two portions. Together they measure 8 cm. in length. The cervix is 6 cm. long; the portio and the surrounding cuff of the vagina is $4{\cdot}2 \times 4{\cdot}2$ cm. The whole of the surface of the portio has been eaten away by a growth, slightly papillary, on the surface. In one wall there is

318. Platten . Well m' Sep 25 1918 Matrimony & Pks
Daughter

323 Mary Sullivan
P. Well 17 years Later

324 Amelia Curtis
Pl. well 23 years Later

an irregular cavity filled with pus. The body appears to be healthy, and the upper part of the cervical mucosa is healthy. 9899

Microscopic Structure.—The growth is a columnar-cell carcinoma, with abundant leucocytic infiltration.

Removed on May 11, 1905 (H. R. S.), with the galvano-cautery—cervix and body separately—from a patient aged 50. The patient was well and free from recurrence (examined) on Nov. 8, 1910.

319. A cervix uteri the surface of which measures $8\frac{1}{2} \times 8 \times 4$ cm. in depth. It forms a cauliflower growth formed of pedunculated processes and lobules. The cervical canal has been laid open and appears to be healthy. The edge of the vaginal mucous membrane has been divided at one spot close to the growth. 7954

Microscopic Structure.—The growth is a squamous carcinoma, made up of masses of epithelial cells with a small amount of stroma between them.

Removed (H. R. S.) from a patient aged 29.

320. A cervix uteri, measuring 5·8 cm. long. The portio measures $3{\cdot}6 \times 3{\cdot}4$ cm. One lip has a small erosion upon it, and is slightly thickened. On the other lip is a growth measuring $1{\cdot}8 \times 1{\cdot}8$ cm.; it is fairly smooth upon the surface, except towards the canal where it is a little lobulated. On cutting open the cervix the growth is seen extending into the lip undermining the portio, and measuring 6 mm. in thickness. The mucous membrane of the canal is slightly hypertrophied. 9101

Microscopic Structure.—The growth is a columnar-cell carcinoma, being made up of large masses of columnar cells deeply infiltrating the walls.

Removed (H. R. S.), Nov. 1902, by the galvano-cautery from a patient aged 38, who subsequently had stenosis of the canal, which caused some pain at times. The patient was free from recurrence and in good health in 1911.

321. A cervix uteri measuring $5 \times 4\frac{1}{2} \times 4\frac{1}{2}$ cm. At the os uteri is a papillary growth measuring $3 \times 2\frac{1}{2}$ cm., growing from the anterior lip. In the section it is seen to infiltrate the lip to a distance of $1\frac{1}{2}$ cm. 8911

Microscopic Structure.—It is a glandular carcinoma, being made up of numerous glands lined with a single layer of epithelium. The surface of the growth is papillary.

Removed (G. F. B.) from a woman aged 36, who had been treated for ulcer of the cervix seven years previously.

322. A uterus extensively affected with carcinoma of the cervix and of the body to within 5 mm. of the fundus, with extensive growths in the broad ligaments which have compressed the lower end of the ureters, producing dilatation of the ureters and hydronephrosis. The wall of the body of the uterus is thickened (3 to 7 mm. in thickness). 7206 A

Microscopic Structure.—The growth is a carcinoma.

323. A cervix uteri removed by high amputation for squamous carcinoma (complicating labour) four months and eleven days after delivery of a living child at term. The cervix is ulcerated at the external os, and a raised growth is seen on the posterior lip. 7628

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient, aged 38, who was delivered in the Maternity of U. C. H. on Jan. 25, 1896. There was no bleeding before labour, which was easy and lasted six hours. She lost blood every day subsequent to delivery until the operation. The cervix was removed (H. R. S.) by high amputation on June 30, 1896, the uterine vessels being tied with catgut and the vaginal mucosa stitched to the endometrium. The patient was quite well and free from recurrence eleven years later. (Obstet. Soc. Trans. vol. 46, p. 364.)

324. A cervix uteri removed by high amputation with scissors and Paquelin's cautery for squamous carcinoma complicating labour. The portion removed

measured 1¼ in. vertically, 2¾ antero-posteriorly, and 1¾ transversely. An extensive irregular growth is seen on the posterior lip of the cervix, extending to within about 3 mm. of the cut edge of the vagina. 7557

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient, aged 35, married 16 years, who had eight children, no miscarriage. She was admitted into U. C. H., being seven months pregnant, with an extensive malignant growth in the posterior lip of the cervix. Labour was induced, Jan. 9, 1896, by Hegar's dilators and Champetier de Ribes's bag. A living child (weighing 3 lb. 7 oz.) was born after 19 hours; it survived only half an hour. The cervix was removed (H. R. S.) on Jan. 28, 1896, by the high amputation, the vagina being cut with scissors, and the broad ligament and vessels tied with catgut, and the cervix severed with Paquelin's cautery. The patient recovered and was quite well eleven years later. (Obstet. Soc. Trans. vol. 46, p. 360.)

325. A cervix uteri removed by high amputation for squamous carcinoma complicating labour. The cervix measures 7 cm. in length by 5 cm. in width, and the lower part is very ragged as the result of parts breaking away during the operation. The appearance of the cervix just before operation is represented in Obstet. Soc. Trans. vol. 46, pl. ix. 7492

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient aged 33, married 10 years, who had had four children and one abortion. She was delivered by forceps in the Maternity of U. C. H. of a full-term living child through the cancerous cervix on March 25, 1893. She had been bleeding for 8 months, but especially for the week before delivery. Labour lasted 12 hours, dilatation being slow owing to the growth in the anterior lip: there was no post partum hæmorrhage. The cervix was removed (H. R. S.) by high amputation on April 8, 1893, Paquelin's cautery being used. The patient recovered well. On June 6, 1894, she became pregnant, and on March 6, 1895, Porro-Cæsarean section was performed by Dr. Spencer, the stump being treated extra-peritoneally by the "serre-nœud." The patient and the child delivered by Cæsarean section were both well in July 1904, eleven years after the high amputation of the cervix. The body of the uterus removed by Porro's operation is preserved in the series of specimens illustrating Cæsarean section.

326. A pelvis with the pelvic viscera, the uterus showing advanced cancer of the cervix, eight days after delivery. The fundus uteri is on a level with the promontory. The anterior wall of the body is 2 cm. from the posterior surface of the symphysis, the posterior wall 1½ cm. from the promontory, and the top of the fundus is 3 cm. above the pelvic brim (*i. e.* measured at right angles to the pelvic brim); the anterior lip of the cervix is on a level with the middle of the symphysis. The axis of the cervix and lower segment is inclined slightly backwards from the axis of the pelvic brim; the axis of the body is bent backwards still further. The anterior peritoneal fold is on a level with the top of the symphysis and 1 cm. below the internal os and 2·7 cm. above the anterior fornix, which is invaded with cancer. Douglas's pouch reaches down to the level of the anterior lip, and is nearly opened by the cancer of the posterior lip. The uterus measures 12 cm. long, 9 cm. broad, and 6·6 cm. antero-posteriorly. There is extensive cancer of the cervix, especially of the posterior wall: it extends into the vagina as a lobulated fold on the posterior wall for 2½ cm., and as a ragged ulcerated growth on the anterior wall for 3 cm. The canal of the cervix is open, and the ragged growth can be seen extending up the canal for 3 cm. The cavity of the body is slightly distended (1 cm.), and the walls of the uterus are 2·8 cm. thick, and in the section the mouths of large vessels are seen, some containing clots, the largest 4 mm. in diameter. In the vertical position the ovary is lying opposite the sacro-iliac synchondrosis with its axis nearly vertical, but slightly inclined backwards and outwards: its surface looks forwards and inwards and its rounded edge backwards and inwards. 7512

Microscopic Structure.—The growth is a squamous carcinoma, consisting of large masses of epithelial cells showing marked keratinisation, with a very small amount of leucocytic infiltration.

From a patient aged 40, who had had nine children and one miscarriage. She was about 6 months pregnant, and had been flooding for 7 months, for which tampons had to be

325 Wisconsin

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applied. This brought on labour (Jan. 23, 1896). The child was born naturally after 12 hours labour: the child lived for 2 days. On Jan. 31 the patient developed phlegmasia and died on Feb. 1.

327. A uterus with the upper part of the vagina and the bladder. The uterus and vagina have been laid open from behind. The wall of the body of the uterus measures 2 cm. in thickness. The anterior lip of the cervix is replaced by a ragged growth consisting of small pedunculated warty processes with enlarged extremities. The posterior lip remains, but bears a few similar growths, and there is a separate nodule growing from the posterior fornix beyond the limit of the lip. The right Fallopian tube is doubled forward on itself, so that its fimbriated end lies between the fundus uteri and the bladder. The ovary has been cut away. The broad ligament is bound down by adhesions.

Microscopic Structure.—The growth is a papilloma which has become epitheliomatous and invaded the tissue of the cervix.

328. A bladder and a uterus which has been laid open from behind. The upper part of the vagina and neck of the uterus is the seat of an ulcerated new growth. The posterior wall of the vagina has in great measure escaped. The mucous membrane of the fundus uteri appears healthy, and the wall is much thickened. There is a large mass of new growth on the left side, immediately below the Fallopian tube and in front of the ovary. 6393

Microscopic Structure.—The growth is a squamous carcinoma.

From a patient, aged 34, who was admitted under Dr. Spencer, Aug. 31st, 1888. She was married and had nine children. The first two were born at the seventh month. The last was a twin pregnancy, and terminated at the seventh month. Her health had been fairly good till the last pregnancy, at the beginning of 1888, during the whole of which she suffered from abdominal pain and a constant discharge of pus and blood from the vagina. In July, 1888, she was confined of twins at the end of the seventh month. The first child was born dead, and in an advanced stage of decomposition. The second was a footling presentation, and much traction was requisite for delivery. It was born alive and lived for some hours. The labour was long and painful, and preceded by flooding. On recovery from the confinement a slight discharge continued, which soon became bloody and offensive. She suffered from severe pain in the back and loins. On admission she was pale, cachectic, and wasted. Her temperature varied from 100° to 103°. Urine was full of pus. A hard, tender mass could be felt above the pubes; *per vaginam* the cervix was found low down, enlarged and fixed, and readily bleeding. The cavity was hollowed out. Repeated profuse hæmorrhages occurred, which often required plugging. The patient died of exhaustion on October 2nd. *Vide* Dr. Williams's *Case-book*, U. C. H., vol. i., 1888.

329. A uterus with the vagina, rectum, and part of the posterior wall of the bladder. The vagina and cervix uteri have been almost entirely destroyed by malignant ulceration. A large opening has been formed into the rectum, and a smaller one into the bladder. The upper part of the rectum is intimately adherent to the uterus and is sharply bent upon itself, and at one part, indicated by a piece of blue glass, is so narrowed that it will not admit a penholder. The body of the uterus is considerably enlarged and the walls are thickened. 4208

The patient was 52 years of age.

330. The bladder, with part of the uterus and vagina, of a woman who died from a recurrence of cancer after removal of the cervix. The vagina and uterus have been laid open from behind, and the bladder from the front. There is a large fistulous communication, measuring one inch in diameter, between the upper part of the vagina and the bladder, the fundus of which is the seat of cancerous disease. The fundus and upper part of the body are all that remains of the uterus, the rest having been removed by operation. Below the fundus uteri is an irregularly ulcerated area, especially marked laterally and anteriorly, which caused the fistulous opening, the margins of which are ulcerated. The body of the uterus has been laid open and is apparently healthy. 6239

From a patient, aged 41, under Sir John Williams in January 1886. She complained of a clear, continuous, watery discharge with a disagreeable odour, which began five months

previously; there was also a "gnawing pain in the womb." She had been losing flesh; was somewhat nervous and hysterical. Eighteen years previously she had suffered from "ulcerating womb." Menstruation had always been regular, but accompanied by severe pain in the back, abdomen, and thighs. She was married at twenty and had a child fifteen months afterwards; labour lasted forty-three hours, hæmorrhage continuing for three weeks after. On examination the cervix was high up, the size of a crown piece, the lower end flattened; the right half was cancerous, the disease extending up the cervical canal for about ¾ inch. The body of the uterus was not enlarged. The cervix was amputated above the inner orifice; the peritoneum was opened during the operation.

Microscopic Examination showed that the cancer was growing from the cervical glands. The disease recurred, and the patient died ten months after the operation. *Vide* Dr. Williams's *Case-books*, 1886; also Dr. Williams's Harveian Lectures on Cancer of the Uterus, 1886, p. 58, case 18.

331. The left half of the pelvic vicera of a woman who had had her cervix uteri removed some time before death on account of epithelioma. The specimen shows the recurrence which has occurred in the cicatrix. No part of the uterus is left except the fundus, which is attached to the vagina by cancerous tissue. The recurrence began in the peri-cervical cellular tissue, and extended into the base of the broad ligament on each side and down between the vagina and bladder to the orifice of the urethra, and between the vagina and peritoneum, about one inch posteriorly, leaving the mucous membrane of the vagina intact, and only attacking the surface of the uterine stump. 6234

From a patient under Sir John Williams, May 9th, 1885. For the past six months she had lost flesh and suffered from slight vaginal discharge and continued and profuse hæmorrhage. She was married at 19, and had five children, at 20, 21, 23, 25, and 27 years of age; labours good. Catamenia regular until a few months before admission. On admission the cervix was low down, and both it and the body were freely movable; the cervix was greatly thickened, flattened, and granular, some of the granules being hard, others soft. Supra-vaginal amputation of the cervix was performed, and the greater part of the body was also removed. The mucous membrane of the fundus, together with that of the orifice of the Fallopian tubes, was shaved off.

Microscopic Examination proved the disease to be glandular carcinoma. On August 31st, 1886, the patient, who had been lost sight of, again returned and was admitted to the hospital. For some little time previously she had had a recurrence of the bleeding and discharge. On examination the vagina was healthy up to the old wound, in the situation of which was a cavity, the walls of which were cancerous. The cavity was formed by the peri-cervical cellular tissue, the bases of the broad ligaments, the bladder and peritoneum, and the roof by the remains of the body of the uterus. While in the hospital she had several attacks of severe hæmorrhage, and died on September 20th. At the post-mortem examination the iliac glands were found to be secondarily involved, and the growth to have extended as stated in the description of the specimen. *Vide* Dr. William's *Case-books*, 1886, also Dr. William's Harveian Lectures on Cancer of the Uterus, 1886, p. 52, case 16.

332. A uterus removed by vaginal hysterectomy for carcinoma of the cervix, the body being removed after the cervix. The two parts have been stitched together. The whole of the cervix is occupied by a dendritic mass which deeply invades the wall of the cervix almost to the surface, and quite as high as the internal os. The wall has been thereby rendered so fragile that it has torn open in the removal. The body is not affected. 7724

Microscopic Structure.—The growth is a carcinoma consisting of well-defined masses of epithelial cells, with very little round-cell infiltration of the stroma. The growth is a columnar-cell carcinoma.

Removed (H. R. S.) by vaginal hysterectomy from a patient aged 55, who had had six children, no miscarriage, on Nov. 14, 1896. The patient was quite well and free from recurrence on Jan. 16, 1902.

333. A uterus removed with the cautery. The uterus measures 8 cm.; the body is of normal size. The cervix measures $4\frac{1}{2} \times 3{\cdot}7$ cm. The os is large, and on the posterior lip is a growth of the size of a shilling, slightly irregular and slightly spongy in appearance under a lens, but not ulcerated. On the anterior lip on the right side is a smaller ulcerated and roughly papillary growth of the size of a threepenny bit. 7941

Microscopic Structure.—The growth is apparently a columnar-cell carcinoma.

Removed (H. R. S.) by the galvano-cautery. The patient, aged 49, was quite well in Oct. 1899, and died suddenly of cerebral hæmorrhage on Jan. 6, 1900, the operation having been performed on Dec. 28, 1897.

334. A uterus removed by vaginal hysterectomy with the Paquelin cautery for carcinoma of the cervix. It measures 10 cm. in length, and the body, which is dilated, 7 × 5 cm. The portio is somewhat atrophied; it measures 3 × 2 cm., and projects very little into the vagina. The external os is a quadrilateral space 1·8 cm. × 7 mm.; its margins are smooth, but in the gaping os are clubbed slender processes of growth. The same are seen in the half of the cervical canal which remains—the other half being missing. Nearly the whole of the Fallopian tube has also been removed. The growth is seen to extensively infiltrate the upper cervical wall to within 3 mm. of the surface. The cavity of the body is distended to the size of a pigeon's egg and the mucosa is ulcerated, no doubt from suppuration. 8457

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of tubules and masses of epithelial cells with a copious stroma infiltrated with leucocytes. It deeply penetrates the uterine wall. Some of the tubules have a single layer of epithelium; in other parts it is several layers thick.

Removed (H. R. S.) by vaginal hysterectomy with Paquelin's cautery on Feb. 27, 1900, from a virgin aged 61. The patient died in March 1903. An entero-vesical fistula occurred some months before death, but no recurrence of the growth was found on careful post-mortem and microscopical examination.

335. A uterus and left appendages removed in two pieces by vaginal hysterectomy for carcinoma of the cervix. The ovary contains a hæmorrhagic corpus luteum. The tube has a few adhesions, but is otherwise normal. The body is slightly thickened, the mucosa slightly hypertrophied, but smooth. The cervix is greatly distended by a large ragged growth, which deeply infiltrates the wall; it measures 6 × 6 × 4 cm. 8204

Microscopic Structure.—The growth is a carcinoma consisting of masses of epithelial cells, apparently squamous, with an abundant inflamed stroma. The mucosa in the neighbourhood is cystic, the columnar epithelium being intact. The mucosa of the body is hypertrophied.

Removed (H. R. S.) March 1899 by vaginal hysterectomy in two pieces with the cautery from a patient aged 27. The patient had a vesico-vaginal fistula and recurrence in Oct. 1899.

336. A uterus measuring 7·7 cm. long; the body 5·3 × 2·2 cm. The portio is atrophied, measuring less than 2 cm. transversely × 1 cm. antero-posteriorly. The cervix is distended, especially on the left side above; it measures 4·5 cm. long, 2·6 cm. antero-posteriorly and 3·8 cm. transversely. On section the body is atrophied and not diseased. There is a growth infiltrating the wall of the cervix and somewhat ragged and ulcerated below. The mucous membrane of the posterior wall is somewhat cystic, but otherwise unaffected. 8129

Microscopic Structure.—The growth is a carcinoma made up of masses of cells, probably columnar, with alveolar arrangement. The stroma is moderate in amount, and but slightly infiltrated with small round cells.

Removed (H. R. S.) by vaginal hysterectomy in Oct. 1898 with the galvano- and Paquelin cautery from a patient aged 64. In August 1899 a small nodule was felt above the vagina, but the patient appeared well: this nodule had slightly increased in May 1900. The patient's doctor wrote that she had recurrence in November 1901.

337. A uterus removed by vaginal hysterectomy for carcinoma of cervix. The uterus measures 7 cm. long; the body, which is atrophied, 3½ cm. The mucosa of the portio is intact; the os showing somewhat spongy growth. Laid open a spongy growth is seen in both lips and rising up nearly to the internal os. The cervix at its greatest width measures 4½ × 3½ cm. The cervix was broken across during removal. 8533

Microscopic Structure.—The growth is a carcinoma, consisting of large masses of elongated cells, with racemose arrangement (columnar-cell carcinoma). There is a moderate amount

of stroma which is extensively infiltrated with small round cells. The mucosa of the body is covered with columnar epithelium, somewhat atrophied, and has a dense stroma.

Removed (H. R. S.) by vaginal hysterectomy on June 13, 1900, from a multipara aged 54. The patient died on Feb. 15, 1904, with recurrence which had involved the bowel.

338. A uterus and ovaries removed by vaginal hysterectomy for carcinoma of the cervix. The ovaries are rather small. The uterus is 7½ cm. long, the body is slightly hypertrophied, and its cavity is occupied by a myoma measuring 1·7 × 1 cm. The uterus has been laid open. The right lip of the cervix measures transversely 3 cm., and is occupied by an ulcerated growth with ragged surface and shaggy polypoid processes and a raised and overhanging edge. The line of section is 6 mm. from the surface of the growth, but at one spot comes in close contact with it. The left lip of the cervix measures 4 × 2 cm. and appears to be healthy; the edge is slightly eroded and spongy in appearance. The mucosa of the body is atrophied. The growth appears to be entirely limited to the edge of the right lip, and the canal near it appears to be healthy, containing a few minute polypi. 8074

Microscopic Structure.—The growth is a carcinoma made up, for the most part, of slender masses and tracts of cells with a small amount of stroma infiltrated with small round cells, considerable collections of which are seen in front of the advancing edge. The cells are mostly elongated and oval in shape, and are much smaller than the usual cells of a cervical carcinoma. The ovaries contain corpora fibrosa, but no growth. In one of the ovaries there are numerous thin-walled vessels with desquamated endothelium.

Removed (H. R. S.) from a patient aged 47 (six children), on July 16, 1898. During life the uterus was fixed, probably by cellulitis, which had caused two gynæcologists to refuse operation. The patient remained quite well for six years, when recurrence occurred in the pelvic glands with enormous œdema of the lower limbs. Wasting then set in and the patient died of cachexia on Dec. 16, 1906.

339. A uterus, removed by vaginal hysterectomy, 9 cm. long. The body is small (senile), the mucosa of the body also atrophied. The external os is slightly eroded at one spot, otherwise normal, except that it is open to admit the tip of the finger. The cervix is dilated into an oval cavity, which would contain a pigeon's egg. This cavity is smooth for the most part, and marked with furrows resembling those of the arbor vitæ. In three small areas it is slightly eroded and rough and shaggy. The wall of the cervix is from 6 mm. to 13 mm. thick, and on section it is slightly spongy and apparently infiltrated with growth for the greater part of its thickness. 8169

Microscopic Structure.—A section taken from the edge of the cervix shows the squamous epithelium somewhat thickened with small round-cell infiltration beneath it. The epithelium grows down and forms large masses of squamous carcinoma. A section of the wall higher up the canal shows a carcinoma with large masses of cells which are much smaller than those near the edge, and look like a different growth, the cells more resembling those of a small-cell columnar carcinoma. The section of the secondary growth from the vagina also resembles in structure the latter, but in it is a single large area of cells resembling the former.

Removed (H. R. S.) by vaginal hysterectomy with the cautery from a patient aged 51, in Jan. 1899 (one child 30 years before). A mass of soft brain-like growth was removed from the cervix during the operation. Two small nodules were removed from the anterior vaginal wall, Oct. 20, 1899, the vaginal scar remaining perfect, and there being no sign of recurrence in the pelvis. The patient had extensive recurrence in May 1901, and died in July of that year.

340. A uterus removed at 4½ months of pregnancy by vaginal hysterectomy for carcinoma of the cervix. The uterus is 14 cm. long, the body 10 cm. wide and 7·3 thick, with the placenta *in situ*. The anterior wall of the uterus is 3½ cm. thick, the posterior 2 cm. in the middle line. The cervix measures 5 cm. long, 6½ broad across the portio; antero-posteriorly 6 cm. It is the seat of a large growth, growing from the whole cervix, but affecting the anterior lip but little in the middle line. It extends up the wall for 4½ cm., and has penetrated nearly to the peritoneum in Douglas's pouch. The lower portion of the growth is very ragged; from this a large mass of growth was removed at the time of the operation.

342. Annie Restall

343. Elizabeth Baldwin. Quite well in Feb 1922 (letter from D. Wordsworth)
also living Feb 3 1936

The left cornu of the uterus broke when seized with the forceps, and the fœtus, which is a female 9 inches long, and part of the placenta escaped. 10193

Microscopic Structure.—The growth is a squamous carcinoma with extremely little stroma and abundant infiltration with small round cells.

Removed (H. R. S.) on March 15, 1906, by vaginal hysterectomy with the galvano-cautery, from a patient aged 26, about 4½ months pregnant. The patient had no pain after the operation and made an excellent recovery, but she died of recurrence in Dec. 1907.

341. A uterus removed with the galvano-cautery. There is a rough growth on one lip of the cervix, which appears to have crept up through the vaginal fornix on to the outer surface of the uterus and not up the cervical canal or into the substance of the cervix to any extent. There is a small subperitoneal fibroid of the size of a bean at about the level of the internal os. The body is unaffected. 9664

Microscopic Structure.—The growth is a squamous carcinoma.

Removed (H. R. S.) by vaginal hysterectomy with the Paquelin cautery from a woman aged 45, Oct. 1902. At the operation it was clear that the cautery was cutting through malignant growth. The patient died with recurrence 6 months later.

342. The right half of a uterus, removed by vaginal hysterectomy with the galvano-cautery. The cervix was excised with the galvano-cautery immediately before the body. The uterus measured 8·3 cm. in length—the body 5·5 cm. in breadth by 3·2 cm. in thickness. The cervix measures 4·2 cm. in length. The portio vaginalis was very slightly enlarged, measuring $2{\cdot}7 \times 2{\cdot}7$ cm. The mucosa was normal, except at the os, where very small granulations were seen, and when examined proved to be columnar-cell carcinoma. The irregular surface on the anterior lip, seen in the specimen, is rather more marked than during life, having been slightly broken by the volsella. The cut surface of the cervix shows a growth invading both lips; in the anterior lip it measures about 1 cm. in thickness by 2 cm. in length; in the posterior lip it is 1·2 cm. in thickness by 1·7 cm. in length. The growth has slightly broken through the mucosa of the anterior but not of the posterior lip. A transverse section of the left half of the cervix, taken at a height of 1·8 cm. above its lower extremity, showed that the growth is invading the anterior lip at that height to within 3 mm. of the surface and the posterior lip to within 5 mm. of the surface. The mucosa of the cervix above the growth is normal, but that of the posterior wall is distorted where a slender mucous polypus was attached. The mucosa of the body is normal. 10979

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of collections of columnar epithelium surrounding spaces. In some of the spaces the epithelium can be seen to be proliferating, till it is several layers thick. The glands and epithelium of the upper cervical canal are normal.

Removed in Nov. 1908 (H. R. S.) from a nullipara aged 34. Neither the uterus nor the portio vaginalis was appreciably enlarged. The mucosa of the portio was smooth. A red granular mass at the os, growing from the anterior lip, about 3 mm. in diameter, was brittle and bled on examination. It was removed and proved to be a columnar-cell carcinoma. The patient was quite well two years afterwards.

343. A uterus, removed by vaginal hysterectomy. It measures 10 cm.; the cervix is 7 cm. broad by 5 cm. antero-posteriorly. The whole of the cervix is occupied by a growth which reaches to within 4 cm. of the peritoneal surface of the fundus. It has been removed with the cautery; the line of section has cleared the growth, but the tissues have torn anteriorly. The mucosa of the body is slightly hypertrophied. 10103

Microscopic Structure.—The growth is a squamous carcinoma with extensive lymphocytic infiltration. A gland removed at the same time shows deposits of squamous carcinoma.

Removed in Jan. 1906 (H. R. S.) by vaginal hysterectomy by the galvano-cautery from a patient aged 42, who had had 4 children and one miscarriage. The patient was living and free from recurrence in March 1911.

344. A uterus with atrophied body, removed by vaginal hysterectomy with the cautery. The uterus measures $6\frac{1}{2}$ cm. in length. The body is $3\frac{1}{2} \times 3{\cdot}2$ cm. in breadth and 2·2 cm. in thickness; its wall and mucosa atrophied. The lower end of the cervix measures $4{\cdot}5 \times 4$ cm. There is an extensive growth in the anterior lip for $1\frac{1}{2}$ cm., and the vagina has been divided nearly 1 cm. above the growth, which has a warty surface. 9664

Microscopic Structure.—The growth is a typical carcinoma consisting of large masses of squamous cells, some of which are keratinised. The stroma is not abundant and there is a moderate amount of leucocytic infiltration.

Removed in Oct. 1904 (H. R. S.) by vaginal hysterectomy with the cautery from a patient aged 54. The menopause occurred at 46; there had been bleeding for 3 months. She had had one child 33 years previously. The patient was quite well in March 1911.

345. A uterus, removed for carcinoma adenomatodes (malignant adenoma) of the cervix by vaginal hysterectomy with the Paquelin cautery. The uterus measures $10\frac{1}{2}$ cm., the body measuring 5 cm. in length, 6 cm. in breadth, and 4 cm. in thickness. The cervix measures $5\frac{1}{2} \times 5 \times 4{\cdot}7$ cm. With the exception of a minute tag of lymph on the peritoneum the body is normal. The cervix is enormously enlarged by a growth, which involved the whole of the anterior lip and measures $4\frac{1}{2}$ cm. transversely and $3\frac{1}{2}$ cm. antero-posteriorly, and projects for 1·7 cm. beyond the level of the posterior lip. The posterior lip also is the seat of an ulcerated growth, part of which has been removed with the cautery. The surface of the growth is slightly uneven and cleft in places, and towards the canal is rough and granular. On making a section of the uterus the growth is found to infiltrate both lips, but especially the anterior, in which it extends up to the anterior fornix within $4\frac{1}{2}$ mm. of the cut vagina in the hardened section. It also infiltrates the posterior part of the anterior wall to a height of 3 cm. from the lower extremity of the anterior lip, and runs up the posterior wall where it is much less extensive, 2·7 cm. above the edge of the posterior lip. The section of the growth is somewhat spongy in places. The rest of the mucosa of the cervix and body is normal. 9338

Microscopic Structure.—The growth is a malignant adenoma, being made up of tubules and spaces, some dilated, lined everywhere with cubical or columnar epithelium, and everywhere existing in a single layer, with no tendency to proliferate. The spaces are separated by a moderate amount of fibrous stroma, which is, particularly near the advancing edge, extremely infiltrated with small round cells, and appears to be of a looser texture there.

Removed (H. R. S.) by vaginal hysterectomy with the Paquelin cautery from a widow aged 47 on July 17, 1903. The patient had bleeding and discharge on and off for 2 years, more copious for the last 12 months. A piece of growth had been removed in the country, and had been reported on by a research association as a simple adenoma. The clinical features were those of a typical malignant disease; it bled readily and broke down under the pressure of the finger. The patient was quite well on March 25, 1909. and Nov, 1925.

346. A uterus with a large cervical myoma and carcinoma of the cervix. The uterus measures $26 \times 15 \times 17$ cm. and weighed 6 lb. The body of the uterus is not altered and its mucosa is normal. The appendages are missing except part of the right tube; they were normal in appearance. The cervix is the seat of an intramural and subperitoneal myoma of irregular shape, which has been enucleated from beneath the peritoneum and in front also from the cervical wall through an incision into its anterior wall. The muscular capsule has retracted towards the region of the external os, where it exists as a roll of tissue 3 cm. thick by 11 cm. across. On this is seen the external os, cut open by an incision into its posterior wall, which is the seat of a friable carcinomatous growth extending nearly through the lip. The anterior lip is but little affected with cancer except on the right side. The external os is irregular. 11605

Microscopic Structure.—The tumour is a myoma and the growth on the cervix is a squamous carcinoma.

Removed (H. R. S.) by total abdominal hysterectomy from a patient aged 44, who complained only of headache and a little difficulty in micturition. She had had no bleeding nor

445. Mrs Fisher. Letter from her on Nov 12th 1925 saying that she is quite well.
(over 22 years after the hysterectomy).

discharge. The pelvis was occupied by the lower end of the cervical myoma, and the anterior lip of the cervix could only just be touched, being very high up and far back in the pelvis. It could not be exposed by the speculum. The lip felt a little irregular and hard, and slight bleeding followed the examination. Carcinoma was suspected. This was confirmed at the operation when the posterior lip was cut down on, and a further piece of the vagina was subsequently removed with the galvano-cautery. The patient made a good recovery, and left the hospital with the vaginal scar quite healed.

347. A uterus and appendages, removed by the extended abdominal hysterectomy for carcinoma of the cervix. There is a pyosalpinx on each side, with cystic ovaries containing blood. The right tube measures 3½ cm. across at its distended extremity. There is a small fibroid of the size of a large pea at the inner end of the isthmus of the Fallopian tube. The uterus is 10·3 cm. long; the body 4·7 cm. in thickness and 7 cm. wide. The cervix and cellular tissue measures 8½ × 6½ cm. A cuff of the vagina, measuring from 2 to 3½ cm. in length, has been removed. The cervix is enormously enlarged (antero-posteriorly on the section it is 5½ cm.). An extensive nodular and excavated growth involves the whole cervix, with an overhanging edge not involving the fornix on the section, though it distends the lateral fornices. A considerable amount of cellular tissue was removed around the uterus; and the specimen is covered with shaggy adhesions. 10458

Microscopic Structure.—The growth is a squamous carcinoma with a good deal of round-cell infiltration, which does not affect the cellular tissue or cervix or Fallopian tubes. There is some inflammatory infiltration of the stroma of the rugæ of the tube, and hypertrophy of the fibro-muscular tissue, and one tube shows glandular structures lined with a single layer of columnar epithelium (adeno-myoma of Fallopian tube). The epithelium of the cornu of the uterus shows some papillary epithelial overgrowth.

Removed (H. R. S.) by the extended abdominal hysterectomy, Feb. 1907, from a patient aged 28. The patient was quite well in Feb. 1911.

348. Half a uterus with carcinoma of the cervix. The uterus measures only 7½ cm. in length, and both the cervix and the body are smaller than normal, the body being only 1·7 cm. thick. 2½ cm. of vagina have also been removed and a large mass of cellular tissue and fat. The tube and ovary are both atrophied. The portio vaginalis is perfectly smooth and healthy, but the whole of the rest of the cervix is infiltrated with growth to within 1 mm. of the surface and extending up 4½ cm. above the external os, that is to within 2 cm. of the top of the canal of the body. 11114

Microscopic Structure.—The growth is a carcinoma, consisting of large masses of epithelial cells for the most part degenerated in the centre. The cells have in many places undergone marked keratinisation, and the growth is a squamous carcinoma.

Removed (H. R. S.) by the extended abdominal hysterectomy in June 1909 from a patient aged 57, who remained free from recurrence in April 1911.

349. A uterus and appendages with the upper part of the vagina, measuring 9½ cm. long. The peritoneum is smooth; the tubes and ovaries appear healthy. There are two cysts in the left ovary of the size of large peas and two in the right ovary, and several corpora lutea. The body of the uterus measures 5 × 4 cm., the solid part of the cervix 7 × 5·2 cm. 5 cm. of the posterior vaginal wall and 2½ cm. of the anterior wall are attached to the specimen. A cancerous growth involves the whole of the cervix; it is irregularly ulcerated round the os; it extends up in the anterior wall for 5 cm. above the lower edge. It approaches within about 2 mm. of the anterior surface, and was lacerated there during removal. The chief cellular tissue is situated on the right side, where the greater part of the growth is felt. A wedge has been cut out at this part, showing the invasion of the tissue. 10973

Microscopic Structure.—The growth is a glandular carcinoma with extensive leucocytic infiltration. One of the cysts in the ovaries is a luteal cyst. There is no growth in either ovary.

Removed (H. R. S.) on Oct. 30, 1908, by the extended abdominal operation from a patient aged 39. She had had one child, and had suffered from hæmorrhage and discharge for 5 or

6 months. The right ureter was dissected out from what appeared to be inflammatory tissue, and in dissecting off the bladder, which was adherent, a hole which would admit the finger was made in the bladder-wall between the two ureteral orifices. This was closed with a purse-string suture, and healed. The patient recovered well, but a little suppuration occurred in the lower part of the wound, due to the broken growth having accidentally touched the wound there. A layer of fat had been excised in order to try to prevent this suppuration. The abscess closed in a few days. The patient had cystitis after the operation and several attacks of vomiting, but left the home well on Dec. 16 and remained well in May 1911.

350. A uterus with carcinoma of the cervix, removed by the extended abdominal operation after Cæsarean section during labour. The uterus measures 22 × 13 × 9½ cm. On the anterior wall of the body, and extending over the fundus, is an incision 15 cm. long, through which the child was delivered (alive). There are a few corpora fibrosa in the ovaries and small cystic follicles, but the only body resembling a corpus luteum is situated at the hilum of the left ovary, and measures 7 mm. in diameter. The cervix is enormously enlarged; it measures 4½ cm. long., 7 cm. wide, 5½ cm. deep. Large masses of cellular tissue and fat are seen at its sides. The enlargement of the cervix is due to a large growth in the anterior lip, extending nearly to the peritoneal surface; it measures 5 × 3 cm. It extends on the left side slightly into the vagina, where it has been cut through. The posterior lip is healthy. 11089

Microscopic Structure.—The growth is a columnar-cell carcinoma.

Removed by Dr. Gray in April 1909 at U. C. H. from a patient aged 44, in labour. The child lived; the mother recovered, but died of recurrence in July 1910.

Carcinoma of the Body of the Uterus.

351. A uterus and appendages removed by abdominal hysterectomy, measuring 10 × 9 × 6·4 cm. The tubes are thickened, especially the right one, from interstitial salpingitis and the ostium is closed, and there appears to be a whitish growth in the wall at the closed end. The right ovary contains a cyst of the size of a marble. The left tube is patent and healthy, the left ovary sclerotic, contains one small cyst. The portio vaginalis is virginal, the cervix 2½ cm. long; canal of body 6 cm. long. The anterior wall of uterus 3½ cm., the posterior wall 3 cm. thick. From the anterior wall down to within ½ cm. of the internal os and the posterior wall to within 1½ cm. of internal os there is an extensive growth somewhat papillary on the surface and varying from 1–2 cm. in thickness; it can be seen to infiltrate the anterior wall, but there is 1½ cm. of uterine wall quite free from growth. The peritoneum is smooth.

The cyst of the right ovary is lined with columnar epithelium and in the ovarian tissue are tubules lined with columnar and apparently ciliated epithelium. It has none of the characters of carcinoma and there is no proliferation of epithelium. The left ovary contains corpora fibrosa and vessels showing hyaline degeneration. There is much lutein and no epithelial structures.

The hymen was biperforate (see No. 6). 9961

Microscopic Structure.—The growth is a glandular carcinoma, being made up of masses of glands, the epithelium of some of which is proliferating and deeply infiltrating the muscular wall. The surface of the growth is necrotic and in some of the dilated gland-spaces there are papillary growths.

Removed Aug. 5, 1905 (H. R. S.), by total abdominal hysterectomy from a virgin aged 50, who had suffered for some months from leucorrhœa, for which she had been treated by a gynæcologist. The large size of the uterus on examination by the rectum led to the diagnosis of carcinoma.

Examination per vaginam was impossible, owing to the minute size of the two perforations in the hymen.

352. A uterus removed by vaginal hysterectomy and measuring 10 × 7 × 5 cm. The whole of the wall of the body is extensively infiltrated with carcinomatous growth. The cervix also is extensively excavated and almost penetrated by a growth which is separated by a band of muscle from the corporeal growth and

3351. E. Tuckwell

3352. Groom.

353. S. Lawrence

354. H. Saunders

355. E. Barrett

356. E. Barthorpe

which extends down almost to the external os. The peritoneal surface is rendered a little uneven by this growth, which in the body extends to within 2 mm. of the surface and has greatly thinned the cervical wall, which was torn in the removal. 10205

Microscopic Structure.—The growth is a carcinoma made up of masses of columnar cells deeply infiltrating the wall, the origin of which from the uterine glands can apparently be traced in places.

Removed (H. R. S.) by vaginal hysterectomy from a patient aged 55, who had had 3 children and in whom the menopause occurred at 50. There had been metrorrhagia and discharge for 1 year. The uterus was fixed by exudation in both broad ligaments. The patient was very ill at the time of the operation, had rigors subsequently, and died of pyæmia.

353. A uterus and appendages removed by total abdominal hysterectomy, measuring $9\frac{1}{2} \times 6\frac{1}{2} \times 4{\cdot}3$ cm. The anterior lip is everted. The cervical canal is 3 cm. long, corporeal canal $4\frac{1}{2}$ cm. The anterior wall is extensively infiltrated with growth, which in its deeper parts is red on the surface from infiltration with blood. The growth is $2\frac{1}{2}$ cm. thick in the anterior, ·5 cm. in the posterior wall. The peritoneum is smooth; the ovaries and the tubes are cirrhotic. 10704

Microscopic Structure.—The growth is a carcinoma, made up of extensive masses of columnar and oval epithelial cells with small bands of fibro-muscular stroma. There is a moderate amount of leucocytic infiltration around the growth. The surface is necrotic. The ovaries are fibrotic, containing few Graafian follicles and no new growth.

Removed (H. R. S.), January 1908, by total abdominal hysterectomy from a patient aged 60, who had suffered from myxœdema and had been taking thyroid extract for 15 years. Menstruation ceased 14 years ago and she had been bleeding on and off for 5 months. She had had three children. The patient was quite well in January 1911.

354. A uterus measuring $9 \times 7\frac{1}{2} \times 4{\cdot}7$ cm. with five subperitoneal fibroids, the largest of the size of a walnut. The left ovary is converted into a multilocular cyst $7\frac{1}{2} \times 3{\cdot}7 \times 4$ cm., which contained chocolate-coloured blood-clot. The portio is virginal; the cervix 3·7 cm. long; the corporeal canal $5\frac{1}{2}$ cm. It is occupied by an extensive shaggy growth $1\frac{1}{2}$ cm. at its greatest thickness. In the posterior wall is an intramural myoma of the size of a small pea. The upper part of the cervical canal down to within 1·5 cm. of the external os is thickened, rough on the surface, and appears to contain growth continuous with the growth on the body. 10419

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of closely packed tubes lined with columnar epithelium, which invades the muscular stroma. There are numerous slender papillary processes covered with columnar epithelium, which is in places desquamating. There is but a small amount of leucocytic infiltration at the base, which is moderately even, but in places the line is interrupted by the downgrowth of the tumour.

Removed (H. R. S.) by the vagino-abdominal method, Jan. 12, 1907, from a single woman aged 44, who had had 10 years ago a coloured discharge for a year and excessive loss at the periods. The patient was quite well March 25, 1909.

355. A uterus removed by total abdominal hysterectomy, measuring $8\frac{1}{2} \times 6\frac{1}{2} \times 5$ cm. The os is virginal. Cervical canal $2\frac{1}{2}$ cm. long. The inner third of the cervical canal, 5 mm. in thickness, is somewhat opaque. Growing from nearly the whole of the body of the uterus is a white growth with an irregular base and a lobulated surface infiltrating the muscle, to within 4 mm. of the surface at one part, as seen in the walls of the excised cavity. There is a considerable amount of blood between the lobules of the growth. The peritoneum is smooth. 10727

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of large masses of columnar cells due to proliferation of the gland-epithelium. In some places the single layer of epithelium is retained.

Removed (H. R. S.), February 1908, by abdominal hysterectomy from a patient aged 53, who remained free from recurrence in May 1911.

356. A uterus removed by abdominal hysterectomy, measuring $10\frac{1}{2} \times 6 \times 5\frac{1}{2}$ cm. The portio small, slightly eroded; the cervical canal 3 cm. long with some

papillary projections at its upper part. The anterior and posterior walls of the body are occupied by a whitish growth, papillary on the surface, which has invaded the muscular wall extensively and irregularly. The papillary surface is well seen in the anterior wall of the left half of the specimen. At one spot the growth reaches to within 6 mm. of the surface, just above the internal os, where a secondary growth is seen in the posterior wall. The peritoneum is slightly covered with lymph. On the anterior wall of the left half is a little superficial fibroid thickening beneath the peritoneum, but no distinct fibroid is present. 9531

Microscopic Structure.—The growth is a carcinoma made up of epithelial cells with round and oval nuclei occurring in small masses with intervening stroma. There is leucocytic infiltration in places. No tubules nor long cell-columns are seen. In places the surface of the growth is covered with papillary processes to a considerable height and having an even and somewhat œdematous line based upon the cancerous growth and infiltrated to some extent with leucocytes. The papillomata are covered with columnar epithelium.

Removed on March 22, 1904 (H. R. S.), by abdominal hysterectomy from a nullipara aged 50, a widow for 8 years. On May 17, 1906, she was admitted to a provincial hospital in a state of great debility and anæmia, and in October she had what the doctor regarded as pernicious anæmia without local growth and a tumour in the left flank thought to be a kidney or possibly a mass of lumbar glands.

357. A uterus removed oy vaginal hysterectomy with the galvano-cautery, measuring $9 \times 6\frac{1}{2} \times 4\frac{1}{2}$ cm. A piece of the anterior vaginal wall has also been removed. The external os is thin and, like the canal, has been dilated by a piece of growth protruding from the body. The cervix is 3·8 cm. long; the cervical canal contains no growth. The body is filled with a growth $4\frac{1}{2} \times 3\frac{1}{2}$ cm., growing from the whole surface. It infiltrates the anterior wall to within 3 mm. of the surface. The peritoneum is thickened and partly covered with lymph. The left tube only has been removed. 10109

Microscopic Structure.—The growth is a glandular carcinoma consisting of large masses of columnar and oval epithelial cells, and in a few places the change can be seen to be taking place by proliferation of the columnar epithelium of the glands. The surface of the growth is papillary, the epithelium of the papillæ is proliferating, in places, into thick masses of epithelial cells.

Removed (H. R. S.), Jan. 16, 1906, by vaginal hysterectomy with the galvano-cautery from a patient aged 54, who had one child 32 years before; no abortion. Widow 18 years. Complained of discharge for one year, a little coloured for 3 months, at times, not always; severe flooding twice, 3 months and 6 weeks ago. Menstruation commenced at 12 years; always regular; the patient always lost a great deal and had much pain before the period. Menopause 5 years ago. Patient was quite well in May 1911.

358. A uterus and right appendages removed by abdominal hysterectomy, measuring $8{\cdot}8 \times 5{\cdot}5 \times 4{\cdot}5$ cm. The lower part of the cervix is healthy, the upper part down to within 1 cm. of the external os is occupied by an extension of the growth in the body. The whole of the body is distended with growth $2\frac{1}{2}$ cm. in thickness in section. The growth is somewhat granular and not quite so firm or opaque or distinctly marked off from the muscular wall as is the growth in the cervix. The peritoneum is smooth; the tube is healthy; the ovary is atrophied ($3 \times 1\frac{1}{2} \times$ ·6 cm.) and contains a number of corpora fibrosa. The other appendages were removed, but only part of the tube remains in the specimen. 10498

Microscopic Structure.—The surface of the growth consists of papillary processes covered with columnar epithelium desquamating in places. Beneath this the structure is carcinomatous, consisting of epithelial cells invading the muscular stroma, the cells of which are swollen and the tissues of which are vascular and œdematous. The masses of epithelial cells are seen in places to bear a close resemblance to the syncytium of chorionepithelioma, forming vacuolated masses of protoplasm with darkly staining nuclei lying amongst blood-clot and with small round and irregular cells. The vacuoles seem to have resulted from fragmentation and ballooning of the nucleus. The cervical growth is papillary, covered with columnar epithelium, which towards the surface is proliferated, the cells being swollen and hazy and several layers thick; the base-line of the growth is even and vascular, and with but a small amount of leucocytic infiltration. There is no doubt, judging from the specimen, that the cervical growth also is malignant. The ovarian tissue is dense, free from follicles and new growth; some hyaline corpora fibrosa with numerous vessels with hyaline walls are present.

357 Evans

358 Manning

359. A. Priestley

360. E. Judds

361. R. Uff

Removed March 1907 (H. R. S.), by total abdominal hysterectomy, from a patient aged 56, in whom the menopause had occurred 5 years previously. The patient was enormously stout and suffered from bronchitis. The wound healed by first intention, but was coughed open about the 10th day and was resutured. Union again occurred and the patient recovered and was quite well in March 1908. The patient died in March 1911, apparently with recurrence.

359. A uterus removed by total vaginal hysterectomy with the galvano-cautery, measuring $8 \times 4\frac{1}{2} \times 3\frac{1}{2}$ cm. Cervix virginal; canal 2·8 cm., somewhat papillary above. The whole of the body is extensively infiltrated with cancer down to the internal os. The anterior wall is nearly penetrated by the growth to within 1 mm. of the surface. The fundus of the uterus has been torn through in removal and in the cavity of the body is a pedunculated growth in which small cysts are visible to the naked eye The peritoneum is smooth. The tubes and ovaries were also removed at the same time. The tubes show no marked change. 9581

Microscopic Structure.—The growth is a glandular carcinoma. Towards the surface are cysts lined with columnar epithelium with numerous papillary ingrowths. The epithelium has in places undergone a marked change, being swollen and more cuboidal and staining less darkly than the other parts, with very little intervening stroma. The deeper parts of the wall are invaded with a malignant growth in which the same structure, including the lumen, is still apparent, nearly everywhere, though in a few places the columns appear to be solid. It invades the wall almost to the peritoneum. The ovary contains a degenerated corpus luteum, and at one part are seen four microscopic cysts lined with columnar epithelium, two of which intercommunicate and are apparently about to break down the partition between them and the other cysts. There is no malignant growth in the ovary.

Removed (H. R. S.) May 1904, by vaginal hysterectomy, from a nullipara aged 49, who had been bleeding on and off for 9 months. Menopause occurred at 44. The patient was in good health in May 1911.

360. A uterus and appendages measuring $9\frac{1}{2} \times 6 \times 5$ cm. The peritoneum is quite smooth; the tubes and ovaries normal. The portio is virginal; cervical canal healthy, $4\frac{1}{2}$ cm. long. The whole of the anterior wall of the body, the fundus, and the posterior wall to within $1\frac{1}{2}$ cm. of the internal os is invaded by a new growth which deeply invades the anterior wall, reaching to within 1 mm. of the peritoneum at one spot. One half of the uterus shows the surface to be somewhat papillary. The growth is degenerated, dark green in colour in places towards the surface. 9809

Microscopic Structure.—The growth is a carcinoma, being made up of narrow columns of epithelial cells with well-marked stroma. Extensive areas of the growth have undergone a change which at first sight gives the impression of a small round-cell sarcoma, but this is found to be due to necrosis of the growth with fragmentation of the nuclei.

Removed March 1905 (H. R. S.) by abdominal hysterectomy, after separating the closed cervix by the galvano-cautery per vaginam, from a single womam aged only 29 years, who had suffered from hæmorrhage and discharge and attacks of severe abdominal pain for 12 months. A few weeks before the operation she had been in another hospital, where the obstetric physician had treated her for fibroid with endometritis and had curetted her without any relief of symptoms. In March 1910 the patient was quite well.

361. A uterus removed by vaginal hysterectomy with the galvano-cautery and measuring $8\frac{1}{2} \times 5 \times 3{\cdot}1$ cm. The cervix is healthy; the os, a transverse slit 3 cm. in diameter; cervical canal $2\frac{1}{2}$ cm.; mucosa slightly hypertrophied and cystic above. The whole of the body is filled with a solid growth, lobulated below and growing from the upper two-thirds of the cavity; it infiltrates the uterine wall to within 1 mm. of the surface, and a conical piece of growth covered with blood distends the left horn, from which a flap has been removed; just below this flap on the posterior wall is a subperitoneal fibro-myoma 1 cm. in diameter. 10160

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of gland-spaces lined with columnar epithelium which penetrate deeply nearly to the peritoneum, and the epithelium of which in the deeper gland-patches is proliferated, forming solid masses of epithelial cells of considerable size, the epithelium, probably from imbibition, taking on the appearance of squamous epithelium.

Removed (H. R. S.) with the galvano-cautery per vaginam from a single woman aged 58, who had suffered from flooding repeatedly for about 8 months. Menstruation, always regular, had ceased 5 years previously. The bladder was injured during the operation and was sutured. The patient died on the third day of peritonitis.

362. Half a uterus removed by total abdominal hysterectomy. The uterus measured $14\frac{1}{2} \times 11\frac{1}{2} \times 7\frac{1}{2}$ cm. It weighed $14\frac{1}{2}$ oz. in the fresh state. There is a subperitoneal fibroid of the size of a marble at the fundus, and an interstitial fibroid as big as a pea just above the internal os. The portio is normal, the cervical canal 5 cm. long and distended by blood-stained mucus. The body of the uterus is distended by a soft brittle growth of the size of an orange, which has infiltrated the muscular wall to within 3 mm. of the peritoneum at one spot. The substance of the growth has been broken into by the curette. 7988

Microscopic Structure.—The growth is a carcinoma consisting of closely-set narrow columns of epithelial cells separated by strands of connective tissue in which fine capillaries can be made out. Bands of muscular tissue also separate the columns where the growth is extending into the muscular wall. Most of the columns appear to be solid, but in some a lumen is apparent. There is extensive infiltration of small round cells both in the connective tissue stroma and in the muscular walls in advance of the growth.

Removed (H. R. S.) by abdominal hysterectomy from a patient only 36 years of age, who was admitted to U. C. H. on Oct. 15, 1896, complaining of pain in the back and abdomen, left leg and hip, and of discharge slightly coloured red, and of bearing down. The symptoms had been present for 10 months. Menstruation had been regular. On Oct. 27 the uterus was found to be enlarged and hard as if it contained a fibroid, with a subperitoneal nodule on the top. The sound passed 4 inches. The uterus was curetted, and the scrapings under the microscope did not suggest malignant disease. On March 25 the uterus was found to be three times its normal size; on Feb. 2, 1898, the patient was re-admitted for a copious watery discharge of several months' duration, loss of flesh, and pain in the back. The uterus was of the size of the organ at the third month of pregnancy: the sound passed 5 inches. With the curette a large piece of soft brittle growth was removed, which was evidently malignant. The uterus was removed on Feb. 8, 1898, by the abdomen, a gauze drain being passed from the peritoneum into the vagina. The patient recovered and was admitted again on Oct. 14, 1898, suffering from intestinal obstruction, which was treated by Mr. Raymond Johnson by opening the bowel. She recovered and still remained in good health, but with a fæcal fistula, in June 1911 (over fourteen years after the operation).

363. Half a uterus, measuring $9 \times 5 \times 4\frac{1}{2}$ cm. The anterior wall is occupied by a fibro-myoma $2\frac{1}{2} \times 1\frac{1}{2}$ cm., which bulges forwards the anterior wall and backwards the mucous membrane, and there is a minute fibroid in the posterior wall opposite to this. The portio is virginal, the cervical canal $3\frac{1}{2}$ cm., and normal. The body is distended by a soft growth which originates in the posterior wall opposite the bulging mucosa, which itself is somewhat thickened. It looks as if the irritation produced by the pressure of the fibroid had set up the growth. The mucosa of the upper part of the body is quite smooth and atrophied. The appendages are normal. The ovary is rather small. 8107

Microscopic Structure.—The growth is a glandular carcinoma, being made up of close-set glands deeply infiltrating the muscle. The cells have the characteristic swollen and hazy appearance of carcinoma epithelium. In some places the stroma is very slight, in others it is well marked. The epithelium shows some tendency to proliferate, but no extensive masses are found, a lumen being almost always visible. There is leucocytic infiltration of the stroma.

Removed on Oct. 18, 1898 (H. R. S.), by vagino-abdominal hysterectomy from a patient aged 53, who had ceased menstruating at 48, and remained well up to July 1895, when a vaginal discharge began. Pain occurred in July 1898. Mother and a paternal aunt had died of "tumour." The patient died on the third day after the operation.

364 (*bis*). A uterus removed by vagino-abdominal hysterectomy, containing a mass of carcinoma the greater part of which has undergone caseation. It weighed 1 lb. $1\frac{1}{2}$ oz., and measured $13{\cdot}3 \times 10 \times 9$ cm. The anterior wall is unaffected, and measures 5 mm. in thickness. The portio is virginal, the cervical canal 3 cm. long, and its posterior wall is slightly invaded by the growth. The great bulk of the growth has been converted into a yellow caseated mass, quite smooth on the surface and moulded to the smooth linear endometrium of the anterior wall. The Fallopian tube is senile; the ovaries are small and contain a few corpora fibrosa. The growth extends almost to the peritoneum at the fundus, but the peritoneum there is free from adhesion, though whiter than the surrounding membrane and somewhat irregularly depressed. 7693

362. Digby

363. G. Fielder

364 R. L. Lond.

366. James

366 Loveday

Microscopic Structure.—The caseated material stains badly, showing only the nuclei faintly. The deeper part of the growth is a carcinoma consisting of closely set columns and masses of epithelial cells with oval nuclei.

Removed on Nov. 9, 1896 (H. R. S.), from a patient aged 55, who was admitted to U. C. H. on Oct. 28, 1896, four years after the menopause, complaining of leucorrhœa and weakness for ten months, metrorrhagia for three months, and pain in the left groin. The patient recovered well, left the hospital on Dec. 19, and remained in good health till the 19th January, when she died, after seven days illness, of acute gastritis, caused by a heavy and indigestible meal, there being no sign of obstruction, and the bowels being opened till two days before death. (For full account see Proc. Roy. Soc. Med., Obstet. and Gyn. Sect. vol. i. p. 119.)

365. A uterus measuring $10\frac{1}{2} \times 6 \times 5\frac{1}{2}$ cm. The cervix is healthy; the cervical canal $3\frac{1}{2}$ cm. long: there is slight cystic change and a small polypus in the upper part of the mucosa. The anterior wall is free from growth and smooth, and not more than 4 mm. thick. The whole of the fundus and posterior wall is occupied by a shaggy fibrous growth which infiltrates the wall, leaving, however, a band of healthy tissue about 5 mm. thick. There are adhesions over the posterior wall, and the uterine tissue in the left half has been cut close in the removal, probably owing to adhesions. 9002

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of glands lined with columnar epithelium and masses of epithelial cells deeply infiltrating the muscular wall.

Removed (H. R. S.) on June 21, 1902, by vaginal hysterectomy, from a married woman aged 55, who had had 6 children and four miscarriages. The patient died in Feb. 1907.

366. A uterus, removed post-mortem, measuring $11 \times 8 \times 4$ cm. The cervix has been lacerated. The cervical canal $3\frac{1}{2}$ cm. long, the arbor vitæ well marked. The posterior wall of the body is covered with an uneven surface slightly pitted, and at the upper part a somewhat granular surface which is at one part slightly ulcerated. The anterior wall is the seat of an extensive growth 1 cm. thick, which infiltrates the wall to within 5 mm. of the peritoneum. The growth has a slightly papillary or clubbed surface on the left side of the section; on the right side of the section it is more solid, and from it depends an elongated ragged growth. The peritoneum is covered with adhesions posteriorly; there are two small fibro-myomata at the back of the left cervix. 7766

Microscopic Structure.—The growth is a columnar-cell carcinoma.

From a patient, aged 62, who had had a foul discharge for 4 years; she had been married 27 years and had had four children and one miscarriage.

367. The uterus and bladder from a woman who died of cancer. The uterus measures $9 \times 7 \times 5$ cm. The bladder is healthy. The entire inner surface of the body of the uterus is occupied by a cancerous growth, which has also invaded both lips of the cervix almost to the external os, where it appears as a finely granulated surface. At the anterior part between the uterus and the bladder a piece of small intestine is adherent to the former, and its lumen communicates freely with the interior of the uterus by an opening through which the finger could pass. The ovaries and tubes are senile and contain no growth. The peritoneum is smooth and there are no adhesions. 5573

Microscopic Structure.—The growth is a carcinoma.

M. R., aged 53, had had symptoms of cancer for some time, and died in University College Hospital in 1881. It is probable that the piece of gut became adherent to the uterus about five weeks before death, during an attack of peritonitis. During quite the latter part of her life she passed fæces through the vagina, although from its position the fistula could not be detected.

368. A uterus measuring $8 \times 5 \times 3\frac{1}{2}$ cm. The cervix and body are separate, the organs having been torn during removal. The tubes and ovaries were atrophied; the ovary measures $2{\cdot}5 \times 1{\cdot}5$ cm. $\times 8$ mm.; the ovaries were fibrotic and contain no growth. The whole body is filled with growth, which at one place penetrates

to the peritoneum, which at two spots has a patch of lymph upon it. The cervix is 3 cm. long; portio virginal; there is no new growth in it, but the upper part of the mucosa is papillary. 9186

Microscopic Structure.—The growth is a columnar-cell carcinoma, being made up of gland-tubes with papillary ingrowths covered with columnar epithelium, which in many parts has the characteristic hazy swollen appearance of uterine glandular carcinoma. There is very little leucocytic infiltration. The nuclei of the carcinoma cells are somewhat rounder and smaller than is usual in cancer. The ovarian tissue is dense, there is no new growth; numerous corpora fibrosa are present and numerous vessels showing hyaline degeneration. One of the ovaries shows tubular structures lined with a single layer of cubical epithelium. There is a good deal of leucocytic infiltration in the neighbourhood of these tubes.

Removed Feb. 1903 (H. R. S.), by abdominal hysterectomy, from a patient, aged 57. The patient was curious in manner before and became demented after the operation. She recovered from the operation after the evacuation of an abdominal abscess, and subsequently became sane and died with recurrence 2 years and 3 months after the operation.

369. A uterus and appendages measuring $10 \times 6\frac{1}{2} \times 5\frac{1}{2}$ cm. The peritoneum has a few minute tags of lymph upon it. The left tube is closed and there were adhesions between the ovary and the right tube. The ovaries are somewhat shrunken and contain a few corpora fibrosa but no growth. The portio has been cauterised, but is otherwise healthy. The cervical canal is healthy for nearly 2 cm. on the posterior wall and 1 cm. on the anterior wall. A yellowish-white growth extends on the posterior wall to within 1 cm. of the fundus and to within $2\frac{1}{2}$ cm. of the fundus on the anterior wall. It deeply infiltrates the anterior wall to within 5 mm. of the surface. The largest part of the growth is in the body, and it most deeply infiltrates the lower segment just above the reflection of the peritoneum. 10620

Microscopic Structure.—The growth is a glandular carcinoma with a single layer of epithelium. In some places the epithelium shows a tendency to proliferate, and many papillary projections are present. The epithelium has the swollen hazy appearance of the epithelium of glandular carcinoma. The stroma is scanty with slight leucocytic infiltration.

Removed in Sept. 1907 (G. F. B.) from a patient aged 49. The patient was quite well in May 1911.

370. A uterus, measuring $12 \times 11 \times 8$ cm., with the broad ligaments, from which has been removed a portion of a multilocular cyst, on the right side, which measured $20 \times 10 \times 6$ cm. A similar tumour, 9 cm. in diameter, has been removed from the left side. These cysts were covered with adhesions and contained no solid growth; they had mucoid contents. The surface of the uterus is also covered with adhesions, and is rendered nodular by the presence of several fibro-myomata, both intramural and subperitoneal, of which sections are seen. There is, further, a finer irregularity of the surface due to new growth in the substance of the uterus. It has infiltrated the right Fallopian tube 4 cm. from its origin, and both the round and the broad ligaments. On the section of the uterus two myomata are seen, encapsuled and of typical appearance, one in each wall of the left half of the uterus. The cervical canal is 4 cm., the corporeal is 6 cm. long. In the right half is seen a small submucous myoma. The mucosa is otherwise unaffected. The whole of the substance of the uterus, the anterior wall of which is 5 cm., the posterior 4 cm., in thickness, is converted into a softish homogeneous tissue with faint evidences of striation in the lower part and numerous small orifices of vessels. In the posterior wall this growth extends to the internal os: in the anterior wall it extends to within $1\frac{1}{2}$ cm. of the external os. It forms a projection just above the bladder, and has broken through the peritoneum at this place. The whole of the section of the body is affected, except the fibro-myomata. 6869

Microscopic Structure.—The growth is made up of masses of epithelial cells with a loose stroma, and presents generally the character of a carcinoma, but the macerated condition of the specimen renders microscopic examination unsatisfactory.

371. A uterus removed by vaginal hysterectomy by the galvano-cautery. The uterus is of normal size ($7\frac{1}{2}$ cm. long). There is a well-marked papillary erosion

168. Westwood.

372. E. Radwell

375. K. Nelson

on the portio, which is not enlarged, covering the whole of one lip. Just above the internal os in the lower part of the body is seen a papillary growth, occupying an area about 1 cm. in diameter, with slight ulceration above it. The rest of the mucosa of body and cervix is normal. Two small fibroids are seen on the wall of the body. 8331

Microscopic Structure.—The growth on the surface is a glandular erosion. The growth in the lower part of the body is a columnar-cell carcinoma.

Removed in Oct. 1899 (H. R. S.), by vaginal hysterectomy with the galvano-cautery, from a patient aged 40. The patient was quite well on June 6, 1901.

372. A uterus removed by vaginal hysterectomy for carcinoma of the body. The uterus measures $9\frac{1}{2} \times 6\frac{1}{2} \times 4{\cdot}8$ cm. Cervix normal, 4 cm. long, atrophied. It was separated from the body in removal. The whole body is infiltrated by a malignant growth, which penetrates practically to the peritoneum. The tubes and ovaries are wanting. 10797

Microscopic Structure.—The growth is a columnar-cell carcinoma consisting of tubules and cavities lined with columnar epithelium, some of which is proliferated and several layers thick. There are necrotic patches of tissue infiltrated with small cells. The growth has penetrated to within a short distance of the peritoneum.

Removed April 1908 (H. R. S.) by vaginal hysterectomy from a patient aged 60. The patient died from recurrence in Feb. 1910.

373. A uterus and appendages removed by abdominal hysterectomy. The uterus measures $11\frac{1}{2}$ cm. long, the body $5\frac{1}{2}$ transversely, the cervix 5 transversely. The body measures 4·7 antero-posteriorly, the cervix 4. On section extensive carcinoma of the cervix is seen extending in the anterior wall from 2 cm. above the external os to within $2\frac{1}{2}$ cm. of the fundus, and in the posterior wall from $2\frac{1}{2}$ cm. above the external os upwards for 4 cm. The uterine wall is hypertrophied, and there is a layer of 6 mm. beyond the growth. The left ovary has a few cysts, but no growth, the right ovary appears normal. The tubes are normal. This is probably a carcinoma of the body which has grown downwards. 10747

Microscopic Structure.—The growth is a columnar-cell carcinoma, being made up of slender processes of stroma covered with columnar epithelium, and cystic spaces with intracystic buds. The ovary contains corpora fibrosa and a cystic corpus luteum, but no growth.

Removed Feb. 1908 (G. F. B.) from a patient aged 39. There was no sign of recurrence in July 1910.

374. A uterus and left appendages which are slender and contain no growth, with carcinoma of the body, measuring $9 \times 6 \times 4{\cdot}8$ cm. The uterus is markedly lop-sided, evidently owing to growth in the right side of the corpus which raised the origin of the right tube to a height of 2 cm. above that of the left. The portio is normal; the cervical canal 3 cm. long; the mucosa healthy. The section shows white growth, most extensive on the anterior wall of the whole of the body and up to the fundus; the growth extends to within 9 mm. of the surface. A second sagittal section of the right half shows the cornu to be filled with growth, which forms a circular mass 3 cm. in diameter extending to within 3 mm. of the peritoneum. A wedge has been cut out of the right cornu near the tube at a spot where the peritoneum appeared pale, and shows a tongue of the growth which has penetrated to within half a millimetre of the peritoneum. 10994

Microscopic Structure.—The growth is a degenerated columnar-cell carcinoma.

Removed Nov. 1908 (G. F. B.) from a patient aged 53. The patient was well in Feb. 1911.

375. A uterus and left unilocular ovarian cyst, $6 \times 5\frac{1}{2} \times 4\frac{1}{2}$ cm. Near the outer end of the Fallopian tube, which is normal, is a small broad ligament cyst. The uterus measures $7{\cdot}5 \times 5 \times 2{\cdot}8$ cm.; its peritoneum is smooth and its left cornu rises much higher than the right. The prominence of the left cornu is well seen from the back. The portio is senile, virginal; the external os free from erosion. The cervical canal, $2\frac{1}{2}$ cm. long, is normal, except that it is blood-stained. The

whole body is occupied by a white blood-stained growth, which arises from the anterior and lateral walls as far as the internal os, the fundus only being exempt from growth. 11012

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of large masses of epithelial cells with a moderate amount of stroma infiltrated with leucocytes. In many places tubular processes are seen lined with a single layer of swollen epithelium, and all stages are seen between this appearance and large epithelial masses.

Removed in Dec. 1908 (H. R. S.) from a virgin aged 58, who complained of slight blood-stained discharge for a few months. The ovarian cyst was felt in Douglas's pouch, and the sound was passed with difficulty, owing to the narrow vagina, for 3 inches. This increased length of the uterus, combined with blood-stained discharge, led to the diagnosis of carcinoma of the body, which was confirmed by finding the asymmetrical swelling of the cornu on making the abdominal section. The patient was quite well in May 1911.

376. A uterus with cancer of the body and cervix. The body is occupied by a shaggy growth which has penetrated to the peritoneum near the fundus. There is a valve-like slit in this situation communicating with an ulcerated surface on the front and right side of the fundus; it is probably a perforation by the curette. Surrounding this is lymph forming the wall of an abcess-cavity. The growth extends all down the canal of the uterus to the external os, where, however, it is much less extensive. The section of the wall of the body of the uterus has the appearance of an adeno-myoma, the growth invading the wall everywhere to within 2 mm. of the peritoneum. There is a small ulcer low down on the right side of the vagina. Large thrombosed veins are seen outside the cervical wall. 8718

Microscopic Structure.—The growth is a columnar-cell carcinoma, consisting of large spaces filled with papillary growth.

From a patient who presented the signs of an early growth on the cervix. The uterus was curetted and cauterised and the growth found to be much more extensive than supposed. A growth was removed from the lower part of the vagina and the area cauterised. The patient died from septic peritonitis seven days after the operation, the intraperitoneal abscess having burst into the peritoneal cavity. The uterus had apparently been perforated by the curette.

377. A uterus with a fibro-myoma and carcinoma of the body, measuring $12 \times 11{\cdot}5 \times 7{\cdot}5$ cm., and weighing $14\frac{3}{4}$ oz. There is a small fibro-myoma in the anterior wall of the size of a dove's egg. The body of the uterus is occupied by a cancerous growth 3 cm. thick in each wall; the growth has nearly perforated the anterior wall of the lower segment. There is a large yellowish-white growth in the left cornu, from which a wedge has been cut. The growth penetrates to the peritoneum, which is retracted and uneven as if by shrinkage of the growth. Below the growth is separated from the muscle by a sinuous outline, and the cut surface is of a yellowish colour permeated by white irregular patches and streaks. 11104

Microscopic Structure.—The growth in the left cornu is a carcinoma consisting of tubules lined with a single layer of columnar epithelium, many of which are distended with mucus. The growth in the cavity is of a similar nature. The growth in places resembles an "adenoma malignum."

Removed May 1909 (H. R. S.), by abdominal hysterectomy; from a patient aged 55. During the removal, owing to the deep penetration of the growth, the cervix partly broke away from the body. Recurrence occurred round the lower end of the right ureter and in the bladder, causing very severe pain. The lower end of the ureter and the right half of the bladder were excised and the bladder closed by suture (H. R. S.). The right kidney was subsequently removed. Recurrence again occurred in the pelvis and intestine, and the patient died suddenly on July 7, 1911.

378. A uterus, removed by abdominal hysterectomy, showing carcinoma of the body. The ovaries and tubes are rather small, the left $2 \times 1{\cdot}5$ cm. $\times 7$ mm., the right about the same size, covered by adhesions. The uterus measures $8 \times 7 \times 4$ cm., and has what looks like a puckered scar on the anterior surface of the body and a deep sulcus on the fundus. The peritoneum is smooth but congested,

375. K. Nelson

377. M. Welch

378. M. C. Read

379. E. Churches . quite well Feb 16 1913 (Letter from patient).
The patient died about 6 months ago (Letter from Dr Bunds
questioning Dated July 23, 1918).

380. A. Tweed

381. Davies
The patient was quite well in June 1918. & in June 1923

and shows at one spot minute white pin-point growths. There is a fibroid of the size of a filbert growing from the side of the uterus into the broad ligament. The cervix is healthy, its canal 2 cm. in length. The whole of the body of the uterus up to the peritoneum is invaded by a whitish growth from 6 mm. to 1 cm. in thickness; it surrounds a cavity with a somewhat irregular but smooth lining, which contained blood-clot. The growth is slightly invading the cervical wall on the right side; it has not quite reached the intraligamentous fibroid. 11141

Microscopic Structure.—The growth is a columnar-cell carcinoma, the glandular arrangement being well marked.

Removed July 1909 (H. R. S.) from a patient aged 55.

379. A uterus removed by vaginal hysterectomy. The uterus measures $11\frac{1}{2} \times 7 \times 9$ cm. The cervix is somewhat atrophied and measures 5 cm. in length. On section two fibroids are seen, one in each wall, the larger measuring $5{\cdot}7 \times 5$ cm., the smaller $3 \times 1\frac{1}{2}$ cm. The mucosa of both walls between these two growths is the seat of carcinomatous growth extending from the external os to within 1 cm. of the fundus. It is thickest opposite the smaller growth, where it is 1·3 cm. in thickness, but has slightly invaded the surface of the larger growth. The mucosa of the cervical canal and the peritoneum are normal. 11132

Microscopic Structure.—The growth is a carcinoma, made up of tubular processes with, for the most part, a single layer of hyaline epithelium which is proliferated in places. It is slightly invading the fibro-myoma, which has undergone hyaline degeneration. The adjacent mucosa is somewhat hypertrophied, and at one spot the cancer has lifted up the hypertrophied mucosa.

Removed June 1909 (H. R. S.) by vaginal hysterectomy. Patient single, aged 57, weighed 16 st. 1 lb.; menopause had occurred at 48. The patient noticed bleeding and discharge for 4 months and abdominal pain. She recovered and was well in July 1911.

380. A uterus with carcinoma of the body, showing marked asymmetry due to the greater part of the growth occupying the right cornu. The right posterior quarter has been removed. It measures $12 \times 5 \times 7$ cm., and the right cornu rises 3 cm. above the left. The whole of the body is affected by a white growth down to the internal os, a small portion projecting even into the upper cervical canal. The growth in the left wall of the cornu is over 2 cm. thick, that on the right wall slightly thinner. The growth is blood-stained in parts. The portio is healthy. The cervical canal is only 2·2 cm. long. The peritoneum is smooth. One ovary also removed measured $5 \times 3\frac{1}{2} \times 3$ cm., and contained several cysts with opaque mucous contents. The tube is normal. 11273

Microscopic Structure.—The growth is a columnar-cell carcinoma of the tubular type.

Removed Dec. 1909 (H. R. S.) from a woman aged 37, who remained quite well in May 1911.

381. A uterus and its appendages. The uterus measures $9 \times 6 \times 4{\cdot}6$ cm., the wall being in one place 2·4 cm. thick. The cervical canal is 3 cm. long, the body-canal 4·5 cm. A few mucous cysts are seen in the cut section of the cervix, but the mucosa of the uterus appears to be quite healthy, except that of the lower 2 cm. of the body, which is congested and slightly excavated on the posterior wall. A quadrilateral piece has been excised from the left half of the uterus and a transverse section of this excised portion inserted to show the excavation. The tubes are thickened and the mucosa appears to be hypertrophied; a section has been made of the tubes. The left ovary contains a cyst 2·5 cm. in diameter, and the right ovary contains three hæmorrhagic cysts. There is a small fibroid, 3 mm. in diameter, beneath the peritoneum on the anterior surface of the body. 10645

From a patient aged 50, who had been known to have a large uterus for many years. Menstruation ceased 6 months before operation; and then a continual hæmorrhagic discharge with pain and pelvic discomfort persisted for 2 months. After dilating the uterus a week before the hysterectomy, only two minute portions about 3 mm. in diameter could be removed by the curette. One of these two portions from the upper part of the body showed uterine glands practically unchanged. The other from the lower portion of the

body showed an immense overgrowth of glands with papillary projections and very little interglandular substance; the epithelium of these glands was swollen and proliferated, and stained differently from the glands in the upper part of the body. It was diagnosed as carcinoma of the body, and the uterus and appendages were removed (H. R. S.) on October 22, 1907, by abdominal hysterectomy. The patient recovered and was quite well in March 1911. A section of the wall at the lower excavated portion of the body shows sparse uterine glands, some of which are normal, others dilated, embedded in dense intraglandular tissue infiltrated with blood and covered with a single layer of low cubical epithelium. There is no sign of epithelial proliferation and no infiltration. The case appears to be one of early columnar carcinoma, which was entirely removed by the curette.

Carcino-Sarcoma and Carcinoma Sarcomatodes of the Uterus.

In rare cases two separate growths having the histological structure of carcinoma and sarcoma respectively are found side by side in the same uterus (382). To this condition the name Carcino-sarcoma has been given. Occasionally the stroma of a carcinoma appears to have undergone a sarcomatous change, and to these cases the name of Carcinoma sarcomatodes is applied (383).

382. A uterus with carcino-sarcoma. Opened out as the result of the method of removal, it measured 15 cm. in both directions. The cervix is somewhat enlarged and otherwise healthy, except at the spot where the growth has slightly extended into it. The body of the organ presents two distinct growths which occupy the whole of the cavity. The more extensive shaggy growth has deeply infiltrated the muscular wall, penetrating in some places nearly up to and in the lower segment apparently to the peritoneum. In the fresh state it was of pinkish colour and brittle. This growth shows the typical appearance of glandular carcinoma, in places showing masses of large epithelial cells. The other growth into which a cut has been made is somewhat narrower at its base than at the surface, which is 7 cm. in diameter, is multilobular in shape, white, and somewhat smooth on the surface, softer in consistence than a fibroid, and not readily breaking down. This growth is a round-cell sarcoma, consisting of closely set masses of small round cells not arranged in spaces and filling the whole field of the microscope. The growth is permeated by numerous fine capillaries; a few large cells with large nuclei are seen. 9665

Removed (H. R. S.), by vaginal hysterectomy with the galvano-cautery, on Oct. 4, 1904. The patient recovered, but was known to have recurrence at the beginning of 1905. The patient was a sterile married woman, aged 44, who complained of swelling and pain in the lower abdomen, discharge, and bleeding. (For full account, with microscopic drawings and notes of other cases, see Obstet. Soc. Trans. vol. 47, p. 338.)

383. A uterus with carcinoma sarcomatodes of the cervix. The uterus is 9 cm. long, and is covered with adhesions. On the surface are seen two small fibroids of the size of a pea and bean. The surface is scorched in places by the cautery. The uterus has been laid open. Its wall is 1 cm. thick. The whole of the cervical canal up to within 2 cm. of the fundus is occupied and distended by a ragged growth ulcerated in places, and in others occupied by polypoid projections. A section of the upper cervical wall shows that the growth has penetrated the wall to within 2 mm. of the surface. In the body of the uterus is seen a smooth mucous polypus of the size of a haricot-bean. The surface of the mucous membrane of the body is atrophied and smooth. The rim of the external os is unaffected; the growth commences about 5 mm. above the external os. 9603

Microscopic Structure.—The growth in the body is an ordinary mucous polypus, covered with columnar epithelium and containing numerous glands with a single layer of columnar epithelium. Some of the glands are dilated. A section at the edge of the growth shows numerous glands with a single layer of columnar epithelium embedded in a stroma having the usual appearance, but at the deeper part of the section the stroma consists of large spindle-cells with capillaries running between them, having the typical appearance of a spindle-cell sarcoma, and contrasting markedly with the normal stroma. A section of a portion

382 McLean

383 Fisher

of a polypoid growth removed some weeks before the operation shows the typical appearance of a large spindle-cell sarcoma. But scattered through the sarcoma in this section are found a few uterine glands, the epithelium of which is commencing to proliferate, and in one or two instances has formed large masses of epithelial cells. The section of the main growth shows a typical carcinoma, with large dilated tubules deeply infiltrating the muscular walls.

Removed (H. R. S.), by vaginal hysterectomy with the cautery, from a patient aged 56, who had recently been married. Fourteen days previously a polypoid mass, showing the structure of a spindle-cell sarcoma, had been removed. The patient recovered from the immediate effects of the operation, but died about five weeks subsequently.

Chorionepithelioma (Deciduoma malignum).

Chorionepithelioma is a very rare disease arising during the child-bearing period of life as a malignant proliferation of the epithelium of the chorionic villi. It usually occurs in the uterus as a reddish tumour at the placental site, but may also be present as a secondary growth in the cervix. The tumour may develop during pregnancy, but usually occurs a few weeks or months after delivery. In nearly half the cases the pregnancy had resulted in the delivery of a hydatidiform mole, which, however, is rarely followed by chorionepithelioma. The tumour is characterised under the microscope by proliferation of the external layer (syncytium) and internal layer (Langhans's layer) of the villus, by large "wander-cells" and by copious hæmorrhages. In rare cases well-formed villi are present.

The malignancy of the tumours varies a good deal, but is usually of a high degree. Secondary growths occur most frequently in the vagina or vulva (as bluish growths resembling thrombosed veins) and in the lungs (causing hæmoptysis). Metastases may occur from embolism of villi, although the uterus itself may be free from growth. The hæmorrhage resulting from the erosion of vessels by the syncytium may lead to the death and elimination of the growth.

Lutein cysts are commonly found in the ovary in this disease as in hydatidiform mole.

Chorionepithelioma can only be recognised on microscopic examination, and it is important that all cases of hydatidiform mole be watched for some months and the uterus explored if bleeding and discharge occurs.

Chorionepithelioma has been observed after tubal pregnancy.

384. A uterus and appendages weighing 8 oz., removed by abdominal hysterectomy for chorionepithelioma. The uterus measures $11\frac{1}{2} \times 8$ (opposite the ovarian ligaments) $\times 5$ cm. The peritoneum is smooth, except for one minute tag of lymph on the posterior surface on the right side. There was a median longitudinal ridge, nearly 7 mm. broad, from the level of the ovarian ligaments to the internal os, on the posterior surface. The Fallopian tubes are normal; the right 10 cm., the left $9\frac{1}{2}$ cm. long. The right ovary measures $3\frac{1}{2} \times 1\frac{1}{2} \times 1$ cm. It contains a cyst 5×3 mm. and three or four corpora fibrosa of similar size. The left ovary measures $4 \times 3\frac{1}{2} \times 1\frac{1}{2}$ cm. It contains two hæmorrhagic Graafian follicles near the surface, measuring nearly 1 cm. in the greatest diameter. A corpus luteum is seen in the middle of the organ and two or three small corpora fibrosa. The ovarian ligaments are slightly thicker than normal, and the left is elongated (2 cm.). A coronal section was made at the level of the ovarian ligaments; this did not reach the cavity, which was opened by further removal of a thin section. The cervical canal thus exposed measures $4\frac{1}{2}$ cm., and a scar of a penetrating wound is seen on the right side 1 cm. above the external os. A slender mucous polypus hangs from the left wall. The cavity of the body is 5 cm. in length and, as exposed, $2\frac{1}{2}$ cm. at the upper part. The mucous membrane of the body is rather thin and discoloured a greyish-brown. Growing from the inner wall of the fundus and projecting down into the cavity is a tumour measuring 2·3 cm. in diameter and about $1\frac{1}{2}$ cm. antero-posteriorly. The upper part of this growth, where it is seen to lie in the fibro-muscular wall of the

uterus, is of a greyish colour. The lower part is somewhat spongy in appearance and of a reddish-brown colour. Deeper in the wall, at 1 cm. below the peritoneum, is an isolated nodule of a pale brown-pink colour, 4 × 2 mm., and separated from the grey growth by about 2 mm. of the fibro-muscular tissue. There are a few large congested vessels in the wall of the uterus above this, and also the vessels in the periphery of the uterus are considerably enlarged and filled with clot. The wall of the body is considerably hypertrophied (1½ to 2½ cm. thick); it appears also to be somewhat fibrotic. 10814

Microscopic Structure.—The growth is a chorionepithelioma, consisting of masses of large polygonal cells, most of which contain large nuclei, many of which are degenerated. In places small masses of syncytium are seen, but for the most part the syncytium is in small amount. In places the growth is seen to lie in the lumen of a vessel, in other places it lies close beneath a capillary wall. At the growing edge individual cells of the growth are found separating individual muscular fibres. The mucosa at the edge of the growth is intact, and very vascular and somewhat hypertrophied. The surface of the growth is necrotic, and there are abundant hæmorrhages into the substance of the growth. The secondary growth deep in the wall has the same structure. There is a small amount of leucocytic infiltration in the neighbourhood of the growth. The cyst of the left ovary is filled with blood and lined with several layers of short columnar cells, beneath which is a layer of epithelial cells. There is abundant hæmorrhage into the tissues around the follicle. A corpus luteum is present near the cyst, and corpora fibrosa are also seen. All the vessels of the ovary are gorged with blood.

Removed May 1908 (H. R. S.) by abdominal hysterectomy, after separating and closing the cervix with the cautery and ligature through the vagina, from a woman aged 47, who had had a hydatidiform mole removed in Nov. 1907. The patient remained quite well and free from bleeding until February 1908, after which she had continuous discharge of blood with occasional flooding, until her admission to U. C. H. The patient made a good recovery, but she had hæmoptysis some weeks after the operation, which gave rise to a suspicion of secondary growth in the lungs. The hæmoptysis ceased after a few weeks, and the patient was quite well 3 years later.

385. A uterus and appendages removed post mortem. The appendages are normal. The left ovary contains a small cyst of the size of a pea, with yellow walls, probably a luteal cyst. The uterus measures 9 × 9 cm. The portio does not project into the vagina. The external os is slightly notched on the left side. The cervical canal 2 cm. long, mucosa smooth. The whole of the body except the lower centimetre is occupied by a convoluted growth. A section of the posterior wall shows a reddish growth deeply infiltrating the wall of the uterus, and at the left side of the fundus perforating the peritoneum. At this spot the sigmoid was adherent. On the section a strand of muscular tissue is seen to separate the growth into two portions. 6345

Microscopic Structure.—The growth is a chorionepithelioma, showing the typical appearances of hæmorrhage, fibrinous reticulum, syncytium, and scattered polymorphous cells. The wall of the small ovarian cyst is lined by a single layer of flattened epithelium; scattered throughout the fibrous wall are a number of lutein cells.

From a patient, aged 38, who was under the care of Sir John Williams. The history extended over 3 years, the prominent symptoms being bleeding and a fœtid discharge from the vagina. A hydatidiform mole had been passed. The case was diagnosed as endometritis and the interior of the uterus was scraped. At the autopsy both lungs were found to be the seat of secondary deposits of growth, about six in number. The lumbar glands were not involved.

386. A uterus with its appendages and the upper part of the vagina, showing chorion-epithelioma. The uterus has been laid open from the front. The parietes are much thickened and softer than natural, and the inner surface is ulcerated. At the upper and left side there is an area measuring 5 × 3 cm.: this is irregular and ulcerated, and in the recent state was filled with curdy material; this is the ulcerated surface of an intramural tumour. At the upper and right side there is a fungating growth measuring 3·5 × 2·5 cm.; this is also connected with a good-sized intramural growth. The situation of these tumours was easily seen on the outer surface of the uterus. A third, sessile submucous tumour is situate at the posterior part of the internal os; this is also ulcerated on the surface.

There are two small cysts in the left ovary. A thin slice, 5 mm. thick, has been removed from the posterior surface of the body, showing the tumours infiltrating the muscular wall almost up to the peritoneum. The tumours are called "hæmato-fungoid" in Liston's Catalogue, dated 1831. 4700

Microscopic Structure.—The growth is extensively infiltrated with blood, and possesses a widespread fibrinous reticulum in which are large cells, oval and polyhedral, with large nuclei. Scattered throughout the growth are also large plasmodial masses, which in places are seen to contain several nuclei, some of which stain deeply and some of these masses are vacuolated. For the most part the nuclei, although they are evident, do not stain well, owing doubtless to the long preservation of the specimen.

The uterus is that of a woman, aged 43, who had been ill for a long time. She had pemphigus and also a fetid discharge from the uterus, accompanied by violent hæmorrhages, from which she sank exhausted.

387. A uterus and appendages with chorionepithelioma in the body and cervix. The uterus measures $11 \times 6{\cdot}2 \times 3{\cdot}7$ cm. The cervix is 5 cm. in length, the cavity of the uterus 9 cm., the posterior wall of the body 3 cm. In the posterior wall is a shaggy breaking-down growth extending to within 3 mm. of the peritoneum. The posterior wall of the cervix also has a large ulcerated growth in it which has nearly perforated the cervical wall and extends to within 2 mm. of the lower surface of the portio vaginalis. The right ovary contains a corpus luteum, measuring $1 \times {\cdot}5$ cm. without a central cavity. The peritoneum is smooth and the tubes are normal. 6428 A

Microscopic Structure.—The growth has the typical structure of a chorionepithelioma and contains large masses of syncytium, and a fibrinous network with hæmorrhages in it containing cells of varying shape. (For full account with microscopical illustrations see Obstet. Soc. Trans. vol. 38, p. 135). This was the first case of chorionepithelioma (deciduoma malignum) observed and the first case published in Great Britain, having been observed (H. R. S.) in 1889 at University College Hospital and published in 1895 (Obstet. Soc. Trans. vol. 37, p. 240 and vol. 38, p. 135).

From a woman, aged 27, who had her first child at the age of 20, the second, living, after a normal labour on July 19, 1889, followed by a normal puerperium. On the 17th or 18th day after confinement she returned to work and a week later she passed five or six black lumps from the vagina. The patient had symptoms of septicæmia. The uterus was enlarged (4 inches above pubes) on Sept. 4th. Some pieces of growth, thought to be decidua, were removed, but the septic symptoms continued; friction was heard over the chest. The cervix was sloughy and appeared to contain a malignant growth. On Sept. 25th there was paralysis of the right side: on Sept. 29th œdema of the leg and ankle set in, and on Sept. 30th the patient died. At the post-mortem examination there was pleurisy on both sides; there was thrombosis of the veins on the left side of the brain extending into the longitudinal sinus. Several growths were found in the lungs (see specimen No. 388).

388. Portions of the lungs from the same case as the preceding specimen. Each lung contained numerous masses of growth, some of which are seen on the free surface and on the cut surface of the lungs. The largest of these is breaking down in the centre, and the pleura over it and in other places is covered with lymph.

Microscopic Structure.—The structure is the same as in the uterine growths, but the syncytium is less abundant.

389. A uterus and vagina containing chorionepithelioma. The uterus is 13 cm. long. The cavity of the cervix is 4 cm., of the body 6·5 cm. The greater part of the anterior wall of the body is occupied by a brown-red growth measuring $11 \times 7\frac{1}{2}$ cm.; it invades the wall up to the peritoneum. On the left side of the fundus is an oval area 3 cm. in diameter, ragged and drab-grey in colour, where a portion of the projecting growth has sloughed away. The peritoneum is covered with lymph and is somewhat nodulated by the red growth beneath. The cervix and the main part of the mucosa of the body are normal. In the middle of the posterior vaginal wall is a breaking-down growth 2 cm. in diameter, and other growths are seen in the paravaginal tissue and in the vagina. The ovaries and tubes are normal. 9358

Microscopic Structure.—The growth consists of irregular polyhedral cells with large nuclei, partly collected into masses and partly scattered through blood-clot. In only one or two places could elongated branching masses of protoplasm with multiple nuclei (syncytium) be observed. All the growths are much degenerated and the small amount of syncytium, both in the primary and secondary growths, is remarkable.

From a patient, aged 29, who had had one child 4 years before. In Jan. 1903 she was taking large quantities of medicine to bring on the periods: in Feb. severe loss of blood occurred from the vagina, and these hæmorrhages continued for the 4 months preceding her admission to the G. N. C. H. on June 7th, 1903, under the care of Mr. Stabb. A swelling at the vulva appeared a fortnight previous to admission and had recently "burst." Patient was very ill. On July 10th Mr. Stabb opened the abdomen and evacuated a large abscess containing about 2 pints of pus. The hæmorrhage from the uterus continued. On Aug. 14th the abdominal incision and the ulcer in the vulva had healed. The uterus was fixed and breaking-down growth could be felt in the interior of the uterus and two ulcerating cavities were present in the vagina. The patient had blood-stained sputum, and, as a result of examination, severe hæmorrhage occurred from the uterus, and the patient died Aug. 27th, about 6 months from the commencement of her illness. Growths were found in the lungs and in the liver. (For full account and microscopical drawing, see Obstet. Soc. Trans. vol. 46, p. 55.)

390. A uterus with chorionepithelioma, together with the appendages, removed by abdominal hysterectomy. The uterus measures 10 cm. transversely × 11·5 cm. vertically. The uterine wall varies from 1–2·5 cm. in thickness, in the middle of the right wall, where there is a fibroid 1·5 cm. in diameter. The uterus is occupied by a reddish-brown growth, which invades the uterine wall above and on the right side and to a less extent on the left. Both the ovaries are enlarged and contain several luteal cysts. Below are mounted several growths removed from the vagina. 10454

Microscopic Structure.—The growth is a typical chorion-epithelioma.

Removed (G. F. B.) from a patient aged 46 who had had 5 children and two miscarriages, the last (two months' duration) 12 months ago. The vaginal growths were first removed on Feb. 6th, 1907, and the uterus by abdominal hysterectomy on Feb. 13th, 1907. After the last miscarriage, the periods returned and were regular for 5 weeks before admission. The patient died in a state of coma on April 1st. (For full account, see Obstet. Soc. Trans. vol. 49. p. 104.)

391. Sections of lung, spleen, and brain from the preceding case. The growths vary in size from that of a pin's head to a marble, and vary in colour from a pinkish white to a dark brown-red according to the amount of blood effused into them, which is especially marked at the periphery. 10512

392. A strip of skin and subcutaneous fat 1 cm. thick × 2 cm. deep, with a secondary deposit of chorionepithelioma from the preceding case. The growth consists of an agglomeration of nodules, for the most part deeply stained a reddish-brown colour. The growth is slightly encroaching on the true skin, which is slightly raised and discoloured. 10495

DISEASES OF THE FALLOPIAN TUBE.

Congenital Malformations of the Fallopian Tube.

The Fallopian tube may be congenitally absent on one or both sides when the uterus or one half of a double uterus or the ovary is absent. In a unicorn uterus the isthmus may be absent while the ampulla is well developed. A *supernumerary tube* (*i. e.* with its own attachment to the uterus) or an *accessory tube* (*i. e.* one in connection with the main tube) has been rarely observed. *Accessory ostia* with well-developed fimbriæ are common. They are usually met with in the ampullary portion, about an inch from the extremity, at a spot where there is occasionally a sacculus, the *antrum* of the tube. The fimbriated extremity may be absent or displaced, and the abdominal end may be congenitally closed (80).

393. A Fallopian tube with a portion of the wall of an ovarian cyst attached to it. The tube is 10 cm. long and has an accessory ostium at a distance of about 4 cm. from its uterine end and accessory fringes near its terminal end. The ovarian fimbria measures 7·5 cm. in length and is fringed to its extremity. 10773

Injuries of the Fallopian Tube.

Injuries to the Fallopian tube are usually ruptures due to tubal pregnancy; but torsion of these tubes is sometimes met with (394) and may be severe enough to cut the tube in two. Ligature and section of both tubes with the intention of rendering the patient sterile has frequently been followed by intra-uterine pregnancy owing to the reunion of the severed ends. The tube is often enormously stretched over parovarian cysts and uterine myomata.

394. Part of a uterus and right appendages which weighed 2 lb. 4 oz. and measured 15 × 11 × 12 mm. It contains one large intramural tumour in the posterior wall, which has undergone red degeneration, and a subperitoneal tumour of the size of a pea. The mucosa of the body is normal above, atrophied below; that of cervix was normal; portio normal. The right ovary is enlarged (6 × 3½ × 2 cm.) and the tube is elongated, measuring about 16 cm., and attached to its outer end is a cyst of the size of a hen's egg. The tube has become twisted twice, owing to the rotation of the attached part of the Fallopian tube and the cyst, which have then become fixed by adhesions to the uterus and ovary. The fundus of the uterus also has a few fibrous adhesions. 11332

Removed (H. R. S.) by total hysterectomy from a patient aged 30.

Inflammation of the Fallopian Tube.—Salpingitis.

Inflammation of the Fallopian tube is caused by microbes, of which the gonococcus, streptococcus, staphylococcus, bacillus coli, and tubercle bacillus are those most frequently met with. In virgins the commonest sources of infection are tubercle and appendicitis.

The inflammation chiefly affects the mucous membrane, but the wall and peritoneum may also be involved.

The mucous membrane becomes thickened and its rugæ swollen, very vascular, and infiltrated with leucocytes. The secretion of the inflamed mucous membrane causes peritonitis around the ostium, which may spread to the whole of the pelvic peritoneum: or it may lead to the closure by lymph of the abdominal ostium of the tube, which then becomes distended (hydrosalpinx, pyosalpinx). Occasionally the lymph binding together the fimbriæ becomes blown out by the tubal secretion into a perifimbrial cyst (409). The ampulla may also be closed by the pressure of the thickened mucosa, the fimbriæ remaining distinct.

The tubal wall often becomes hypertrophied, œdematous, and inflamed. A peculiar form of inflammation is the so-called *salpingitis isthmica nodosa*, which gives rise to small nodular thickenings of the isthmus containing hypertrophied muscle enclosing glandular spaces which are continuous with the tubal epithelium. This form of salpingitis is sometimes associated with tubercle.

When the abdominal end of the tube becomes closed by inflammatory adhesions or by the pressure of the swollen mucous membrane, the secretion, unable to escape by the uterine ostium (which is rarely organically strictured), distends the tube into a legume-shaped or retort-shaped swelling containing serum (*hydrosalpinx*) or pus (*pyosalpinx*) and sometimes blood (*hæmatosalpinx*). A collection of blood in the Fallopian tube is, however, usually due to tubal pregnancy: the term hæmatosalpinx should be limited to cases in which tubal gestation is not present; these

cases are rare; they are due either to severe inflammation or torsion of the tube, or to accumulation of menstrual blood from the uterus when the lower genital tract is stenosed.

Hydrosalpinx is a legume-shaped or retort-shaped tumour formed by the distended tube, which contains clear fluid. It rarely exceeds in size a fist, though much larger tumours are occasionally met with. The wall of the tube is thinned and often covered with filmy adhesions. The rugæ are mostly obliterated by the distension; but at the ampullary end, on opening the tube, the stretched fimbriæ may be seen radiating from the lumen; this is best seen when the tube communicates with an ovarian cyst (tubo-ovarian cyst).

A *pyosalpinx* has much the same shape as a hydrosalpinx, but differs from it in the thickness of its wall, in containing pus, and in the condition of its mucous membrane. The rugæ become thickened and infiltrated with leucocytes and either thrown into papillary projections (407) or so increased in thickness, especially in chronic cases, as sometimes to simulate a new growth (403). The muscular wall of the tube is thickened and inflamed, and dense adhesions are usually found around it.

Very large pus-containing tubes may have the walls somewhat thinned: these are usually of tubercular origin.

The contents of a pyosalpinx are virulent in the acute stages: after a time they become sterile. Rarely they may become the seat of a secondary infection and may then perforate into the peritoneal cavity with fatal result (411); spontaneous perforation, however, is a rare event.

A pyosalpinx may communicate with an ovarian abscess (tubo-ovarian abscess).

Hæmatosalpinx, being usually the result of tubal pregnancy, will be found illustrated under that heading.

Hydrosalpinx.

395. A right hydrosalpinx 13 cm. long with the ovary. The Fallopian tube is closed at its outer end, where it is distended to a diameter of 4 × 2 cm. It is dilated (3 mm.) at its uterine end at the line of section. A few flimsy adhesions cover it. The ovary has three small cysts at its periphery, which appear to be distended follicles, and are seen microscopically to be luteal cysts. The wall of the tube is not thickened. 6862

From a patient who had an ovarian cyst of the size of an orange removed from the left side; the left tube, being normal, was not removed.

396. The uterus and appendages from a case of double hydrosalpinx. The uterus has been laid open by removal of part of the anterior wall, the intramural portion of the Fallopian tubes being exposed. The uterine orifices of the tubes are not obstructed. The distended tubes have been laid open; they are convoluted and bent backward, the free end being adherent to the posterior surface of the ovary, where it is distended to form a round cyst. There is no trace of the fimbriæ. The interior of the dilated tubes is marked by transverse folds, except in the terminal cyst, the lining of which is smooth and shining; a few fibrous bands traverse the sac. The right ovary is denser than normal, but otherwise unaltered. Part of the left ovary has been removed anteriorly, exposing a small cyst formed by the dilatation of a Graafian follicle. Projecting from its upper and posterior aspect is a smooth-walled cyst, the posterior wall of which is in apposition with the anterior wall of the terminal cyst of the Fallopian tube. Broad thin bands of adhesion pass between the end of the left Fallopian tube and the posterior surface of the uterus; a band also bridges over the ovarian cyst, binding the Fallopian tube in its curved position. 6577

397. A specimen of hydrosalpinx of the right side. The tube is convoluted, and at its termination forms a large round cyst, which has been opened posteriorly. It is adherent to the fundus of the uterus by a broad band of adhesion. On the

left side the tube is somewhat thickened, but its fimbriæ can still be made out; attached to them by a slender pedicle, about an inch long, is a rounded cyst (hydatid of Morgagni). The free end of the left tube is attached to the posterior wall of the uterus by a broad band of adhesion. On the fundus uteri, near the attachment of the left ovarian ligament, is a group of small subperitoneal cysts and the whole of the fundal peritoneum is covered with membranous adhesions.

398. A hydrosalpinx 13 cm. in diameter, distended into a twisted retort-shape. The outer extremity is 4 cm. in diameter. A small hydatid of Morgagni hangs from the ovarian fimbriæ. The wall of the tube is not thickened; the cut uterine end is slightly dilated. A few membranous adhesions bind the loops of the tube together. 7964

Removed (H. R. S.) from a patient aged 36. Patient had two children, the last 16 years previously.

399. A hydrosalpinx forming a rounded tumour measuring 9 cm. × 9 × 7. The cut uterine extremity is not distended. The tube is much coiled upon itself and its outer end is 8 cm. × 7 cm. in diameter. There are a few flimsy adhesions binding its coils together and vessels are seen coursing in its walls. Incomplete transverse septa are seen in the tube in the position of the bends, and faint longitudinal streaks are visible on the internal wall, which are stretched rugæ and fimbriæ. A portion of one fimbria is seen on the outer surface. The wall is thin and translucent. 10614

Removed (H. R. S.) from a patient aged 30, who had had seven miscarriages but no child. She had inflammation of the womb. 12 months ago she complained of bearing down, but had no other pain or discharge.

400. Half a hydrosalpinx measuring 11 × 7 cm. There are numerous membranous adhesions on the external surface. Partial septa are seen in the narrow part of the dilated tube in the position of the bends; the remains of the rugæ are seen on the inner surface. 8887

Removed (G. F. B.) from a patient who complained of chronic pain and dysmenorrhœa.

401. A left Fallopian tube and ovary. The Fallopian tube is distended with mucus and measures 3·5 cm. at its outer extremity. The wall of the tube is slightly thickened and towards the outer end the mucosa is covered with yellowish papillary projections. A section has been made towards the uterine end and shows the tube greatly thickened and opaque, 1·7 cm. in diameter, and the lumen almost obliterated by the thickening of the rugæ. The tube is full of coagulated mucus. The ovary contains a cyst of the size of a walnut, filled with blood and mucus. The right tube was slightly distended, 1 cm. in diameter. Its fimbriæ were free, but its wall also contained greatly thickened and opaque mucosa. 9092

Microscopic Structure.—The wall of the tube and rugæ are densely infiltrated with leucocytes, but there is no evidence of tubercle, either as regards giant cells or caseous degeneration.

Removed (G. F. B.) from a patient aged 28 who had had 2 children, the last 22 months previously. There had been no acute abdominal symptoms, the main symptom being menorrhagia.

402. A hydrosalpinx surrounding a hæmorrhagic ovarian cyst measuring 9 × 7½ × 5½ cm. The outer surface has a few adhesions. The tube is greatly distended and filled with mucus, measuring 3 cm. in diameter at its outer end. It embraces and is closely adherent to the ovary, which contains a blood-cyst 4 × 3½ cm. in diameter, and several smaller cysts, most of which have paler contents, but one of which is opaque and yellow. (The other side showed a multilocular cyst of the ovary, with a slightly thickened tube, the whole of the size of a lemon.) 10280

Removed (H. R. S.) from a patient aged 32.

403. Two Fallopian tubes showing chronic proliferative salpingitis simulating carcinoma. 10605

From a case of fibro-myoma of the uterus. For a description of the tubes, see specimen No. 255.

Pyosalpinx.

404. A pyosalpinx, together with the ovary, the two measuring $6\frac{1}{2} \times 5 \times 4\frac{1}{2}$ cm. The ovary contains a cyst 3 cm. in diameter. The Fallopian tube is distended with muco-pus, and measures $2\frac{1}{2}$ cm. in diameter at its distal end. The mucosa of the middle portion of the tube is thickened (4 mm.) and opaque. 8715

Microscopic Structure.—The rugæ of the tube are greatly infiltrated with leucocytes, but there are no giant-cells or evidences of tubercle.

Removed in 1901 by Mr. Meredith from a patient aged 26, who had had dysmenorrhœa following confinement in 1898 followed by peritonitis. The patient had gonorrhœa in Feb. 1901.

405. A suppurating right ovarian cyst with suppurative salpingitis. The cyst measures $5 \times 4\frac{1}{2}$ cm. and contains pus. The lining is slightly granular from inflammation, but fairly regular. The tube was somewhat distended with pus and the rugæ are thickened. Sheets of lymph bind the cyst and tube together. 7456

Removed (H. R. S.) entire; the left tube and ovary were normal; the uterine end of the tube of the specimen appeared to be normal, but suppuration occurred in the peritoneum, requiring a secondary operation for its evacuation on the 8th day. The infection probably occurred from the cut end of the tube.

406. The pelvic viscera, consisting of uterus and appendages, rectum and peritoneum. The uterus and appendages are covered with lymph. Both tubes are dilated by pus to the size of the finger. The right tube has been opened, showing thickening of the wall. At the end of the left tube, which is still more dilated, is a ragged hole where the tube has burst, giving rise to septic peritonitis from which the patient died. 7339

407. A Fallopian tube, enormously distended, measuring 6×6 cm. at its extremity. The wall is 1 mm. thick and the cavity is filled with muco-purulent contents. The ovary is covered with adhesions and contains a few cysts. The tubal mucosa of the uterine end is thickened and opaque and the overgrowth of it abruptly ceases, showing, however, small papillary projections on the less thickened part. 9672

Microscopic Structure.—The rugæ are enormously thickened and infiltrated and are covered with cubical epithelium, and in the substance of the thickened rugæ are numerous glands, the epithelium in some of which is normal columnar, the rest is hazy and swollen. There is very abundant leucocytic infiltration between the glands. There does not appear to be any invasion of the muscular wall of the tube. The change is probably due to inflammation.

From a married woman, nullipara, aged 23, who complained of pain in the lower part of the abdomen on the left side for the last 12 months, sometimes dull, sometimes acute, also a discharge.

408. A Fallopian tube which was greatly distended with pus. The tube has been torn open during removal and the mucosa is covered with papillary growths. The other tube was a typical hydrosalpinx measuring 3 cm. in diameter. 9137

Microscopic Structure.—There is intense inflammation of the tube. The papillomata are due to the leucocytic infiltration of the mucosa.

Removed (H. R. S.) Jan. 6, 1903, from a patient aged 34.

409. Two tubes inflamed, thickened, and distended with pus; the smaller tube is 1 cm. in diameter and covered with lymph; it is welded with the ovary and the dilated end in which the fimbriæ can be seen covers a corpus luteum, the cavity

of which appears to communicate with the tube. The other tube is 2 cm. in diameter; its walls 3–5 mm. in thickness: the fimbriæ are welded together and attached to the end is a cyst. The tube is covered with adhesions. The corresponding ovary is distended to the size of a duck's egg by a dermoid cyst with sebaceous contents, from the cut surface of which hairs can be seen to project. There are numerous membranous adhesions around this cyst. 7186

Microscopic Structure.—The dermoid cyst contains several layers of epithelioid cells, the upper layer of which is flattened. Some of these cells penetrated into the wall to a slight extent and seem swollen; in one part a definite gland is seen.

Removed (H. R. S.) from a patient aged 34, who had had 8 children during the first 9 years of marriage and no miscarriage. She was infected with gonorrhœa shortly after marriage. Eight months before operation the patient began to suffer from menorrhagia, bleeding two or three weeks at a time.

410. A uterus, with the appendages, measuring $14 \times 10\frac{1}{2} \times 9$ cm. It contains numerous intramural fibroids, of which eight are seen in section. The uterine canal is 10 cm. long, cervical canal 5 cm.; mucosa normal, except in the body where, pressed upon by a submucous myoma, it is atrophied. The left appendages are matted together and converted into a tumour as big as an orange, of which the lining shows a granular pyogenic membrane. On cutting a section out of it the windings of the tube are seen with thickened and suppurating wall. It is a specimen of pyosalpinx with cystic ovary. On the other side the tube was thickened, but the orifice was not closed. At its outer extremity there was a cyst as big as a marble, and the ovary contained two blood-cysts of the size of marbles. 10907

Microscopic Structure.—A section of the winding structures mentioned shows extremely close leucocytic infiltration, with œdema of the connective tissue and swelling of its cells and nuclei.

Removed (H. R. S.) from a patient aged about 40 who had had one child and subsequently, about 10 years before operation, was infected with virulent gonorrhœa, which caused the left tube to distend to the size of a lemon in about a week. Numerous attacks of peritonitis occurred in the course of the next 10 years. The patient recovered and was in excellent health $2\frac{1}{2}$ years later.

411. Two suppurating tubes of the size of a little finger. The larger has the ovary incorporated with it and has a thickened wall (5 mm. thick) and shaggy cavity but little distended; the fimbriated end is closed and in it is a perforation nearly 1 cm. in length. The smaller tube is more distended and has a somewhat shaggy papillary surface, but the wall is only a millimetre thick. 10461

Microscopic Structure.—The lining of the tube is covered with granulation tissue and the wall is infiltrated with leucocytes.

Removed (G. F. B.) from a patient suffering from peritonitis from rupture of the tube $2\frac{1}{2}$ days before the operation. The patient succumbed 12 hours later.

Tubercle of the Fallopian Tube.

Tubercle of the Fallopian tube is fairly common in girls and women up to the age of 40: after this age it is much less frequently met with, though it occurs even in extreme old age.

The disease often affects the tubal peritoneum in the form of discrete tubercles; it may also invade the muscular wall, but mainly affects the mucous membrane. The tubercular tube is often not much thickened, but is of a nodular shape and often of a yellowish colour. It contains pus, which sometimes accumulates to an enormous amount. The mucous membrane is thickened and caseated or ulcerated, and contains tubercles with epithelioid cells and sparse giant-cells. Tubercle bacilli may often be demonstrated.

Tubercle of the Fallopian tube is illustrated by drawings by Sir Robert Carswell, which are preserved in the Museum.

412. The left Fallopian tube of a pair, enormously distended with pus, the right tube measuring $15 \times 8 \times 7$ cm., the left $15 \times 8\frac{1}{2} \times 8$, together with the adherent ovaries, of which that of the right side contained a cyst of the size of a walnut, with bloody contents. The uterine ends of the tubes are not dilated and the wall of the isthmus is greatly thickened. There are numerous adhesions between the coils of the tubes and the ovaries. 9605

Microscopic Structure.—The uterine end of the tube shows great thickening of the muscular wall from infiltration of leucocytes, with a few giant-cells and well-marked patches of caseation. The tube is tuberculous.

Removed (H. R. S.) from a patient aged 31.

413. The right tube from the same case as the preceding specimen. 9605

414. A uterus with the broad ligament and appendages. On the surface of the broad ligament are some small shreds of lymph and some small tubercles. The Fallopian tubes have been laid open, showing great thickening of the rugæ, but no caseation. The uterus is small, 6 cm. long, and its mucosa is quite smooth; it shows no evidence of disease. 6837

Microscopic Structure.—The tube shows it to be tuberculous.

415. A uterus, etc., laid open by removal of part of its posterior wall. The ovaries are somewhat dense in consistency, but show no naked-eye changes. The Fallopian tubes are the seat of tuberculous inflammation. The right one has been laid open; the walls are thickened and infiltrated with caseating tubercle, which also fills the lumen. The disease is most marked at the free extremity, which is closed, but the fimbriæ can still be distinguished. The evidence of disease becomes less marked as the uterine wall is approached. A small yellow nodule is situated under the peritoneal covering of the fundus (it is seen in section by removal of a wedge-shaped piece, and does not involve the muscular fibres). The mucous membrane of the body of the uterus is somewhat uneven and ulcerated. 6482 A

Microscopic Structure.—The tuberculous nature of the inflammation of the tube is confirmed by microscopic examination. Both the tube and the endometrium are affected with tubercle.

416. Two tuberculous Fallopian tubes, one of which is blocked; the other is possibly patent and the fimbriæ are very distinct. Both are filled with caseous material to the thickness of 1 cm. and are covered externally with tubercle. The ovary contains a small cyst, but appears to be somewhat fibrotic. 10500

Microscopic Structure.—The cyst in the ovary is a luteal cyst.

Removed (H. R. S.) from a patient aged 30, who had had a normal labour 8 weeks previously. Rapid swelling of the abdomen had followed the labour, but, notwithstanding the swelling and fever, patient felt quite well. At the operation a large quantity of fluid was found in the abdomen, and the peritoneum was covered with tubercle. She had had 8 children. The patient recovered, and remained well four years later.

417. A uterus from a lunatic, with a fibroid in the posterior wall of the size of a hen's egg. The cavity of the body is full of caseous material, which at the upper part is 2 cm. in thickness. There is a smaller fibroid at the fundus. Both tubes are full of caseous material. 10089

Tumours of the Fallopian Tube.

Myoma (418) and *adenomyoma* of the tube, mucous polypi, and papilloma of the tube are very rarely met with. A few cases of endothelioma, sarcoma, chorion-epithelioma, and hydatid cysts have been described.

Primary carcinoma of the Fallopian tube is rare: as a secondary deposit in cases of carcinoma of the ovary or uterus it has been occasionally met with (552).

Primary carcinoma of the Fallopian tube commences as a papillomatous growth of the mucous membrane, with the formation of alveolar spaces and tubes lined with

columnar cells; often extensive masses of cells are met with. The tumour may attain a considerable size without perforating the wall. The disease may be limited to one tube; when both are affected the probability of its being secondary should be considered. Metastases have been met with in various organs, including the vagina (421).

The three specimens in the Museum are described in detail in the 'Journal of Obstetrics and Gynæcology of the British Empire,' vol. 17, where also the record of 100 cases collected by Mr. Alban Doran will be found.

Fibro-myoma of the Fallopian Tube.

418. A uterus and its appendages. The outer two-thirds of the left Fallopian tube are dilated and filled with fluid. The left ovary has been incised, the cut surface showing small cysts; projecting into the broad ligament from its lower part is a round cyst with Graafian follicles in its wall measuring about $1\frac{3}{4}$ inch in its greatest diameter; at the lower and outer part this communicates with the lumen of the dilated tube (tubo-ovarian cyst). At the point of communication between the two cysts little bands and tags of tissue are seen, which represent the remains of the fimbriæ of the Fallopian tube. The uterine orifice of the Fallopian tube is patent, and is marked by a bristle. There are numerous small dilated Graafian follicles in the right ovary, and the right Fallopian tube is dilated. There is a small fibroid tumour in each Fallopian tube, near the uterine end. There is a myoma 1 cm. across on the posterior surface of the uterus.

5506

Carcinoma of the Fallopian Tube.

419. A Fallopian tube distended with cancer, with the adjacent ovary. The ovary contains a cyst of the size of a hen's egg and was torn during removal. There are numerous adhesions around the ovary and tube, and several lymph-cysts are attached to the tube. The Fallopian tube measures 9 cm. in length by $2\frac{1}{2}$ cm. in thickness at the distal end, to which is attached a lymph-cyst ($2\frac{1}{2} \times 2$ cm.). The whole of the tube is full of growth, which has slightly perforated the wall at one spot, which has been torn during removal; it has an opaque yellow colour and has completely destroyed the wall of the tube except at its cut extremity. The growth has practically obliterated the lumen of the tube. 10145

Microscopic Structure.—The growth is a carcinoma, being made up of masses and tracts of epithelial cells of the columnar type. In some of these masses spaces are seen which are due to degeneration of the central cells. There is but little small-celled infiltration of the stroma.

Removed on Feb. 20, 1906 (H. R. S.), from a virgin aged 35. The patient died in Feb. 1907, the growth having recurred in the stitch-punctures.

420. A Fallopian tube affected with carcinoma. The uterine end is normal for about $\frac{1}{2}$ cm. and rapidly expands to a thickness of 4 cm., and is terminated by a great expansion partly covered by irregular smooth membrane, through which the ragged growth has burst at one spot, where it adhered to the broad ligament. The mass formed by the tube measures altogether 11×9 cm., and the section shows that the tube forms the wall of the whole of the mass except at the extremity, where it has broken through. The wall in some places is invaded to its peritoneal coat. The growth is of a yellowish-white colour and completely fills the tube, but is somewhat broken and papillomatous along the centre, where the growths from the two sides come in contact. 11129

Microscopic Structure.—The growth is a carcinoma, being made up of extensive masses of epithelial cells with scanty stroma, which causes it to closely resemble a sarcoma in its deeper parts.

Removed June 1909 (H. R. S.) from a widow aged 58. At the operation the growth was thought to be a papillomatous ovarian tumour. The growth had grown through the abdominal ostium on to the broad ligament, which was removed with another small growth which was adherent to the small intestine. Patient recovered, but a recurrent mass was found in Douglas's pouch in Oct. 1909.

421. Half a uterus and appendages and part of the vagina removed by the extended abdominal hysterectomy. The uterus measures $6{\cdot}7 \times 4 \times 2\frac{1}{2}$ cm., being atrophied; the upper part of the body is dilated to the size of a pea by mucus. The portio is atrophied and normal; mucosa throughout atrophied. In the posterior vaginal wall is a small puckered scar and the surface is eroded and a small tag of growth is still attached there; this is part of a red, cock's-comb-like growth, which was as big as the top of the thumb, and was removed before operation. It is on account of this that the hysterectomy was performed. The right tube was normal, except for a few slight adhesions. The left tube has its outer half distended to the size of a pigeon's egg by a growth which is warty in appearance where the distended tube has given way during removal. The extreme end of the tube has been dilated by fluid, but is not affected with growth. The ovary was not affected and was adherent to the outer surface of the tube. 9958

Microscopic Structure.—The growth is a primary carcinoma of the Fallopian tube with a secondary growth in the vagina. The tubal growth has originated by proliferation of the epithelium of the rugæ which forms extensive epithelial masses, some of which have infiltrated the wall. Masses of epithelial cells of similar structure are found in the vaginal wall at the spot from which the tumour was removed. The vaginal epithelium is not changed.

Removed (H. R. S.) by extended abdominal hysterectomy from a patient aged 64. The patient had worn a pessary for about 30 years.

(The above three cases of primary carcinoma of the Fallopian tube are described in the Journal of Obst. & Gyn. Brit. Emp. vol. 17, 1910, p. 30.)

DISEASES OF THE OVARY.

Congenital malformations and abnormalities of the ovary are rare. *Complete absence of the ovaries* on both sides is one of the rarest abnormalities, and is found only in certain monsters. One ovary may be wanting, even when the uterus is normal, but most of the cases have been associated with a unicorn uterus. The complete absence of the ovary can only be proved on post-mortem examination, for which purpose fœtuses are especially suitable, and in some (perhaps many) cases of apparent absence it will then be found that the ovary is still present though rudimentary and displaced. In some cases ovarian tissue has been found in the ligament of the ovary.

Supernumerary and accessory ovaries have been met with. The supernumerary ovary has its own ligament attaching it to the uterus; the accessory ovary is situated near the main ovary, and probably has become detached by the constriction of an inflammatory band during fœtal life.

Displacements of the ovary may occur, forwards into the inguinal canal or downwards into Douglas's pouch in cases of retroversion and prolapse of the uterus; in this situation the ovaries are easily felt on vaginal examination and are a frequent cause of pain during coitus (*dyspareunia*). In *non-descent of the ovary* the organ has a higher position than normal.

Hypertrophy of the ovary is occasionally met with. Apparent hypertrophy occurs during pregnancy and when the uterus is the seat of fibroids. In the latter case, however, the enlargement is usually due to congestion and œdema resulting from pressure on the veins or lymphatics or to the development of small Graafian cysts.

Atrophy occurs after the menopause and occasionally as a sequel to inflammation of the organ. It is said also to occur within a few years after the removal of the uterus, but probably when atrophy ensues in these cases the blood-supply of the ovaries has been interfered with at the operation, owing to a faulty technique.

Inflammation of the ovary (ovaritis, oophoritis) occurs as a result of microbic infection or of one of the acute specific diseases; in virgins appendicitis is not

uncommonly a cause. In acute ovaritis the organ is swollen and red, often covered with lymph, and on section the stroma and follicles are congested and often contain blood. The inflammation may pass on to form an abscess, which may affect the Graafian follicles, the corpus luteum, or the stroma. The abscess may be single or multiple, and though usually small may attain a considerable size.

In chronic ovaritis the organ may be of normal size and is often bound down by adhesions, and shows on section a dense stroma, sometimes infiltrated with leucocytes and containing small cystic follicles.

A *Hæmatoma* of the ovary may occur as the result of congestion or inflammation. It is found normally in the Graafian follicle after it has burst, but may occur while the wall of the follicle is intact. It may also occupy the stroma. Hæmatoma of the ovary is usually of small size, not larger than a hen's egg. In rare cases a follicular hæmatoma has been found to be due to ovarian pregnancy.

Tubercle of the ovary is found only in association with tubercle of the neighbouring peritoneum, uterus, or tube. It may occur in the form of miliary tubercles or as caseous deposits in the stroma, or as an abscess which may completely destroy the structure of the organ.

422. An ovary and Fallopian tube, both of which appear to be normal. The surface of the ovary is convoluted and there is rather a deep sulcus at its outer end. Hanging from the ovarian fimbria at a distance of 1 cm. from the ovary is a lobulated, slightly pedunculated growth 1 cm. × 5 cm., which on section is seen to be solid, and on microscopic examination is seen to be made up of interlacing bundles of fibrous tissue somewhat resembling the cortex of the ovary, with at one part papillary projections covered with columnar epithelium and in its substance numerous tubules also lined with short columnar epithelium. A part of the ovary nearest the tumour shows the usual dense structure of the ovary and one slit-like invagination of the endothelium is seen, but no tubules. It is doubtful whether the tumour is a detached piece of the ovary (accessory ovary) or is a fibro-adenoma arising from the ovarian fimbria. 9444

TUMOURS OF THE OVARY AND PAROVARIUM.

Tumours of the ovary and parovarium may arise from the following sources :—

1. The epithelium (surface epithelium, Graafian follicle, corpus luteum, Pflüger's tubules, tubules of the parovarium in the hilum) :

   Follicular and luteal cysts.
   Adenoma—cystadenoma pseudomucinosum ; cystadenoma serosum ; papillomatous cysts ; "solid adenoma."
   Carcinoma.

2. The stroma — fibroma, fibro-myoma, myoma ; osteoma ; chondroma ; myxoma ; angioma ; endothelioma ; sarcoma.
3. An abnormally developed ovum—teratoma, dermoid.
4. The parovarium (= Wolffian body, organ of Rosenmüller, epoophoron).

For practical purposes and for a museum catalogue it is more convenient to describe the tumours under the following headings :—

Ovarian Cysts (Cystadenoma).

Ovarian cysts are commonly met with, from puberty to extreme old age. Rarely they occur in intrauterine life or before puberty. The simplest form of ovarian cyst arises from the dilatation of the Graafian follicles (hydrops folliculi) ; it rarely attains any great size. Sometimes one follicle only may be distended with serum or blood (hæmatovarium). The corpus luteum often contains a cyst, usually of

small size, but sometimes as big as a walnut, hen's egg, a fist, or even larger. They have a characteristic yellow wall, are unilocular, with an uneven tripe-like inner surface, and are very prone to become infected.

The commonest ovarian cyst is multilocular, and may reach an enormous size. These cysts are thin-walled and are very liable to burst either into the peritoneum or into each other. In this way an apparently unilocular tumour may be formed, in the inner wall of which, on careful inspection, the retracted walls of the burst cysts may be found as ridges or bands stretching from one part of the cyst to another.

The cysts contain a mucous secretion varying in consistence in the different varieties, from the thin serous effusion of simple serous cysts to the colloid material met with in enormous quantities in pseudomyxomatous cysts.

The lining of the cysts is frequently beset with papilloma, which sometimes bursts through the cyst-wall to the peritoneal surface, and may become implanted on the peritoneum, where it may take on a malignant development and destroy the patient, or it may entirely disappear. The papilloma often gives rise to bleeding into the cyst; when it affects the outer surface of the ovary it is apt to cause free fluid in the peritoneum. Papilloma on the surface of the ovary is usually due to the bursting of papilliferous cyst, but occasionally it may occur apart from any cystic change.

Ovarian cysts are liable to undergo axial rotation, so that the pedicle becomes twisted and causes engorgement, followed by hæmorrhage into the wall of the cyst and its attached broad ligament and tube or into the peritoneum. The distended cyst may burst and if the fluid is sterile the rupture may cause few symptoms, but if the cyst be large it may cause fatal shock or, if infected, give rise to peritonitis; as a result of the interference with its blood-supply the twisted cyst becomes necrobiotic, and is saved from gangrene by the adhesions formed by the surrounding viscera. The torsion may cause the complete separation of the cyst (444).

Ovarian cysts are liable to inflammation either as a result of torsion or infection, especially after labour; they not uncommonly suppurate, and may discharge into the vagina, rectum, bladder, or large or small intestine.

In the wall of an ovarian cyst-adenoma small fibromata are sometimes found (423, 438); rarely a dermoid tumour coexists (436).

Sometimes the tumour feels solid in parts, and in section appears to be so on account of the small size of the cysts and the opacity and solidity of its mucous contents. It may thus simulate a malignant growth to the naked eye, but on squeezing the cut surface the mucus can be pressed out of the cystic cavities and its nature more clearly ascertained. Rarely the section actually is solid (the so-called solid adenoma, 461), being made up of minute closely apposed glandular cavities.

Multilocular cysts are lined by a single layer of epithelium, which in the smaller cysts is columnar and ciliated, and in the larger cysts is cubical or flattened according to the size of the cyst. Papillæ are commonly seen projecting into the cavities. Rarely the outer surface is rough or warty from the so-called superficial papilloma, which is a fibrous projection covered with a single layer of epithelium.

All tumours having masses of papilloma or solid growth should be watched after operation, for investigation of the after-histories of ovarian cysts shows that about one-quarter of them are malignant. This malignant change may be due to rapid growth of the papilloma, which histologically shows no sign of cancer, or to the rapid proliferation of the gland-spaces (with scanty interglandular stroma) or of the epithelium.

A somewhat rare tumour of the ovary is the pseudomyxomatous cyst, which is characterized by its thin walls and consequent great tendency to rupture and discharge its jelly-like contents. It is liable after rupture to give rise to secondary growths containing the same jelly-like material in the omentum or peritoneum. Notwithstanding the development of these secondary growths, its malignancy is not great.

A rare form of ovarian cyst is the "grape-like tumour," in which the cysts are loosely connected together with stalks like the berries of a bunch of grapes.

Echinococcus cysts have very rarely been found in the ovary.

424 S. Mandelblatt (1907)

425 Deacon (1891)

426 S. Reul (1903)

427 D. Acland (1896)

Tubo-ovarian Cysts are sometimes found when a distended tube or its perifimbrial cyst becomes applied to a cystic ovary, and by pressure-atrophy of the apposed walls causes the cyst and tube to communicate with each other.

423. A unilocular ovarian tumour of the size of an orange, with the Fallopian tube. The surface of the tumour is covered with lymph, and projecting from near the fimbriated extremity of the tube is a flat tumour 1½ cm. in diameter and 6 mm. in thickness, which has all the appearance of a fibroma. 7008

Microscopic Structure.—The tumour is a fibroma.

424. A uterus with two ovarian cysts containing large masses of papilloma, some inside the cysts and some which have grown through on to the surface. The tumours and uterus are firmly matted together by thick adhesions. The uterus appears to be healthy, except for the dense adhesions on its surface. 10669

Microscopic Structure.—The papillomata have a fibrous stroma, in places myxomatous, and are covered with columnar epithelium, one layer thick, often arranged in papillæ. In the stroma are tubular spaces which are sections of the interpapillary crypts.

Removed (H. R. S.) from a patient aged 32, in November 1907. The patient was examined in January 1909; the abdominal and vaginal scars were sound, and the patient was quite well, but complained of slight pain on coitus. The vaginal scar was supple; there was no growth or induration to be felt.

425. A large ovarian cyst. The wall is very thick. A cyst 2 inches in diameter has ruptured on the surface, and the ruptured wall has retracted. 6763

Removed (H. R. S.) from a patient aged 52.

426. A large ovarian tumour with slight adhesions on the surface. The lining of the cyst is covered with opaque lymph. 6945

Removed (H. R. S.) in February 1903 from a patient, 6 weeks after confinement, who was suffering from bronchitis and sapræmia, with a temperature of 103°–104° at the time of the operation. The labour had been normal, and the patient had no abdominal pain at the confinement, but was very feeble during the whole puerperium, and had an exceedingly offensive discharge. When admitted the abdomen was greatly distended, more than by the uterus at term. There was neither pain nor tenderness, and the tumour was movable. The tumour was slightly adherent to the abdominal wall and extensively to the omentum. It contained over 15 pints of pus. No drainage was employed, and the patient made a good recovery.

427. An ovarian tumour with a piece of adherent abdominal wall which was removed together with the tumour. There are very numerous and strong adhesions over this part of the tumour near the abdominal wall, due to tapping before the operation. 7510

Removed Jan. 1896 (H. R. S.) from a patient aged 27. The tumour was present during the patient's pregnancy, and was tapped by a doctor a fortnight after delivery (August 1895), when ten pints of fluid were removed. The patient made a good recovery.

428. Part of the Fallopian tube and left ovary from a case of acromegaly. The ovary is distended by a cyst $3\frac{1}{2} \times 2\frac{1}{2}$ cm., with a smooth yellowish lining, and has probably originated in a Graafian follicle. 6995

Microscopic Structure.—The cyst is lined with a single layer of short columnar epithelium.

429. Two ovaries removed from a patient suffering from hæmorrhage due to uterine fibroids. The ovaries are enlarged, the biggest being $4\frac{1}{2} \times 3 \times 2$ cm. Under the microscope the organ exhibits an abnormal development of fibrous tissue and lack of cellular elements. 7443

430. Part of a left Fallopian tube and the ovary bisected. The ovary measures $4\frac{1}{2} \times 4 \times 2\frac{1}{2}$ cm., being in great part occupied by a cyst filled with blood-clot. On separating the blood-clot the lining appears to be smooth, but blood-stained.

Three small cysts are found in the periphery of the organ, and one of these is filled with bloody mucus. 6705

Microscopic Structure.—The cysts are luteal cysts, the cells in the wall of the larger cyst being very large, and those of the smaller cyst degenerated.

Removed (H. R. S.) from a patient, aged 22, from whom a dermoid tumour of the opposite ovary was removed at the same time.

431. A tube, mesosalpinx, and part of a unilocular ovarian cyst. In the mesosalpinx is a yellowish-white tumour of the size of a haricot-bean, from the surface of which a small tumour hangs by a thread 1 cm. long (Kobelt's tube). A section of the tumour in the mesosalpinx is seen to be partly cystic and partly solid. 9493

Microscopic Structure.—The small yellowish-white tumour is a lipoma, and has adjacent to it a cyst with a fibrous wall and lined with a single layer of columnar epithelium. At one spot a little diverticulum is seen to pass off into the wall of the larger cyst.

Removed (H. R. S.) from a patient aged 66.

432. A multilocular ovarian tumour of the size of an adult head. It is covered with adhesions and contains large masses of papilloma growing from the lining of the cysts. The wall is very thick, varying from 3 mm. to a centimetre in thickness. 7006

Microscopic Structure.—The ovarian tumour shows cysts lined with columnar epithelium, with numerous papillæ projecting into the cavity of the cysts. Some parts of the wall are intensely inflamed and degenerated in places.

From a nullipara, aged 34, who had been known to have the tumour for two years. On July 10, 1893, she awoke with great pain in the abdomen and vomiting, which lasted all day. In four days she got a little better, and on passing a motion was suddenly seized with pain and began to vomit again. She was admitted July 14 in the evening, and the tumour was removed the next day. It was found to be ruptured. The patient recovered well, but in May 1896 a mass was felt in the abdomen which appeared to be malignant.

433. A multilocular ovarian cyst of the size of a cocoa-nut, with a healthy tube. There is only one small secondary cyst, which is filled with blood. There are no adhesions. A few scattered papillomata of the size of a small pea are present. 8527

Microscopic Structure.—The cyst is lined with columnar epithelium. In places this grows down and cuts off portions of the fibrous wall of a wedge shape with base downwards. These fibrous sections assume a pedunculated and branched shape (fibroid polypi), and the stroma in them is in some cases myxomatous, and the epithelium in places assumes a flattened shape.

434. Part of a multilocular ovarian cyst measuring 20×19 cm., which is covered with adhesions. The wall is 1 mm. thick, and near the pedicle are seen several cysts and sacs and strands which have resulted from the bursting of cysts, with papilloma on them. The inner surface of the cyst is blood-stained in parts. (See also No. 435.) 9299

Microscopic Structure.—The cyst is lined with columnar or cubical epithelium, and with papillomata covered with columnar epithelium.

435. Half a multilocular papillomatous ovarian cyst measuring 14×7 cm. It is somewhat conical in shape and is covered with shaggy adhesions. On the outer surface of the narrow end projects a mass of pedunculated warty growth 5 cm. in diameter. The inner surface is generally smooth, but shows the remains of septa. Small masses of papilloma are growing from it in several places. The section of the tube shows the mucosa to be thickened.

The uterus from this case, removed at the same time, measured $14 \times 6\frac{1}{2} \times 4\frac{1}{2}$ cm., was covered with thick adhesions, and contained a mucous polypus in the body and in the cervix and two minute fibroids in the uterine wall. 9300

436. A multilocular ovarian tumour, which in its collapsed condition measures 18×16 cm. The tube is normal and 10 cm. long. The outer surface of the

430 Stone (1891)

431 Livingstone (1904)

tumour is smooth; its wall is 1–2 mm. thick, generally. Numerous secondary cysts are seen projecting on the surface. They contain mucus, but no growth or dermoid material, but at one spot at the periphery the wall of the tumour is thicker (7 mm. in thickness), and underneath this is a dermoid cyst as big as a hen's egg, lined with skin, from which hairs project, and containing sebaceous material. 8135

Microscopic Structure.—The dermoid is seen to contain skin and the multilocular cyst is lined with a single layer of columnar epithelium.

From a patient aged 36.

437. Two ovaries and tubes. The ovaries measure $4 \times 2\frac{1}{2} \times 2$ and $4\frac{1}{2} \times 2\frac{1}{2} \times 2$ cm. Each contains numerous small cysts, and the larger has a cyst that has ruptured on the surface, and some of the cysts contain blood. The smaller ovary shows four cysts with hæmorrhage, and in one of them the hæmorrhage is in the substance of the corpus luteum rather than into its cavity, as shown by microscopic examination. The rugæ of the tubes are greatly thickened and hypertrophied towards the free extremity, filling up the whole lumen, which is 8 mm. across. 9722

From a patient aged 29.

438. A cystic ovarian tumour, $13 \times 9\frac{1}{2} \times 8$ cm. The Fallopian tube is normal. On the outer surface of the cyst are two solid tumours measuring $2 \times 1{\cdot}7 \times {\cdot}5$ cm. in thickness, which have a fibromatous appearance on section. On the inner surface of the cyst are numerous papillomatous growths, most marked at the inner end of the cyst.

A section of one of the fibroid growths shows the tumour to involve the whole thickness of the wall, down to its membranous lining. 6699

Microscopic Structure.—The tumours on the surface are fibro-myomata, and the papillary projections on the inner wall are due to a fibro-myomatous thickening of the tissue beneath the single layer of columnar epithelium, which is raised up into papilliform projections.

439. The uterus and appendages of a still-born child. In the outer part of the right ovary is a cystic tumour made up of numerous small cysts, the whole measuring $1\frac{1}{2} \times 1$ cm. The inner end of the left ovary is occupied by a smaller cystic swelling of the size of a small pea, and another cyst of the size of a No. 7 shot is seen at the outer part of this ovary.

440. The right half of a uterus with the broad ligament, etc. The ovary has been bisected to show six distinct rounded cysts, which render its surface nodular. The interior of each cyst is smooth, but in some of them are small sessile papillomatous growths; the contents were quite clear. The cysts are evidently dilated Graafian follicles, and project on the surface without any covering from the parenchyma of the ovary. The hilum of the ovary is normal. 6531

Microscopic Structure.—The cyst is lined with columnar epithelium. One of the papillomata cut across has a myxomatous stroma and low cubical or flattened epithelium.

441. The left half of a uterus with the broad ligament. The left ovary, bisected, is in an early stage of cystic disease. Several cysts are seen in section: the largest of these is oval in shape and about the size of a cherry; its walls are quite smooth and thin. Each cyst contained a variable quantity of gelatinous material; in the largest cyst this had the appearance of hard-boiled yolk of egg. The fluid part of the contents was quite clear. In the wall of the Fallopian tube, near its fimbriated end, is a collection of minute cysts, each containing yellowish material. There is also a small subperitoneal cyst on the posterior surface of the broad ligament. 5475

The opposite ovary was the seat of a cystic tumour nearly as large as a man's head.

Microscopic Structure.—The wall of the ovarian cysts is lined with short columnar epithelium. There is no papilloma.

442. A uterus with its appendages and the upper part of the vagina, which has been laid open posteriorly to show the os uteri. The left ovary is dilated into a smooth round cyst measuring 4½ cm. in diameter; the wall measures 5 mm. in its thickest part, and in the thinnest about 1 mm. At the bottom of the cyst are two small cysts with very thin walls; they have been laid open, but the cyst-wall collapses on account of its extreme thinness. The right ovary is normal. 3791

443. A large ovarian cyst, which has been everted. The inner wall is traversed by broad flat bands of fibrous tissue, which are the remains of the fibrous walls of secondary cysts which have been absorbed into the common cyst by rupture of their walls. The surface is studded with secondary cysts of varying size; these are arranged in clusters, but a few are separate.

444. Part of a large multilocular ovarian cyst, attached to which is a quantity of omentum, the vessels of which supplied it with blood. The cyst was removed by operation by Sir John Williams. It was found that, owing to twisting of the pedicle, the cyst had become completely separated, and no trace of the pedicle could be found. 6599

445. A uterus with a large ovarian cyst laid open. The uterus itself is normal. The right Fallopian tube is much elongated, measuring 18 cm.; this is due to the gradual stretching taking place as the cyst grew. The right ovary is represented by the cyst. Its interior is roughened from the presence of slightly elevated patches, which in some places can be seen to be finely papillated, and are no doubt an early stage of intracystic growths. At one part there is a definite growth, oval in shape, and measuring about one inch in its longest diameter. On its surface are one or two depressions corresponding to minute cysts in the interior. The cut surface has a fibrous appearance, and numerous minute cysts are dispersed throughout it. 1442

Microscopic Structure.—The oval growth is a dense fibroma made up of interlacing fasciculated fibrous tissue with a few small cysts with a lining of columnar epithelium surrounded by a multiple epithelial layer of large cells, evidently small corpora lutea. The papillary elevations are due to irregular fibroid thickening of the inner wall of the cyst.

446. A uterus with its appendages, both ovaries being in an early stage of cystic disease. The ovaries are enlarged, measuring about 4–6 cm. in diameter. They are irregular on the surface, owing to the presence of small cysts, some of which have been laid open. These are seen to be smooth internally, and some of them contain papillomatous intracystic growths; in some instances the cyst is almost filled by these growths. Similar growths are seen attached to the outer surface of each ovary; they are for the most part coarsely papillomatous and attached by narrow pedicles.

The cysts vary in size; the largest is situate in the left ovary, on its posterior aspect, and measures 2·5 cm. in diameter; this only contains a small intracystic growth. A smaller cyst on the posterior aspect of the right ovary is almost completely filled by a similar growth. The cysts contain clear serous fluid.

The Fallopian tubes and uterine cavity are normal. 5034

447. A left suppurating unilocular ovarian cyst with the omentum. The surface of the cyst is rough from the presence of adhesions, and the omentum is greatly thickened from œdema; it is intimately adherent to the cyst. At one spot the tumour has perforated, as shown by purulent lymph outside the cyst. At another spot outside the cyst is seen a rough sloughy area in which is a perforation. This area corresponds to the sloughy area in the small intestine, which was adherent there and on the point of perforating.

Also a piece of small intestine, 3 cm. long on one wall by 1½ cm. on the other. On the peritoneal aspect is seen the rough ulcerating surface which penetrates to

44 9. Lyons

the mucosa. The wall of the intestine is thickened, and the mucous membrane under the slough is œdematous and has a patch of lymph on it, the mucosa on the opposite wall being healthy. The mesentery is œdematous, 2 cm. wide at its attachment to the intestine. This piece of intestine was excised together with another piece 1 cm. long, so as to get rid of the œdematous mesentery and permit end to end anastomosis.

Also the vermiform appendix with its œdematous mesentery and somewhat congested and thickened outer end, covered with adherent blood-clot on which is purulent lymph, where it was adherent to the cyst and coil of intestine. On section the appendix appears to be healthy, but there is some œdema of its wall and thickening of the mucous membrane, but no sign of inflammation or foreign body in its lumen. 11046

Removed (H. R. S.) from a patient aged 42, who was admitted into U. C. H. extremely ill and with high fever. The tumour, of the size of an adult head, was found in the abdomen, fluctuating and extremely tender and adherent to the uterus, which could not be defined as separate from it on vaginal examination. It was diagnosed as a suppurating ovarian tumour, possibly malignant. At the operation in March 1909 the œdematous omentum was found to be adherent over the whole of the front of the cyst. On separating this with the hand on the right side the cyst was opened and a large quantity of fetid purulent blood escaped. This was removed by flushing and gauze, which was packed in the cyst. The coil of adherent small intestine was gently pinched off the cyst. The appendix adherent at the same spot was also separated and the cyst sponged off the mesentery, to which it was strongly adherent. The pedicle was then tied with silk, the intestine excised, and end-to-end anastomosis performed with fine silk. The appendix was removed, after tying its mesentery, by passing a purse-string suture round its base, circumcising the peritoneum above this, dividing the wall with the galvano-cautery, and tying the purse-string. The operation lasted one hour and fifty-two minutes. A rubber tube was employed for a few days in the lower end of the wound. The pulse and temperature fell to normal after the operation. The patient made a good recovery. (See Proc. Roy. Soc. Med. Obstet. Gyn. Sec. vol. 4, p. 157.)

448. A multilocular papillomatous ovarian tumour measuring $16 \times 11 \times 9$ cm. On the other side was a similar tumour somewhat smaller. Large masses of papilloma are seen inside the cyst, on the surface and depending from its lower end. Many of these are clubbed, and some of the lower ones are swollen into cystic bodies like mistletoe-berries (cystic papillomata). This cystic condition is confined to the external papillomata. Besides the other cyst, several pieces of growth were broken off during removal and were slightly adherent to but not growing on the intestine. 11656

Microscopic Structure.—The growths are papillomata consisting of a fibrous stroma covered with columnar epithelium. In many places secondary papillomata are seen sprouting from the main stem. The main stems consist of fibrous tissue, which in the finer branches is degenerated to a myxomatous structure, which sometimes is cystic, so that the papillomatous berry consists of nothing but an epithelial covering; in other places the œdema appears to have lifted the epithelium from its stroma. There is no evidence of epithelial proliferation.

Removed (H. R. S.) in March 1911 from a patient aged 40 who had never been pregnant, who recovered well after the operation. In May 1910 the abdomen had been opened by a gynæcologist and closed, as he regarded the case as malignant and inoperable. The abdomen was at that time greatly distended with fluid, and about 2 gallons were removed by tapping about every fortnight till the tumours were removed, after which there was no formation of fluid, and the patient was well in July 1911.

449. A papillomatous ovarian tumour, measuring $11 \times 9 \times 9$ cm. It has a few adhesions on the surface and contains several cysts, from the walls of which masses of papilloma are seen growing; in two of these the papilloma is fixed in the coagulated colloid contents. The upper cyst is full of papilloma, which has burst through the wall forming a composite warty mass 7×5 cm. in area. The opposite ovary was also the seat of a multilocular cyst measuring $11 \times 8 \times 8$ cm., was covered with adhesions, and contained a very small amount of papilloma growing from the inner wall of the cyst, which, however, was nowhere perforated. 9656

Microscopic Structure.—A section of the papillomatous mass shows a fibro-myxomatous degenerated stroma and a papillary surface covered with a single layer of columnar epithelium.

Removed in Sept. 1904 (G. F. B.) from a patient aged 27. There was a history of a blow on the left side of the abdomen followed by sudden enlargement of the abdomen. At the operation the left tumour was found ruptured and a large quantity of ascitic fluid was present in the abdomen, with many adhesions. There was a history of alcohol, but the liver was not cirrhotic. Patient recovered well.

450. A Fallopian tube with mesosalpinx and ovary. The tube is slightly thickened at its outer end and has a double ostium, the two halves separated by a smooth band. A cyst of the size of a large pea depends from one of the tubes of the parovarium; and the ovary, $4\frac{1}{2} \times 4$ cm., contains a cyst of the size of a hen's egg, which is one of several cysts of a multilocular tumour. 7778

Removed (H. R. S.) from a patient aged 31, who had passed a hydatidiform mole a few months previously.

451. A uterus with the appendages and a right unilocular ovarian cyst of the size of an orange. The left ovary is normal. Depending from ovarian fimbriæ on each side is a small hydatid of Morgagni. 10088

Microscopic Structure.—The opposite ovary shows no growth or cyst.

Removed post mortem from a lunatic.

452. A multilocular ovarian tumour of the size of a football. It is smooth but irregular, and in places slightly pitted on the surface. The cysts had gelatinous contents. There is no solid growth or papilloma. The tube is thickened and its peripheral end closed, and the contained rugæ slightly hypertrophied. 9466

Microscopic Structure.—The main cyst is made up of fibrous layers and has the remains of a cubical epithelium on its inner surface. The cyst of the opposite ovary was lined with cubical and flattened epithelium, which is thrown into papillary folds and forms branching papillomata in places. At one part there are definite gland-spaces in the substance of the wall beneath the papilloma lined with a single layer of columnar epithelium.

Removed (G. F. B.) from a patient aged 92½. The patient died of acute bronchitis on the 8th day.

The opposite ovary was similarly affected, but the tumour was somewhat smaller and contained papilloma on its inner surface.

453. A multilocular ovarian tumour, weighing 7 lb. $4\frac{1}{2}$ oz., and measuring $22 \times 14 \times 13$ cm. There are no adhesions on the surface. The Fallopian tube is slightly hypertrophied. The section shows a honeycomb arrangement of the septa formed by the secondary cyst-walls, which contain gelatinous contents, in places deeply blood-stained. 10246

Microscopic Structure.—The septa are densely infiltrated with blood and leucocytes.

Removed (H. R. S.) from a patient aged 27.

454. A multilocular ovarian tumour and the mesosalpinx, of which the pedicle has been twisted. The tumour measures $17 \times 13 \times 10$ cm. It is covered externally with slight adhesions. The tube is thickened and the mesosalpinx greatly distended with blood. The tube is covered with adhesions, and the vessels of the pedicle are thrombosed. A raw surface is seen in the cyst where the adherent tube has been separated from the cyst-wall. The tumour consists of three main cysts, and hæmorrhage has taken place into the wall and septa. The contents are coagulated blood and mucus. 9408

Removed (H. R. S.) from a patient who had had the tumour more than a year without symptoms till an acute attack of peritonitis a few days before operation. The tumour was adherent to the surrounding parts and the vessels were so completely thrombosed as a result of a twist of the pedicle ($1\frac{1}{2}$ time) that it was cut across and no ligature applied. The raw surface was stitched over with fine silk.

455. A multilocular ovarian tumour measuring $11 \times 9\frac{1}{2} \times 4$ cm. in the collapsed condition. The outer wall of the cyst has a few adhesions, and at one end

450 M. Sache (1897)

453 K. Chisholm (1906)

455 Rose (1894)

456 Moore (1900) ? Hanley

459 Pandmeker (1906)

460 E. Lester (1903)

warty masses of papilloma are seen, in some places sessile and in some attached by stalks. Both the main cyst and a small secondary cyst also contain numerous papillomata inside. 7303

Microscopic Structure.—The growth is a papilloma.

Removed (H. R. S.) from a patient aged 36, in 1894. A papillomatous cyst containing many pints of fluid was removed from the other side at the same time. The patient was seen on April 11, 1911, and was quite well.

456. Half a papillomatous ovarian cystic tumour of the right side, which measured $10\frac{1}{2} \times 8\frac{1}{2} \times 6$ cm. The tumour is lobulated on the surface, and one end is covered with a warty mass which has grown through the cyst-wall. On the cut surface two larger cysts are seen containing small masses of papilloma and other smaller ones completely filled with growth, which is seen in places to have grown through the wall. The larger cyst contained buff-coloured coagulated mucus. 8614

Microscopic Structure.—There are numerous cysts containing large masses of papilloma covered with columnar epithelium. In some places tubular spaces are so closely set as to resemble carcinoma, and in others tubules seem to be penetrating into the wall of the cyst.

Removed (H. R. S.) on Dec. 5, 1900, from a patient aged 49 (5 children), who had had a broad ligament cyst removed 10 years previously. There were some fibroids in the uterus; the left ovary could not be made out, owing to adhesions from the former operation. The patient was quite well on Dec. 6, 1902, and no mass could be felt in the pelvis.

457. An ovarian cyst, $17 \times 15 \times 9$ cm., the pedicle of which was twisted. The tumour is blue-black in colour with some lymph upon the surface. The mesosalpinx is but slightly thickened, but the anterior layer of the broad ligament below the tube is raised up by effused blood into a ridge 2 cm. in diameter. The cyst-wall varies from 2 mm. to 1 cm. in thickness, and is extensively infiltrated with blood. 9051

Removed (G. F. B.) from a patient who also had uterine fibroids.

458. Half an ovarian cyst 18 cm. in diameter, the pedicle of which was twisted. The wall of the cyst, the Fallopian tube, and the mesosalpinx are densely infiltrated with blood. The layers of the broad ligament have been separated by a hæmatoma $10 \times 6 \times 3\frac{1}{2}$ cm. 10898

Microscopic Structure.—The whole of the wall of the cyst, except the superficial fibrous layer, which is œdematous, is permeated with blood.

Removed (G. F. B.) from a patient aged 22, who had had an attack of abdominal pain 3 months before the attack for which she was admitted.

459. A papillomatous ovarian cyst, $12 \times 11 \times 11$ cm. It has been turned inside out. The superficial surface is smooth and free from adhesions. The exposed (inner) surface is covered with numerous papillomata of all sizes up to that of peas, many of them extremely minute. Though it contains but one cyst, the remains of septa of secondary cysts are seen. 10196

Microscopic Structure.—The wall of the cyst contains numerous papillary growths and elevations of the surface, with a single layer of columnar epithelium, which in many places has fallen away. In the substance of the wall are narrow cystic spaces lined with columnar epithelium, which shows epithelial sprouts.

Removed April 1906 (H. R. S.) from a patient aged 60, who was quite well in May 1911.

460. A papillomatous ovarian cyst 11×10 cm., in the empty condition. The cyst has been turned inside out. The Fallopian tube has an accessory ostium 1 inch from its outer extremity. The outer surface is smooth. The inner surface is covered with whitish sessile growths, some of which are cystic and some solid; also by growths which appear to be papillomata. 9146

Microscopic Structure.—The warty and papillomatous growths have a fibrous stroma and are covered with low cubical epithelium. The fibrous stroma in the finest growths has become myxomatous.

Removed on Jan. 10, 1903 (H. R. S.), from a single patient aged 31.

461. Half of a left multilocular ovarian cyst, which measured $17 \times 12 \times 7$ cm. It is smooth on the surface, and on section shows numerous cysts containing very hard colloid contents, and in places papillomata are seen growing from the walls and perforating the tumour at one place, where a pedunculated mass has been stitched on. In several places there are solid masses of white growth with a homogeneous slightly granular surface ("solid adenoma"). 9043

Microscopic Structure.—The solid "growth" consists of numerous minute cavities lined with low cubical epithelium and containing mucoid material and cells apparently desquamated from the surface and degenerated. The papilloma described above has a typical structure.

Removed Sept. 1902 (H. R. S.) from a patient aged 50. Eight years previously the left ovary was found to be slightly enlarged and adherent. The patient recovered well and remained well in April 1911. She had had four children, the last at the age of 26. A sister had had bilateral dermoids removed (H. R. S.).

462. An ovarian tumour measuring $24 \times 17 \times 12$ cm., together with an adherent foot of small intestine. The tumour is a multilocular cyst, and is covered with adhesions and omentum. The largest cyst, nearly of the size of an adult head, has been laid open, showing numerous small masses of papilloma on its inner wall. The surface of the small intestine is covered with adhesions and much bruised, and is constricted at about 1 inch from its extremity, so that it is not much thicker than a pencil. The wall of the bowel just at this spot is very thin, and there is a minute aperture through it. 10455

Microscopic Structure.—A section of the cyst-wall shows fine dendritic papillæ covered with columnar epithelium.

Removed Feb. 1907 (H. R. S.) from a patient aged 58. The divided small intestine was united by lateral anastomosis. A good recovery ensued. An attempt had been made by an abdominal surgeon to remove the tumour three years previously, but he considered that the tumour was irremovable, tapped the cyst, and closed the wound, which accounts for the very extensive and dense adhesions, necessitating the use of the knife and scissors to sever them (see Proc. Roy. Soc., Med. Obstet. Gynæc. Sect. vol. i. 1908).

In 1910 growths could be felt in the upper part of the left hypochondrium and apparently in the omentum, and from these the patient died of asthenia in Sept. 1910.

463. Part of a ruptured left ovarian cyst. The tumour was found lying in the pelvis in its present ragged condition. It measures 23×10 cm. The portion of the cyst that remains is smooth on the surface, but inside it has a stringy appearance with very little solid growth. 9207

Removed (H. R. S.) on March 6, 1903, from a multipara aged 50, who felt quite well except for the weight of the abdomen, which had become enormously distended during the last 6 months. At the operation ten quarts of green colloid material were scooped out of the peritoneal cavity, and one or two quarts were lost. The intestines were somewhat reddened, perhaps a little thickened, but were not adherent anywhere; they were smeared with colloid material, so that a small quantity had to be left behind. The other ovary was not removed. The patient recovered well, and had no pain or discomfort during convalescence. (For further history, see No. 464.)

464. A tumour of the size of a small orange. It is made up of cystic cavities filled with jelly-like material, and was removed from the pelvic peritoneum on Nov. 28, 1904, *pseudomyxoma peritonei*. 9701

Microscopic Structure.—The tumour consists of loose connective tissue with small cystic cavities lined with columnar epithelium.

Removed Nov. 1904 (H. R. S.) from a patient who, a year and a half previously, had had a pseudomucinous cyst of the ovary removed. A small cyst of the size of a hen's egg was found in the hepatic flexure of the colon, but was not removed. The patient recovered well. (See No. 465.)

465. A ruptured right ovarian cyst, containing, projecting from its inner wall, many thin-walled cysts filled with colloid material. 10790

Microscopic Structure.—The cyst consists of a dense fibrous wall with numerous cysts lined with columnar epithelium thrown into closely-set papillary folds.

Removed (H. R. S.) on April 4, 1908, from the same patient as Nos. 463 and 464. A large quantity of colloid material was again found in the peritoneum, and a cyst of the size of a

.461. Booth (1902)

63-4-5 Cavendish. I heard from a friend of the patients sister that Mrs Cavendish is ill NOV 5th 1918 (H.A.S.)
I spoke for her 4th time NOV 13 1919. She recovered well though she was emaciated + had a weak heart.
She died on May 6th, 1920 (letter from her Daughter)

466 Yokuley (1903)

467 C. Howard (1891)

468 Earle (1905)

469 M. Boomer (1908)

pigeon's egg was found in the sigmoid mesocolon, and was incised and its colloid contents evacuated. The cyst in the hepatic flexure, seen at a former operation, could not be found. The patient recovered well, but some months later some indefinite induration was felt in the pelvis on vaginal examination, pointing to the probability of the development of other tumours. The patient, however, wrote three years later (April 8, 1911) to say that she was perfectly well—that is, eight years after the first operation.

466. A right unilocular ovarian cyst, $7\frac{1}{2} \times 6 \times 5$ cm., containing gelatinous contents, together with the Fallopian tube distended into a hydrosalpinx. There are numerous adhesions between the tumour and the tube, the extremity of which is closed. Near the end of the tube is a prominence in the surface of the cyst, which on section is seen to be a cystic corpus luteum with blood-stained gelatinous contents, which no doubt had contained the ovum of the pregnancy. Several other minute cysts in the wall have slightly yellow walls and gelatinous contents. The tube must have become closed soon after the impregnation. 9310

Microscopic Structure.—The hæmorrhagic cyst is a corpus luteum with much hæmorrhage into it which is mixed up with and separates the individual luteal cells. Some thin-walled vessels are distended with hyaline coagulum and red corpuscles. The small lenticular cyst is a degenerate corpus luteum, with granular degenerated blood. The other cysts are old cystic follicles and corpora lutea.

Removed (H. R. S.) from a patient aged 25 after a miscarriage seven weeks previously. Three years previously he had removed an ovarian dermoid containing hair and sebaceous material of the size of an emu's egg, of which the pedicle was twisted, 5 weeks after labour at term.

Tubo-ovarian Cysts.

467. A left tubo-ovarian cyst turned inside out, measuring $7 \times 5 \times 3$ cm. A valve-like opening of the Fallopian tube is seen, from which the rugæ of the tube can be traced over the surface except for a smooth area 4×5 cm. in diameter, which is formed by an ovarian cyst, a valve-like septum on which shows a ruptured secondary cyst. 6701

Microscopic Structure.—A section of the ovarian part has the characters of ovarian tissue. At one part is a degenerated corpus luteum.

Removed (H. R. S.) from a patient aged 27, who menstruated first at $13\frac{1}{2}$, was regular (6–7 days); discharge copious; some pain before menstruation. She had had lupus of the face since she was 4 years of age. Had no pelvic symptoms.

There was a tubo-ovarian cyst of the size of the fist on the right side.

468. A fibro-myomatous uterus with a left-sided tubo-ovarian cyst. The uterus measures $15 \times 6 \times 7$ cm., and contains several undegenerated intramural fibro-myomata in the body. The cervix is 7 cm. long, very slender, mucosa normal. The body 2 cm. long, the mucosa normal. The tubo-ovarian cyst measures $14 \times 10 \times 9$ cm. On the surface of this a secondary cyst has been opened. The tube, distended to 1 cm., opens into the large cyst by a valve-like aperture into which a piece of glass has been passed. 9747

Removed Jan. 1905 (H. R. S.) by total abdominal hysterectomy from a patient aged 34. The cyst was impacted in the pelvis, and gave rise to pain which prevented her from performing her work as an actress.

469. A tubo-ovarian cyst measuring $10 \times 8 \times 7$ cm. and weighing $8\frac{1}{2}$ oz. The uterine end of the tube is not distended; it is somewhat tortuous, and 2 cm. in its widest part, and communicates with the unilocular ovarian cyst. From the orifice of communication the fimbria can be traced for a distance of 4 cm. 10865

Microscopic Structure.—The cyst has a fibrous layer and is lined with flattened epithelium.

Removed (H. R. S.) from a patient aged 39. Patient had noticed the tumour for two years.

470. A tubo-ovarian cyst of the size of a hen's egg. The tube is dilated and opens by an orifice 1 cm. in diameter, from which the rugæ diverge over the tubal

portion of the cyst. The ovarian portion of the cyst is smooth. The ovary itself contains a blood-cyst, and gradually thins out into the wall of the tubo-ovarian cyst. The opposite ovary was adherent to the tube, which was slightly dilated, but the ovary was not cystic. 9947

Microscopic Structure.—The blood-cyst occupies the centre of a structure which appears to be a degenerated corpus luteum.

Removed July 1904 (H. R. S.) from a patient aged 46. The patient recovered well, but was somewhat neurasthenic in 1911.

471. A hydrosalpinx with an adherent ovarian cyst communicating with it (tubo-ovarian cyst). The pedicle has been twisted, causing an effusion of bloody fluid into the ovary and the cysts. The ovarian cyst, though unilocular, shows the shrunken septa of secondary cysts, and the septum between the distended tube and ovarian cyst is very thin and has given way at one place, forming an aperture 1 cm. in diameter. 10556

Removed (H. R. S.) from a patient aged 38.

Parovarian and Broad Ligament Cysts.

Parovarian tumours arising in the tubes of the parovarium (Wolffian body, organ of Rosenmüller, epoophoron) are unilocular, usually of moderate size, and are contained within the layers of the broad ligament. They are encircled by the Fallopian tube and its ovarian fimbria, the ovary and its ligament, and the wall of the uterus. These structures may become greatly stretched if the tumour is large. The tumours contain a thin watery fluid and often contain papilloma (473). They may undergo torsion (476), but less commonly than ovarian tumours.

A small tumour is often found beneath the ovarian fimbria; it is of small size and sometimes contains papilloma (474). Small serous cysts are also often found in the broad ligament.

472. Half of a uterus and the right appendages. Occupying the outer part of the mesosalpinx between the Fallopian tube and the ovarian fimbria is a cyst, measuring $3\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{2}$ cm., and slightly uneven on the surface. 6599

473. A parovarian cyst measuring $16 \times 14 \times 12$ cm. The Fallopian tube (through which a thread has been passed) and its ovarian fimbria are greatly stretched and surround the tumour. A window has been cut in one side of the cyst exposing one large mass and several smaller scattered masses of papilloma. The cyst-wall is thin and is covered by peritoneum, which has been reflected at one place. 6717

Microscopic Structure.—There are several cysts in the ovary, lined with flattened epithelium.

Removed (H. R. S.) from a patient aged 49.

474. A thin-walled cyst of the size and shape of a plover's egg. There are some flimsy adhesions on the outside. In the lining of the cyst are several scattered masses of papilloma. 9080

Microscopic Structure.—The cyst contains a fibrous layer, most dense towards its inner surface, which is thrown up into nodular elevations covered with short columnar epithelium.

The cyst was removed from the broad ligament beneath the ovarian fimbria from a patient aged 45, from whom at the same time a myomatous uterus weighing 3 lb. 11 oz. was removed.

475. A parovarian cyst, measuring $25 \times 22 \times 10$ cm. The peritoneal investment is seen to contain numerous vessels, and one pole is encircled by the stretched Fallopian tube (33 cm. long) through which a thread has been passed, the stretched ovarian fimbria (20 cm. long), and the ovary with its ligament. The tumour contained 8 pints of fluid and has no growth inside it. 6762

470 Fairfield (1904)

471 E. Crabb (1907)

474 Taylor (1902)

475. Jennings (1891)

476 Powell (1900)

477. T-Imes (1911)

478 E. Holloway (1908)

479 Linker (1896)

Removed (H. R. S.) on Oct. 30, 1891, from a patient aged 26. The tumour had been noticed by the patient 2 years and by the doctor 1 year previously. It was also noticed (H. R. S.) during labour Aug. 28, 1891, at which the patient was delivered with forceps of a living girl, and recovered well, the highest temperature during the puerperium being 99°·6.

476. A parovarian cyst of the left side of which the pedicle was twisted, causing inflammation and great enlargement of the ovary, which in the fresh state was of black-red colour and more than twice its normal size, the cyst itself not being inflamed. Lymph is seen on the surface of the ovary and adhesions between the ovary and cyst. (See Obstet. Soc. Trans. vol. 42, p. 334, Case I.) 8560

Removed (H. R. S.) from a patient aged 16.

477. A right parovarian cyst with the tube and ovary, which had become twisted during pregnancy. The tumour measures $13 \times 9 \times 8$ cm. The ovary measures $8 \times 4 \times 3\frac{1}{2}$ cm. The cyst contained clear yellow fluid and a thick layer of blood ($2\frac{1}{2}$ cm. thick) is seen in one place between the broad ligament and the cyst-wall. Blood is also effused into the cut surface of the broad ligament, distending it to a thickness of $2\frac{1}{2}$ cm. The ovary also is infiltrated with blood; a few small cystic follicles are seen in it. On the surface of the broad ligament, but some distance from the tube, is seen what appears to be an accessory fimbria. 11655

Removed (H. R. S.), Mar. 25, 1911, from a patient, aged 35, who had had one child and was at the time of the operation 3 months pregnant. Patient was perfectly well till 8 A.M., when she felt pain in the right side on getting out of the bath. The pain and abdominal tenderness became very severe; there was slight vomiting. When seen in consultation at 10.30, there was a hard irregular tumour reaching up above the umbilicus on the right side and a soft 3 months pregnant uterus to the left. The lower end of the tumour could just be reached by the vagina. The diagnosis made was that of a twisted right ovarian tumour. The tumour was removed at 2.30 by laparotomy; several ounces of blood had leaked through a crack in the broad ligament. There were no adhesions. The broad ligament had to be tied with several ligatures rather near the uterus on account of the infiltration with blood. The pain entirely ceased after the operation and the patient felt quite well the next day.

The pedicle was twisted two complete turns in the direction of the hands of a clock when the tumour was held in the hand of the operator standing on the left of the patient. The patient had threatened to abort at the second month of this pregnancy, but there was no disturbance during the convalescence till the second week, when abortion occurred with thrombosis of the left femoral vein. The wound healed by first intention, and a good recovery ensued.

478. A parovarian cyst and the ovary and tube, with the twisted broad ligament, all densely infiltrated with blood. The cyst of a purple-black colour, $11 \times 9\frac{1}{2} \times 8$ cm., has been opened showing the purple smooth lining of the single cyst, which contained thin slightly blood-stained watery fluid. The peritoneum has been raised up by a layer of blood 1–5 mm. in thickness, and at one spot is seen a small cyst filled with blood. The wall of the cyst is also infiltrated with blood and about 1 mm. in thickness. The ovary is greatly enlarged, measures $7 \times 4 \times 3\frac{1}{2}$ cm., is curved, densely infiltrated with blood, and contains no cysts. The Fallopian tube and its fimbriated extremity are permeated with blood, and in the broad ligament is a hæmatoma of the size of a large walnut. There is a little lymph on the surface of the ovary and adjacent part of the cyst. 10988

Removed (H. R. S.) from a patient aged 31. 479

479. A large suppurating broad-ligament cyst. The outer surface is covered with adhesions and at its upper part is an enlarged suppurating ovary and part of the Fallopian tube stretched over the surface of the cyst. 7629

Microscopic Structure.—The section shows a small cyst lined with cubical epithelium. The surface of the main cyst is necrotic, œdematous, and has some leucocytic infiltration.

Removed July 1896 (H. R. S.) from a patient aged 45.

Dermoids and Teratomata of the Ovary.

Dermoid tumours of the ovary are usually small tumours with a smooth and even surface, containing one or several cavities (often communicating with each other) which are filled with sebum, which, fluid at the temperature of the body, and often of a milky appearance when it escapes during operation (hence often supposed to be pus), sets into a butter-like fat at the ordinary temperature of the air. Occasionally the fat occurs as small pill-like or seed-like balls (508 A). The cysts are lined with skin which is freely supplied with sebaceous glands. At one part of the cyst is found the embryonic tuft from which and from other parts hair usually grows. Teeth, bone, and almost any or all of the structures of the body may be found in the wall of the tumour. Thyroid gland tissue, or even a well-developed thyroid gland (504), may be met with. Endothelioma (482) or squamous carcinoma (494, 506) is rarely observed.

Dermoid tumours frequently complicate pregnancy (484 to 490). From their small size they are liable to give rise to obstruction to delivery (488). Dermoids are usually unilateral, but may occupy both ovaries, even during pregnancy (484). The contents of dermoid cysts escaping through a puncture or rupture may set up secondary dermal cysts in the peritoneum (507, 508). The tumour should therefore be removed intact.

480. A left ovarian dermoid, weighing 10½ oz. and measuring 10 × 9 × 7 cm. The tumour is smooth on the surface, but slightly pitted, and 2 cm. from the ovarian ligament it is elevated and slightly furrowed, and a prominence 1·3 cm. × 1 cm. is seen, which is the corpus luteum: it has been exposed by excising a wedge. The structure of the tumour at this part is very dense and fibrous. The corpus luteum measures 1·2 × 1·1 cm. in section and has a central cavity filled with gelatinous material, but there are no cysts in the neighbourhood. 3 cm. of the tube remain, and it and the mesosalpinx are normal. The tumour has been divided on one side of the ovarian ligament, and this section has an annular form surrounding a single cyst, the wall nearest the ovarian ligament being 3 cm. thick, while the opposite wall is 7 mm. thick. The part of the wall near the ovarian ligament is very dense and white, but at its lower part is seen a structure 2½ cm. in thickness made up of a central fatty-looking portion with small cysts, from two of which hairs project; others have jelly-like contents and are arranged in series. This structure gradually tails off into a bony tract which almost surrounds the cyst. In the upper part of this tract are divisions somewhat resembling those of vertebræ. The single cyst measures 6 × 5½ cm., and its lining is smooth with indications of secondary septa. At one part of the inner wall is a prominence, from which a hair depends. It contained coagulated mucus and a mass of sebaceous material mixed with hair. 9944

Microscopic Structure.—The wall of the cyst near the corpus luteum consists of dense fibrous tissue.

Removed (H. R. S.) on July 13, 1905, from a patient aged 24, at the end of the 4th month of pregnancy. A right dermoid tumour had been removed 19 years previously. The patient was delivered in U. C. H. of a living child, which weighed 7 lb. 1 oz., on Dec. 12, 1905, and mother and child were quite well in 1909.

481. A bilobed ovarian dermoid, weighing 2 lb. 6½ oz. and measuring 20 × 15 × 11 cm., covered with adhesions. The larger lobe contains a single cyst with a secondary cyst in its wall and a bony mass with a long lock of matted hair. The smaller lobe also contains a single cyst with two smaller cysts in its wall, and it contains a rounded solid mass, uneven on the surface, from which hair grows: on section this contains plates of bone and two dark soft portions in the centre; the main structure of it is apparently fat. 10334

Microscopic Structure.—The cyst is lined with squamous epithelium, and contains large numbers of sebaceous glands in its wall. At one spot is a piece of ossifying cartilage containing marrow.

480 Elmsfield (1905)

482. M. Denny. The growth removed in the posterior wall of the vagina, removed (H.B.S.) at U.C.H. Jan 1917 nearly 14 years after the ovariotomy. The specimen is in the museum. The patient remained well in April 1923.

483 L. Gardener (1895)

484. Warnes (1896)

485 May (1898)

482. A solid ovarian dermoid, measuring $12 \times 9 \times 7$ cm., smooth on the surface, from which projects a single cyst with blood-stained contents. On section there is a single dermoid cyst, measuring $4 \times 2\frac{1}{2}$ cm., filled with sebaceous material and containing hair growing from its wall, but the whole of the rest of the surface is made up of a solid white tumour with clear indications of capsulation in places and with several cysts, particularly towards the centre, filled with blood-stained jelly-like material; the great bulk of the growth has a fibrous appearance. The opposite ovary was not enlarged; it had a single cyst near the hilum. 9296

Microscopic Structure.—The dermoid cyst is lined with stratified epithelium. The growth consists of a dense fibrous stroma permeated by a close network of epithelioid cells, usually two or three cells deep, in some places forming broader bands. These bands seem to lie in lymphatic spaces. In some places a blood-vessel is seen in the centre of the growth which is intimately connected with its outer wall. The cells are elongated, with their axis transverse to the long axis of the strands; they have large nuclei. The growth is a perithelioma.

Removed on 23 May, 1903 (H. R. S.), from a single patient aged 44. The patient was well in May 1911.

483. An ovarian dermoid, measuring $11 \times 10 \times 7$ cm., with the tube and broad ligament. The tube is severed at a distance of 2 cm. from its cut uterine end, and the two portions are only connected by a membranous band 1 cm. long. Slight membranous strands are found in this situation on the broad ligament, probably due to an old twist of the pedicle, though none was found at the time of the operation. There is an accessory ostium 3 cm. from the normal ostium. The ovary is occupied by a single cyst with indications of the septa of secondary cysts. The wall is generally thin, but near its ligament it is $\frac{1}{2}$ cm. in thickness, and at this spot a pitted process is seen, from which is growing a lock of hair. The cyst contained sebaceous material and hair, which is seen at the bottom of the specimen. 7390

Removed (H. R. S.) from a patient aged 35, who had 6 children, the last 8 months previously. The patient died of intestinal obstruction from adhesion of the small intestine to the stump.

484. Two ovarian dermoids from the same patient, of which the larger (the right) measures $10\frac{1}{2} \times 7\frac{1}{2} \times 6$ cm., the smaller $8\frac{1}{2} \times 7\frac{1}{2} \times 6$ cm. Both tumours are multilocular, several of the loculi containing sebaceous material and hair. In each case the larger cyst contains a bony mass, and in the smaller cyst a piece of cartilage also. The cysts are smooth on the surface. 7630

Microscopic Structure.—Under the microscope one cyst shows a piece of cartilage and is lined with columnar epithelium.

Removed (H. R. S.) from a patient aged 30. The patient was sterile for 6 months after marriage, owing to a narrow hymen. The hymen was divided and the vaginal orifice dilated with the fingers and subsequently with hydrostatic dilation. Coitus occurred on April 22, 1896, and was followed by pregnancy, slight hæmorrhage occurred from the uterus on June 6; the tumours were removed July 12, the patient being 11 weeks pregnant. The patient aborted, but recovered and was quite well 10 years afterwards.

485. A dermoid of the left ovary, measuring $12 \times 8 \times 6$ cm., with one main cyst and two smaller ones, with numerous minute cysts in the tissue between the two smaller. The outer surface of the tumour is smooth and regular. On section the largest cyst shows two pits, which intercommunicate under a thick bridge of solid tissue. There is a solid mass of tissue 3 cm. thick in the wall of the tumour; this contains bone and cartilage. There is hair in the larger cyst and many of the smaller cysts contain sebaceous material. 8003

Microscopic Structure.—The cyst is lined with squamous epithelium and the wall contains numerous small cysts lined with cubical epithelium, which has fallen out in most cases.

Removed (H. R. S.) on March 21, 1898. The tumour was incarcerated in the pelvis and was pushed up in the middle of pregnancy under an anæsthetic. The patient was delivered easily of a living child, weighing 8 lb. 13 oz., on Mar. 6, 1898. The tumour was removed on March 21. The patient recovered well. (Obstet. Soc. Trans. vol. 40, p. 259.)

486. An ovarian dermoid, measuring $9 \times 7\frac{1}{2} \times 5$ cm. The outer surface is smooth, but slightly irregular; a small portion of the tube is attached; there are no adhesions. It is a multilocular tumour, having three main cysts and incomplete septa, showing that numerous other cysts have existed. On the septum between two of the larger cysts is a small warty body. The cysts contained sebaceous material and three of them have hair growing from the inner surface. There is no hair growing from the warty body. 8070

Microscopic Structure.—The wall of the cyst shows dense masses of sebaceous glands and is lined with stratified epithelium.

Removed (H. R. S.) from a patient aged 22, who had had two living children after lingering labours—the last, at which the tumour was known to be present, being 16 months previously. On Feb. 1898 the patient, being again pregnant, had much pelvic pain and rather severe hæmorrhage. On May 30, 1898, the tumour was removed, the patient being 4 months pregnant and the tumour incarcerated in the pelvis. The pain ceased after the operation, and the patient was delivered on Oct. 29 of a living child weighing 9 lb. 4 oz., after an easy labour, and recovered well. (Obstet. Soc. Trans. vol. 40, p. 329.)

487. An ovarian dermoid, measuring $11 \times 7\frac{1}{2} \times 6$ cm., fairly smooth and slightly pitted on the surface, with two main loculi communicating by a small aperture. The tumour contained sebaceous material and has hair growing on the inner wall of each cyst. The septum between the cysts is solid and 5 mm. thick; it contains bone. 8141

Microscopic Structure.—The cyst is lined with squamous epithelium, which has fallen off in places, and the wall contains sebaceous glands, fat, and hair.

From a patient who died of peritonitis on the 3rd day after delivery by version, the application of forceps being impossible, owing to the presence of the tumour, which was lying in the pelvis. At the post-mortem examination the tumour was found bruised and ruptured and had set up peritonitis. (Obstet. Soc. Trans. vol. 40, p. 331.)

488. A right ovarian dermoid, measuring $11 \times 10 \times 9$ cm. It is smooth on the surface and free from adhesions. One or two small secondary cysts can be seen on the surface. The cyst is unilocular, but contains the remains of the septa of other cysts. There is a solid portion containing bone between two of these septa, and a lock of hair, and several isolated hairs are seen growing from one part of the inner wall. 7829

Microscopic Structure.—The cyst-wall stains badly, but is lined with a single layer of epithelium, which appears to be cubical. In the substance of the wall is a slit-like cavity which is lined with similar epithelium, which is several layers thick in places.

Removed on July 10, 1897 (H. R. S.), during labour. The tumour was impacted in the pelvis and could not be pushed up. The uterus was withdrawn from the abdomen through the laparotomy wound, the tumour removed, the child delivered by forceps, and the uterus replaced in the abdomen. The mother and child recovered. (Obstet. Soc. Trans. vol. 40, p. 14.)

489. A left ovarian dermoid measuring $10 \times 8\frac{1}{2} \times 7$ cm., turned inside out. There is one main cyst with indications of secondary cysts. From its lower end depends by a pedicle of the thickness of whipcord a mass of tissue, 4×2 cm., with a skin-like surface, from which hair is growing. This tumour contains fat and apparently a tooth. Hair is growing from various parts of its surface. 7928

Removed (H. R. S.) on Dec. 9, 1897. On May 17, 1897, the patient had been in labour all day and the tumour was impacted in the pelvis. The cervix was dilated, the cord prolapsed and pulsating 30–40 to the minute. Under chloroform the tumour was pushed up, forceps applied, and a living child delivered, which survived. Seven months later the tumour was removed. The patient subsequently had twins. (Obstet. Soc. Trans. vol. 40, p. 22.)

490. An ovary measuring $4 \times 3\frac{1}{2} \times 2\frac{1}{2}$ cm., containing a small dermoid cyst. The outer surface is smooth and regular. On section the surface is somewhat honeycombed from the presence of numerous small cysts from the size of a pin's head to that of a small pea. But one cyst, $1\frac{1}{2}$ cm. in diameter, occupies the centre of the ovary and contained sebaceous material, which has been removed, showing a

486 Underwood (1848)

488 Gregory (1897)

489 Devin (1897)

growth nearly 1 cm. in diameter attached to the inner wall. The surface of the growth is somewhat mammillated, and fine hairs project from it.

The ovary of the opposite side contained a similar material, but in much greater quantity. 1807

Microscopic Structure.—A section of the wall shows fat, sebaceous glands, cysts lined with stratified epithelium, and the secondary cysts are similarly lined.

491. Two dermoid cysts of the ovaries. The smaller specimen consists of part of the broad ligament and Fallopian tube with the ovary, which has been bisected. In the centre of it is a cyst measuring 3 cm. in diameter; it contained sebaceous material and shows a mammillated and pitted solid body, from which hairs are growing. Many other cysts are present round the main one; some of these have been laid open. There are three cysts in the broad ligament, each rather larger than a pea; two of them are pedunculated. They probably arose in the parovarium.

The larger specimen resembles the one already described, the difference being merely one of size, but some of the secondary cysts are from 2–3 cm. in diameter. The Fallopian tube is curled up on the outer surface. The broad ligament, when stretched out, does not show any cysts. In the recent state the brown hair was mixed with fatty material. The solid portions of both dermoid cysts contain bone. 6211

The patient suffered with severe aching pains in the right groin and lower part of back. Menses remained regular. In February patient consulted Dr. Bird, who found an ovarian tumour on the right side of the pelvis, and on admission into the hospital a similar, though smaller, growth was diagnosed on the left side. Both tumours were removed by Sir J. Williams, and the patient made a rapid recovery.

Microscopic Structure.—The cyst is lined with stratified epithelium and contains large masses of sebaceous glands and a mass of cartilage.

492. A dermoid cyst of the ovary with part of the broad and round ligaments and Fallopian tube. The Fallopian tube is thickened, and the fimbriated extremity is bound down to the cyst, but the fimbriæ are free. The cyst is round in shape and is smooth externally; the wall is distinctly laminated, and at one part a small cyst has been formed in its thickness. The cyst is full of reddish-brown hair, which was mixed with fatty matter. The hair is growing from various parts of the cyst-wall.

Opposite the small cyst before mentioned there is a rounded growth projecting into the cavity of the parent cyst. This growth resembles a section of an oak-apple; it is hollowed in the centre, and here contains a mass of dense calcareous matter, and the surface is somewhat mammillated and pitted.

Microscopic Structure.—The cyst shows a lining of stratified epithelium, sebaceous glands, hair, fat, and blood.

493. A portion of the contents of a dermoid cyst. The specimen consists of a portion of the cyst-wall, attached to which is a mass having some resemblance to a human fœtus. The rounded portion above represents the head, and in the centre of this is a rounded aperture, the mouth, through which three teeth project. One of these is a well-formed bicuspid, and another is an incisor. On each side is a solid projection of soft tissue, in the position of ears. The rounded portion described as representing the head is bony, covered by integument, and consists of the lower jaw and part of the upper. At the top of it is a rounded cavity, lined by a smooth membrane; this probably represents the base of the skull—there is no roof. The upper part of the trunk and upper limbs are rudimentary and ill-developed. On the left side is an arm and part of a forearm, with rudimentary joints. The arm contains one bone—the humerus, and the radius and ulna are both present. On the right side the upper limb is represented by a fold of integument at the end of which is a tuft of hair. The rest of the body is represented by a large piece of bone partly covered by

integument and connected by it to the front of the rudimentary chest, an imperfect joint having been formed. At the lower part of the process is a single craggy bony mass. 3690

The specimen was presented by Mr. Liston. The woman, æt. 47, was married and had borne several children. For some time she had "been afflicted with disease of the abdomen, accompanied by dropsy, which continued to increase and ultimately destroyed life." At the post-mortem examination a cyst, containing two or three pailfuls of fluid, was found in the abdomen. It was situated in the left iliac fossa. It was covered by healthy peritoneum. The cyst contained hair and fatty material in addition to fluid and the parts preserved in the specimen.

The uterus was not examined, nor is there any note as to the condition of the ovaries and broad ligaments.

494. An irregularly-shaped piece of bone, with two teeth, removed from the wall of an ovarian cyst. The larger tooth is a perfect molar; the smaller one is also a molar, but ill-developed. The cyst was in connection with the left ovary, and had become adherent to the rectum, uterus, and vagina. It measured eight or nine inches in diameter, and contained about three pints of thin oily fluid and a quantity of hair. The wall was carcinomatous, microscopic examination showing the characters of epithelioma. 6317

From a widow, aged 48, who was admitted into University College Hospital, July 7th, 1887. She had only had one child, and had never been pregnant since.

She first noticed a lump in the right side seven years previously; this had been gradually increasing in size. Three years ago she suffered from acute pain in the right side; and since then there has been a continual dragging pain, much worse just before admission. The increase in size of the tumour in the last eight months was very marked. Micturition was frequent and painful, and there was also constipation, with some pain on defæcation. The general health was impaired, and the patient had lost flesh.

After admission the pain was so great that morphia was usually necessary to give the patient rest. On July 23rd Sir J. Williams performed laparotomy, and removed part of the cyst, with the contents, but the base, which was adherent to surrounding parts, was left. A dermoid cyst of the right ovary was also removed. The patient died two days after the operation.

495. A right-sided ovarian dermoid measuring $9 \times 6 \times 4\frac{1}{2}$ cm. The tube is absent. It is smooth on the surface, but projecting from it at one spot is a body, raised and pitted on the surface, measuring 3 cm. in diameter and projecting 3 mm. from the surface. On section this is seen to be the corpus luteum. On the inner wall of the single cyst is a solid body, measuring 4×3 cm., bristling with fibrous spicules, and from this grows a long lock of hair. In the remains of the ovary near the hilum is a small cyst of the size of a pea. 10745

Microscopic Structure.—The corpus luteum is a recent corpus luteum of pregnancy, with a loose connective-tissue centre, infiltrated with blood. The small cyst mentioned is lined with columnar epithelium, mostly in a single layer.

Removed Mar. 10, 1908 (H. R. S.), from a primigravida aged 21, at the tenth week of pregnancy. The patient came to England from Mauritius just before the operation and returned there afterwards, and was delivered of a living boy on Oct. 7th, 1908.

496. A dermoid of the ovary measuring $11\frac{1}{2} \times 6\frac{1}{2} \times 5$ cm., the pedicle of which was twisted. The outer surface is free from adhesions. The tube is somewhat thickened and there is an extensive hæmatoma in the adjacent broad ligament and ovary. The dermoid part consists of five cysts containing sebaceous material, and into three of these project rounded masses, two of which have spiculated surfaces bristling with hair. From one of these masses a conical tooth without any fang broke off. 8485

Microscopic Structure.—The smallest of the masses is covered with stratified epithelium, all but the deepest layer of which has been shed, leaving the spicules of the corium, in which are seen numerous sebaceous glands and hairs with a substratum of fat, which is extensively infiltrated with blood from rupture of its vessels, the blood appearing in broad strands around the vessels and even isolating the individual fat-cells.

495 De Chazal (1908

499 Elliott (1906)

501. ? Tokeley (1900)

497. An ovarian dermoid measuring $10 \times 8 \times 7$ cm. There are a few adhesions on the surface. Fallopian tube 11 cm. long; mesosalpinx free. The tumour has been turned inside out, exposing a skin-like inner surface and a solid body bearing a tooth resembling a canine. From this body and around it long hairs are growing. 8105

Microscopic Structure.—The cyst is lined with squamous epithelium, of which the horny layer is desquamated; it contains numerous sebaceous glands and hairs, together with a number of tubular sweat-glands lined with cubical epithelium and dilated at their deeper part.

The patient subsequently had a child.

498. Part of a large dermoid which measured in the empty state 20×17 cm. The tube has hæmorrhage into its wall, and the tumour has expanded the mesosalpinx. Evidently the pedicle has been twisted, and lymph is seen in the neighbourhood of the tube. The omentum was adherent. The cyst is unilocular; it contains a solid body from which a structure like a rudimentary lower limb, 2 cm. in length, depends from a thickened portion of the wall; it bristles with pointed processes and contains bone. 8159

Microscopic Structure.—The cyst-wall is lined with stratified epithelium, the horny layer of which strips off like silky fibres. The wall of the tube is suffused with blood.

499. An ovarian dermoid turned inside out and resembling a large kidney in shape; measuring $15 \times 9 \times 7$ cm. The lower end of the tumour is rough and covered with a layer of purulent lymph in which hairs are entangled. In the hilum is situated an irregular body 4 cm. transversely by 3 vertically, which is beset with coarse pointed fleshy processes. At the base of this body is a bony mass, in the lower extremity of which two molar teeth are inserted in a manner exactly resembling the normal alveolar border. From one side of the hilum there is a long lock of hair, and from the opposite side of the hilum is a band slightly constricting the tumour and probably the remains of a septum. 10388

Microscopic Structure.—The pointed processes are made up of fibrous tissue covered with stratified epithelium, the superficial layers being shed in places. There are enormous numbers of sebaceous glands.

Removed (H. R. S.) from a patient aged 67, who made a good recovery.

500. An ovarian dermoid turned inside out and measuring $9 \times 7 \times 6\frac{1}{2}$ cm. The true outer surface of the tumour is smooth and the Fallopian tube is not present. It is a unilocular cyst and contains an irregular smooth V-shaped body projecting from its lower wall, which contains bone, slightly uneven on the surface, from which hairs project. 3 cm. from this is a small bony plate in the wall, from which a single small tooth resembling a canine projects. 10340

Microscopic Structure.—A section of the solid body shows the cyst to be lined with squamous epithelium, beneath which are numerous sebaceous glands. A piece of ossifying cartilage is present, and hairs.

501. An ovarian dermoid measuring $7 \times 5\frac{1}{2} \times 3$ cm. with a single main cavity. It has been turned inside out. The Fallopian tube is very slender. The inner surface of the cyst is smooth. Part of the ovary remains ($1\frac{1}{2}$ cm. thick) and in its wall are several cysts of the size of peas containing coagulated material, possibly sebaceous. From one end of the specimen depend two conical processes, from the surface of which hairs are growing. A wedge has been cut out of the smaller process showing a bony spicule in its centre. 8516

Microscopic Structure.—The small process consists of a small amount of fat with strands of fibrous tissue, with an enormous number of sebaceous glands and a few hairs. The surface is covered with stratified epithelium. The small cysts are lined with several layers of cubical epithelium and originate in Graafian follicles.

Removed (H. R. S.) from a patient aged 22.

502. Part of an ovarian dermoid which measured $21 \times 16 \times 10$ cm. The outer surface was smooth and the wall generally very thin. Growing from its inner wall is a deeply lobulated body of the size of an orange: hair grows from its surface; it contains bone, and several teeth grew from various parts of its surface. 10989

Microscopic Structure.—The solid body consists mainly of fat and fibrous tissue covered by stratified epithelium, beneath which are numerous sebaceous follicles and hairs.

From a patient, aged 37, who had noticed the tumour for 7 years, since the last pregnancy.

503. Part of an ovarian dermoid, of which the pedicle was twisted: it was of a blue colour and covered with patches of lymph. It measured $14 \times 13 \times 9$ cm. It contained a thin bloody fluid, a solid body, black, infiltrated with blood, and locks of hair, but only a few small particles of fatty material. The blood is infiltrated into the wall of the cyst, which measures from $\frac{1}{2}$–$2\frac{1}{2}$ cm. in thickness. There are indications of secondary cysts. The Fallopian tube has its walls deeply infiltrated with blood, and there is hæmorrhage into the remains of the ovarian ligament, and a thick projection somewhat curled towards the Fallopian tube is the infiltrated mesosalpinx which contains large clotted veins and much infiltrated blood. The opposite ovary contains a single cyst measuring $3\frac{1}{2}$ cm. in diameter growing from its inner end towards the hilum, and several small luteal cysts of the size of peas. 10998

Microscopic Structure.—The wall of the cyst shows layers of fibrous tissue densely infiltrated with blood, but there is no epithelium on the inner surface, the tissues of which are degenerated. The tube also is infiltrated with blood, but the epithelium of the villi cannot be made out.

Removed (H. R. S.) from a patient aged 31.

504. Part of a large ovarian dermoid cyst containing the usual irregular mass, with teeth, bones, and fat, but no hair. A small secondary cyst also contained fat without hair, and is calcified in its wall. On the outer surface of the cyst is seen a prominent mass $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$ cm., which in the recent state was dull red and very soft; it has the appearance of thyroid gland, which the microscope confirms. The natural structure is better seen on the loose piece, the fixed piece having been broken up by the finger. The tumour contained sebaceous material, but no hair. 11593

505. A tumour of the ovary, the greater part of which is solid; it contains a dermoid cyst. The Fallopian tube, 7 cm. long, is normal: the ovarian ligament is hypertrophied (nearly 1 cm. thick). The outer surface of the tumour is smooth, with three cracks in it, from one of which blood had escaped before the operation. The tumour at the time of the operation was of the consistence of spleen and is now very hard owing to the solidification of the infiltrated blood. A segment has been cut out of the tumour showing its tissue to be densely infiltrated with blood, which has formed a blood-cyst at the upper part. In the solid part is embedded a small dermoid cyst 10×12 mm. in diameter, and near this is another minute cyst of the size of a canary-seed. Near this is also a small piece of cartilage. The small dermoid contains sebaceous material and hair.

Microscopic Structure.—The solid part of the tumour consists of a loose fibrous stroma densely infiltrated with blood and leucocytes, which in places are so dense as to resemble sarcoma, especially as in places very large cells with deeply staining nuclei are present.

Removed Jan. 1907 (H. R. S.) from a patient aged 27, who remained quite well in May 1911, having had two children since the operation.

506. An ovarian dermoid, turned inside out, measuring $13 \times 8\frac{1}{2} \times 7\frac{1}{2}$ cm. Its lining is somewhat wrinkled and skin-like, and on it is an irregular body from which a few hairs grew. Scattered over its surface are several papillary growths

502 L. ~~Hunter~~ Steer (1908)

503 Doyle (1908)

505 Burridge (1907)

and a more solid projection extending for half a centimetre into the wall. This on microscopic examination proves to be a squamous-cell carcinoma. 11060

Removed (G. F. B.) from a patient aged 47. (See Proc. Roy. Soc. Med. Obstet. & Gyn. Sect. vol. iii. p. 143.)

507. A dermoid of the ovary, of the size of a hen's egg. It is rough and shaggy on the surface and has hairs growing from its inner lining. A piece of glass has been passed through a perforation in the wall, around which hairs are also seen. 10010

Removed by Dr. Martin Randall from a patient aged 26, some time after the tumour had been perforated by a trochar under the idea that it was an abscess. This perforation permitted the escape of some of the contents which formed secondary cysts in the omentum. (See next specimen.)

508. A piece of omentum from the preceding case, showing small implantation dermoids varying in size from that of a pin's head to a lentil. (Proc. Roy. Soc. Med. Obstet. & Gyn. Sect. vol. i. p. 105.) 10010

508 A. Seed-like balls of fat from the contents of a dermoid cyst. 10345

Papilloma of the Ovary.

Papilloma apart from cystic disease has been described as occurring on the ovary, and the Museum contains one specimen which is apparently of this kind, but without making many sections of the specimen it would be impossible to exclude the presence of cysts in the ovary, and the fact that a cyst of doubtful origin containing papilloma can be seen in the specimen renders it probable that the papilloma on the surface of the ovary has originated in small cysts and has broken through on to the surface, as in the case of many papillomatous cysts.

509. The fundus uteri, with the right broad ligament, Fallopian tube, and ovary, removed by operation. The tube is dilated, its interior rugose, and its free extremity closed. The ovary and the broad ligament are thickly covered with large pedunculated papillomata. These masses are attached by slender pedicles, and have a dendritic appearance. Some of them are transparent and look cystic, but they are all solid. There is a smooth thin-walled cyst at the anterior part of the uterus, close to the attachment of the Fallopian tube. This cyst, the origin of which is doubtful, contains a small papillated growth.

The left ovary removed by operation presented appearances similar to those seen in the specimen.

The patient, aged 27, was married, but had never been pregnant. The catamenia, which appeared between fifteen and sixteen, were, after the first year, regular. She was admitted into the hospital under Sir J. Williams on Jan. 10th, 1882. For about eighteen months previously she complained of pain in the right lumbar region; this was rapidly followed by swelling of the lower extremities and an increase of the abdominal girth by six inches. She was tapped by a doctor in June 1880, four and a half gallons of greenish fluid being drawn off. The fluid re-accumulated, necessitating a further tapping at Christmas, about the same quantity of fluid being removed. In July 1881 six gallons of dark-coloured fluid were again removed; and a further quantity on the 22nd of November.

On admission, the patient stated that she had lost flesh; the abdomen was greatly distended by fluid, but no definite tumour could be made out. Distinct fluctuation could be felt. On vaginal examination the body of the uterus could be distinctly felt, apparently retroflexed; the posterior vaginal wall was bulged downwards. No solid tumour could be detected. The accumulation of fluid in the peritoneal cavity increased considerably while the patient was in the hospital.

On March 4th laparotomy was performed, a quantity of serous fluid escaping when the thickened peritoneum was divided. The left ovary and broad ligament, similarly diseased as the specimen, were removed; after this the specimen was removed. The uterus being divided at the junction of the body and cervix, the abdominal cavity was cleaned and the wound sutured, except at the lower part, where a drainage-tube 4½ inches long was inserted. The wound required frequent dressing at first, owing to the oozing. On March 11th the tube was shortened so that it did not enter the abdominal cavity. The patient made a good recovery, and left the hospital on April 25th. (*Vide* Dr. Grailly Hewitt's *Case-books*, 1882, No. 288, page 272.)

Fibro-myoma, Myoma, Fibroma of the Ovary.

Solid tumours of the ovary similar in appearance to uterine fibroids are met with not uncommonly. They are dense heavy tumours, usually of a size not much exceeding a fœtal head, though they may attain huge dimensions. They are usually distinct from the substance of the ovary which is stretched as a capsule around them. This permits enucleation of the tumour in some cases (510). They may undergo cystic degeneration (516) and calcification (515). They are frequently associated with ascites. Occasionally they are bilateral (510). They may coexist with similar tumours of the uterus (231) and with pregnancy (510, 515).

Rarely glands or solid masses of cells are found in the substance of these growths (adeno-fibroma, 526).

510. An ovarian fibroma of the right side, measuring $18 \times 15 \times 11$ cm., and weighing 3 lb. $8\frac{1}{4}$ oz. The surface is irregular and shows several large veins and a sinuous fibrous band. A bristle has been passed into the orifice of the Fallopian tube. Projecting from the surface is the remains of the ovary containing a corpus luteum, measuring $2\frac{1}{2} \times 1\frac{1}{2}$ cm., and superficial to this a cyst of the size of a filbert with a little hæmorrhagic cyst in its wall and several smaller cysts are seen in the rest of the ovary. From this the tissue of the ovary can be traced as a capsule round the tumour, finally becoming of membranous tenuity.

With this is mounted an ovarian fibroid of the size of a filbert, $2\frac{1}{2} \times 2\frac{1}{4} \times 2$ cm., enucleated from the left ovary. A small portion of ovary is still attached to one side of the specimen, and the tumour has the usual appearance of a fibro-myoma. 10185, 10187

Microscopic Structure.—Both the tumours are fibro-myomata. The fibrous strand appears to be a piece of ovarian tissue.

Removed (H. R. S.) on March 17, 1906, from a patient aged 26, who was five weeks pregnant. There was some free fluid in the peritoneum. The uterus was slightly enlarged, but very soft and vascular, and the patient aborted on March 23, 1906. The patient subsequently became pregnant, and was delivered of a living full-term male child on Sept. 22, 1907, and, with the child, was in excellent health on March 2, 1909.

511. A solid ovarian tumour measuring $11 \times 8 \times 5$ cm. It is lobulated on the surface, with a few patches of lymph. One portion of the surface is discoloured with hæmorrhage into the growth. An inch of the Fallopian tube is attached. The section runs through the hilum of the ovary and shows a growth of waxy consistence with very little indication of fibrous structure. In one part hæmorrhage extends into the growth for a distance of 1 cm. It looks like a sarcoma. 9939

Microscopic Structure.—The tumour is a dense fibroma with patches of myxomatous degeneration.

Removed (H. R. S.) from a patient aged 54.

512. A cystic degenerated fibroma of the ovary measuring $15 \times 10 \times 9$ cm. The surface is slightly irregular and from one part projects a portion of the Fallopian tube. Beneath this on section is seen a layer of tissue 3 mm. thick, gradually shelving off into membrane over the fibromatous tumour; it is probably the remains of the normal tissue of the ovary. The surface of section of the tumour shows the usual fasciculated fibrous structure, in which are patches of gelatinous degeneration, and at one end this has broken down to form cysts, the largest of which measures 6×5 cm. 9663

Microscopic Structure.—The tumour is a fibro-myoma, containing a few thin-walled vessels.

Removed (H. R. S.) from a patient aged 54. Menstruation began at 12, was always regular and normal; it ceased at 50. She had one child at 25. Ascites was present.

513. An ovarian fibroid, weighing 1 lb. 11 oz., smooth and even on the surface and free from adhesions. The Fallopian tube is attached and is normal. A section of the tumour shows the remains of the ovary 4 mm. in thickness gradually

510, Darnell (1906)

511 Amerson (1905)

512 Godwin (1904)

515 Gardner (1903)

516 E. Graham (1906)

thinning out as a membranous capsule of the tumour, which consists of interlacing fibrous bundles with patches of mucoid degeneration. 7086

Microscopic Structure.—The tumour is composed of interlacing bundles of spindle cells with elongated nuclei. The tumour is a fibro-myoma, degenerated in patches.

Removed (H. R. S.) from a patient aged 33.

514. A fibroid of the ovary weighing 1 lb. 13½ oz. It is smooth and even on the surface. The attached Fallopian tube is normal. The portion of the ovary seen in the section is stretched out to form a capsule to the tumour. The cut surface has the usual appearance of a fibro-myoma with a few patches of degeneration, which has caused a cavity at one spot. 7252

Microscopic Structure.—The tumour is a fibro-myoma, showing mucous degeneration in patches.

Removed (G. F. B.) from a patient aged 44, who had had 4 children and two miscarriages.

515. A calcified ovarian fibroid weighing 1 lb. 8 oz., and measuring $13\frac{1}{2} \times 12 \times 9$ cm. The surface is uneven, lobulated, and in places gritty from calcareous spicules. The ovary is seen stretched out as usual to form a capsule to the tumour. The tumour has the usual appearance of a fibro-myoma with the occurrence of calcareous spicules in many places. 9439

Microscopic Structure.—The tumour is a fibro-myoma, degenerated and calcified in places.

Removed (H. R. S.) immediately after Cæsarean section near term. The tumour was incarcerated in the pelvis and could not be pushed up. The vessels of the broad ligament were very large, as may be seen in the specimen. Forcible reposition might easily have ruptured them. The tumour had been diagnosed as a uterine fibroid, though the fact that menstruation had never been excessive raised the suspicion that it might be an ovarian fibroid. The child lived and the mother subsequently had a natural premature delivery.

516. The middle third of an ovarian fibroid which with its contents weighed 45 lb., and measured $34 \times 32 \times 11$ cm. when emptied of its contents. The outer surface has a few adhesions. The tumour is deeply lobulated on its surface; on section it has the usual appearance of a fibro-myoma, the central part of which has degenerated, forming a cyst, the walls of which are generally from 2–4 cm. thick, though at one part 5 cm. thick. At one spot is a thin-walled cyst with jelly-like contents. 10330

Microscopic Structure.—The growth is a fibro-myoma with patches of mucous degeneration.

Removed (H. R. S.) from a single patient aged 47, on Oct. 3, 1906. Patient quite well in March 1909. Enlargement of the abdomen had been noticed for 3 years. Menstruation began at 15, ceased at 42, and was always regular, not excessive, but accompanied by pain.

517. An ovary, attached to which is a pedunculated fibroid tumour. The ovary is much smaller than usual and is coarsely lobulated on the surface. The new growth is quite smooth, attached by a very narrow pedicle, and the cut surface presents all the characteristics of simple fibrous tumours.

The specimen, quite unsuspected during life, was found in the body of a woman who died from cholera. 5242

Microscopic Structure —The tumour is a fibroma made up of densely interlacing fibres, of which the nuclei are no longer visible.

518. A bladder, with the uterus, vagina, and part of the rectum. The left ovary is the seat of a smooth rounded fibroid tumour, enclosed in a distinct fibrous capsule.

Microscopic Structure.—The tumour is a fibroma with some hyaline degeneration in patches.

519. A uterus and its appendages, with part of the rectum. There is a kidney-shaped lobulated tumour, attached by its hilum to the ovarian ligament. The tumour has no connection with the walls of the uterus, although in its growth it has pressed upon its posterior and left side and has caused an indentation on its surface. The Fallopian tube winds round the lower part of the growth and terminates behind, and is attached to the back of the body by strong adhesions;

a bristle has been passed into it in front. The tumour measures 6 × 4 cm. The cut surface shows it to be made up of coarse bundles of fibres.

The growth appears to be a fibroid of the left ovary, no trace of which can be found. 863

Microscopic Structure.—The tumour is a fibro-myoma, which has undergone hyaline degeneration.

520. The left ovary and Fallopian tube, with part of the broad ligament, which is adherent to the ovary by inflammatory bands. Part of the ovary has been removed. The outer half is the seat of a new growth, smooth and lobulated on the surface, and traversed by small blood-vessels. The cut surface presents a fibroid appearance; it is white in colour and non-vascular to the naked eye. The growth is sharply defined from the ovary, but is not encapsuled. The Fallopian tube runs in front and at the lower margin of the growth. 6476

E. T., æt. 32, died of acute phthisis five months after delivery. The tumour preserved in the specimen was not suspected during life.

Microscopic Structure.—The tumour is a fibro-myoma.

521. The middle third of an ovarian fibro-myoma weighing 6¾ lb., and measuring 24 × 15 × 12 cm. The surface of the tumour was smooth and slightly uneven. It was free from adhesions. The portion of the Fallopian tube and the rough surface of attachment is seen at one end of the tumour, and near the Fallopian tube is seen on section a portion of the ovary 2 mm. in thickness which has gradually stretched out to form a capsule to the tumour. The cut surface shows the characteristic appearances of a fibro-myoma, which is degenerated in places with the formation of several small cysts. 6263

Microscopic Structure.—The tumour is a fibroma, the cells of which have undergone hyaline swelling.

The tumour was removed by Sir John Williams.

522. A slice of a large fibroid tumour of the ovary. The cut surface shows extensive calcification, more especially in the centre. Large veins are seen in section immediately under the fibrous investment of the tumour. There is a definite capsule to the tumour which at one part is 4 mm. thick. 5844

Microscopic Structure.—The tumour is a fibro-myoma, which has undergone extensive degeneration.

The specimen is part of a very large tumour of the ovary, removed, by operation, from a patient, aged 19, who was under the care of Sir John Williams.

523. Part of an ovarian fibroid measuring 16 × 14 × 7 cm., and weighing 1 lb. 10½ oz. The tumour was smooth and lobulated on the surface and free from adhesions; at one part was a cyst of the size of a duck's egg. Part of the ovary is seen to form a capsule to the tumour, as in early cases. 10641

Microscopic Structure.—The tumour is a fibroma, being made up of spindle cells with elongated nuclei in bundles running in various directions.

Removed (G. F. B.) from a patient, aged 54, who had eight children. She ceased menstruating at 51. There was a considerable quantity of ascitic fluid present.

524. A right ovarian fibroid measuring 14 × 15 cm. It is very irregular on the surface, and the ovary with its pedicle is seen at one part between two lobes, and contains a cyst 4 × 2½ cm. with clear contents. The fibroid has undergone extensive mucoid degeneration over an area 5 × 5·3 cm. across this surface, and smaller patches of degeneration are seen at other parts. 10853

Microscopic Structure.—The small cyst is lined with cubical epithelium. The tumour is a fibro-myoma with patches of hyaline degeneration.

Removed (H. R. S.) from a patient aged 36.

525. A Fallopian tube and the corresponding ovary containing a suppurating degenerated and calcified fibroma. The Fallopian tube is normal, except for an accessory ostium near its outer extremity. The ovary measures 5 × 4 × 2·6 cm.,

524 H. Meagens (1908)

525. G. Bozan - Removed at U.C.H. Jaundice after abortion at 10th week.

526 E. Austie (1908)

and is covered externally with delicate membranous adhesions. On section the ovary shows three small cysts containing opalescent mucus, and a small corpus luteum containing blood. The bulk of the organ is occupied by a tumour measuring 2·5 × 2·2 cm., with a central cavity which contained pus. The substance of the tumour is dirty white and brown in colour, is clearly demarcated from the rest of the ovary, and is embedded 3 mm. in its substance beneath the surface. The periphery of the tumour is calcified and there are whitish masses of calcification scattered through substance of the tumour. 11467

Microscopic Structure.—The tumour is a fibroma which has undergone hyaline degeneration and is calcified. The tumour shows inflammation, and pus is present in the cavity.

Removed (H. R. S.) from a patient aged 29.

5526. Half a longitudinally bisected ovary and Fallopian tube. The tube is normal. The ovary measures 2·9 × 1·9 cm. At its outer end is seen a nodule 1·5 cm. in diameter, the outer surface of which is smooth and white, contrasting with the ordinary corrugated surface of the rest of the ovary. The cut surface of the ovary is normal; it shows three corpora fibrosa, 3 mm. in diameter, towards its free border, and the tumour above mentioned is a discrete hard fibrous body of a yellowish-white colour, with fine white strands just visible to the naked eye permeating it in all directions. These are seen with a lens enclosing more or less rounded spaces which are filled with a solid and homogeneous substance, but in some places apparently show softening or commencing minute cysts. The tumour could easily be enucleated from the surrounding tissue. 10990

Microscopic Structure.—The tumour consists of dense fascicles of fibro-muscular tissue enclosing spaces filled with large masses of epithelioid cells, with complete absence of leucocytic invasion. The growth is a fibro-adenoma or a fibro-endothelioma. The opposite ovarian cyst showed cysts lined with columnar epithelium with numerous proliferated papillæ, the epithelium of which is greatly swollen and in places more than one layer thick.

Removed (H. R. S.) from a patient aged 62, from whom a multilocular ovarian cyst of the opposite side was removed at the same time.

Sarcoma and Endothelioma of the Ovary.

Sarcoma of the ovary is a rare growth. It is usually characterised by moderate size, waxy surface on section, and soft consistence. It is usually bilateral and is very liable to degeneration, and to have hæmorrhage into its substance.

All varieties of sarcoma—spindle-cell, round-cell, and mixed-cell—are met with. Melanotic sarcoma has been observed.

Endothelioma is a very rare disease: it is much less malignant than the other forms. The only typical endothelioma in the Museum occurs in a teratoma (482).

5527. Half a sarcomatous ovary, measuring 21 × 18 × 10 cm. It is smooth, slightly lobulated on the surface, and on section shows a homogeneous or granular surface, on which a small cyst and numerous vessels are seen cut across. 11051

Microscopic Structure.—The growth consists of large cells much degenerated, with very little stroma and numerous vessels. It appears to be a large-cell sarcoma.

Removed in March 1909 (G. F. B.) from a patient aged 24, who remained well two years later. The other (left) ovary was not removed.

5528. A uterus, laid open from the front, with its appendages. Each ovary is the seat of an irregularly lobulated tumour (9 × 7 × 6 cm.). The surface of the tumours is smooth, and in the right one a smooth-walled cyst has been opened; there is also another in the interior; the cyst-wall is extremely thin. The cut surface has a fibrous appearance, and the openings of numerous vessels can be seen.

These tumours have no capsule. 2231

Microscopic Examination.—The tumours consist for the most part of round cells, with a small amount of fibrous tissue—not, however, arranged in alveoli. They are fibro-sarcomata.

529. The right half of a uterus with a lobulated growth of the ovary $6\frac{1}{2} \times 3\frac{1}{2} \times 3$ cm.; at its inner extremity is a lobulated growth consisting of four lobules; it is smooth on the surface and has a small cyst at its outer extremity. The tube is thickened, apparently by œdema. 10039

Microscopic Structure.—The growth is a sarcoma, being made up of round and oval cells contained in a delicate reticulum. Many of the cells are swollen, as the result of hyaline degeneration, and contain large deeply staining nuclei.

From a case of retroperitoneal sarcoma.

530. Two ovarian sarcomata with the uterus from a girl of 14. The left tumour measured $16 \times 12 \times 6\frac{1}{2}$ cm., the right $10 \times 8 \times 5$ cm. Each is slightly lobulated, smooth. The left tube is free from growth; the right is infiltrated. The section is homogeneous and granular, and slightly infiltrated with blood. The uterus measures $4\frac{1}{2} \times 3 \times 1{\cdot}2$ cm., and there is some infiltration of the cellular tissue of the broad ligament. 8381

Microscopic Structure.—The growth is a small round-cell sarcoma. It contains a delicate reticulum and a few swollen cells are seen.

531. Part of a solid left ovarian tumour measuring $19 \times 15 \times 10$ cm. The surface was slightly lobulated, smooth, and free from adhesions. On the outer side the raw surface of the broad ligament with numerous vessels crossing from it is seen. The tumour has a distinct capsule, and on section is of a white homogeneous structure, in places somewhat granulated and infiltrated with blood. 9810

Microscopic Structure.—The growth appears to be a large round-cell sarcoma, but in some places has somewhat the appearance of carcinoma.

Removed in March, 1905 (G. F. B.), from a patient aged 31, in whom there was no trace of a vagina, except the urogenital sinus. The uterus was absent; there was no pubic hair and the breasts were rudimentary. The right ovary was present, but small. The patient remained well in May 1911.

532. A uterus and appendages. Each ovary is the seat of a solid somewhat lobulated smooth growth, the right $16 \times 8\frac{1}{2} \times 8$ cm., the left $9\frac{1}{2} \times 8 \times 7$ cm. The section shows a somewhat granular growth, homogeneous and waxy in consistence: on the right side the growth is infiltrated with blood. The tube on the right side and its mesosalpinx are greatly thickened, apparently by the extension of growth into it, as shown by the removal of a wedge of tissue. The rugæ, however, appear to be intact. The mesosalpinx and wall of the left tube are similarly affected. The surface of the uterus was slightly lobulated, as if the growth had extended beneath its peritoneum. 7434

Microscopic Structure.—The ovarian growth is an oval-cell sarcoma. The growth has extended on to the surface of the uterus and to the Fallopian tube even to the stroma of the rugæ, of which the epithelium in most places remains.

533. Half an ovary and a Fallopian tube. The ovary measured $5\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{1}{2}$ cm. The surface is slightly uneven and blood-stained. The section shows a whitish appearance with much blood effused into its lower part. 9545

Microscopic Structure.—The tumour is an oval and spindle-cell sarcoma.

Removed in 1904 (G. F. B.) from a patient aged 68.

Carcinoma of the Ovary.

Carcinoma of the ovary is much commoner than sarcoma. The tumours are usually cystic, with solid masses growing in the cyst-walls; occasionally the whole growth is solid, in which case it is usually not of large size. The consistence is soft and hæmorrhage into the substance of the growth is very liable to occur. Soft growths of the ovary are almost always malignant, though occasionally the so-called "solid-adenoma," a benign growth, is met with. Microscopically, the tumours may appear (1) as papilloma very similar to the papilloma in simple cysts, though

534 Squire (1898)

the epithelium is usually hazy and tends to proliferate ; (2) as "adeno-carcinoma," which consists of large numbers of glandular spaces containing a single layer of epithelium, which may be abnormal in appearance or proliferating ; (3) as medullary carcinoma.

Carcinoma of the ovary is often bilateral and is sometimes associated with, and perhaps secondary to, cancer of the stomach, intestine, gall-bladder, or breast.

It may affect the whole of the ovary on both sides and yet permit the development of the pregnant uterus (547). When secondary it may occur as isolated nodules in the ovary (550).

Certain growths which resemble carcinoma, but are possibly endotheliomata, occasionally have a secondary growth in the Fallopian tube (552) and yet the patients from whom they have been removed have been known to remain free from recurrence, after operation, for many years.

5534. An ovarian cyst of the size of an adult head. The walls are thick. There are some adhesions around it. The inner surface is pitted in places ; at other parts it is covered with growth, and at one place there is solid growth, 1 inch thick, in the substance of the cyst-wall. 7975

Microscopic Structure.—A section of the solid growth shows a few spaces lined with a single layer of columnar epithelium, but adjacent to these are spaces filled with epithelial cells which are very irregular in shape, invade the surrounding tissues, and are clearly carcinomatous. The growth appears to have started in a papillomatous change in the lining epithelium.

Removed Feb. 1898 (H. R. S.) from a patient aged 52, who had noticed the tumour for 6 months. There was a family history of cancer.

5535. A right multilocular ovarian tumour together with the uterus and rectum. The external surface of the tumour is smooth. There are some flattened warty prominences on the inner lining of some of the cysts, and some are almost solid with what appears to be new growth. The left ovary has a small cyst, apparently of a corpus luteum, with a small papilloma in it. There is narrowing of the lumen of the sigmoid flexure with presence of carcinomatous growth. The uterus is $5\frac{1}{2}$ cm. long, and contains no growth. 7509

Microscopic Structure.—Section of the ovarian tumour shows it to be carcinoma, consisting of large masses of epithelial cells with a small amount of stroma. There is a similar growth invading the sigmoid. The small cyst of the other ovary is not a luteal cyst.

5536. A uterus with two malignant ovarian cystic tumours and a piece of the abdominal wall with the scar of an incision. The left ovary is converted into a cyst 20×11 cm. On the outer surface it is irregular from the projection of numerous secondary cysts, some of which contain warty growths and some are filled with a somewhat striated growth. A large mass of this growth is found to be arising from the inner lining of the main cyst. The right ovary is similarly affected and solid with growth. There are very dense adhesions between the uterus and right ovary, but there is no growth in the uterus itself. The abdominal scar is quite healed, and the portion of the wall beneath it adheres to the main cyst. 6680

Microscopic Structure.—The cyst contains extensive branching masses of papilloma with a single layer of epithelium. In another part of the tumour small masses of epithelial cells in tubular or solid form invade the stroma of the tumour and are evidently malignant.

From a patient on whom an exploratory operation was made ; the patient died of embolism on the 12th day.

5537. A multilocular ovarian tumour, measuring $25 \times 23 \times 9$ cm. The tumour is fairly smooth on the surface, but lobulated and rendered uneven by the projection of small cysts. One of the main cysts has ruptured before the operation, exposing the secondary cysts. A wedge has been cut out of the tumour and shows a honeycomb structure, the cavities being filled with gelatinous mucus. 6697

Microscopic Structure.—The growth is a carcinoma containing large masses of cells lying in a delicate stroma.

Removed (H. R. S.) from a patient aged 42, who was admitted into U. C. H. on June 4, 1891. She had never been pregnant. Menstruation began at 17 and was regular till the age of 41, since which she has had no proper period. She had been in good health till April 1890, when the periods stopped, and in November she thought she was pregnant and in labour, but the pains passed off in about a day and she remained well till April 1891, when she noticed enlargement of the abdomen and pain. On admission the abdomen was greatly distended and dull to percussion to 3 inches above the umbilicus. There was a large quantity of free fluid in the abdomen and about a gallon of straw-coloured fluid escaped. Recurrence took place.

538. A carcinomatous ovarian tumour measuring $19 \times 12 \times 7$ cm. It is solid to the touch and has a few adhesions upon it, and near the end of the tube a lobulated piece of growth projects through the smoother cyst-wall. The cyst-wall is thin and its surface somewhat velvety where there is no new growth, but from this surface a mammillated growth is found gradually increasing until it measures 3 cm. in thickness and forms large solid masses, in which extravasations of blood and at one spot necrosis can be seen. The tube is unaffected with growth. The opposite ovary (stitched to the larger tumour) is the seat of a multilocular cyst of the size of a hen's egg, and on the surface of it near the end of the tube is a solid growth, somewhat resembling the growth in the other ovary. 10465

Microscopic Structure.—The growth is an adeno-carcinoma composed of closely packed tubules lined with epithelium with very little stroma and in some places no stroma between the tubules.

Removed Feb. 1907 (G. F. B.) from a patient aged 52. The patient appeared to be well in May 1911, but during the last few months had had monthly discharges of blood from the uterus.

539. Half of a left malignant ovarian tumour showing a slightly uneven surface, which is rough and warty at one part from the presence of new growth which has perforated the wall. The Fallopian tube is thickened, but otherwise normal. The tumour is for the most part made up of solid growth, but has an irregular cavity in the middle, probably due to degeneration. 10282

Microscopic Structure.—The growth is a carcinoma made up of alveolar spaces filled with epithelial cells. The stroma is very scanty.

Removed (H. R. S.) from a virgin aged about 40. The growth had extended from the rough spot seen on the specimen to the left broad ligament and had grown into the meso-sigmoid. The patient made a good recovery from the operation, but died of the extension of the malignant growth about 6 months afterwards.

540. A multilocular ovarian tumour with a portion of the Fallopian tube. The tumour is $12 \times 9 \times 7$ cm. Externally it is rendered uneven by the presence of secondary cysts, which in places have an opaque appearance and a solid feel. The outer surface is quite smooth and free from adhesions. The Fallopian tube is healthy. The section of the tumour shows several of the cysts containing gelatinous contents, but interspersed through the section is an irregular structure of solid growth, in some places occurring in rounded masses as if the growth occupied the secondary cysts. 9463

Microscopic Structure.—The growth is a carcinoma consisting of densely packed small tubules and columns of epithelial cells with a small amount of stroma.

Removed (H. R. S.) from a patient aged 33, together with a similar tumour of the other side. At the operation secondary growths were found in the omentum and peritoneum. The patient recovered and remained in apparently perfect health for several months, but finally died from extension of the growths.

541 (*bis*). A carcinomatous multilocular ovarian tumour measuring $12 \times 9 \times 6$ cm., irregular on the surface and covered by lymph. At one spot on the surface is seen what appears to be papilloma. On section several cysts are seen filled with gelatinous contents, and the largest are filled with a white growth, somewhat granular on section. 9617

Microscopic Structure.—The tumour contains cavities lined with epithelium which is much proliferated, forming almost solid masses, due to proliferations starting in papillæ. The

539 Newton (1906)

540 Spencer (1904)

541 E. Davies (1904)

543 Baker (1895)

545 Gibbs (1902)

basement-membrane, however, does not appear to be broken through. In some parts the growth shows large solid masses of epithelial cells.

Removed (H. R. S.) July 1904 from a patient aged 54. Small growths were also found in the uterus and the omentum.

542. The pelvic viscera from a patient with carcinoma of the ovaries. The uterus is normal. Each ovary is occupied by a multilocular growth, the loculi being in some places occupied by mucus and in some by solid growth. The left tumour is the larger, being of the size of a double fist, and the right is of the size of a small orange. On the section the rectum is seen below the right tumour and the solid growth has perforated the base of the left tumour forming a fungating mass. 8544

Microscopic Structure.—The growth is a carcinoma consisting of epithelial masses arranged in alveolar spaces. There is a dense stroma.

From a single woman aged 48. Growths were also found in the mesocolon, diaphragm, capsule of liver; there was no growth in either lung.

543. A mass of papilloma of the size of a halfpenny which was attached to the sigmoid mesocolon. Both tubes were thickened and inflamed. A suppurating ovarian tumour was removed at the same time, which may have been papillomatous but was not examined. 8054

Microscopic Structure.—The growth has the structure of a papilloma, the epithelium of which is in some places much proliferated.

Removed in June 1898 (H. R. S.) from a patient aged 50. The patient died with the pelvis full of growth in November 1900.

544. One quarter of an ovarian tumour which measured $20 \times 17 \times 10$ cm. The surface is smooth, firm, and whitish, with a few adhesions and slightly blood-stained. The section shows whitish growth with numerous cysts containing opaque white contents, and some of them contain granular growth infiltrated with blood. 10725

Microscopic Structure.—The growth is a columnar-cell carcinoma.

Removed (G. F. B.) from a patient aged 40, who presented no symptoms. There was no ascites present.

545. A uterus with an adherent left ovarian cyst containing papillomata. The uterus measures $11 \times 10 \times 7$ cm., and contains an intramural fibroid of the size of an orange. The right ovary is enlarged (6×4 cm.); it is not cystic; there are two large thrombosed veins below it. The left ovarian tumour measures $20 \times 17 \times 10$ cm. in the collapsed state; it is covered with adhesions, and intimately incorporated with the body of the uterus, as seen in the section. It contains an irregular mass of warty growth in the neighbourhood of the uterus. The ovarian cyst is calcified in places. 9123

Microscopic Structure.—The warty growth is a carcinoma, being made up of spaces filled up with epithelial cells and a very small amount of stroma. The right ovary is fibrotic; it contains no malignant growth.

Removed Dec. 13, 1902 (H. R. S.), from a patient, who remained quite well in 1911.

546. A uterus with two ovarian tumours, one of the size and shape of a large kidney, the other of the size of a lemon. They are both lobulated on the surface and free from adhesions. On section the ovaries are occupied by a growth of a somewhat fibrous but waxy appearance, into which several discoloured areas of a softer more granular growth are seen quite distinct from the structure of the main tumour. The tubes are normal; the uterus is small, only $6 \times 4\frac{1}{2} \times 2\frac{1}{2}$ cm. The uterus contains no growth; the mucosa is atrophied. 7584

Microscopic Structure.—The growth is a carcinoma made up of masses of epithelial cells having an alveolar arrangement, the cells being very large and in places fused together into plasmodial masses.

Removed post-mortem from a patient who had gastric ulcer.

547. A uterus pregnant with twins, measuring $20 \times 15 \times 10$ cm., with carcinomatous ovaries. Each ovary is converted into a smooth lobulated mass of growth, the right $14 \times 9 \times 5$ cm., the left $9 \times 7 \times 3$ cm. The growth is a soft solid infiltrated with blood. There was a mass of soft growth at the base of the left broad ligament, apparently in the glands; this has been cut away. A window has been cut in the body of the uterus, and the anterior wall of the cervix has been removed. The cervix measures 3·5 cm. in length; the internal os is dilated to about 75 mm.; the bag of membranes is exposed. The lower fœtus presents by the head; the upper one by the breech. 7627

Microscopic Structure.—The growth is a carcinoma, being made up of small masses and strands of epithelial cells, never more than a few cells in thickness, diffused throughout the reticulated fibrous stroma.

There is no history to the specimen.

548. A quarter of a large ovarian tumour which weighed 10 lb. 2 oz. and measured $24 \times 16 \times 18$ cm. The surface was pearly, slightly uneven, but free from adhesions. Numerous large veins are seen beneath the surface. The organ is occupied by a whitish growth into which abundant hæmorrhage has occurred. Several cysts were present in the other half of the specimen, and one of them, filled with gelatinous contents, is seen in the section. The greater part of the bulk of the tumour is made up of coagulated blood and mucus. The specimen shows carcinomatous invasion of a multilocular cyst. 10520

Microscopic Structure.—The growth is a carcinoma consisting of masses of epithelial cells with a small amount of intervening stroma.

Removed (G. F. B.) April 6, 1907, from a patient aged 45, from whose pleura 12 oz. of blood-stained fluid were aspirated 10 days after the ovariotomy. The left ovary (healthy) was not removed. The patient remained well in May 1911.

549. Half a left carcinomatous ovary which measures $25 \times 17 \times 15$ cm. The surface of the tumour is smooth, slightly lobulated, and slightly rough in places, where growth is coming through the capsule. The section shows a whitish granular growth, the central parts of which have broken down, forming a ragged anfractuous cavity. 8364

Microscopic Structure.—The growth is a carcinoma, being made up of masses of epithelial cells with an abundant stroma invaded by leucocytes.

Removed entire (H. R. S.) from a virgin aged 16. The tumour had grown rapidly. At the operation the right ovary was found to contain distended Graafian follicles, but, as it was otherwise normal, it was not removed. Menstruation began at 13, and was regular. The patient recovered from the operation, but died of recurrence. At the post-mortem examination a similar tumour 11×8 cm. was found in the right ovary.

550. A uterus and appendages, of which the right ovary contains secondary deposits of cancer. The specimen has been partly injected. The ovary is enlarged, measuring $5 \times 3\frac{1}{2}$ cm. on section, which shows numerous small round deposits of white growth. 6635

Microscopic Structure.—The growth is a carcinoma.

From a patient, aged 38, who had growths in the lung, kidney, pancreas, and sacrum, and a large primary growth in the liver.

551. A right carcinomatous ovary with a large cyst, from the outer surface of which grows an irregular mass of fibroid and a smaller mass of papilloma. The greater part of the tumour is made up of solid growth, firm but elastic, slightly lobulated on the surface, and with a small ragged surface at the lower extremity, where it was adherent in Douglas's pouch.

The ovarian ligament is hypertrophied and attached to the cyst, into the cavity of which projects a nodulated mass of the carcinomatous growth. The solid carcinomatous portion measures $14 \times 13 \times 7$ cm.

749 R. Thompson (1899)

H. A. Burdett (1909)

5-5-2. Haviland (1909)

The surface is slightly lobulated, smooth, and is permeated with vessels; a slice has been removed from it to show its structure, which is that of a racemose growth of yellowish-white colour and with a small cyst in its lower part. The growth is not degenerated. 11235

Microscopic Structure.—The growth is a carcinoma, made up for the most part of tubules lined with columnar epithelium, which in some parts are so closely appressed as to look like solid masses. In other places, where the stroma is more abundant, large tracts of epithelial cells are seen. The stroma is scanty, and shows very little cellular infiltration. The hard growth on the surface, from which a narrow wedge has been removed, is a fibroma, and the small warty growth near the upper edge of the cyst is a papilloma.

Removed (H. R. S.) on Nov. 13, 1909, from a patient, aged 50, who remained quite well in April 1911.

552. Half a carcinomatous ovarian tumour with a secondary growth in the Fallopian tube. The tumour measures 11 cm. in both directions, and is irregularly lobulated on the surface, with two cystic projections above. Below is a solid part with a granular surface intersected with fibrous trabeculæ, and below containing cysts filled with brownish mucoid material. Similar solid growth is seen in the wall of the base of both upper cysts. The Fallopian tube, which measures 3 cm. in length, is healthy at its outer portion, but shows a projection of the size of a haricot-bean in its inner half, from the deep surface of which a wedge has been cut for microscopic purposes. 11245

Microscopic Structure.—The growth is a carcinoma consisting of large masses and tracts of epithelial cells set in a scanty fibrous stroma, with but little leucocytic infiltration. Some of the masses show a lumen, but this appears to be due for the most part to central degeneration. The growth in the Fallopian tube is of the same nature and invades the muscular wall.

Removed in Nov. 1909 (H. R. S.) from a patient, aged 54, who recovered well and remained in good health till April 1911, when numerous small secondary growths were found on abdominal section in the peritoneum and intestine.

553. A uterus and its appendages, with part of the ureters. Each ovary is the seat of a new growth. The ovaries are lobulated and smooth on the surface. The surface of section is smooth, dense, and almost homogeneous; projecting on the surface of the right ovary is a Graafian follicle filled with blood-clot; on the surface of the left is a small cyst, and a second, filled with coagulated contents, is seen about the centre of the cut surface.

The lower part of the cervix uteri has been destroyed by cancer, which, by infiltrating the neighbouring areolar tissue, has compressed the ureters, inducing secondary changes in the kidneys. The cancer of the cervix does not extend as far as the internal os.

Anteriorly the growth has involved the lymphatics, which are seen as rounded nodules underneath the peritoneum forming the utero-vesical fold. Spreading from these to the ovary, Fallopian tube, and round ligament, on each side, is a tract of new growth. Some of the nodules in the Fallopian tube are discrete and separated by a tract of apparently healthy tissue.

Microscopic Examination proves the growth to be a carcinoma.

The patient was æt. 29. Hæmorrhage from the uterus occurred ten months before death. In consequence of this she came to the hospital, and the interior of the uterus was scraped.

The hæmorrhage diminished in amount for a few weeks, but recurred in greater quantity and became continuous. There was no appreciable pain. She had had five children, all living, the last confinement about two years before admission to the hospital. All the confinements were easy and natural.

On re-admission to the hospital the patient was very blanched, and was secreting only from ten to seventeen ounces of urine daily. There was constant vomiting. The urine was pale, sp. gr. 1010, slight deposit of pus and mucus, 1·3 per cent. of urea, with a trace of albumen. Abdominal palpation showed that the kidneys were enlarged. The vomiting continued, and the patient died of uræmia seven days after admission, being conscious up to the last. The post-mortem examination showed hydronephrosis with distension of the ureters, the right one being as large as the small intestine. The lower ends of the ureters were implicated in the growth.

554. The uterus and appendages from a woman, æt. 52, who died of disseminated cancer, secondary to primary disease in the breast. The uterus has been laid open from the front. Nodules of cancer are seen underneath the mucous membrane. The right ovary is cystic, part of the cyst having been cut away. Both ovaries are cancerous, the surface being nodular. Broad bands of inflammatory adhesions stretch between the posterior surface of the uterus and the neighbouring parts. The Fallopian tubes appear healthy; the fimbriated extremities are patent. 6578

Microscopic Structure.—The growth in the ovaries is a carcinoma.

Post-mortem Examination showed the presence of secondary growths of scirrhus cancer in the other breast, in the ocular muscles, and in the liver, spleen, kidney, heart, pericardium, stomach, and intestines.

Cysts simulating Ovarian Cysts.

555. A multilocular omental cyst $7\frac{1}{2} \times 6 \times 4$ cm. It is convoluted and externally somewhat resembles a hydrosalpinx. The cut edge of the omentum is seen above, and from it thin strands containing vessels can be traced over the surface of the tumour. 10718

Microscopic Structure.—The cyst is lined with a single layer of columnar epithelium, which appears to be ciliated. Beneath this is a thin basement-membrane, beneath which is a definite layer of uniform thickness made up of loose tissue consisting of vertical bundles of fusiform cells with narrow elongated nuclei. The rest of the wall is made up of similar fibres interlacing in all directions, which towards the surface have undergone marked hyaline degeneration. The wall contains a few thin-walled vessels.

Removed (H. R. S.) from a patient aged 53. The tumour was in the pelvis and was thought to be a small ovarian cyst. The ovaries and tubes and uterus were quite healthy and free from adhesions.

556. A cystic sarcoma of the great omentum, weighing 8 lb. 12 oz. and measuring $30 \times 23 \times 16$ cm. The tumour somewhat resembles an ovarian cyst, but at parts it is more like the fœtal surface of the placenta owing to the stretching of the omentum by the growth, solid nodules of which are seen at the upper and lower part of the tumour, and some flattened lobules in the middle. Loose strands of omentum are attached to the tumour, and can be traced to the meshes aforesaid. There is one pedunculated cyst at the upper part of the tumour. Some adhesions are seen on either side of the incision; by these the tumour was attached to the abdominal wall. The tumour was attached to the lower part of the great omentum by four or five strands, which appeared to contain only veins and ran unsupported and without adhesions to the tumour. The uterus and ovaries were healthy. There was no attachment to the pelvis except by two omental strands. The pedunculated pear-like process contained blood-clot. The main part of the tumour is made up of one large cyst, which contained many pints of brown-red fluid, evidently old blood. The more solid portions of the tumour consisted of soft growth which exuded bloody fluid on section. 7355

Microscopic Structure.—The growth is a large round-cell sarcoma.

Removed (H. R. S.) from a patient aged 28, who had noticed pain 11 months ago when she was 4 months pregnant. The pain ceased for 3 months previous to delivery. Menstruation always normal. Patient had twins (6 months) at Christmas 1888, a miscarriage in March 1889, a child in 1890, another in Sept. 1891, and the last in June 1894. She recovered from the operation and was delivered of another child about a year afterwards.

557. Three hydatid cysts of the omentum. The upper one has been turned inside out, and shows the hydatid cyst now covering the adventitious cyst and having on its surface numerous little wart-like growths which are brood-capsules with scolices visible under the microscope. The middle cyst is collapsed and evidently dead. The upper cyst was enucleated from the omentum, and the lower two are contained within its layers. 6576

563. F. Newman (1908)

356. E. Fielden (1895)

Perimetritis and Parametritis.

Inflammation of the pelvic peritoneum (*perimetritis*) is due to infection of the serous membrane with microbes, of which the commonest are the gonococcus, streptococcus, staphylococcus, bacillus coli, pneumococcus, and tubercle bacillus. These micro-organisms may reach the pelvic peritoneum through the blood, through the Fallopian tubes, the uterine and other pelvic lymphatics, or from some neighbouring infected organ such as the vermiform appendix.

In the acute stage the peritoneum is thickened, reddened, and its sheen dulled or hidden by more or less lymph, which binds together adjacent affected organs (*adhesive perimetritis*): more or less serum may be exuded and collect in Douglas's pouch (*serous perimetritis*); it is, however, rare to meet with a large collection of serum, which soon becomes encapsuled and closely resembles a true cyst clinically. More or less blood may sometimes be mixed with the serum (*hæmorrhagic perimetritis*), and the inflammation may go on to the formation of pus (*purulent peritonitis*), which may be localised as an abscess, which may burst through the abdominal wall or into one of the hollow abdominal viscera, or the vagina, rectum, or bladder. In the most virulent form of septic peritonitis the serous membrane becomes rapidly and extensively affected and filled with a thin purulent fluid; in these cases adhesions may be few or absent and a localised peritonitis does not occur.

In its chronic form perimetritis manifests itself by bands and bridles of organised lymph on the surface of the infected organ, or binding adjacent organs together, in some cases so firmly that separation can only be effected by the knife. These bands and bridles are especially frequent around the Fallopian tube as the commonest channel of infection and between the ovary and Fallopian tube (*peri-salpingitis, peri-oophoritis*).

Occasionally parametritis and perimetritis extend widely, and the pelvic part of the inflammation resolves, leaving the signs of inflammation in distal parts ("remote peri- and parametritis").

Inflammation of the pelvic cellular tissue (*parametritis*) is due to microbic infection of the tissue through a wound, as of the vagina, cervix, or rectum, produced during labour, by unskilful examinations with fingers or sound, neglect to disinfect the passage, and to infection during operation, especially when the cervix is torn, as is frequently the case during dilatation with metallic sounds. Inflammation of the cellular tissue may also occur from infection of tumours such as myomata, which invade the broad ligament.

In a well-marked case there is a considerable exudate in the cellular tissue, especially of one or both broad ligaments, and the veins are thrombosed and the lympatics distended and sometimes filled with pus. The diffuse tumour thus formed is called a *phlegmon* (736). The exudate occurs most commonly in the left broad ligament, owing to the greater frequency of laceration of the cervix on that side, but it may occur on both broad ligaments and in any or all of the deposits of cellular tissue in the pelvis, and from these may extend around the rectum (paraproctitis), bladder (paracystitis), or vagina (paracolpitis), or upwards into the retrocolic cellular tissue. A phlegmon sometimes occurs in the sigmoid mesocolon as a result of infection from an ulcer of that intestine. It may closely resemble a pyosalpinx or ovarian abscess on clinical examination, and has been mistaken for malignant disease even when exposed at an operation.

Pelvic cellulitis usually ends by resolution and leaves no trace behind, but in some cases it may lead to the formation of fibrous strands in the cellular tissue, and not uncommonly it leads to the formation of a pelvic abscess, which may burst through the abdominal wall, usually above Poupart's ligament, or into the vagina, bladder, or rectum.

558. A pelvis measuring across the anterior superior iliac spines 23 cm., crests 26 cm., and the external conjugate 18 cm. The intestines are matted together by lymph, and a thick mass of lymph is present in the retro-pubic space, probably in the cellular tissue, though the exact point of reflection of the peritoneum from the bladder cannot be seen. The fundus of the uterus in the erect posture is on a level with the promontory. The obstetric conjugate is 10·7 cm. (4¼ inches). The length in the uterus is 12 cm., the cervix measuring 7·5 cm. The uterus and bladder are bound together by recent exudation. The omentum is adherent at the junction of the two, and an abscess lies between the two organs in the utero-vesical pouch, and has burst through into the bladder, separating in great part the sloughing mucosa, the lower end of which has passed through a fistula into the vagina and hangs free into the cavity of the latter. There is a small purulent deposit in the anterior wall of the uterus just above the internal os. The wall of the bladder is thickened (·5 to 1 cm.). The mucosa is present in the lower part, but has been separated above as previously noticed. The urethra is 3 cm. long and is normal. The skin of the vulva is ulcerated. 8472

From a patient aged 31, who had been delivered two months previously by version with laceration of the cervix and vagina.

559. A uterus and appendages from a patient who died of pyæmia one month after delivery. There are numerous adhesions in Douglas's pouch, and entangled among them on the right side is a pin which has probably passed through the rectum, though no sign of its passage could be found. 7309

NORMAL ANATOMY OF THE FEMALE PELVIC ORGANS.

560. A model showing the arrangement of the pelvic viscera in the female. The uterus is tilted to the right side and twisted so that its left cornu looks a little forwards, and anteverted. The right ovary and the greater part of the tube are vertical, with surfaces looking inwards and outwards. The greater part of the tube runs anteriorly along its vertical border, and the extremity of the tube embraces its upper extremity and posterior half. The right ureter lies beneath the peritoneum near the upper pole of the ovary. The left Fallopian tube runs outwards and slightly upwards, and the extremity of the tube covers the apex and posterior edge of its upper half as on the right side. The left ovary lies more obliquely than the right, having an anterior surface which looks upwards, inwards, and forwards. The ureter approaches the apex of the ovary as on the opposite side. The sigmoid flexure and rectum and ileum are seen, but the sigmoid flexure is higher up than usual. On the back of the specimen the dimples over the posterior superior iliac spines are well marked.

561. A model showing a side view of the pelvic organs, the right side having been removed. The uterus is anteflexed, surrounded by the sigmoid flexure passing into the rectum, which runs down the right side of the pelvis. The vertical position of the right ovary with the tube surmounting its apex and the position of the ureter are well shown. The promontory is at a height of 8½ cm. almost vertically above the pubes. The upper surface of the uterus is at a height of 4 cm. above the upper surface of the symphysis.

562. A model of the pelvis and organs of a parous woman. The uterus is anteflexed and anteverted, and its upper edge is at a height of 6½ cm. above the top of the symphysis.

The Pregnant Uterus.

The uterus during pregnancy undergoes a progressive increase in bulk: at the end of the 3rd calendar month it is of the size of an adult fist (5 in. × 4 in. × 3 in.), at term it measures 12 in. × 9½ in. × 8 in.): throughout gestation its width remains considerably greater than its depth. The enlargement takes place almost entirely at the expense of the body, and of this the fundus especially becomes developed, as shown by the lower insertion of the Fallopian tubes. The muscular wall and the individual fibres become greatly hypertrophied and in the later months three layers can be distinguished: (1) an outer layer, mainly longitudinal, beneath the peritoneum, which is continuous with the muscular wall of the vagina, Fallopian tubes, broad ligment (*mesometrium*), and other ligaments; (2) a middle layer, forming the main thickness of the organ, composed of circular and longitudinal fibres interlacing with one another; (3) an inner layer of circular fibres which are arranged concentrically around the orifices of the Fallopian tubes and os internum. The cervix undergoes but slight increase in size and takes no part in the formation of the uterine cavity until labour sets in. It is scarcely increased in length, but is somewhat thickened and softened by œdema, and is *patulous*. The end of the portio vaginalis becomes truncated and pulpy within a few weeks after conception, and towards the end of pregnancy and during labour it is almost as soft as jelly. The fusiform canal is filled with a plug of mucus. The softening of the supravaginal cervix is so marked that the fingers may be almost made to meet on bimanual palpation (Hegar's sign of pregnancy) and the body may appear to be separate from the cervix.

The uterine vessels increase in size and become exceedingly tortuous; they are especially large over the site of the placenta.

During pregnancy the uterus at first becomes anteverted and sinks a little in the pelvis: at the end of the 2nd calendar month the upper border of the uterus is about 2½ inches vertically above the top of the pubes, and up to the end of the 6th month the height of the uterus may be approximately obtained by adding half an inch to the number of the month: thus at the end of the 3rd calendar month the upper border is about 3½ inches (or more accurately 3¾ inches) above the top of the pubes, *i. e.* at the same height above the pubes as the promontory; at the 5th month 5½ inches, *i. e.* at the level of the umbilicus; in the last three months the height varies a good deal in different cases and the uterus sinks a little in the last fortnight.

563. A uterus, etc., injected. The walls are thickened, the organ enlarged, and the mucous membrane of the body is highly vascular. The cervix does not contribute to the formation of the uterine cavity, nor is the mucous membrane so vascular, soft, and spongy in appearance as that of the body. There is a corpus luteum in the right ovary.

The specimen is described in the MS. Catalogue as, and has the appearance of, an early pregnancy; but there is no sign of the ovum and the endometrium has not the characteristic spongy appearance. 842

564. A uterus, etc., about 2 months pregnant. The posterior wall of the organ has been removed. The cavity is oval in shape, the cervix does not contribute to its formation. The decidua reflexa has been partly removed to show the fœtus and chorion, easily recognized by its villi. The mucous membrane lining the rest of the uterine wall is swollen and spongy and lobulated; and with a lens the orifices of the uterine glands can be well seen. The muscular walls are thickened, and large blood-vessels are seen in section. Small smooth-walled cysts, formed by dilatation of the Graafian follicles are present in the left ovary. The right ovary is the seat of the corpus luteum.

565 (*bis*). Sections of a pregnant uterus at the 10th week of gestation. Measurements:—From fundus to external os 14·1 cm., from fundus to internal os 9·4 cm., transverse diameter 6·6 cm., antero-posterior diameter 6·7 cm. The placenta is attached to the anterior uterine wall. The cervical canal has a fusiform cavity containing a mucous plug. The decidua vera and reflexa are not yet united. The thickest part of the decidua vera is just below the lower end of the placenta. Note the thickness of the supravaginal cervix showing that its apparent thinness during life is due to softening. (For full account see Blacker, Obstet. Soc. Trans. vol. 42, p. 235.)

566. Model of part of the pelvis of a woman about 3 months pregnant. The promontory is 10 cm. and the top of the uterus 9 cm. above the symphysis. The relations of the bladder, ureter, vagina, and appendages are shown, also the rectum which passes down the right side of the pelvis. Note the vertical position of the ovary with its surfaces looking inwards and outwards.

567 (*bis*). A pregnant uterus at about the 4th month. It measures $16 \times 11 \times 6$ cm. There is a corpus luteum in the right ovary. The placenta is situated on the posterior wall and the fœtus presents by the head and lies with its back to the right. The cervix is 3 cm. long; the internal os is closed. The placenta is 1·5 cm. at its thickest part. 8374

568. A pregnant uterus at about the 5th month, which measured $24\frac{1}{2} \times 17 \times 7{\cdot}5$ cm., greatest girth 44 cm. The cervical canal measures 4 cm. in length. The body-wall is 7–8 mm. in thickness. The placenta is attached to the posterior wall. The brown shaggy decidua, the thinner somewhat transparent chorion, and the pellucid amnion are well seen on the right of the specimen. The child presents by the breech. There is a small corpus luteum in the left ovary $\frac{1}{2}$ cm. $\times$ 7 mm. 6884 E

569. A pregnant uterus, $21 \times 14 \times 7$ cm., at about the 5th month. The Fallopian tubes and round ligaments come off from the front of the uterus 6 cm. below the fundus and are separated by only $10\frac{1}{2}$ cm. The cervical canal measures $2\frac{1}{2}$ cm. in length; the internal os is 1 cm. in diameter. The fœtus presents by the head; the placenta is attached to the posterior wall and fundus mainly on the right side. No corpus luteum of pregnancy is visible in either ovary. 11070

570. A portion of the wall of the gravid uterus at about the sixth month, showing the chorion and decidua. The chorion and amnion have been partially separated from the uterine wall. Note the thickness of the walls.

571. Half a uterus in about the $6\frac{1}{2}$ month of pregnancy. The uterus measures $25\frac{1}{2} \times 17\frac{1}{2} \times 9$ cm. The placenta is situated in the posterior wall, reaching from the fundus to 16 cm. below it. It occupies nearly the whole of the wall. The body is 4 mm. in thickness—5 mm. where the placenta is situated. The cervical canal is $2\frac{1}{2}$ cm. along the anterior wall, and 2 cm. along the posterior wall. The internal os is closed. The posterior lip of the cervix measures 8 mm. in thickness, the anterior from 1–$1\frac{1}{2}$ cm. The peritoneum is reflected over the bladder at a height of 1 cm. above the internal os. The placenta is $1\frac{1}{2}$ cm. thick. The cord measured 37 cm. in length. The fœtus measures from vertex to buttock $20\frac{1}{2}$ cm.; its legs were extended, its toes touching its forehead; it is of the male sex. Douglas's pouch extends down to the level of the edge of the anterior lip about 1 cm. below the posterior fornix. 9669

572. A model of the pregnant uterus near full term. The uterus reaches up to the level of the middle of the body of the third lumbar vertebra. The placenta has been flattened in places by the projecting parts of the fœtus. The fœtus shows the general flexion of the body and limbs, and marked flexion of the head. The

sole of the right foot is applied to the dorsum of the left instead of the legs being crossed as usual. The child presents in the first vertex position; the occiput of the child inclines more to the left than the spine.

573. A model showing the pregnant uterus at the full term of pregnancy in a first breech presentation. The placenta is flattened by the fœtus as in model No. 572. The fœtus shows extension of the lower limbs, the feet being applied over the eyes, the head being strongly bent to the right, and the face turned to the left; the hands are applied to the feet. The wedge formed in this presentation is well seen. From the flattening of the cord and the close apposition of the extremities it is evident that the liquor amnii has escaped.

574. A uterus at the full period of gestation. The Fallopian tubes are seen coming off from the anterior surface of the body, the right from a point 6 cm. below the fundus, the left 7 cm. below it. Part of the placenta protrudes through a rent in the fundus on the right side, where there appears to be scarcely any uterine wall left. The wall of the uterus everywhere is extremely thin, from 1–2 mm. in the body to 4 mm. in the lower segment. The wall has been cut away near the rupture, showing the placenta and the almost complete disappearance of the uterine muscle.

The uterus measures $30 \times 20 \times 15$ cm. 879

Microscopic Structure.—A section was taken of the uterine wall at the placental site; it is less than a millimetre thick. There seems to be no decidua remaining, but an occasional large cell is seen in the muscular wall. There is no sign of chorionepithelioma or marked proliferation of the epithelium of the villi. The specimen is macerated and stains badly.

575. An injected specimen of a portion of the uterine wall and placenta at the full term of pregnancy. The uterine arteries have been filled with yellow injection, the veins with size, and the fœtal portion of the placenta with vermilion. The placenta forms a disc-shaped mass, attached to the centre of which is the umbilical cord, and covering its free surface are the fœtal membranes. Beneath the chorion towards the free surface of the placenta is a thick yellowish laminated layer which is probably due to the injection. The placenta has a spongy appearance, and is subdivided into lobes by decidual septa.

576. A portion of the wall of the uterus, with the margin of the placenta, the fœtal portion being injected with vermilion. The uterine vessels are seen in section and are much increased in size. The septal prolongations of the decidua serotina dividing the fœtal placenta into lobes are well seen. The amnion covers the free surface of the placenta. The decidua vera is well seen at the top of the specimen.

577. The body of a fowl which has been laid open, showing the ovary and oviduct, with ova in various stages of development. 750

The Uterus during Labour.

During pregnancy the cervix maintains its length and takes no part in the formation of the uterine cavity. When labour sets in the internal os first dilates under the pressure of the bag of membranes; the cervical canal then becomes funnel-shaped (579), and then the external os dilates. At the end of the "first stage" (stage of dilatation) the cervical canal becomes continuous with the vaginal wall. Under the influence of the "pains" the upper segment of the uterus becomes thickened, "retracted," and the lower segment thinned; the junction of the two is marked internally by a ridge, which is most evident in cases of obstruction, the "ring of Bandl" (583). After the birth of the child the uterus retracts on the

placenta, and from time to time contractions occur; when the placenta is passed into the vagina the uterus is observed to rise higher in the abdomen, and to sink again when the placenta is delivered, when it forms the typical firm tumour, extending upwards for about 5 inches above the pubes.

578. A full-term pregnant uterus at the beginning of the first stage of labour, $34\frac{1}{2} \times 18 \times 13{\cdot}5$ cm. The Fallopian tubes come off at a distance of $7\frac{1}{2}$ cm. below the fundus. The round ligament is about 3 cm. lower down. The Fallopian tubes are 13 cm. long, the ovaries elongated, the right measuring $4\frac{1}{2} \times 2 \times {\cdot}7$ cm., containing a corpus luteum 1 cm. in diameter in the centre of the ovary, 3 mm. below the surface. The left ovary measures $4 \times 1\frac{1}{2} \times {\cdot}5$ cm. The peritoneum is loose below a point 22 cm. from the fundus, 13 cm. above the external os. The fundus of the bladder is at a height of 6 cm. above the os. The vessels and ureter are seen on the left side, but the vessels have been removed on the right. The left ureter, 4 mm. in diameter, courses beneath the vessels over the prominence formed by the occiput of the child. The right ureter has been opened and courses round the sinciput of the child. On the left side the obliterated hypogastric artery is seen; it has been removed on the right. The uterus is nearly straight; it has a slight curve backwards above a shallow groove probably corresponding to the promontory. The cervix has been stretched to accommodate the child's head, which rests upon it; the external os measures $1\frac{1}{2} \times 1$ cm. transversely, is an aperture with an edge less than 1 mm. in thickness, and inside this are the membranes, which are intact and contain a small amount of liquor amnii. From the external os to the anterior fornix measures 2 cm., to the posterior fornix 2·5 cm., and while the anterior wall of the cervix is 4 mm. in thickness, the posterior is only 1–2 mm. in thickness. The cavity of the bladder lies parallel with the uterus for 5 cm.; the portion of urethra preserved is curved forwards at rather more than a right angle, and measures 2 cm. in length.

The child is lying in the first vertex position, the occiput to the left and slightly forwards. The head is bent slightly towards the left shoulder, forming a distinct angle with the long axis of the body. The child is in a position of general flexion, the head flexed on the chest, the arms and legs flexed and conveniently disposed in the cavity of the uterus. A coil of cord passes from the umbilicus under the left forearm, round the back of the neck, and under both forearms to pass to the right side of the uterus.

The thickness of the uterine wall is greatest over the middle of the body, where it measures 5 mm.; the placenta is situated on the back of the fundus, from the middle of the fundus downwards to $17\frac{1}{2}$ cm. below it; it varies from 1–$1\frac{1}{2}$ cm. in thickness. At the fundus the uterine wall measures 3 mm. in front of the placenta, and over the placental site it is thicker, 4–5 mm. Below the level of the lower edge of the placenta, where the wall measures 5 mm. in thickness, it gradually diminishes down to 1 mm., which is the thickness over the head, but the lips of the cervix, as before mentioned, are somewhat thicker. There is no caput succedaneum. 9152

579 (*bis*). A median sagittal section through the body of a woman who died at about the sixth month of pregnancy. Labour pains were observed to be present for some time before the patient died. The body was hardened in formalin for several months, the bony structures sawn through in the middle line, and the body divided with a knife, the fœtus being left intact by cutting through the uterus around it. The upper extremity of the uterus is at the level of the lower margin of the second lumbar vertebra. The organ measures 9 in. in length, $4\frac{1}{2}$ in. in depth. The wall varies from $\frac{3}{16}$ in. to $\frac{1}{16}$ in., except at the placental site, where it is $\frac{5}{16}$ in. in thickness. The external os and fornix and wall of the vagina are the seat of cancer, secondary nodules being found in the posterior wall of the vagina as low down as the level of the lower border of the symphysis. The upper cervical

canal is dilated into a funnel-shaped cavity by the uterine contractions. The placenta is situated on the anterior wall; the upper part of the posterior wall of the uterus is moulded to the lower lumbar spine.

The top of the bladder is on a level with the top of the pubes.

580. A model showing a first vertex presentation with the head born and showing the movement of external rotation, the face looking towards the right thigh. The lower segment of the uterus is very thin (2 mm.), and there is no indication on the inner surface of the position of the internal or external os.

The other half of the same model. This model laid flat, with the fœtus *in situ*, shows the external rotation as it is observed when the woman is delivered on the left side.

581. The right half of a uterus in the third stage of labour. The uterus measures 23 cm. in length, and the placenta lies in the lower segment and upper part of the vagina, its edge being 4½ cm. below the external os. The placenta is doubled back upon itself, almost at its middle, the maternal surface presenting; the upper edge of the placenta is 11 cm. above the external os and 1 cm. above the retraction-ring. The lower segment and cervix are thinned, the upper segment and fundus thickened.

582. The left half of the same specimen, from which the placenta has been removed. It shows a well-marked retraction-ring 10 cm. above the external os and 11 cm. from the top of the cavity. The lower part of the body has been distended by blood-clot, the lower segment and the vagina by placenta which has been removed.

583. Portion of the uterus and vagina from a woman who died during labour. It shows a portion of the vagina, and the vaginal portion of the cervix greatly elongated and thinned. The cervix and lower segment of the uterus are very thin and elongated, measuring, from the insertion of the vagina to Bandl's ring, about eight inches. Above the lower segment is "Bandl's ring," or the "contraction ring" or "retraction ring" of the uterus. It forms a thickening on the uterine wall about an inch in thickness. Above the ring the wall is again somewhat thinner. At the extreme end is a small part of the placenta and membranes. Over the placenta the uterine wall is only about a line thick.

The Uterus after Labour.

After delivery the uterus undergoes a process of involution accompanied by the discharge of *lochia*, which, for the first few days are red (*lochia cruenta*), then become serous (*lochia serosa*), and during the second and third weeks are white (*lochia alba*).

The uterus gradually diminishes in size, but usually increases somewhat during the first 24 hours, and remains stationary on the third day. It can be felt on abdominal palpation up till the 14th day, and often in thin patients up till the end of the third week. The whole process of involution of the uterus takes about ten weeks, and the organ always remains larger than in the virgin state, and on section of its walls the thick white vessels stand out and furnish evidence of previous gestation.

584. A uterus from a woman who died on the third day after confinement from pneumonia contracted 6 days before delivery. Weight 15 oz.; outside length 15½ cm.; outside breadth 9½ cm.; thickness 5·4 cm. There is a corpus luteum in the right ovary.

585. A uterus, ten days after confinement, showing a piece of adherent placenta in the upper part of the body. The patient died of septicæmia ten days later. A microscopic section shows the placenta to be densely infiltrated with blood, also a few faintly staining villi and extensive thrombosis of the veins. 6683

Models illustrating the Moulding of the Fœtal Head.

586. A cast of a child's head, taken by Dr. Roper. It shows the thickening and ridging of the scalp (*caput succedaneum*) at the presenting part. The expression of the face is natural. The child has been born in the first vertex position, as may be determined by the maximum thickening of the scalp over the posterior parietal bone.

587. A cast by Dr. Roper of the head of a child which has been delivered in an occipito-posterior position. The head is greatly elongated from vertex to chin (17 cm.), and compressed from occiput to forehead (11 cm.), the occipital and frontal bones being depressed under the parietal.

588. A cast by Dr. Roper of the head which presented by the face. The head has the dolichocephalic form produced by the œdema of the tissues of the forehead and over the occipital sinciput. The vertex is flattened. The parts of the face are swollen; the eyelids, cheeks, and upper lip are swollen. There is an indication of a blister on the right upper eyelid. The mouth is distorted, the left angle pushed to the right by the œdema of the cheek.

589. Half a child's head which presented by the face, showing the elongation of the antero-posterior diameter of the head produced by œdema of the scalp over the occiput and to a less extent over the lower part of the forehead and upper lip. The labour lasted 19 hours. The child was small, and consequently the œdema is not as extensive as it would have been had the child been subjected to greater pressure, owing to the greater size of the head.

The Fœtus and Membranes.

The *fœtus* at the end of the first month measures $\frac{1}{3}$ inch in a straight line, $\frac{3}{4}$ inch along the dorsal curve; at the end of the second month $\frac{1}{2}$ inch in a straight line, 1 inch along the curve; at the end of the third month it measures 4 inches in length, and at the end of each subsequent month its length in inches is approximately twice the number of the month. At term it measures 18 to 20 inches in length and weighs about 7 lb. on an average. Living new-born children over 12 lb. in weight are rarely met with, though children of giantesses have been born of nearly twice that weight. A centre of ossification appears in the condyle of the femur in the 9th calendar month.

The *membranes* consist of deciduæ, chorion, and amnion. The corporeal endometrium becomes thickened and vascular to receive the impregnated ovum, which usually is inserted at the upper segment but occasionally in the lower segment. This thickened endometrium is the *decidua*. That part of the decidua where the ovum is inserted is distinguished as the *decidua serotina* and with the *chorion frondosum* forms the placenta. The ovum eats its way by means of the syncytium of the villi into the substance of the decidua, which then closes over it (*decidua reflexa*); the rest of the endometrium is known as the *decidua vera*. As the ovum grows the *decidua reflexa* and the *decidua vera* approximate more and more and fuse at the end of the third month.

The *chorion* as seen in early ova is a membrane beset with fine thread-like processes, the "villi"; at the side attached to the decidua serotina the villi develop (*chorion frondosum*) and form the placenta; elsewhere they atrophy (*chorion lævе*). Hofmeier's theory of the production of placenta prævia is that the chorion covered by the reflexa develops into the placenta, which thus becomes pushed down to the os when the reflexa and vera fuse at the third month.

The edge of the chorion is attached to the edge of the placenta.

The *amnion* is a thin strong membrane lying within the chorion which can be stripped off the surface of the placenta up to the cord, to which it forms an adherent sheath. It encloses the amniotic fluid, a yellowish-green fluid of peculiar odour containing about 1 per cent. of solid matter, chiefly albumen, salts, and urea, the latter probably derived from the urine of the fœtus. The quantity is usually from one to two pints; in cases of *hydramnion* ten pints or more may be present.

590. An aborted ovum at about the sixth week of gestation. 2751

591. A fœtus enclosed in the amnion, with the placenta, at about the second month of pregnancy.

592. An aborted ovum about the tenth week of gestation. The funis has been twisted into a slender cord and there is a subchorionic hæmatoma at about the middle of the placenta. 928

593. A fœtus at about the fourth month of gestation, with the amnion and placenta.

594. A male fœtus with the placenta and membranes at about the fourth month. The membranes have been laid open. 4657

595. A fœtus with the placenta and membranes at about 4½ months. The membranes have been laid open. 4641

596. A female fœtus with the placenta attached, at about 4½ months. 4623

597. A fœtus with the placenta and membranes, at about 5½ months. The membranes have been torn. 4644

598. Placenta and membranes containing a seven-month fœtus. 1611

599. A fœtal sheep with the amniotic sac, at an early stage of development. 2044

600. A fœtal pig enclosed in its bag of membranes. The placenta is not present. 88

601. An embryo chick with the umbilical vesicle attached. 4716

602. The chorion at about the third week of gestation.

603. The chorion at about five weeks' gestation. The chorionic villi are seen as delicate branching processes attached to the membrane by a single stalk. The embryo is not present. 4704

604. An abortion at about the sixth week of gestation. The embryo is not present. The chorionic villi are seen scattered over the outer surface of the specimen; at one part, however, the decidua is adherent to the chorion. The interior of the amniotic sac has been laid open, and is seen to be quite smooth. 1310

605. The chorion of a fœtus at an early period of pregnancy. The embryo is not present.

606. The chorion at about the third week of gestation.

607. An ovum at about the third week of pregnancy. The chorionic villi are well shown.

608. An aborted ovum at an early stage of development. A portion of the embryo remains attached to the umbilical cord, which has a small cystic dilatation in the middle of its course. All the membranes can be well seen. 4713

609. A specimen showing the chorionic villi after about thirteen weeks' gestation. The outer surface is seen to be beset by dendritic masses of villi, which are at their terminations very delicate. These arise from the membrane by a single primary-trunk, which soon divides and subdivides, the subdivisions forming the fine villous processes. It is these processes which, sometimes undergoing mucoid degeneration, become distended into cysts constituting the disease known as hydatidiform degeneration of the chorion. 954

610. A portion of the decidua, chorion, and amnion, from an advanced stage of pregnancy. Taken from close to the placenta, a small piece of which is present.

611. A fœtus and membranes of about the fourth week of gestation. The amniotic sac has been abnormally distended by the accumulation of fluid, constituting the condition known as hydramnios.

612. A portion of the chorion, with the vessels partially injected.

613. A portion of a "caul," which has been dried. A caul is the term applied to the membranes when they come away surrounding the fœtus or its head. In such cases the membranes are frequently tougher than natural.

The Placenta.

The placenta is a round flat organ nearly an inch in thickness, a span in breadth, and a pound in weight. It is formed by the union of the chorion frondosum of the fœtus and the decidua serotina of the mother and takes shape about the end of the third month.

The maternal surface is rough where the decidua serotina has been separated and divided into cotyledons by septa which penetrate into its substance from that membrane. Certain chorionic villi become attached to the decidua serotina (*anchoring villi*, 614), while others float freely in the blood of the maternal sinuses, and thence derive nutriment and oxygen for the fœtus.

The fœtal surface of the placenta is smooth and is covered with amnion, which is reflected over and forms an adherent sheath to the cord. The amnion can easily be stripped off the surface of the placenta exposing the fœtal vessels. The chorion is attached to the edge of the placenta and is covered externally by the decidua reflexa and decidua vera.

Usually the villi over that part of the chorion which is opposite to the site of attachment to the decidua serotina (*chorion læve*) undergo atrophy, but occasionally they develop and form placenta (*prævia*). Occasionally nearly the whole of the chorionic villi develop into placenta (*pl. diffusa*), or isolated patches may develop (*pl. succenturiata*, 623). The placenta of ectopic pregnancy is usually a bulky organ due to infiltration of blood.

The site of the placenta is usually in the upper part of the body, but it may occupy the lower segment of the uterus or reach or overlap the os uteri (*placenta prævia*). Very rarely the chorionic villi become attached either primarily or secondarily (666) to the cervical canal, forming the *cervical placenta*; in some of these a cervical decidua has been found, but usually no decidual development takes place in the cervix during pregnancy.

Occasionally a white crescent or band is found at the margin of the fœtal surface of the placenta (*pl. marginata, circumvallata*, 626, 627), and certain pathological conditions are met with in the organ, such as white infarcts (628), calcification, cysts (632), and hæmatomata (620).

Usually the placenta is delivered naturally or artificially within an hour after the birth of the child, and may be born by its edge (Matthews Duncan), or by its fœtal surface (Schultze), or by its maternal surface. It may be *retained* either by *inertia* or by *hour-glass contraction* of the uterus. More rarely it is *adherent*, and in some cases so firmly that its complete removal is impossible.

Occasionally a piece of the placenta or placenta succenturiata is retained in the uterus and becomes infiltrated with blood, forming a "placental polypus"; it gives rise to secondary hæmorrhages.

614. A specimen of the decidua from an early abortion, showing the relations of the chorionic villi to the maternal placenta. In part the two have been separated, but elsewhere the delicate processes are seen to be in intimate relation with the maternal structures.

615. The fœtal portion of a placenta, which has been injected and then macerated to show the chorionic villi.

616. The fœtal portion of the placenta with the umbilical cord attached. The specimen has been macerated in order to separate the chorionic villi from the maternal portion of the placenta. The villi are the ultimate divisions of the rounded cord-like processes attached to the outer surface of the chorion. 4684

617. A specimen showing the fœtal cotyledons of a sheep attached to the membranes. It illustrates very clearly the disposition of the cotyledons on the membrane, and also their relative positions. The vessels have been injected from the fœtal side. The preparation also demonstrates the completeness with which the fœtal portion of the placenta may be separated from the maternal portion in these animals. 5227

618. A section of the placenta through the insertion of the umbilical cord. 7983

619. A section of a placenta at its edge showing the chorion and the amnion which has been partly stripped from the fœtal surface. 7982

620. A placenta, about the fifth month, into the substance of which extensive hæmorrhage has occurred. On the fœtal aspect the hæmorrhage forms a rounded prominence, a portion of which has been removed in order to show the clot. On the maternal aspect the blood-clot is readily recognizable by its red colour. There was no evidence of syphilis in the bones or organs of the fœtus. 6591

621. A placenta with part of the umbilical cord, which has been dried. The specimen shows extensive calcareous deposit. The change is most marked on the maternal surface. 4679

622. A placenta at full term from which the amnion has been partly reflected. On the fœtal aspect are seen several cysts lying beneath the chorion. The contents are for the most part clear, but in some cysts are blood-stained, probably from hæmorrhage occurring at the time of delivery. The placenta is otherwise normal and its maternal surface shows the cotyledons well. 6543

623. Part of a placenta with a placenta succenturiata measuring $1\frac{1}{2} \times 2\frac{1}{2}$ cm. A strand of vessels is seen passing from the accessory placenta to the main organ. In examining the placenta after delivery it is from the presence of these vessels torn across at the edge of a gap in the chorion that the diagnosis is made that a placenta succenturiata has been present, and it becomes necessary to explore the uterus. 8570

624. A placenta showing marginal insertion of the cord ("battledore" placenta). A vein is seen coursing round the lower edge of the placenta, which was *prævia*. 7495

625. A portion of a placenta showing the umbilical cord inserted into the membranes (velamentous insertion) $2\frac{1}{2}$ cm. from the edge of the placenta. Large vessels are seen coursing over the membranes. In cases of placenta prævia these vessels are liable to be torn and to lead to the death of the fœtus from hæmorrhage. 8579

626. Half a placenta marginata showing on the fœtal surface a collar measuring from 2 to 5 cm. in breadth. The band appears to have been caused by a doubling back of the chorion carrying the amnion with it for nearly the whole length of the band. 10608

627. A placenta marginata. The chorion has been cut round the edge of the placenta and the amnion has been stripped off to the cord. Around the periphery of the fœtal surface is a smooth band from 2 to 3 cm. broad, within the circle formed by which the vessels are well seen. 8615

628. A slice of placenta showing at its thin upper edge an old decolorised infarct. The specimen has been injected. Under the microscope the injection has passed into parts where the villi are healthy and stain well, but does not pass into parts which are infiltrated with blood in which are numerous leucocytes and the villi stain badly. 6654

629. A section of a placenta showing what appears to be a white infarct. The infarct appears to be in the chorion, which also contains a cyst on the surface of the infarct. 8605

Microscopic Structure shows the "infarct" to be blood-clot.

630. A slice of a placenta, showing white deposits beneath the chorion. These are seen in section to be thickenings beneath the chorion, distinctly marked off from the true placental tissue; they are white and laminated, and are probably due to altered blood-clot. 8585

631. A placenta with a fœtus compressus. The placenta measured 20 cm. in diameter. On the fœtal surface of one quadrant is a circular patch 8 cm. in diameter and raised 1 cm. above the placenta, which looks like a white infarct. The maternal surface beneath this portion is quite pale. On section through this patch it is found to be an amniotic cavity with a fœtus compressus, the head of which has been removed and measures $4\frac{1}{2}$ cm. in diameter. The amniotic cavity can be seen, and the skeleton of the fœtus has been divided. The placenta belonging to the fœtus is white and fibrous and 7 mm. in thickness, the healthy adjacent placenta being 23 mm. in thickness. 11163

632. A segment of a placenta with a cyst 5 cm. in diameter. The cyst is in the chorion and is covered with the amnion. Beneath the cyst is an opaque round deposit continuous with a layer of similar deposit beneath the chorion and probably due to altered blood. 6775

633. A placental polypus measuring $3\frac{1}{2} \times 1\frac{1}{2}$ cm. Rounded and fairly smooth below and pointed and shaggy above. A few thread-like villi project from its surface. On cutting into it it is seen to be densely infiltrated with blood. 7619

From a patient aged 31, who complained of bleeding from the womb. The history dates from a period of amenorrhœa of 6 weeks' duration, at the end of which time she had bleeding and passed a dirty yellow lump per vaginam. Two days later the bleeding recommenced and

went on till the operation, two months later, when the curette brought away a small piece of perfectly fresh placenta, to which a small cyst, evidently caused by myxomatous degeneration of a villus, was attached; the uterine forceps was then used, and the polypus freshly infiltrated with blood and several pieces of endometrium were removed.

634. A placental polypus removed on Jan. 2, 1896, from a patient, aged 18, who had had a child on Dec. 1, 1895, and had since had intermittent hæmorrhage, which made her very anæmic. 7497

Microscopic Structure.—The polypus is placenta which is infiltrated with blood which is becoming organised. It shows villi, the epithelium of which is not proliferated. The epithelium stains in some cases deeply, in others hardly at all.

The Umbilical Cord or Funis.

The umbilical cord, funis, or navel-string, which carries the vessels to the placenta, is of the thickness of the adult finger, and of the same length as the child at term, viz., 20 inches: it may, however, be as long as a tall man (6 feet) or as short as 2 or 3 inches. Unusual length leads to coiling around the child, to knots, and to prolapse; unusual shortness may lead to rupture or to inversion of the uterus. Coils around the fœtus may lead to its death or to deformation or amputation of its limbs. The funis is twisted and contains two arteries and one vein, all of which contain coarctations or "valves" in their lumen (641, 644). They are embedded in Wharton's jelly, which varies in amount and sometimes contains cysts of considerable size (638). Uneven projections around a loop of vessels ("nodes") are commonly met with. True *knots* (635) caused by the fœtus slipping through a loop are not very common. They are usually not tight enough to interfere with the circulation, but occasionally they lead to the death of the fœtus, which is also sometimes due to excessive torsion of the cord (660).

Rarely a piece of intestine is contained in the base of the cord, and the circulation is occasionally connected with the circulation of a twin still in the uterus. For these reasons two ligatures should be applied to the cord; the proximal ligature should be about 3 inches from the abdomen, and should be tied tight. A second ligature should be applied in the groove formed by the first, and the cord should be cut at least three-quarters of an inch beyond the ligature in order to prevent hæmorrhage (646). After birth the cord dries and shrinks, and usually falls off within a week.

635. A piece of an umbilical cord with a simple knot in it. The knot is not sufficiently tight to interfere with the circulation. 986 A

636. An umbilical cord of unusual length, measuring forty-four inches. There is a simple knot upon it. 2263

637. A full-term male fœtus with the cord and placenta, which has been injected. The cord passes over the right shoulder and takes one turn round the child's neck. 4648

638. A portion of an umbilical cord showing three cystic dilatations filled with clear fluid. The cysts do not communicate with each other. The largest one has been laid open, and is seen to consist of two cavities, one of which is still intact. The vessels of the cord lie in one side of the cyst walls. 943

639. A placenta, with the membranes and a small portion of the cord, which is attached to the membranes about seven inches from the placental margin. The vessels pass separately to the placental margin, and one of them sends off a considerable branch about three inches from it. The cord from the fœtus to the point of division measured about seventeen inches. 6570

640. Three umbilical cords which have been inflated and dried. The spiral arrangement of the vessels is well shown, the arteries being the more tortuous and forming "false knots" in places (nodes).

641. A piece of the umbilical cord showing the spiral arrangement of the vessels. One of the arteries has been injected. The other one and the vein have been laid open by removal of part of their circumference; it will be seen that the inner coat of these vessels is raised into annular folds projecting into the lumen, resembling the valvulæ conniventes of the small intestines.

642. A specimen of umbilical cord, but not injected as the preceding one, and not showing any annular projections of the coats. The Whartonian jelly is much thickened at one spot.

643. A similar specimen.

644. Two transverse sections of the umbilical cord. The folds, formed by the inner coat of the arteries, are well seen projecting inwards into the lumen in a crescentic form.

645. A fœtus, showing the prolongation of the intestine into the umbilical cord, and a single cloacal aperture, into which a bristle has been passed. The cord has been laid open.

646. The proximal 2 inches of the umbilical cord, from a new-born child (delivered by Cæsarean section) which died from hæmorrhage from the cord owing to the faulty ligature of the cord which was too loosely tied and too near the extremity. Nearly $\frac{3}{4}$ inch above the extremity is seen a groove where a proper ligature was applied, too late to save the child's life; this ligature has been removed.

Ligatures of the umbilical cord should always be applied dry, as wet ligatures are apt to become slack on drying. The cord should not be cut closer than half an inch from the ligature, which should be tied very tight and rendered more secure by a second ligature in the groove formed by the first. The cord should be inspected from time to time. 9149

647. An umbilical cord 15 inches long with the amnion. The vessels have been torn across at its insertion and a small clot of the size of a bean was adherent there. The cord appears to be normal and is from 1–1½ cm. in thickness. The amnion has been pulled back over the cord. At delivery it was inserted over the torn end of the cord.

The cord was coiled round the neck of the child, and was torn in pulling the coil over its head. The child, a female at full term, was born alive; the placenta and chorion were retained and were slightly adherent. 8941

648. A piece of placenta with the attached cord, which is ruptured 10 cm. from its attached extremity. The cord, which is about 1 cm. in diameter, is much thinner at the place of rupture. Labour was induced at about the 36th week. The cord was found to be twisted round the child's neck, and in the attempt to draw it over the head it was torn across, about 12 inches of it being left attached to the child, which was delivered with long forceps, and lived. 9153

649. A placenta of about the 4th month, measuring 12 cm. × 8 cm. and about 1 cm. thick. Part of the cord is attached and shows a tear in one of the branches of the umbilical artery near the placenta, which led to hæmorrhage into the amniotic cavity, causing the death of the fœtus. 10169

Abortion

By "*abortion*" is meant the expulsion of the ovum during the first three months of gestation; by "*miscarriage*" from the end of the third to the end of the seventh month; and after the seventh month the case is spoken of as "*premature birth.*"

Abortion may be due to accident or trauma, to some constitutional disease in the mother, such as syphilis or Bright's disease, or to disease affecting the uterus or ovum and causing the death of the fœtus.

The most common cause of abortion is inflammation of the uterine mucous membrane, which is frequently syphilitic in origin. In some cases the inflammation leads to a discharge of a thin watery fluid like liquor amnii (*hydrorrhœa gravidarum*); in other cases the decidua becomes thickened and raised into polypoid growths (*endometritis polyposa*); in others extensive hæmorrhages occur into the decidua and form elevations beneath the chorion (*subchorial hæmatoma*). Usually the ovum is soon discharged with considerable loss of blood and some pain; sometimes the whole or part of the decidua remains in the uterus; occasionally the whole ovum (*fleshy mole*) remains quiescent in the uterus for weeks, months, or even as long as a year (*missed abortion*).

655. An aborted ovum in an early week of pregnancy. The ovum is a twin; the decidua and chorion are single, but the amniotic sac is divided into two by a delicate membranous partition running in the long axis of the cavity. Neither embryo is present. Hæmorrhage has occurred into the decidua.

656. A specimen of fleshy mole. The inner surface of the ovum is nodular from hæmorrhages. The fœtus is present.

657. An aborted ovum. The specimen has been everted to show the rounded prominences on the inner surface. These are produced by hæmorrhages into the chorion. The specimen is part of a fleshy mole. 4010

658. An ovum of about the tenth week from a case of fleshy mole. The trunk of the fœtus has been bisected and one half removed. Hæmorrhage has occurred in the chorion, forming a rounded prominence on the interior of the sac. 5585

659. A fleshy mole. The fœtus is still attached by the cord and is malformed. Hæmorrhages have occurred immediately beneath the chorion and into the decidua. 3846

660. A fœtus, etc., between the third and fourth months of utero-gestation. The inner surface of the sac is coarsely lobulated from hæmorrhages beneath the chorion. The cord is much twisted and very thin. 914

661. A fœtus of 3½ months' development, in its amnion, unruptured. The torn umbilical vessels which permitted its discharge are seen at the top of the amnion. (See Graily Hewitt, Obstet. Soc. Trans. vol. xxxiii. p. 461.) 6761

662. A uterus at about the end of the second week of gestation. The cavity is enlarged and oval in shape. The remains of the decidua are present. The uterine wall is thinned. The cervix contributes to the formation of the uterine cavity, and the external os does not project into the vagina. Normally the cervix does not form part of the uterine cavity in which the fœtus lies. The condition in the specimen tends to show that abortion had occurred, the cervix dilating owing to the uterine contractions. There are adhesions on the surface of the uterus. The Fallopian tubes cannot be clearly traced, and the fimbriæ cannot be seen. Each tube at its free end is dilated. On the right side the

terminal cyst of the Fallopian tube lies posterior to the ovary, which it partly conceals. On the left side the ovary cannot be made out, but in its situation is a cyst which has been laid open. The broad ligaments are thickened. 4694

663. A fleshy mole measuring $9 \times 6 \times 4$ cm. At the lower part it tails off, so that if straightened out it would measure 2 cm. more. It contains extensive subchorial and decidual hæmorrhages, and the cord, which is $1\frac{1}{2}$ cm. in length by 2 mm. broad, is present, but the embryo has been absorbed. 11146

From a patient who had an ovarian multilocular tumour filling the whole abdomen, which retroverted the uterus and produced some prolapse. Ovariotomy was performed. A blood-stained discharge had existed some weeks before the operation, and the patient, who recovered from the operation, discharged the mole 1 month after the operation. The ovum had evidently died before the ovariotomy was performed.

664. A fœtus which was contained in an intact ovum. The fœtus is much deformed, its body flexed to the right, and its right forearm and leg are tied together by the cord, the constriction of which has probably caused its death. The skin is peeling from slight maceration. 9313

665. A very early ovum from which the fœtus has become absorbed. The cavity measures 18×7 mm. The decidua attached showed the usual grooving of the free surface. 9335

666. Part of the chorion mixed with blood-clot. The villi are much thickened. The ovum separated from the body had united to the cervical canal, which bled profusely on separation of the ovum by the finger. 10222

667. A three-months' ovum retained in utero for 8 months. The fœtus is somewhat compressed and the placenta is firm from hæmorrhage into it, as shown by nodules on the inner surface of the sac. 7696

From a patient, aged 35, who had had six children, but no miscarriage, who menstruated regularly to March 1896, after which she saw nothing till the following August, and believed she was pregnant. In August she suddenly began to have hæmorrhage, and from then till Nov. 12, 1896, when she passed the ovum, she had frequent losses of blood, like an ordinary period, lasting usually for 3 or 4 days, but once for a fortnight, with never more than a week's interval between the losses. She had no pain and was able to go about her ordinary duties without getting weaker since the beginning of October.

668. A uterus from a woman who died shortly after premature delivery. The mucous membrane is roughened, and at the upper and posterior part is the situation of the placenta. Where the placenta was attached is shaggy and uneven. 3814

Hydatidiform Mole.

The hydatidiform or vesicular mole is due to cystic degeneration of the chorionic villi. The mass has some resemblance to a bunch of white currants or grapes, though differing in that the stalk of one berry is often attached to the summit of another, owing to the cystic change having affected a villus at several spots. The cysts vary in size, but rarely attain the size of a large grape. Under the microscope the stroma of the villus is found to have undergone mucoid degeneration, while the epithelium is proliferated, especially the syncytial layer, which often forms extensive buds on the surface. Usually the whole of the chorion is affected, and the fœtus dies and is absorbed, but occasionally only a portion of the villi are affected; in that case the child may survive. Sometimes only one placenta in a case of twins is affected (680); in that case also the child with the healthy placenta may be born alive. The degenerated villi have a tendency to penetrate

the uterine wall deeply, and have been known to grow through the wall into the peritoneal cavity.

Hydatidiform mole is often associated with luteal cysts in the ovary, which may attain the size of a fist and yet completely disappear by involution.

Cystic degeneration of the villi has been met with in tubal pregnancy. Though usually a benign growth, it is sometimes followed by chorionepithelioma (384).

669. A diseased ovum of about six weeks' gestation. The outer surface of the chorion is studded with minute cysts having long slender pedicles. These are the villi which have undergone mucoid degeneration. The fœtus, which has been torn away, was attached by a slender umbilical cord. 963

670. A specimen similar to the preceding. The cystic characters are, however, less marked, the cysts being very minute. 953

671. A specimen of cystic disease of the chorion. Entangled among the cysts are small masses of blood-clot. 4686

672. A specimen of cystic degeneration of the chorion. The preparation consists of a mass of small cysts, which are united together by delicate pedicles, the remains of the chorionic villi which have not become diseased. The cysts are the result of mucoid degeneration of the villi, the mucoid material filling up the cyst. 952

673. Vesicular degeneration of the chorion. The cysts are attached to one another by slender pedicles, consisting of that part of the villi which has not become distended by fluid. 927

674. Cystic degeneration of the chorion. The grape-like cysts are seen to be attached to one another by delicate processes. The cysts vary a good deal in size. In shape they are for the most part oval, but some, chiefly the smaller ones, are round. A considerable amount of blood-clot is intermingled with the cysts. 3871

675. A hydatidiform mole measuring $11 \times 8 \times 5$ cm. The tumour is largely made up of blood, but interspread through it and on the surface of it are numerous chorionic villi, many of which are hypertrophied and cystic. 8956

Microscopic Structure.—A section shows villi with the usual myxomatous stroma covered with a double layer of epithelium, the outer syncytial layer of which forms buds in several places. Some of the villi are cystic.

From a patient aged about 35. The patient was examined periodically during the pregnancy, and it was known that she had retained the mole for 8 months.

676. A retained ovum showing fibroid and cystic chorionic villi embedded in organised blood-clot. Under the microscope the epithelial layers have undergone slight proliferation. 8558

From a septipara aged 31. The ovum had been retained for about 11 months.

677. Part of a vesicular mole which was known to have been retained *in utero* for five months. 10585

Microscopic Structure.—Villi are seen embedded in blood-clot, but they stain badly owing to degeneration.

The mole was removed on June 15, 1907, and the patient left the hospital on June 27, 1907. She became pregnant in the middle of August and was delivered at full term of a living child on May 16, 1908. The child weighed 7 lb. 10 oz., and the placenta under the microscope showed no evidence of hydatidiform change and looked healthy. The involution of the uterus was normal.

gangrene and rupture of the bladder (681); occasionally the displacement is due to pressure of the distended bladder.

Retroflexion is due to the fixation of the fundus either by adhesions or by a fibroid attached to the fundus and adherent to Douglas's pouch. In these cases the cervix is situated high up in front and the anterior wall of the uterus bulges forwards and is extremely thin (273).

681. A portion of the anterior abdominal wall, with the bladder and uterus. The bladder is much distended and has been laid open along its right side; its walls are thickened. Posteriorly there is an irregular rent in the bladder about $\frac{3}{4}$ inch long; the peritoneal coat round this is covered with adherent lymph. The uterus has been laid open from the front. It contains a well-developed fœtus between the fifth and sixth months of gestation.

In the MS. Catalogue it is stated that the rupture in the bladder was consequent upon the impaction of the pregnant uterus in the pelvis on account of its having been retroverted. 888

Accidental Hæmorrhage and Post-partum Hæmorrhage.

By "*accidental hæmorrhage*" is meant hæmorrhage due to the separation of a part or the whole of a normally situated placenta. The blood usually escapes from the os, but occasionally is "*concealed.*"

Post-partum hæmorrhage is due either to uterine atony or to laceration of the uterus or of the lower parturient canal. It may be *primary* or *secondary*; the latter occurs in the second week, and is due to retained products of conception or to septic ulceration into a blood-vessel.

682. A uterus measuring 18 cm. long × 13 broad. There are numerous membranous adhesions on the surface of the organ, especially at the back. The placenta was situated at the posterior wall and fundus. Several blood-clots are adherent. There are slight lacerations of the endometrium at the internal os. 6611

From a patient who died from accidental hæmorrhage followed by post-partum hæmorrhage.

Placenta Prævia.

Occasionally the placenta, instead of being implanted on the upper segment, is attached to the lower segment, reaching or covering the internal os; in the latter case it is said to be *complete placenta prævia*; if the edge of the placenta partly covers the os it is called *partial placenta prævia*, and if it only reaches the os *marginal placenta prævia*. Complete placenta prævia usually involves the death of the child if delivered through the natural passage, though exceptions occur to this rule (654).

Placenta prævia gives rise to sudden and repeated hæmorrhages, most marked in the last three months of pregnancy; but investigation of the histories of these cases shows that the first hæmorrhage occurs as often in the first six months as in the last three months. Occasionally hæmorrhages occur almost daily during pregnancy; on the other hand, the first hæmorrhage may set in with the onset of labour. The hæmorrhage arises from the partial separation of the placenta from its uterine attachment; it can be completely controlled by the pressure of the child's trunk after podalic version or by the introduction of Champetier de Ribes's bag into the amniotic cavity. Usually "pains" are feeble in this condition, and post-partum hæmorrhage is very liable to occur. The presenting edge of the placenta is often hard, owing to infiltration with blood. The mortality to the children is very high. In order to remedy this Cæsarean section has been extensively practised of late years. It is certainly indicated in cases where a copious

hæmorrhage has occurred, while the os is undilated and the child alive and vigorous. It must be remembered, however, that in placenta prævia the child is usually premature, and that the condition rarely recurs in a subsequent pregnancy. It is uncommon in primiparæ.

In favourable circumstances the placenta may be felt on abdominal palpation as a soft semifluctuating cushion masking the outline of the presenting part.

683. A placenta from a case of partial placenta prævia. Hæmorrhage has occurred into that portion of the placenta which presented at the os, where a blood-clot adheres to the chorion. 6474

The pregnancy had advanced to the sixth month, when bleeding, lasting three days, occurred. The hæmorrhage was moderate in quantity and unattended by grave symptoms. Bipolar podalic version was performed. The cervix tightly grasped the neck of the child, which was already dead. The head was perforated. The mother made a good recovery, the highest temperature recorded being 100°·4. The fœtus, a female, measured 14½ inches in length.

684. A slice of the uterus from a case of complete placenta prævia. The placental site is indicated by an adherent blood-clot overlying a thin layer of placenta, but the clot does not extend quite to the internal os. The portion of uterine wall below the point of attachment of the placenta is the cervical canal. The position of the internal os can be seen 4½ cm. above the external os. Above the internal os is a smooth surface from which the placenta has been separated. 6562

The patient was a multipara. Labour came on at full term at 6 A.M. Profuse hæmorrhage occurred and the patient fainted. There was extreme pallor, and the pulse was hardly perceptible. The bleeding had ceased at 8 A.M., and the os was found to be about the size of half a crown and rather rigid. On the recurrence of hæmorrhage at 11 A.M. podalic version, followed by embryotomy, was performed, The patient was transfused, but died in an hour.

685. A placenta from a case of placenta prævia measuring 18 × 11 × 1 cm. The aperture in the membranes is below and the edge of the placenta in that situation is much thickened from infiltration of blood. 8869

686. A bilobed placenta prævia, measuring 19 cm. in diameter and 2½ cm. thick at its thickest part. The membranes are intact except at the presenting part of the placenta, which is cleft, as shown also on the maternal surface, by a deep sulcus extending two-thirds of the way across. The cord has a simple knot upon it. 7958

687. A placenta prævia diffusa, with hæmorrhage into the presenting part; but a small part of the chorion has not taken part in the formation of the placenta. 7761

688. A uterus from a patient pregnant 8 months, showing a placenta prævia marginalis, the placenta being situated on the posterior wall from the internal os upwards for 15 cm. The cervix is about 3½ cm. long; the internal os is well marked. The amnion has been separated from the chorion in part. 7231

Ectopic Pregnancy.

Ectopic Pregnancy signifies pregnancy occurring in some other place than the normal uterine cavity; it includes pregnancy in the Fallopian tube, in the ovary, in the abdominal cavity, and in the ill-developed horn of a bicornuate uterus.

Tubal Pregnancy is the variety usually met with, the other forms being rare.

The cause of tubal gestation is unknown, though salpingitis leading to desquamation of the ciliated epithelium and mechanical hindrance to the passage of the ovum caused by tumours or adhesions have been supposed to favour it. Often there is a history of a period of sterility following child-birth, and one attack of ectopic pregnancy seems to predispose to another.

The ovum usually settles in the ampulla of the tube, rarely in the isthmus and very rarely in the interstitial portion. The ovum burrows into the wall of the tube and develops for a few weeks without accident, though often setting up pain in the region of the affected organ. After from five to eight weeks, or sometimes earlier or later than this, either the tube ruptures or hæmorrhage occurs into the ovum and a *tubal mole* is formed which may either be discharged through the abdominal ostium (*tubal abortion*) or remain *in situ* and gradually diminish in size or be completely absorbed. In some cases it is supposed that the fœtus may develop to full term in the Fallopian tube without causing rupture. When rupture of the tube occurs, blood is freely poured out into the peritoneal cavity and the ovum is usually discharged into the peritoneum; but occasionally the tear occurs into the broad ligament, where the blood may form a *hæmatoma* and lead to the death of the fœtus. Or the child may survive, either growing between the layers of the broad ligament or partly in the tube and partly in the abdomen or ovary (*tubo-abdominal, tubo-ovarian gestation*).

Primary ovarian gestation is a rare but well-proved occurrence.

Primary abdominal gestation is very rare and difficult to prove satisfactorily. Its possibility, however, may be inferred from the fact that well-formed decidual tissue develops in the pelvic peritoneum during pregnancy.

When tubal abortion occurs the ovum falls into the pouch of Douglas and blood accumulates in the retro-uterine pouch and soon becomes localised by organisation of its surface and the adhesions of the adjacent viscera, forming a *hæmatocele* which may be rapidly but usually is slowly absorbed and which may become infected and be discharged into the rectum, vagina, or bladder. Usually after tubal rupture or abortion the fœtus dies; rarely it survives till the second half of pregnancy and may develop to term, but is often deformed by the cramped position in which it lies in the *gestation-sac*. During the life of the fœtus the mother is never safe from an attack of hæmorrhage. At term a spurious labour sets in and the child dies, and the placental vessels become thrombosed, so that after a few weeks the placenta may usually be removed by operation with but little fear of hæmorrhage (which often occurs to an alarming extent when the child is alive). The child unless removed becomes shrunken and its tissues converted into adipocere and calcified, forming a *lithopædion*, which may remain in the mother's abdomen for many years or may be discharged piecemeal by suppuration.

Pregnancy in the interstitial portion of the Fallopian tube usually ruptures at a very early date; pregnancy in the ill-developed horn of a bicornuate uterus, having usually thicker walls, often progresses to the 4th or 5th month or even to term before it ruptures. It may be distinguished from tubal pregnancy by the position of the round ligament.

During ectopic pregnancy the uterus undergoes a sympathetic enlargement and a well-marked decidua is formed (720); after rupture or abortion this may be passed either intact or in fragments and a discharge of dark tarry blood lasting for several weeks usually occurs from the uterus.

689. A Fallopian tube with an unruptured tubal gestation. The tube measures $7\frac{1}{2}$ cm. in length, the sac measures $1\frac{1}{2} \times 1\frac{1}{4} \times 1$ cm. and is intact except for a minute aperture on its thinned upper wall. 10256

690. A gravid tube, unruptured. The outer part of the Fallopian tube is normal. Its inner portion is distended by a red ovum $2 \times 1\frac{1}{2}$ cm.: the peritoneal covering has been lacerated slightly, but the ovum is still contained within the tube. On the section the mucous membrane of the Fallopian tube is seen to lie beneath the ovum, indicating that the ovum is in the wall of the tube and in the centre is a membrane which represents the amnion. 9495

The tube was removed by Mr. Bucknall from a patient who was supposed to be suffering from perforated gastric ulcer.

691. The Fallopian tube and ovary from a case of tubal abortion. The tube is unruptured; it contains a collection of blood 3 cm. from its fimbriated extremity. The ovary contains a few distended Graafian follicles. Between the ovary and tube is a rough area formed by adherent blood-clot. The ovary itself is not congested except at the hilum, but the edge near the blood-clot is everted and the case may possibly have been one of ovarian pregnancy. Except for the small clot of the size of a pea, the tube shows no sign of recent pregnancy. Attached is a dilated sausage-like vermiform appendix measuring $9 \times 1{\cdot}5 \times 4$ cm., smooth with one or two flimsy adhesions upon it. 11471

692. A Fallopian tube pregnant 1 inch from its outer extremity. The fimbriated extremity is open and there are numerous adhesions around it where blood has been collected. The ovum, measuring $1\frac{1}{2} \times 1$ cm., is still present and is embedded in the wall of the tube. There was a large hæmatocele around the tube. The specimen illustrates well tubal hæmorrhage with the ovum still *in situ*. 10327

693. The outer part of a Fallopian tube with a bilocular hydatid of Morgagni. At a distance of 1 cm. from the cut end of the tube is seen a ragged oval opening situated on a thickened area of the Fallopian tube measuring 13×7 mm., which is the site of implantation of an ovum which has escaped through the rupture, leaving behind two or three remnants of chorionic villi.

At the operation a spurting arteriole was found, having been torn across in the rupture. 7639

Removed (H. R. S.) from a patient who had had two children and several miscarriages. She is supposed to have aborted at the sixth week, 1 month before the operation, and passed a piece of "afterbirth," and had since lost blood daily. On August 2, 1896, at 2 P.M., she stepped down from a seat and was suddenly seized with violent hypogastric pain and felt faint. The pain gradually crept up the abdomen. The patient became very blanched. At 6 P.M. the patient was pulseless, the abdomen, full of blood, gave a thrill. Abdominal section was performed and the tube removed, leaving the ovary. A large quantity of blood was removed, salt solution was poured into the abdomen, and the abdomen closed. The ovum was not found. The patient recovered.

694. A uterus, with its appendages. In the anterior wall is a small round fibromyoma of about the size of a marble, which has been cut across in laying open the organ. The interior of the uterus is lined by a layer of shreddy decidua. Both ovaries are much enlarged and are the seats of early cystic disease. In the left one at the lower part is a cyst about an inch long. In the right ovary there are four smaller cysts and two others of about the size of the one on the left side. They have all been laid open. Bristles have been passed into the uterine openings of the Fallopian tubes. On the right side, about an inch from its uterine end, the Fallopian tube is dilated into a small cyst measuring $\frac{1}{2}$ inch in diameter, which has ruptured in its upper wall; a bristle has been passed along the tube through the cyst. This is the sac of a tubal gestation. 858

The patient, whose age is not stated, died suddenly. She had taken a calomel pill in the evening and a draught of senna in the morning, and when in the closet she fainted. She revived and fainted again several times, and then died. At the post-mortem examination the abdomen was found full of coagulated blood, which was traced to the Fallopian tube by a coagulum adhering to the ragged edge of the rupture. The woman was unmarried, and in a respectable condition of life. She is said to have menstruated three weeks before.

695. A ruptured pregnant tube and cystic ovary. The ovary contains a cyst measuring $2\frac{1}{2} \times 3$ cm. and a well-marked corpus luteum. The middle portion of the Fallopian tube is distended by an ovum $3\frac{1}{2}$ cm. in length $\times$ $1\frac{1}{2}$ in thickness. A section has been made, showing that the wall of the tube is much thinned and hæmorrhage into the ovum, and there is a hole 5 mm. in diameter where it has ruptured, through which hangs a mass of chorionic villi. 8645

From a patient, aged 32, who had had 4 children and 1 miscarriage (2 years ago). The last child was born 8 months ago, and 2 months after its birth the patient nearly lost her life from hæmorrhage. The child was not suckled, and the catamenia appeared 2 months after the confinement and were normal until the last period, a fortnight before the attack. This period she noticed to be shorter in duration and the blood more scanty and paler than usual. On December 9, 1900, she was suddenly seized with intense abdominal pain, pallor and vomiting just after getting into bed, and when seen 3 hours later was pale, collapsed, with much abdominal pain and some general tenderness. The abdomen was opened 1 hour later, and many handfuls of clot and much fluid blood were removed from Douglas's pouch. The tube was excised by Dr. Washbourn of Gloucester, the abdomen flushed with many gallons of hot water, some of which was left in the abdomen. No drainage. The patient recovered.

696. The outer end of a left Fallopian tube. The tube is distended to the size of a thrush's egg close to the fimbriated extremity; the fimbriated extremity is widely open. The upper part of the wall of the tube is very thin, cracked, and blood-stained. The ovary contains a luteal cyst with yellow wall $1\frac{1}{2}$ cm. in diameter. 9333

From a case of tubal abortion with slight rupture. Removed (H. R. S.) on July 19, 1902, from a patient on whom he had operated for tubal pregnancy on July 13, 1900.

697. A ruptured tubal pregnancy. The tube has been torn across 1 inch from its fimbriated extremity, and contained the ovum and fœtus which is 2 cm. long. Part of the chorion remains in the tube. 10279

698. A uterus measuring $12\frac{1}{2} \times 13 \times 8$ cm. It has been laid open anteriorly, and contains numerous interstitial and subperitoneal fibroids, the largest of about the size of a tangerine orange. The body contains a small amount of shaggy decidua at its upper part. The left appendages are normal; the right ovary is slightly enlarged and contains a corpus luteum at its outer end. The right tube is distended in its middle two-fourths into a sac $5 \times 3\frac{1}{2}$ cm., which is freely ruptured and shows a few chorionic villi still attached to its inner surface. The patient was single, and died one week after rupture, no operation having been performed. A large quantity of blood was found in the peritoneum. 8872

699. A uterus, with the upper part of the vagina and the broad ligaments; part of the posterior wall of the uterus has been removed. The uterine walls are thickened, but the thickening appears greater than it really is on account of the obliquity of the section. The lining of the body is slightly roughened as if from disintegration of the mucous membrane. On the right side the inner $\frac{2}{3}$ of the Fallopian tube is the seat of a tubal gestation. The wall has been partly removed, and the membranes opened. The pregnancy is apparently at about the eighth week of gestation. The placenta is attached to the anterior wall of the tube. The outer third and fimbriated extremity of the Fallopian tube are normal. 4276

700. The bladder, uterus, and broad ligaments, from a case of tubal gestation. The portion of the right Fallopian tube external to the uterine wall is dilated into a round cyst measuring two inches in diameter. This cavity contains the ovum, including a well-formed fœtus of about the tenth week; the amnion and chorion are well seen. The placenta is engrafted on the wall of the cyst nearest to the uterus. The uterus has been laid open anteriorly. Its cavity is lined with an irregular and shaggy mucous membrane.

701. A ruptured tube which was pregnant about 6 weeks. The tear is about 1 inch from the fimbriated extremity. In the outer bed of the ovary is a corpus luteum about 1 cm. across. Below is the ovum covered with villi, and measuring 3 cm. across. 10937

Removed by Dr. Gray.

702. The left appendages from a case of tubal abortion, complicated with a broad ligament cyst. The tube is dilated with blood to a diameter of 2 cm. The tube is much kinked upon itself and the fimbriated extremity is open. Around the fimbriated extremity are numerous shaggy adhesions between tube and ovary. Below the tube is a broad ligament cyst 6 × 4 cm. in diameter. The wall of the tube is thin and it appears that the mole has been discharged through the abdominal ostium. 7214

Removed (H. R. S.) March 1894, from a patient who after three months' amenorrhœa bled for nearly 7 weeks and passed a piece of decidua about 10 days before the operation. The cervix was soft and there was colostrum in the breasts, and a tumour as big as a fist was felt on the left side of and behind the uterus. At the operation a handful of clot and some liquid blood was found in Douglas's pouch. The specimen was easily removed, being almost free from adhesions: and then the clots were removed. The outer two inches of the Fallopian tube were sharply bent and collapsed and wrinkled on the surface, and had evidently contained some large body. The outer orifice of the Fallopian tube easily admitted the little finger and blood was issuing from it. Evidently a tubal abortion has recently occurred.

703. The outer part of a left Fallopian tube containing the placenta, partly detached, with the fœtus, which measures 8½ cm. in length when the legs are stretched out; the head measures from occiput to forehead 2·8 cm. and in depth 2·2 cm.; the cord measures 7·5 cm. The belly of the child is protuberant from ascites and measures 3 cm. antero-posteriorly and the wall is thin and translucent, showing the abdominal organs through. The penis is in the erect position from œdema, with the tip curved towards the abdomen: there is no sign of a scrotum. The anus is imperforate. The ovary measures 3½ × 3 × 2 cm., has a few tags of blood-stained lymph and numerous minute cysts on the surface. Part of the sac is present, with the fimbriated extremity of the tube, showing that the distension was in the ampulla. The uterine end of the tube was also removed, but has been lost. The placenta is flocculent and the villi are enormously thickened, being in some cases nearly 1 mm. thick, and some of the villi have cysts upon them (early stage of hydatidiform degeneration). 11674

Removed (H. R. S.) May 3, 1911, from a patient aged 22, who had one child and thought she had a miscarriage in January. She was seized with acute pain in the early morning; seen at 11.30 the abdomen was extremely tender and agonising pain occurred on abdominal manipulation, due apparently to a clot of blood of the size of a double fist which was wrapped up in and distended the omentum, so that it somewhat resembled the amnion when exposed at abdominal section. The uterus was slightly enlarged and tilted to the right by a mass of the size of the fist in the right posterior quadrant of the pelvis. The patient made a good recovery.

704. A specimen from a case of tubal gestation, including the uterus, ovaries, and part of the vagina, with the bladder and a portion of the cyst with fœtal bones. The vagina and bladder have been laid open. The uterus has been laid open from behind and is healthy. The right ovary is seen at the fundus uteri, and above it is the coil of the Fallopian tube. The left ovary is normal in position and appearance; at its origin from the uterus is a small fibroid, which also touches the right ovary. On the top of the mass formed by the right ovary and the fibroid is the fœtal cyst laid open, but its outline cannot be satisfactorily made out. It contains the greater part of a spinal column, with several lower limb-bones, and depending from it is the fœtal head. The cyst communicates with the bladder by a fistulous opening, through which a piece of glass has been passed.

705. A specimen of lithopædion, removed from the body of a woman æt. 43, who died in the seventh month of pregnancy from bronchitis and ulcerative tracheitis. The existence of the condition was not suspected during life. The fœtus is enclosed in a thick membrane, presumably the dilated and thickened Fallopian tube. Many of the parts of the macerated fœtus can be recognized. There is a slight deposit of calcareous material in the cyst-wall, which is confined to the inner surface. The specimen was removed from the right broad ligament. 6254

Vide Path. Trans. vol. xxxviii. p. 445.

706. A tubo-abdominal gestation sac containing a 4 months' fœtus, placenta, and blood-clot. The commencement of the tube is seen on the outer surface of the lower half of the specimen, which is ruptured at one spot, permitting of the escape of a portion of the cord and head of the fœtus. Part of the gestation-sac is formed by the dilated Fallopian tube and part by organized blood-clot. 10060

Removed (G. F. B.) from a patient aged 42 who had 4 children, the last 4 years previously, and no miscarriages. The patient recovered. (See Obstet. Soc. Trans. vol. xlviii. p. 137.)

707. A Fallopian tube which has been pregnant containing blood at the site of the ovum and a distended ostium communicating with the sac which contained the ovum, which has been lost. 9320

Microscopic Structure.—Microscopic structure of the tube shows hæmorrhage, but no chorionic villi. Beneath the mucosa of the left tube are large epithelioid cells containing yellow pigment.

Removed (H. R. S.) by abdominal section from a patient who had been pregnant in the opposite tube one year previously.

708. A right Fallopian tube with the ovary, in which is an abscess-cavity. Connecting the ovary and tube is a gestation-sac which contained the ovum, which measured $7 \times 5 \times 5$ cm. The wall of the Fallopian tube is thickened and its outer end has apparently been ruptured and is infiltrated with blood. The ovarian abscess contained several ounces of stinking pus. 10946

Removed (H. R. S.) from a patient, aged 33, who had had no miscarriage and two children, the last 9 years ago.

709. A uterus and retro-uterine gestation-sac. The uterus measures 11·3 cm. long $\times$ 9 cm. broad $\times$ 7 cm. The anterior wall has been cut away, exposing the cavity lined with a decidua 1½ cm. and extensively infiltrated with blood. The cervical canal measures 2·2 cm. The anterior wall of the uterus was smooth, the posterior wall is covered with shaggy adhesions below the level of the Fallopian tube. Behind the uterus is a sac which would accommodate a fœtal head, which is covered with dense adhesions involving the Fallopian tubes. The uterine ends of the Fallopian tubes are normal, except for adhesions, and there is no evidence of rupture of a tube. The orifice of the left tube appears to be slightly open, but there is no evident communication between the tubes and the sac, both tubes having been incised to determine this point. The case was therefore a secondary abdominal pregnancy due to tubal abortion and not rupture. 7196

From a case of ectopic gestation in which the child, a 6 months' male fœtus, was living. Abdominal section was performed, the fœtus was removed alive, but survived only a short time. The sac was packed with gauze after the removal of placenta and membranes, during which there was severe hæmorrhage. The patient died suddenly and unexpectedly of syncope, 20 hours after delivery.

710. The fœtus from the preceding case. It measures 13 inches, it is considerably deformed, its left lower jaw and face being compressed, the legs are bowed, the legs are crossed, the feet in a state of varus, and the toes of the right foot are twisted out of position, and there is a marked lateral curvature of the spine with the concavity to the right. 7197

711. A Fallopian tube measuring $11 \times 10 \times 7$ cm. It is covered with adhesions externally and on section is seen to be filled with clot, in the centre of which is a tortuous cavity, which is the amnionic cavity. 7003

Removed (H. R. S.) July 5, 1893, from a patient aged 36.

712. A hæmatosalpinx weighing 1 lb. ¼ oz. and measuring $14\frac{1}{2} \times 12 \times 9\frac{1}{2}$ cm. with the attached ovary. The tube is intact, its wall about 1 mm. thick, and the whole is occupied by blood-clot in which there is no cavity to be seen. A section of the tube, 1 inch from the end, shows some thickening of the mucous membrane

There are numerous adhesions on the surface and the ovary contains a small cyst. 6987

Microscopic Structure.—The tube is honeycomb-like on section; the rugæ are covered with columnar epithelium and appear to have united in places, so that spaces are present completely surrounded with columnar epithelium, and into these spaces, which contain blood, papillæ project.

Removed (H. R. S.) from a patient aged 26, who had not menstruated for nearly 4 months.

713. A left hæmatosalpinx measuring $10\frac{1}{2} \times 7 \times 6$ cm. The tube contains blood which is slightly broken up and has a cavity in its centre which is not lined by a smooth membrane and contained serum. To one end of the tube adheres a blood-clot—part of a peritubal hæmatocele. The surface is partly covered with adhesions. The hæmatocele contains no chorionic villi, and it is probable that the tube has filled up after discharging the ovum into the peritoneum (tubal abortion). 7698

Removed (H. R. S.) on Nov. 21, 1896, from a patient aged 31, who was in U. C. H. in August and September, 1894, with a history and signs of a ruptured 2 months' tubal gestation on the right side. She left the hospital with a large mass of the size of a fist behind and on the right side of the uterus. She was again admitted in 1896 and the specimen was removed. The old hæmatocele behind the uterus was opened and drained.

714. A tubal mole, measuring $7 \times 4 \times 3$ cm. It is narrower at one—the uterine—end, and consists for the most part of clotted blood, but projecting from its surface are seen fine hair-like processes, the chorionic villi, and in its centre is a smooth convoluted membrane, the amnion. 6757

Removed (H. R. S.) from a patient at the 11th week of tubal pregnancy. Probably the fœtus died at the 6th week. The tube was unruptured, but there was a hæmatoma of the left broad ligament raising up its peritoneum. The tube was enucleated and the sac drained.

715. A bicornuate uterus with rupture of the pregnant left cornu. The right horn contains numerous fibroids, both interstitial and subperitoneal, the largest, reniform in shape, measuring 10×7 cm. The uterus is lined with decidua 4 mm. thick having the usual furrowed appearance. The uterine cavity measures 11 cm. in length, of which the cervix measures 4 cm. The right ovary is normal; the right tube, 6 cm. long, has its fimbriated extremity almost closed by adesions, some of which are also seen on the uterus. Stretching transversely around the lower end of the reniform tumour is a membranous band of peritoneum $5\frac{1}{2}$ cm. in length, which suddenly enlarges into a pyriform tumour which is the distended pregnant uterine horn, containing the placenta, into which hæmorrhage has occurred. The uterine wall at its inner extremity measures 1 cm. thick and gradually diminishes to half a cm., and becomes at its distal part, where it has ruptured, of membranous tenuity. The ovary contains a corpus luteum, is attached by its ligament 3 cm. from the commencement of the horn, the round ligament the same distance and the Fallopian tube which is normal 6 cm. long, $5\frac{1}{2}$ cm. from the commencement of the horn. The fœtus (male) is 19 cm. long, is slightly shrivelled, and has a blood-clot round its right ankle.

This specimen has been erroneously described as a ruptured tubal pregnancy in the first volume of the Obstetrical Society's Transactions. 4275

716. A bicornuate uterus with a ruptured pregnant right horn. The uterus is 9 cm. long; it has been laid open posteriorly, showing a well-marked and partly separated decidua. The left Fallopian tube is 14 cm. long, and it and the ovary are normal. The right horn is connected with the uterus by a thickened band $4\frac{1}{2}$ cm. long, which comes off at about the level of the middle of the body. A piece of this band has been cut out; it measures 3 mm. in thickness and has a double layer, a whitish external layer, and a central yellowish, probably muscular layer, but no lumen. Beyond the band it is gradually distended into the horn,

which is 8 cm. in diameter and is ruptured at its distal extremity, showing a ragged aperture, through which the ovum seen below has escaped. Just below the lower extremity of the tear is the commencement of the Fallopian tube which is 14 cm. long. The ovary, which contains a corpus luteum 2 cm. × 1·8 cm., is attached by its ligament to the right horn at a distance of 7 cm. from the left horn and the right round ligament comes off from the anterior wall of the right horn at a similar distance (7 cm.) from the left horn. The wall of the horn is, at its inner side, 9 mm. thick; it gradually thins out towards its lacerated end, which is only 1 mm. thick. The inner aspect of the horn is somewhat uneven, apparently from the presence of a decidua; and portions of the chorionic villi are still attached. The fœtus is of about 3½ months gestation.

This specimen was erroneously described as a ruptured tubal pregnancy in the first volume of the Obstetrical Society's Transactions.

717. A uterus, with the broad ligament and ovaries, from a case of tubal pregnancy. The uterus has been laid open by removal of the right half of the posterior wall. The body contains the decidua, which is from 2–5 mm. in thickness, and the surface is smooth and divided by narrow furrows. At the uterine end of the right Fallopian tube is a round cyst measuring ½ inch in diameter; it has been laid open, and its interior is rough and shaggy. The cyst was ruptured, permitting the escape of the ovum, causing the death of the patient from hæmorrhage. A bristle marks the two ends of the Fallopian tube. There is a small smooth cyst in the right ovary of the size of a small walnut. The sac is situated in that portion of the Fallopian tube which perforates the uterine wall (interstitial pregnancy). 3543

The specimen is from a young healthy married woman who had not menstruated for seven weeks. She ran half a mile to overtake her husband. On reaching home she slept for two hours, awaking with severe pain in the abdomen and coldness of the surface. Later she became restless and anxious. The pain moderated about an hour before death, which occurred twenty hours after the onset of the symptoms. At the post-mortem examination about 3½ pints of blood were found in the abdomen.

718. Part of the placenta and fœtus from a case of ectopic gestation. The fœtus is much deformed, the limbs being represented by little buds. The eyes are invisible. There are adhesions around the neck. 9334

719. An extrauterine fœtus measuring 8½ cm. in length. It is greatly deformed and covered with adhesions. The features are scarcely recognizable, both arms are covered by adhesions and its left hand is over the genitals. The lower limbs are greatly twisted. The umbilical cord is narrow at its insertion. The fœtus was free in the peritoneal cavity. A mass of the size of a fist, which on section appeared to be blood-clot (possibly a tubal mole), was found in the abdomen. 9356

Removed (G. F. B.) from a patient who was 4 months pregnant.

720. A decidual uterine cast from a case of ectopic gestation. The cast measures 6 cm. in length × 4½ cm. in width × 8 mm. in thickness. It is triangular in shape with the apex downwards and the sides slightly concave. The apex is slightly ragged and has a slight slit in it. At the upper angle are two prolongations which occupied the uterine end of the Fallopian tubes. The surface of the decidua is somewhat uneven and shaggy, a triangular piece has been removed showing the inner surface smooth but rendered uneven from the presence of furrows. 9596

From a patient aged 32, who was admitted on June 2, 1904, in a serious condition with anæmia from ruptured tubal pregnancy, which had occurred the night before. She was 7 weeks pregnant. There was free fluid in the peritoneum and a mass was felt in the right posterior part of the pelvis. The patient rapidly improved and the cast was passed on June 6. The patient was discharged on June 18, with a slight thickening to be felt in Douglas's pouch. No operation was performed.

721. A specimen of extra-uterine gestation, removed from the mesentery of a cat. It has been bisected. The fœtus is partly covered with hair. It is enveloped in a moderately thick capsule which readily peels off the fœtus, tearing some of the hair off with it. Its outer surface consists of healthy peritoneum, with here and there pieces of omentum attached. The uterus was found to be slightly enlarged and filled with thick yellow pus. 4718

There is no statement in the history that the uterus was examined for the scar of a rupture, which has been found to be present and to be the cause of abdominal pregnancy in animals in some cases.

Rupture of the Uterus, Vagina, Perineum, etc.

Rupture of the uterus may occur during pregnancy from deep invasion of the wall by the chorionic villi (574), or the peritoneal coat alone may give way, or the scar of a former Cæsarean Section, especially when the wound has been imperfectly united or has been stitched with catgut.

Usually, however, rupture occurs during labour in cases of malpresentation, especially shoulder presentations and in contracted pelvis. It may also arise from direct mechanical violence or from an abnormal weakness of the uterine walls. It is especially liable to occur in extracting a fœtus through an incompletely dilated cervix and in forcible dilatation of the canal.

Rupture of the fundus is rarely met with, except after the fundal incision for Cæsarean section: it almost always occurs in the lower segment on one side of the cervix, usually the left, and may extend upwards into the lower segment, downwards into the vagina, or the tear may be limited to the cervix or vagina.

The rent is usually longitudinal, but may be L-shaped or circular, the latter occurring more often in cases of contracted pelvis. In some cases the peritoneum is the only part torn, or it may remain intact when the uterine wall is completely torn through. The edges of the rent are ragged and there is usually a considerable effusion of blood: in ruptures into the broad ligament the blood may infiltrate the retroperitoneal tissue as high as the kidney.

Lacerations of the vaginal portion of the cervix are very common, especially in primiparæ. Sometimes they extend upwards for some distance and sometimes they implicate the vaginal wall. The rent is usually longitudinal: in rare cases a complete ring has been torn away. The rent may tear the uterine artery and the resulting hæmorrhage may be stopped by packing; but the wound is liable to infection and secondary hæmorrhage, on the occurrence of which the uterus should be removed and the vessels tied at a healthy spot, or a recurrence of the hæmorrhage may prove fatal. An aneurism has been known to occur as a result of laceration of the uterine artery.

Lacerations of the vagina (732) may occur alone or in association with rupture of the cervix or body of the uterus. They are often caused by the injudicious use of forceps. Any part of the canal may be lacerated, the rent being longitudinal.

Laceration of the perineum occurs to the *first degree* (*i. e.* the fourchette is torn) in nearly every primipara; laceration to the *second degree* (not involving the sphincter) is common in primiparæ, especially if delivered too rapidly before the parts have time to stretch; laceration to the *third degree* (involving the rectum) should rarely occur, being mostly met with in sudden forceps deliveries, especially in occipito-posterior positions. Rarely an arm of the child perforates the perineum or the whole child may be born through the perforation (*central rupture of the perineum*).

722. A uterus with rupture of the cervix and vagina. The uterus measures 23 × 16 × 9 cm. The wall of the uterus is very thick—4 cm. The cervix and vagina are extensively infiltrated with blood. The left lower segment has been torn through, and there is extensive laceration of the vagina on the left side forming a hole which would admit the hand. Douglas's pouch has been opened. 9610

From a patient, a very fat woman, with pendulous abdomen, aged 32, who was delivered at 6 A.M. of a still-born child weighing 13½ lbs. Forceps were applied after dilation of the os. After the head was delivered the shoulders became impacted and were delivered with great difficulty. The tear was packed with iodoform gauze; the patient died the next day.

723. Half a uterus and vagina from a patient who died of secondary hæmorrhage from the uterine artery injured by the laceration after delivery. The uterus measured $18 \times 12 \times 4\frac{1}{2}$ cm. and contained a clot 1 cm. in thickness, which has been removed. The vagina has been distended by gauze packing. In the right half of the cervix is a laceration extending from just below the internal os on the right side obliquely into the vagina to near the middle line in front. The bladder has been separated to show that the tear has gone right through the cervix, but has not involved the bladder. The corpus luteum was in the inner end of the opposite ovary and measured 8 mm. The left ovary measured 3½ cm. × 2 cm. × 7 mm., the right 3½ cm. × 2 cm. × 6 mm. The left kidney had two ureters. 10413

724. A uterus and vagina. The uterus measures 9 cm. × 6 × 3 cm. The appendages are normal. The vagina has been laid open along the right side and shows an extensive gap in the cervix on that side, the edges of the gap being infiltrated with new growth. There is also extensive superficial ulcerated new growth on the left side of the vagina. The posterior lip is infiltrated with new growth, but the anterior lip and right side of the cervix have been destroyed by the growth. 7742

From a patient who ruptured the cancerous cervix into the broad ligament during labour at 7½ months. Collapse ensued and the child was delivered alive with forceps. The tear was packed with gauze and the patient recovered, but died of hæmorrhage a year later. At the time of rupture the cancer had been present for 6 months.

725. A ruptured uterus after labour. The torn pouch of peritoneum extending from the uterus to the bladder is seen, and an extensive laceration through the right side of the cervix extends up for 8 cm. above the external os. The cervix has also been torn across the anterior lip, which is wanting in the specimen. The corpus luteum is in the left ovary near the surface, and measures 12 × 11 mm. The uterus measures 18 × 14 × 7 cm. 7085

From a patient, aged 32, who had 4 children delivered with difficulty. The pelvis appeared to be slightly contracted. The 8 months' child presented by the breech, and was delivered after somewhat prolonged labour by traction. Only a few ounces of blood were lost after delivery. As the placenta did not come away the doctor introduced his hand into the vagina and was alarmed to find that his fingers went through the anterior fornix and felt the smooth peritoneal surface of the uterus. The placenta was easily delivered by expression. The patient had become extremely collapsed with imperceptible pulse and cold extremities. Seen within an hour the condition of the patient remained the same. There had been no more hæmorrhage and the patient was unconscious. Brandy was administered per rectum, after 6 hours the patient partly recovered from shock. The uterus was found to be completely torn away from the anterior wall of the vagina, a deep tear was found in the right broad ligament, and the left broad ligament was also torn across. The uterus was removed (H. R. S.) in Nov. 1893 by abdominal section and the peritoneum stitched over. 15 oz. of blood were found in the peritoneum—the operation lasted nearly an hour. The patient was greatly collapsed at the end of the operation and died 2 hours afterwards.

726. A ruptured uterus after delivery, with the ascending colon attached. The uterus has been laid open posteriorly, and shows on the right side of the anterior wall a perforating laceration of the cervix which is seen as an oval hole of the size of a pigeon's egg extending downwards to within 1 cm. of the edge of the cervix, which is intact. It has opened up the broad ligament and there is seen a triangular lacerated surface above extending above the internal os, the whole laceration being about 6 cm. in length. The ascending colon is attached and extensive hæmorrhage has taken place into the retroperitoneal cellular tissue.

727. A uterus showing a rupture on the left side, extending through the cervix and up into the wall of the body. The rent measures five inches in length and crossing it are seen the exposed uterine vessels. At the upper part the wall is not torn completely through, and the peritoneum is intact, although there is an extravasation of blood beneath it. On the right side of the cervix is seen an old laceration, ½ in. wide, extending to the vagina and upwards into the lower segment. This cicatrix has not given way, but the mucosa over it has been slightly torn.

The specimen is from a case of contracted pelvis, which measured 3 inches in the conjugate diameter and 4¼ in the transverse. This was the fourth pregnancy. The first and second pregnancies required cephalotripsy for delivery, and the the third one was induced at the seventh month. The fourth one was also induced at the seventh month. Four and a half days later labour set in There was placenta prævia marginalis. The fœtus was turned and left for two hours, the os being rigid. The patient was much exhausted, and was easily delivered by traction without much force. Post-partum hæmorrhage ensued, and transfusion was performed. Death occurred two hours later.

728. A uterus removed by Porro's operation. The uterus, from the point of section at the operation nearly up to the fundus, has been ruptured on the right of the middle line anteriorly. The lower portion of the specimen includes the cervix uteri, the os being sufficiently dilated to admit two fingers. 6560

The patient had been in labour three days. Fifteen hours before death the os just admitted a finger; but the labour pains being of moderate strength, it slowly dilated. Two drachms of ergot were administered by a doctor who had not made out the presentation. The patient gradually grew weaker. There was no history of sudden pain or sudden collapse, or cessation of pains; and scarcely any blood escaped externally. When seen (H. R. S.) she was suffering severely from shock and internal hæmorrhage; pulse 140, flickering. The child was easily felt through the abdomen, the head being in the right hypochondriac region. The uterus could be felt above the pubes, and was contracted like the organ after delivery. By vaginal examination the lower end of the rent could be felt, but not the child. The patient was removed to University College Hospital, and immediately operated on; the abdomen was opened in the middle line, the fœtus was removed, and the uterus drawn up and clamped, and subsequently removed. Several pints of blood-clot were removed from the abdominal cavity, and the patient died on the table. The child presented by the left shoulder which had an extensive "caput" upon it; the pelvis was not contracted.

729. Half a uterus after labour, with a portion of the pelvic colon. The cervix has been torn through on the left side from the internal os almost to the external os. The tear extends up to the round ligament which is seen as a thick cord, and the peritoneum and the anterior and posterior layers of the broad ligament have been torn in front and behind. The mesosigmoid is extensively infiltrated with blood. The body of the uterus is about 2½ cm. thick, the cervix is about 1 cm. There is a sharpish line of demarcation at what appears to be the internal os. The mucous membrane of the cervix is thrown into polypoid folds. 6710 A

730. Half a ruptured uterus which was 24 cm. long × 14½ broad and 6 cm. thick. The circumference at the widest part of the body 34 cm. The pelvis was normal (the brim, transverse 5¼ in., oblique 5, conjugate 4¼ in.). There is an extensive laceration in the whole length of the cervix on the right side, extending from the external os upwards as far as the retraction-ring, which is situated 14½ cm. below the fundus, and extending into the broad ligament, with a slight laceration of its anterior layer. The body of the uterus is 2½ cm. thick and the cervix 1 cm.

7034

From a case of neglected shoulder presentation. Patient had been in labour 56 hours when decapitation was performed. The patient died shortly after delivery, There was no blood in the peritoneum.

731. Half a ruptured uterus, measuring 17 cm. in length. The wall of the body measures 2½ cm. in diameter, the anterior lip of the cervix appears to be intact (3½ cm. in length and nearly 2 cm. thick). The internal os appears to be marked by a distinct ridge with a groove above. The left side of the cervix from 1½ cm.

above the edge of the posterior lip is torn through by an oblique laceration 6 cm. long extending into the lower segment and opening up the base of the broad ligament. The peritoneum was not involved, the slight tear in it, which has been stitched, having been made at the post-mortem examination. 7219

The rupture occurred spontaneously, the patient dying 6 hours after confinement.

732. A uterus and vagina. The uterus measures $15 \times 11 \times 7$ cm. The os is intact, except that its posterior lip has been slightly notched. There is a T-shaped laceration of the posterior wall of the vagina into Douglas's pouch, measuring 6 cm. in length by 5 in breadth. 6648

The injury occurred spontaneously—breech presentation—and the tear was stitched from the vagina.

733. The uterus and upper portion of the vagina of a woman immediately after delivery. On the left side the vagina is lacerated, from the effects of which the woman died. The laceration extends from the os down to the end of the preserved portion of the vagina. There is no note as to whether it extended further. The uterus measures $16 \times 11 \times 6$ cm.

734. A uterus ruptured during delivery. The child presented by the shoulder and version was employed. There is an extensive tear of the left side of the cervix and lower segment, and Douglas's pouch has been extensively opened. 7747

735. A uterus, measuring $18 \times 13\frac{1}{2} \times 11$ cm. On the left side of the cervix and lower segment for 10 cm. above the anterior lip is a tear which opened the peritoneum; it does not extend as far as the top of the broad ligament. The cervix is infiltrated with blood and the posterior lip is much thickened, measuring nearly 3 cm. antero-posteriorly. The wall of the body is enormously thickened (5·5 cm.). 11662

Removed (G. F. B.) by abdominal hysterectomy for rupture occurring during delivery. The patient recovered.

736. A uterus with the broad ligament and a coil of large intestine. The uterus is small, 6 cm. in length. The cervix has been lacerated on both sides. The right appendages are normal; the left broad ligament is greatly thickened and infiltrated, measuring 3–4 cm. in thickness. The left tube is adherent to the ovary, which is of the size of a tangerine orange and contained pus. 7749

From a patient who died of pyæmia 4 months after delivery, at which version was performed for a shoulder presentation. At the autopsy, abscesses were found in the lower part of the upper lobe of the right lung, an empyæma which had been opened and drained 6 weeks previously, malignant endocarditis and septic thrombosis of the inferior vena cava.

737. A vulva, showing extensive scarring of the labia minora as the result of parturition. The left labium minus is widely separated from the frænum by a broad smooth scar, and the prepuce of the clitoris and the right labium minus have been almost completely torn across, a narrow bridge of tissue only remaining. 7922

738. The greater part of the vagina with the cervix uteri, posterior half of the bladder and the ureters, with the lower inch of the rectum and the anus. The bladder has been laid open anteriorly and bristles passed along the ureters. There is a kidney-shaped fistulous opening between the bladder and vagina, the concavity turned downwards. The opening measures on its bladder aspect about $\frac{3}{4}$ inch transversely and $\frac{1}{2}$ inch vertically. The edges are even. The fistula occupies the upper part of the trigone, on a level with the orifice of the ureters. The mucous membrane of the bladder is elsewhere healthy. The upper part of the vaginal mucous membrane, below the edge of the fistulous opening, is superficially

ulcerated. The cervix uteri is unaffected. There are one or two external piles. The fistula is the result of sloughing after labour. 806

739. The uterus and vagina with the bladder and part of the rectum of a woman who died after labour. There is a rupture of the cervix in its whole extent on the left side posteriorly, which extends down through the vaginal wall for ¾ of an inch and then into the peritoneum. There is also a large opening into the bladder, the result of sloughing. The uterus has undergone a considerable degree of involution, so that death must have occurred many days after labour. 3762

H. C., æt. 25, was in labour from Sunday morning till Wednesday night. She subsequently died of exhaustion.

740. The uterus, etc., with the upper part of the vagina, of a woman who died of pyæmia following criminal abortion. The uterus has been laid open from the left side: in the anterior wall, near the fundus, are the remains of the decidua. In the posterior wall of the vagina, towards the left side and half an inch below the os, is a small punctured wound leading into a suppurating cavity in the peri-vaginal tissue. The tissues in the neighbourhood are thickened and the veins are thrombosed. 6318

The patient was admitted to the hospital July 14th, 1887. Fourteen days before she had aborted. On admission her temperature was 105°, and soon afterwards rose to 107°·6 during a rigor, subsequently falling to 97°. There was suppurative arthritis of one of the metacarpal joints. The temperature showed marked fluctuations, and the patient showed all the signs of pyæmia, and died 28 days after the abortion.

Post-mortem Examination.—There were no signs of peritonitis; the heart-muscle was fatty, but there was no endocarditis; there were no infarcts in any of the organs. There were a few petechiæ on the surface of the lungs and on the liver. The placental site was healthy, and there were no morbid changes in the uterus itself. In addition to the punctured wound shown in the vagina, there was a smaller one close to it, which has been laid open in opening the abscess; from both these pus exuded. At the inquest there was no evidence to show whether the wounds had been inflicted by the patient or someone else; but owing to their position in the posterior wall and to the left, and to the complete absence of injury to the uterus, Mr. Pepper thought that they were probably self-inflicted.

Contracted Pelvis.

Contracted pelvis may be divided into the following varieties:—

A. Contracted pelvis without change of shape:—
   - *a.* The *dwarf pelvis.*
   - *b.* The *generally contracted pelvis.*

B. Contracted pelvis with change of shape:—
   - *a.* The *flat pelvis.*
     1. The *flat non-rachitic pelvis.*
     2. The *flat rachitic pelvis.*
     3. The *generally contracted flat pelvis.*
   - *b.* The *obliquely distorted pelvis.*
     1. By spinal curvature (the *scoliotic pelvis*).
     2. By hip or thigh disease (the *coxalgic pelvis*).
     3. By sacro-iliac disease (the *synostotic pelvis*).
   - *c.* The *transversely contracted pelvis—Robert's pelvis.*
   - *d.* The *funnel-shaped pelvis* and the *kyphotic pelvis.*
   - *e.* The *compressed pelvis*—the *triradiate pelvis.*
     1. Rachitic.
     2. Osteomalacic.
   - *f.* The *spondylolisthetic pelvis* (last lumbar vertebra dislocated on to front of sacrum).
   - *g.* The *split pelvis* (associated with extroversion of the bladder).
   - *h.* The *pelvis contracted by tumour* (exostoses, enchondroma, osteoma, cancer, and sarcoma) or *fractures.*

741. A slightly flattened pelvis. Measurements:—

		cm.
Spines		24·5
Crests		28
External conjugate	(about)	16·5
Obstetrical conjugate		9·5
Brim, transverse		14
Right oblique		12·5
Left oblique		12·8
Diagonal conjugate		10·5
Posterior superior spines		8·5
Ischial spines		11·5
Ischial tuberosities		11·5
Tip of sacrum to bottom of symphysis		11·5
Depth of symphysis		4

Subpubic angle, wide and rounded.

The pelvis is characterised by a very slight flattening of the brim. 8551

742. A flattened rachitic pelvis. Measurements:—

		cm.
Spines		26
Crests		26·5
External conjugate	(about)	13·5
Obstetrical conjugate		6
Brim, transverse		13·5
Right oblique		12
Left oblique		12
Diagonal conjugate		7·5
Posterior superior spines		6·5
Ischial spines		11·5
Ischial tuberosities		12
Tip of sacrum to bottom of symphysis		11
Depth of symphysis		3

Subpubic angle, wide.

The pelvis is characterised by flattening and eversion of the iliac bones, sinking downwards of the sacrum forming a reniform inlet, curving forwards of the lower sacrum, wide subpubic angle, and capacious outlet. 7317

743. A generally contracted and flattened rachitic pelvis. Measurements:—

		cm.
Spines		26
Crests		25
External conjugate	(about)	13
Obstetrical conjugate		7·5
Anatomical conjugate		8·5
Brim, transverse		12·5
Right oblique		11
Left oblique		11·5
Diagonal conjugate		9
Posterior superior spines		7·5
Ischial spines		10
Ischial tuberosities		10
Tip of sacrum to bottom of symphysis		11
Depth of symphysis		2·7

Subpubic angle, wide.

The pelvis is characterised by its small size and slender bones, by the eversion of the iliac bones, the sinking forwards of the sacrum, the triangular brim overhung by the promontory, and general narrowing of the outlet. 7318

744. A flattened rachitic pelvis. Measurements:—

		cm.
Spines		27·5
Crests		26·5
External conjugate	(about)	14·5
Obstetrical conjugate		9·5
Anatomical conjugate		10
Brim, transverse		14
Right oblique		13
Left oblique		12·5
Diagonal conjugate		11
Posterior superior spines		8
Ischial spines		12
Ischial tuberosities		13
Tip of sacrum to bottom of symphysis		11
Depth of symphysis		3·5

Subpubic angle, broad.

The pelvis is characterised by flattening and eversion of the iliac crests, by a tendency to triangulation of the pelvic inlet which is contracted from before back, by a curving forwards of the lower part of the sacrum, and a fairly capacious outlet. 7325

745. A flattened rachitic pelvis. Measurements:—

		cm.	
Spines		25	
Crests		25	(5 cm. behind spines).
External conjugate		14	
Obstetrical conjugate		6	
Anatomical conjugate		7	
Brim, transverse		12·5	
Right oblique		11·5	
Left oblique		11	
Diagonal conjugate		8	
Posterior superior iliac spines		6	
Ischial spines		10	
Ischial tuberosities		11	
Tip of coccyx to symphysis		7·5	
Depth of symphysis		3·8	
Tip of sacrum to subpubic arch		11	

Subpubic angle, very wide.

The pelvis is characterised by curving and splaying of the iliac crests, by the transverse and vertical flattening and deep sinking of the sacrum, the lower extremity of which and the coccyx are sharply curved forwards. The triangular brim, rendered kidney-shaped by the overhanging promontory. The pelvis is shallow, the potential outlet comparatively wide. 6901

746. A flattened rachitic pelvis. Measurements:—

		cm.
Spines		26
Crests		22·5
External conjugate	(about)	14
Obstetrical conjugate		7
Anatomical conjugate		7·5
Brim, transverse		13·5
Right oblique		12

	cm.
Left oblique	12
Diagonal conjugate	8·8
Posterior superior iliac spines	8·5
Ischial spines	11
Ischial tuberosities	10·2
Tip of sacrum to bottom of symphysis	10
Depth of symphysis	6

Subpubic angle, wide and rounded.

The pelvis is characterised by slender bones, overhanging promontory, with kidney-shaped inlet, shallow cavity and wide but somewhat flattened outlet, produced by forward curvature of the lower end of the sacrum. 1043

747. A carved wooden pelvis, showing an extreme degree of rachitic flattening. Measurements:—

	cm.
Spines	25
Crests	27
External conjugate	11·5
Obstetrical conjugate	4·5
Anatomical conjugate	6
Brim, transverse	12·2
Right oblique	11
Left oblique	10·4
Diagonal conjugate	5·8
Posterior superior iliac spines	6·5
Ischial spines	10·3
Ischial tuberosities	12
Tip of sacrum to bottom of symphysis	7
Depth of symphysis	3·8

Subpubic angle, wide.

The pelvis is characterised by flattening and eversion of the iliac bones, kidney-shaped brim produced by sinking of the sacrum, the right side of the pelvic brim being smaller than the left as the result of compression towards the right produced by the left curvature of the spine. 30

748. A flattened pelvis. Measurements:—

	cm.
Spines	23·5
Crests	27
External conjugate	18
Obstetrical conjugate	9
Anatomical conjugate	10
Brim, transverse	13·7
Right oblique	13
Left oblique	13
Diagonal conjugate	11
Posterior superior iliac spines	9
Ischial spines	11·5
Ischial tuberosities	11
Tip of coccyx to bottom of symphysis	9
Depth of symphysis	4·5

Subpubic angle, wide.

The pelvis is characterised by simple flattening of the brim. 1040

749. A generally contracted flattened pelvis. Measurements :—

		cm.
Spines		24
Crests		25
External conjugate	(about)	15
Obstetrical conjugate		7·5
Brim, transverse		13
Right oblique		11
Left oblique		11
Diagonal conjugate		9·5
Posterior superior spines		9
Ischial spines		11
Ischial tuberosities		10·5
Tip of sacrum to bottom of symphysis		9·5
Depth of symphysis		4

Subpubic angle, wide.

The pelvis is characterised by general contraction with flattening. 10480

From a patient for whom Dr. Herbert Spencer induced premature labour at the 35th week on Jan. 23, 1892. He had previously induced labour at the 32nd week and estimated the the conjugate 3 inches. The 35th week child survived and was quite strong in 1907, when the mother came on account of cancer of the cervix and died after the extended abdominal operation undertaken for its cure. Seventy-two hours after birth, the 35th week child (a girl) weighed 5 lb. 1 oz., was 17½ inches long, the occipito-mental diameter was 4¾ in., the occipito-frontal 4½ in., the biparietal 3½ in., and the bitemporal 2¾ in.

750. A scoliotic oblique and flattened pelvis. Measurements :—

	cm.
Spines	25
Crests	25·5
External conjugate	15·3
Obstetrical conjugate	9·5
Anatomical conjugate	10·5
Brim, transverse	13·5
Right oblique	13
Left oblique	12
Diagonal conjugate	10·7
Posterior superior iliac spines	9·5
Ischial spines	10·5
Ischial tuberosities	11
Tip of sacrum to bottom of symphysis	11·3
Depth of symphysis	4

Subpubic angle, rounded.

The pelvis is characterised by diminution of the right side of the pelvis by compression of the bones towards the right, as the result of the spinal curvature to the left. 5

751. A triradiate osteomalacic pelvis. Measurements :—

		cm.
Spines		19
Crests		22
External conjugate	(about)	17
Obstetrical conjugate		10
Brim, transverse		11
Right oblique		10
Left oblique		10
Diagonal conjugate		10·2
Posterior superior spines		5

	cm.
Ischial spines	5·5
Ischial tuberosities	4·5
Tip of sacrum to bottom of symphysis	8
Depth of symphysis	4

Subpubic angle, just admits the finger, but the ascending rami of the ischium approach within 5 mm. of each other.

The pelvis is characterised by its great distortion from yielding of the soft bones producing a trefoil inlet, a rostrate pubis, a sacrum greatly curved forwards, and a shortened and extremely narrow outlet. 7327

752. A triradiate and oblique pelvis. Measurements :—

	cm.
Spines	21
Crests	23
External conjugate	14·5
Obstetrical conjugate	9
Brim, transverse	11·5
Right oblique	11
Left oblique	9
Diagonal conjugate	10
Posterior superior spines	6·5
Ischial spines	7·5
Ischial tuberosities	8
Tip of sacrum to bottom of symphysis	8
Depth of symphysis	3·5

Subpubic angle, very narrow.

The pelvis is characterised by triangular-shaped brim, the right side of the triangle being indented from softening of the bones, which has also produced extreme contraction of the outlet. 1044

753. Another triradiate pelvis showing similar characters.

754. A pelvis showing somewhat similar characters, but the inlet is more pear-shaped, and the outlet less compressed than in the other two specimens. In this specimen, as in the two preceding, the symphysis is keeled or rostrate.

755. A pelvis, the sacrum of which has 6 vertebræ. Measurements :—

	cm.
Pelvis	24·5
Crests	28
Obstetrical conjugate	11
Anatomical conjugate	11·7
Brim, transverse	14
Right oblique	13·7
Left oblique	12·7
Diagonal conjugate	13·5
Posterior superior iliac spines	8·7
Ischial spines	10·7
Ischial tuberosities	9·2
Tip of sacrum to bottom of symphysis	14
Depth of symphysis	5

Subpubic angle, narrow but rounded.

The pelvis is characterised by a cordate inlet produced by the overhanging promontory ; apart from this the inlet would be large, the conjugate to the top of the true sacrum being 13 cm. The outlet is transversely contracted.

756. A funnel-shaped pelvis. Measurements:—

	cm.
Spines	25·5
Crests	27·5
External conjugate (about)	16
Obstetrical conjugate	10·2
Brim, transverse	12·5
Right oblique	12
Left oblique	12
Diagonal conjugate	12
Posterior superior spines	3
Ischial spines	9
Ischial tuberosities	10
Tip of sacrum to bottom of symphysis	9·4
Depth of symphysis	4·5

Subpubic angle, narrow.

The pelvis is characterised by a slight general contraction of the brim and considerable contraction of the outlet. 7321

757. The left half of a pelvis showing an enchondroma growing from the 3rd, 4th, and 5th sacral vertebræ. The ureter is greatly dilated. The surface of the section shows cystic spaces due to degeneration. The tumour fills the pelvis to within 3 cm. of the pubes, in this space are seen the bladder and the uterine stump. 6984

From a primigravida, aged 21, on whom Porro-Cæsarean section with extraperitoneal treatment of the stump was done (H. R. S.) at term on April 16, 1893. The child, which weighed 6¼ lb., survived, but the mother died on April 25th. At the autopsy the ureters were found to be dilated (seen in the specimen) to the size of the middle finger and there was double pyonephrosis. (For full account, see Obstet. Soc. Trans. vol. 38, p. 403.)

757 A. The right half of the pelvis from the same case as the preceding specimen. 6984

758. A cast of the cavity of a female pelvis after the viscera have been removed. The first inch of the cavity is seen to form a cylinder slightly flattened antero-posteriorly, from the lower level of which the cavity gradually contracts from side to side and also from before back, more abruptly in front owing to gap of the pubic arch there. The lower extremity of the cavity is rounded and extends to a depth of 9·5 cm. below the level of the brim.

Cæsarean Section.

Cæsarean Section is an incision made through the abdominal and uterine walls for the purpose of delivering the child in cases where it is impossible or inadvisable to deliver by the natural passages. It is mainly called for in cases of dystocia due to contraction of the pelvis or tumours; but it has also been performed as a means of rapid delivery in cases of eclampsia, accidental hæmorrhage, and placenta prævia. In these last affections the so-called *Vaginal Cæsarean Section* has also been employed, which consists of an incision into the cervix and lower segment after opening the anterior fornix and pushing up the bladder, room being thus obtained to enable the child to be delivered by forceps or version.

Extra-peritoneal Cæsarean Section has been performed of late years by some operators in preference to the classical operation, especially in the treatment of placenta prævia. In the performance of this variety of the operation different incisions have been made: the most successful is one parallel to Poupart's ligament; after cutting through the abdominal wall the bladder is pushed to the left, the lower segment opened, and the child delivered by forceps or by

pushing it up *per vaginam*. This incision involves considerable risk to the bladder and ureters, takes a long time, and rarely heals by first intention. It is generally admitted to be unsuitable for infected cases, for which it was primarily devised.

Neither Vaginal Cæsarean Section nor Extra-peritoneal Cæsarean Section is much in favour in this country.

The *Classical Cæsarean Section* is made by a longitudinal incision through the body (sagittal and coronal incisions have been recommended, but have no advantages to counterpoise the danger of intestine adhering to the scar). The incision should be closed by silk sutures passing through the wall down to but not involving the decidua, and by fine superficial silk sutures in the peritoneum, so as to bury the knots of the deep sutures. Catgut should not be employed, owing to the risk of the sutures becoming untied by the contractions and relaxations of the organ.

Occasionally, when the uterus is infected or is the seat of a tumour, it may be necessary to remove the body of the uterus. This operation was first practised by Porro in 1876, and is called after him the *Porro operation*; it was originally performed by means of an *écraseur*.

When it is necessary to remove the organ, total abdominal hysterectomy should nowadays be performed.

For pregnancy complicated by Cancer of the Cervix in the operable stage, Cæsarian Section followed by the extended abdominal hysterectomy of Wertheim is the best treatment.

759. A uterus and appendages removed by Cæsarean hysterectomy with extra-peritoneal treatment of the stump, for fibroids. The uterus weighed 6 lb. It measured 22 cm. × 19½ cm. × 14 cm. The lower segment is 13½ cm. in depth. The Cæsarean section wound gapes and shows several fibroids in the anterior wall. Numerous small peritoneal fibroids are scattered over the surface. The uterus has been divided and shows that the wall gets progressively thicker from above down as a result of fibroid growths in its wall, which get progressively more abundant from above down, so that the posterior half of the lower segment measures 5½ cm. and the anterior half 6 cm. at the lower extremity. The cavity is larger above and incarcerated the child's head. 6843

Removed during labour by Porro-Cæsarean section (H. R. S.) from a patient aged 28, on the 299th day from the last menstruation. The child weighed 9½ lb. (clothed). Mother and child were quite well 15 years later. (Obstet. Soc. Trans. vol. 38, p. 390.)

760. The body of a uterus and appendages removed (H. R. S.) by Porro-Cæsarean section with extra-peritoneal treatment of the stump two years after high amputation of the cervix for carcinoma (H. R. S.). The Cæsarean section measures 7·5 cm. The right ovary measures 5 × 3½ × 1½ cm. and contains a corpus luteum 1 cm. in diameter, the upper part of which is 8 mm. below the surface. The left ovary measures 4 × 3 × 1 cm. and contains no corpus luteum. The peritoneum is wrinkled, from the rigor mortis of the uterine muscle. The child weighed 7 lb. 5 oz. at birth, and it and the mother were well nine years afterwards. (See also specimen No. 325, and Obstet. Soc. Trans. vol. 46, p. 355.) 7363

761. A uterus removed by Porro's operation on account of contracted pelvis. Anteriorly is an incision about three inches long, through which the child was removed; the divided uterine sinuses stand widely open. The peritoneal surface of the organ is wrinkled through the contraction of its muscular walls. The central wrinkles run longitudinally owing to the transverse direction of the muscle there, while the lateral wrinkles run obliquely and encircle the cornua, owing to the fact that the uterine muscle encircles the cornua. 6569

Pregnancy had advanced to the full term. The operation was performed by Sir John Williams; both mother and child lived. The patient was aged 25, and this was the first pregnancy; she had been in labour twenty-four hours. The conjugate diameter of the pelvis was 1¾ inch.

762. A uterus removed by Porro's operation with intra-peritoneal treatment of the stump. A long incision has been made to the left of the middle line, passing obliquely across the fundus. The upper part of the fundus has been stitched with deep and superficial silk sutures. In the lower part the deep sutures are not tied and do not penetrate the decidua. 8703

Removed (G. F. B.) from a patient aged 30, with a contracted pelvis, conjugate 3 inches. The patient recovered well.

763. A uterus near term, which weighed, apart from the placenta, 2 lb. 14 oz. It is 18 cm. long, 16 cm. wide, and 10 cm. thick. In the anterior wall is a fibroid which on the surface measures 6 cm. across, but which is itself only 3·4 cm. long, the elevation being due to the thickened muscle above it. This fibroid is of a pearly white and looks quite healthy in the section. The posterior wall of the body is 5 cm. thick and shows a small white fibroid 1·2 cm. in diameter. A coronal incision was made into the body and shows another small fibroid of the size of a bean near the left cornu, and the muscular wall of the fundus is found to be 3 cm. thick, very firm, and with white strands in it. The Cæsarean section wound is on the posterior wall and is unusually large, having been made after the pregnant uterus had been withdrawn from the abdomen and after the delivery of the child; it was prolonged downwards to the cervix, so as to enable the finger to be hooked into the cervix, which was thus drawn up, and the posterior fornix being opened the uterus was totally excised. 11145

Removed (H. R. S.) by total abdominal hysterectomy following Cæsarean section from a patient aged 37, who had had 3 living children delivered with great difficulty with instruments (on the last occasion, 10 years previously, the child's brain was damaged), and 2 miscarriages. During the present pregnancy the patient suffered considerably from pain and tenderness in the uterus for several months up to delivery, probably due to the hypertrophied and fibrotic condition of the uterus. It will be noted that the fibroids appear to be quite healthy and free from red degeneration. The indication for Cæsarean section was the history of the difficulty in previous confinements and the presence of the fibroids, which were thought to be probably degenerated and more extensive than was subsequently found to be the case.

INJURIES TO THE FŒTUS DURING DELIVERY.

The fœtus is liable to many injuries during the act of birth.

The skull may be depressed or fractured by a projecting promontory or by the pressure of the blades of the forceps (776). Cephalhæmatomata may form beneath the periosteum of one or more of the bones of the vault and occasionally over the sutures from lacerations of those structures (788). The jaw may be broken by traction upon it, and bones of the trunk or limbs, especially the clavicle, humerus, and femur, are liable to fracture if unskilful manœuvres be employed. Various muscles are liable to be torn, especially the sternomastoid in presentation of the breech. Meningeal hæmorrhage is common in severe forceps deliveries; and nearly all the viscera of the body are liable to have hæmorrhages into their substance or beneath their capsule or to be ruptured if unduly pressed upon by the parturient canal or instruments or hand of the accoucheur during the act of delivery. These injuries are especially liable to occur in premature children when extracted with difficulty after version.

764. The liver of a still-born child. At the anterior part of the upper surface of each lobe is a subperitoneal hæmorrhage, sharply marked off from the underlying liver-substance. The outer margin of the hæmorrhage corresponded with the costal margin.

The child was the second of twins. The first was born alive. The presentation was a shoulder, and the child was delivered by traction on the presenting part, the head and body being doubled up. Considerable force was used.

765. Portion of the liver of a still-born child, showing a large subperitoneal hæmorrhage situate over the outer and anterior aspect of the right lobe. 6568

The child presented by the breech, with extended legs; the delivery was natural, labour lasting thirteen and a quarter hours. The child, which weighed five pounds, was still-born. The hæmorrhage was probably produced by the pressure of the thighs on the abdomen.

766. The spleen of a child at full term, showing hæmorrhage into its substance and under the capsule. 6544 A

The child was a male, 19½ inches long, and weighing five pounds. It presented by the head, and the labour was natural; the child died a quarter of an hour after birth, in spite of artificial respiration. At the post-mortem examination a small hæmorrhage was found on the upper surface of the liver. There was congestion of the testes, and congestion and slight hæmorrhage into the cellular tissue of the hilum of the kidneys. Blood was also extravasated into the substance of the suprarenal capsules, and at the base of the brain and along the tentorium cerebelli. Heart and other organs normal.

767. Half a spleen of a child which only lived a few hours after birth. The cut surface shows hæmorrhage under the capsule and into the substance of the organ. There is a dark central portion due to the crystallization of the colouring-matter of the blood; this is surrounded by a lighter area, seen microscopically to be full of effused blood, and external to this is a darker narrow band stained by blood-colouring matter. 6555

From a child weighing 4 lb. 9 oz.

768. Two sections of a right suprarenal capsule with part of the kidney, showing hæmorrhage beneath the capsule of the suprarenal body.

The specimen is from a child whose head was born half an hour before the delivery of the trunk was effected. The head was greatly congested, but the child was alive, dying three days after delivery. The lower lobes of the lung were aërated, but greatly congested and almost solid. The child was deeply cyanosed before death.

The delay in delivery was due to the woman being without medical assistance.

769. The right kidney and suprarenal capsule of a still-born child. In the anterior and upper part of the suprarenal capsule is a deep sulcus, indicating the situation of a rent, as the result of which there was a large hæmorrhage, the blood escaping through the rent into the peritoneal cavity. 6559

The child was delivered by version, after the forceps had been applied twice ineffectually. Pelvis contracted; conjugate diameter 3½ inches. The child weighed 8½ pounds.

770. The external genitals of a full-term female child. The left nympha is the seat of a hæmorrhage.

The child presented by the breech, with the legs extended, It was delivered by traction by the fillet near the left groin. It is probable that the pressure of the fillet produced the hæmorrhage.

771. A vertical antero-posterior section of the head of a child which presented by the face. The specimen illustrates the formation of the caput succedaneum over the occipital region. In the frontal region there is a slight amount of œdema, also into the tissues of the upper lip. The labour occupied nineteen hours.

772. The upper part of the skull of a child which had been dead *in utero* for some days before birth. On the left parietal region is a subperiosteal hæmatoma; on the right side the condition is also present, but less marked. 6540 A

773. Part of the skull of a still-born child, showing extravasation of blood along the right half of the lambdoid suture, more marked externally. 6541

The child presented by the shoulder and was turned by the feet. It was born dead. There was hæmorrhage all over the brain, cerebellum, and medulla.

774. The base of a fœtal skull, showing hæmorrhage on to the surface of the tentorium cerebelli. 6588 A

From a child delivered naturally by the vertex and which died soon after birth.

775. A fœtal skull showing two interparietal bones (upper division of the tabular part of the occipital bone). Both parietal bones are slightly fissured posteriorly, but the right has two fractures in front running in the direction of the fibres of the bone. The front part of the sagittal and of the right lambdoid sutures and the back part of the squamous suture have been torn through. 7583

From a child which presented in the second vertex position, with the anterior fontanelle low down, and was delivered with difficulty dead by axis-traction forceps through a pelvis with a true conjugate of 3½ inches.

776. Two frontal bones showing fracture of the two orbital plates, and the right frontal bone is extensively fractured from the middle of the frontal suture to the frontal eminence. The right supraorbital ridge has also been broken. 6571

The fracture was produced by forceps. The child weighed 8¼ lb.

777. A fœtal head from which the bones of the calvarium have been removed on the right side, showing a meningeal hæmorrhage in the pia mater (subarachnoid hæmorrhage). The specimen has been injected with carmine. 6661

778. A section through the parietal bones and falx cerebri, showing a hæmatoma above the periosteum and also beneath the periosteum and dura mater, more marked on the side on which the bone is raised, thereby probably tearing across the vessels of the sagittal suture. 6828

779. A liver showing a subcapsular hæmatoma on the lower surface of the left lobe at its anterior part. 6679 C

780. Part of a liver showing subcapsular hæmorrhage on the lower surface of the quadrate lobe. 6679 B

The child was delivered by the breech.

781. A liver showing rupture of the posterior part of the right lobe. Anteriorly the lobe has been divided by the knife. 6559

From a female hydrocephalic child which weighed 8 lb., which presented by the breech and was delivered by traction combined with suprapubic pressure. The abdomen contained a large quantity of nearly pure blood which came from the ruptured liver. The right suprarenal capsule was also lacerated.

782. A liver with a subcapsular hæmatoma on the upper surface of the left lobe at its anterior part. 6679 A

783. Half a testicle and cord showing a thin layer of hæmorrhage beneath the tunica vaginalis and also into the superficial part of the cord. 6650

784. The edge of the lower lobe of a left lung showing hæmorrhage into it and beneath the pleura. 6565

From a child weighing 4 lb. 4 oz., delivered by turning with slight traction on account of placenta prævia. The microscope shows a thick layer of blood raising up the pleura and blood in alveoli and bronchioles.

785. The colon and ileum showing extensive effusion of blood, clotted, into the wall and lumen of the cæcum, and two small subperitoneal hæmorrhages (now seen with difficulty) in the ileum.

From a female child weighing 3 lb. 5 oz., delivered by the vertex. The hæmorrhage into the cæcum produced intestinal obstruction, from which the child died on the fourth day.

786. Part of the penis, left half of the scrotum, and left testicle of a new-born child, showing scattered hæmorrhages into the body of the testis and into the epididymis. 6685

787. The lower part of the trunk of a new-born male child showing hæmorrhage into the processus vaginalis and cord. The right foot presented, and delivery was effected by traction. (See "Visceral Hæmorrhages in Still-born Children," Obstet. Soc. Trans. vol. 33, 1891, p. 203, where drawings of the naked-eye and microscopic appearances may be found.)

788. The upper part of a fœtal skull showing a hæmatoma situated above the outer part of the right coronal suture, which has been torn through and has given rise to the hæmatoma above the pericranium and to the extravasation of a thin layer of blood beneath the dura mater. 6540

From a still-born child delivered by the breech.

789. A series of twelve water-colour drawings (H. R. S.) mounted in two frames, being the original drawings illustrating the paper on visceral hæmorrhages in still-born children (Obstet. Soc. Trans. vol. 33, p. 203).

DISEASES OF THE FŒTUS.

790. A male fœtus with ascites. The girth at the umbilicus is 40 cm. The intestines are seen at the back of the abdominal cavity covered with adhesions (fœtal peritonitis). It was necessary to decapitate and open the chest and abdomen before delivery could take place. 9995

791. One half of the head of a full-term child with hydrocephalus. The head measures 18 cm. (occipito-mental) × 17 cm. (occipito-frontal) × $10\frac{1}{2}$ (biparietal). There is considerable distension of the lateral ventricles. 8017

792. A hydrocephalic male new-born full-term fœtus. The head measures 6 inches in diameter, and the sagittal suture is 3 cm. wide.

There is no history to this specimen, but it probably presented by the breech, and was perforated on the left side of the neck in the situation of the stitched wound.

793. A female hydrocephalic fœtus with supernumerary digits, delivered by craniotomy. 8193

794. The skeleton of a rickety fœtus. The cranium is large and the face small. The ossification of all the flat bones of the cranium is defective, irregular plates of very thin bone being widely separated by intervals which are in parts entirely membranous, and in others are undergoing ossification in irregular striæ. In many parts the bone is so thin as to give to the finger a sensation like the crackling of parchment, the thinness being such that the shape of the skull could only be maintained by filling the cavity with wool. The lower jaw is fractured on each side in front of the masseter. The vertebral column presents a normal appearance. The wall of the thorax presents on each side a vertical groove outside the junction of the ribs with their cartilages. The ribs are sharply bent at their angles, especially on the right side, and there are several swellings of the bones in this situation which appear to indicate the seat of fracture. (The clavicle and scapula are wanting on each side.)

In the right upper extremity the humerus is curved outwards as the result of a healed fracture in the middle of its shaft; there is a recent fracture close to the lower extremity; the upper extremity of the shaft is considerably thickened. The radius and ulna present an enlargement in the middle of their shafts following the repair of a fracture; each bone has also been recently fractured in the upper and lower part of its shaft, and the lower end of the shaft of each is thickened.

In the left upper extremity the humerus is curved outwards even more markedly than the right, and presents two ununited fractures below its middle. The ulna is fractured about its middle and the radius at a lower level. The fifth metacarpal bone is fractured at its lower end.

The pelvis is flattened from before back and its cavity contracted. The inlet of the true pelvis has the shape of a triangle with the corners rounded. The left ilium is fractured transversely a little below the crest.

In the right lower extremity the femur is bent outwards and the leg-bones prominently forwards, so that the thigh- and leg-bones together have the outline of a semicircle. The femur presents two repaired fractures, one at and the other above the middle, and an ununited fracture midway between the middle of the shaft and the lower epiphysis.

The leg-bones are the seat of unrepaired fractures in the middle of their length, and the fibula also at its upper extremity. The foot-bones are normal.

The general appearance of the bones of the left lower extremity is similar to that of the right. The femur is fractured at the middle of its length, and the leg-bones in two places at and below their middle.

In both limbs the ends of the long bones are considerably enlarged, and, as in the upper limbs, the growth in length of the long bones is deficient. 6690

795. A normal fœtal skull from a full-term child of large size delivered by the breech, still-born. The bones are unusually ossified, and the sutures unusually narrow.

MALFORMATIONS OF THE FŒTUS.

Malformations of the fœtus may be dependent upon some inherited vice in the ovum, transmitted through the male or female, or to some abnormal condition of its environment. The degree and nature of the monstrosity depend in great measure upon the period of gestation at which the cause producing the monstrosity acts. In some cases malformations may result from mechanical injury inflicted on the mother. Whether or not so-called "maternal impressions" have any influence in the production of monsters is undetermined: the balance of scientific facts is against this hypothesis. Malformations due to arrested development of some part of the body are dependent in many cases upon local causes interfering with the blood-supply or may be hereditary. In other cases they arise from an abnormal position of the fœtus *in utero*, or from some disease of the uterus of an inflammatory nature.

Double monsters arise from a single ovum owing to duplication of the embryonic area, or duplication of individual parts which should develop singly.

Malformations of the genital organs may be due to the continued growth of some part which should only be present in each sex as a rudiment, *e. g.* the uterus masculinus (No. 854).

MALFORMATIONS BY ARREST OF DEVELOPMENT.

i. Arrested Development of the Whole Embryo.

These malformations occur at quite an early period of utero-gestation. The embryo may develop quite normally but be stunted in growth, although all its parts may bear their normal proportion to the body. This leads to general dwarfing (Mikrosomia).

The fleshy mole and hydatidiform degeneration of the chorion come under this heading.

In some cases the fœtus dies and is converted into a fatty mass surrounded by a fibrous capsule containing lime salts. This is known as Lithopædion (No. 705).

ii. Arrested Development of Part of the Body.

α. Acrania: Anencephalus (Nos. 796 to 807).—The degree of deficiency of the vault of the skull varies: its place is taken by a thin red membranous structure, such as is seen in some cases of spina bifida. The brain is undeveloped, and forms a spongy mass, with which the cranial nerves are connected.

In other cases a rudimentary cerebellum and medulla may be distinguished. This condition is often associated with spina bifida in the upper cervical region (Nos. 797 and 798).

In less severe cases the vault of the skull is more or less perfectly formed, except posteriorly. Fissures in the skull and dura mater lead to protrusions of the cranial contents (meningocele and encephalocele). See also Surgical Catalogue, Part III. p. 188.

β. Spina bifida (*vide* Surgical Catalogue, Part III. p. 193).

γ. Hydrocephalus (791).

δ. Acephalus is due to an arrest of development at a very early stage of gestation before the fœtus has any head discernible. The head is not clearly marked off until the third week.

Usually such monsters do not possess limbs, or only imperfectly formed ones budding from the body (808). In other cases the upper or lower limbs may be more or less perfectly developed, the others being absent. In some cases the neck may be present, and is surmounted by the ears, which are often fused, but there is no skull.

ε. Cyclops (812, 814).

ζ. Cleft Palate and Hare-Lip (*vide* Surgical Catalogue, Part III. p. 186).

η. Clefts of the Anterior Body-Wall (817).—Originally the thoracic and abdominal cavities are open; they close in later fœtal life. If this closure is entirely absent there will be complete ectopia of the viscera. In such cases the skeleton is imperfectly formed and there is marked retroflexion, so that the head and feet of the fœtus may touch.

When the body-wall closes it does so from above down, hence the more frequent cases of ectopia of the abdominal organs.

Ectopia Cordis (810).—The heart is usually well formed, but there is no pericardium. The sternum is cleft, or may be absent, or only represented by the manubrium.

Ectopia of the Abdominal Viscera may be complete or not. The viscera are usually covered by a thin membranous sac, continuous with the integument and representing the body-wall (824).

For Congenital Umbilical Hernia and Extroversion of the Bladder, *vide* Surgical Catalogue, Part II. p. 152, and Part III. p. 202.

θ. Defects in the Development of the Limbs (Nos. 828 and 829).—If all the limbs are absent, the arrest in development occurs quite early. The limbs may be formed, but not grow to their proper relative size, or the hands and feet may be the only parts developed, and are then attached to the trunk as ill-formed appendages. The hands and feet may be the only parts wanting, the limb forming a stump, as if those parts had been removed by amputation.

The fingers and toes may be joined together by webs more or less complete; or they may be fewer or more in number than normal.

Congenital talipes is not uncommon (*vide* Surgical Catalogue, Part III. p. 213).

ι. Defective Development of the Trunk. Acormia.—In very rare instances the head may be the only part of the fœtus showing any approach to normal development.

All degrees of mal-development may be met with from that mentioned up to those cases in which the trunk is formed, but the inferior extremities are fused (Syreniform monster, 859).

MALFORMATIONS BY EXCESS OF DEVELOPMENT.

α. *Inclusio Fœtalis.*—One fœtus may be included, more or less completely, in the body of its twin. The included fœtus is usually in the abdomen, but may be in the mediastinum, subcutaneous tissue, ovary, or testis, and very rarely elsewhere.

β. *A rudimentary fœtus* may be attached as a parasite to some part of the body of a twin. The attachment is usually in the sacral or perineal region. The tegumentary covering of the two fœtuses is distinct. In some cases the parasitic fœtus may be more or less perfect.

γ. *Double Monsters* (Nos. 838 to 849).—Monsters coming under this heading are distinguished from those under β by being nearly equally developed.

i. *Anterior Duplicity.*—Most usually the bodies are joined by the thorax, the abdomen being double, at least below the umbilicus. The cord may be single or double. There may be eight limbs, or only six or seven owing to fusion of two adjacent ones, in the upper or lower extremities or both. There are two thoracic walls, united by fibrous tissue and integument. In other cases the sterna are fused or may be absent, and in the latter case the thoracic organs may be fused. The peritoneal cavities are continuous. The livers are usually continuous, but the other organs are double. Such monsters appear to be independent of one another in their relations.

ii. *Lateral Duplicity.*—The thoracic cavity is common to both trunks, the right ribs of one body and the left of the other joining a common sternum in front; while the left of the one and the right of the second join the second sternum behind, the two bodies being opposite each other. The duplicity may be *complete*, *i. e.* there is a common thorax containing four lungs, but only one heart, and all other parts are double. In other cases two upper limbs are fused, so that there are three in all: or the fusion may occur in the lower limbs, or there may be two only. Lastly, the fusion may affect both upper and lower limbs. The head is usually double, but may be single. In the case of double, but fused head, two adjacent ears may be fused.

iii. *Inferior Duplicity.*—Rarely two fœtuses are joined by the buttocks, so that the monster has a head and two upper limbs at either end, and four lower limbs at the place of union; these may be less in number from fusion.

iv. *Posterior Duplicity.*—In this form the fœtuses are joined by their backs. The point of union is usually at the pelvis.

v. *Superior Duplicity.*—The fœtuses are joined at their heads, there being a common cranial cavity.

δ. *Cleavage of Certain Parts of the Body.*—Certain parts of the fœtus which should develop singly are duplicated.

i. *Duplication of the limbs*, especially of the fingers and toes, is not uncommon (855).

ii. *Duplication of the Mammary Glands.*—The third gland is usually placed between the two normal ones. Sometimes it may be in the axilla or in a distant part. There may be several mammæ placed in double longitudinal line down the thorax and abdomen, as in the bitch.

iii. *Supernumerary bones and muscles* may be met with.

iv. *Duplication of the Viscera. Hermaphroditism* (Nos. 851, 854, 857).

796. A large female anencephalic fœtus at full time, showing incomplete development of the cranial vault. The bony vault is absent, but the skin is present and covered with hair, except quite at the vertex. Here there is a transverse slit, which runs inwards towards the base for about ¼ inch; round it are two or three rounded soft masses, not covered with hair, but continuous with the hairy scalp. These masses are covered by a very delicate membrane in place of the integuments, and represent the undeveloped brain. Both feet are in a state of talipes calcaneus.

913

797. A female anencephalous fœtus at about the eighth month with spina bifida. There is anencephalus and spina bifida in the upper half of the column. The integuments are also deficient in these situations, being merely represented by a very thin membranous structure. On the skull this has been laid open, and inside can be seen a ragged friable mass of tissue, representing the undeveloped brain. The spinal cord cannot be seen, and is quite rudimentary. 4652

798. An anencephalous female fœtus. The fœtus is stunted, the limbs flexed, the abdomen protuberant, and the whole has a toad-like appearance, much increased by the flattened condition of the chin, which is almost level with the sternum, and with the great projection of the eyes, due to the undeveloped state of the forehead.

The vault of the skull is wanting, and the tissues of the scalp are represented by a thin membrane, which forms a sac and contains the nervous mass representing the brain. The upper vertebræ are deficient, constituting the condition known as spina bifida. The integuments over this part are represented by a thin membrane similar to that on the head: it has been laid open and turned aside in order to show the malformed spinal cord. 4637

799. A specimen very similar to the preceding. The fœtus is a female. There is curvature of the spinal column in the dorsal region. The neural arches have failed to unite; the cord is represented by a flattened band of tissue. The cephalic mass is not so large as in the preceding specimen. The right foot is in a position of talipes valgus. 4638

800. An anencephalous fœtus at the full period of gestation. The body generally and the limbs are normally formed, but there is an entire absence of roof to the skull. The outline of the base is irregular and distorted; the masses in front, just behind the brows, are soft and represent the imperfectly developed brain. Covering over this is a delicate membrane continuous with the scalp—the representative of that part which should have developed into the scalp covering the vault. The basilar and condyloid portions of the occipital bone form a hollow which is continuous with the cervical canal. The laminæ of the vertebræ appear to be perfectly formed. At the upper part the beginning of the cord can be seen as rounded nerve-cords.

The appearance of the fœtus is very characteristic. The malformed head is sunk upon the shoulders, the neck having remained also undeveloped, the chin projecting very little beyond the level of the sternum. The ears are doubled up and bent forwards; the nose is flattened, the nostrils and mouth open, and the tongue thrust forwards. The eyes are, owing to the want of development of the frontal bones, peculiarly prominent, imparting to the face a toad-like aspect. 4236

801. An anencephalous fœtus at the full time. The deformity does not extend to the cervical spine. The vault of the skull is absent, but there is an irregularly rounded softish mass at the anterior part, which represents the brain. This is covered over by a thin membrane, commonly seen in these cases. On the dorsum of the left foot are seen several scar-like areas in the skin. The most marked of these is situate just in front of the outer ankle; the skin is quite smooth here, and slightly depressed below the surrounding parts; at its margin it is of a brownish colour, from the deposit of blood pigment. The other patches are precisely similar, but they are smaller and not pigmented. There is also a small patch in front of the right ankle-joint. These are the result of some ulcerative process which had occurred during fœtal life. 4636

802. A female fœtus showing the following malformations:—There is anencephalus and no trace of brain-substance, but the thin membranous sac usually found representing the scalp in these cases has become adherent to the amnion. The nose is

absent. The upper lip is ill-developed, but the frænum can be seen. The opening of the mouth is prolonged upwards, so that it forms a large triangular opening with the apex upwards. The liver, spleen, stomach, and intestines protrude through an opening in the abdominal wall. The liver is abnormal in appearance, and is subdivided into three lobes by a constriction passing along the normal right lobe. Both feet are in a state of talipes equino-varus. The hand on the right side is malformed. There are only two digits and a rudimentary thumb. The forearm is also malformed, the radius apparently being absent. The child lived for some hours after birth. 885

803. The head, spinal column, and pelvis of an anencephalic fœtus of about the eighth month. The spinal column has been laid open by removal of the posterior part of the neural arches. The cranial vault is deficient, but the soft parts of the scalp lie over the base for a short distance, and are then represented by a thin fibrous membrane, which blends with the dural lining of the base of the skull. The base is irregular in outline, presenting a projecting boss in the middle. The brain was entirely absent. The spinal cord, smaller than natural, is at the upper part only represented by bundles of nerve-cords passing outwards to the foramina of exit from the canal. It is uncertain whether or not the upper cervical vertebræ had deficient arches. The eyes project a good deal; the nose is flattened, and the ears turned forward. 1453

804. The macerated skull and upper six cervical vertebræ of an anencephalous fœtus at the full period. The vault of the skull is almost entirely deficient, and in the recent state was represented by a dense fibrous membrane. The bones forming the base are all more or less deficient and malformed. The vertical portion of the frontal is quite rudimentary, the upper margin being serrated. The small wing of the sphenoid is absent, and the large wing very rudimentary. The pterygoid processes are present. The squamous portion of the temporal is represented by a thin plate of bone, not arched upwards, but lying almost horizontally and articulating with a bar of bone representing the parietal. The petrous, extremely irregular in outline and ill-developed, passes backwards, articulating with the basilar process of the occipital, and to a less extent with that of the sphenoid. The basilar and condyloid portions of the occipital bone are present, but the occipital part is quite rudimentary and is inclined downwards; projecting from it is the bar of bone before mentioned as representing the parietal. The facial bones are normal. The arches of the upper three cervical vertebræ are deficient. The frontal bone is displaced backwards so that the anterior fossa of the skull is represented by a deep pit between the two halves, its floor formed by the cribriform plate of the ethmoid. The foramina present from before back are the sphenoidal, foramen rotundum, optic, foramen lacerum medium and posterius, internal auditory meatus, and condyloid. 3557

805. A fœtal monster, with partial anencephaly and unusually extensive oral and palpebral fissures. The apex of the tongue is slightly bifid. There is talipes equino-varus of both feet. 10686

806. A female anencephalic fœtus with macrostoma. There is a supernumerary auricle on each side. 9935

807. The disarticulated skull with the cervical vertebræ of an anencephalous fœtus at full term. The arches of the first two vertebræ are deficient behind. There is no vault to the skull, the bones forming it being quite rudimentary, and almost precisely similar to those forming the base of the skull in specimen No. 804.

808. A wax model of an acephalic monster. The upper limbs are absent and lower limbs are imperfectly developed. 2543

809. A portion of the head of a cyclops lamb. The eye has a distinct optic nerve, which can be seen just after it has passed through the foramen. Attached to the lower lid is a slip of tissue with hair growing on it. 4656

810. The thoracic viscera, with a part of the anterior wall, from a lamb. The heart protrudes through an oval opening caused by non-closure of the integuments. The sternum is imperfectly developed. The pericardium is continued from the surface of the heart to the skin; there does not appear to have been any parietal layer.

811. A monster stated to be in about the eighth month of gestation. The head, thorax, and upper limbs are normally formed. The abdominal wall has failed to close in the middle, and is represented by a delicate membranous structure, which forms a large sac containing the abdominal contents, which have escaped from their normal position. This membrane was continuous with the amnion, which has been removed with the placenta. Situate on the posterior and left aspect of the loin is seen a large cyst divided into two parts, and which has been laid open. Both of these cysts seem to communicate with the abdominal cavity by a small opening, and they probably represent the bladder. The genitals are represented by two small oval nodular masses representing fat. The lower limbs are much deformed, and, indeed, the pelvis seems to be so rotated that the lower half of the body inclines to the left side. The right leg is apparently normal, but the foot is in the position of talipes calcaneus. The left limb, the foot being in the position of talipes equinus, is much malformed. At first sight it would appear that the thigh was quite rudimentary, but on moving this it was found to extend upwards, quite as high as the top of the pelvis. It is impossible without dissecting the specimen to say precisely what the anatomical peculiarities may be. There is no trace of an anus. 882

812. A female cyclops. The limbs and trunk are well developed. The head is small and the front is flattened and presents a pear-shaped proboscis turned upwards over the single eye; it is pitted at its extremity. The single eye has a well-marked cornea and the palpebral fissure is kite-shaped, at the bottom of which is the caruncle. 9235

813. A fœtus acardiacus measuring 12 × 7 cm. The head and neck are absent. At the side of the neck is an irregular shallow groove in which appear two small cystic bodies of the size of peas, surrounded by a few hairs. The right lower limb is curled to the left and is terminated by a single digit. The left extremity is even less developed, being a small heart-shaped prominence with a "nipple" representing the foot. The right upper extremity is represented by a rudimentary hand with 3 digits, the left by a rudimentary hand with 2 digits. Below each arm is a depression probably representing the site of the breast. The umbilical cord is of the size of a quill and is slightly twisted. A keloid-like scar runs down the centre of the back as far as the spine of the ilium, where it terminates in a coloured depression-scar similar to that met with in spina bifida.

It was a twin, the fellow being a living female. There was a single placenta and single amnion.

A skiagram of this specimen shows only a faint shadow of dorsal and lumbar vertebræ with a suggestion of a pelvis. 9390

814. A cyclops fœtus. The trunk and limbs are well developed and the head except in the orbital region. The nose is absent, and in its situation is a large eye resulting from the fusion of the two organs, and showing a transversely elongated cornea, and below the globe a body which is probably the fused carunculæ. Above the eye is a penis-like proboscis with a transverse aperture, which is the fronto-nasal process. The skin at the end of this proboscis shows well-marked orifices of sebaceous glands. The fœtus is partly macerated. The frontal region is flattened. 687

815. A fœtus with retroflexion of the spine and a posterior meningo-encephalocele with slight hydrocephalus. Owing to the retroflexed condition of the spine the lower part of the sac of the encephalocele corresponds to the lower lumbar region. The bodies of the vertebræ are visible, but the arches are absent, forming spina bifida throughout the length of the spine. 9070

816. A female fœtus showing extroversion of the bladder and the left kidney displaced downwards into the left side of the false pelvis. Only the right horn of the uterus is present; there is a well-marked ovary and Fallopian tube. The left suprarenal is in its normal position, but separated by 1 cm. from the kidney. The right kidney and suprarenal are in their normal position. The bladder is extroverted and behind the upper part is situated a portion of the liver, the rest of which has been removed. The condition of the specimen does not permit of careful dissection of the ureters and kidneys. 7926

817. A male fœtus with spina bifida, and ectopia abdominalis. The cord has three large cystic swellings apparently due to œdema of the Whartonian jelly. The legs are extended and the knee overextended (genu retrorsum); the feet show talipes equino-varus; the left wrist is forcibly flexed. 8379

The child was of 8 months' development and presented by the foot. The mother had had seven children, all healthy. No miscarriages.

818. A longitudinal section of a female fœtus, passing a little to the right of the middle line, so that the bodies of the lower dorsal and upper lumbar vertebræ have been removed. The abdominal parietes have failed to unite in the middle line, the skin terminating abruptly in a thin membranous sac containing the liver, stomach, duodenum, and a coil of the small intestine, with the spleen. The outer surface of the sac-wall is wrinkled, and about the centre is the umbilical cord, the vessels passing over the sac in a direction downwards and to the left side. The left kidney, which has been cut into, is seen to lie against the spinal column, its upper border touching the diaphragm. The hypogastric artery is running in the cut border of the sac at its lower part.

819. A full-term fœtus with extroversion of the abdominal contents (*fœtus retroflexus*). The thighs are flexed upon the trunk, and the legs upon the thighs, so that the knees are on a level with the shoulders and are posterior. The left foot is apparently dislocated backwards, the lower ends of the leg-bones making a distinct projection anteriorly. The right foot is in an extreme degree of talipes equinus, forming a line with the leg. The right hip is attached to the trunk by a narrow pedicle of skin and subcutaneous tissue only, its upper free end being rounded: on the posterior aspect is a small outgrowth of the skin and areolar tissue. The development of the trunk has failed just below the ensiform cartilage, the skin being continued on as a thin membrane which probably enveloped the viscera. The cardiac end of the stomach is adherent to the integuments of the left buttock. The peritoneal coat of the liver is much thickened and pigmented, and that of the intestine is roughened by flakes of lymph. The heart is large, the lungs ill-developed, the right one especially. 5548

820. The base of a fœtal skull with a posterior meningocele of the size of a hen's egg. The aperture through which the membranes protrude is of about the size of a pea, and is situated in the occipital bone in the middle line, 1 cm. above the foramen magnum. 7025

821. The vault of a fœtal skull, through the posterior part of which projects a bilobed tumour measuring $5\frac{1}{2} \times 4$ cm. (*posterior encephalocele*). The aperture through which the encephalocele projects is formed at the expense of the superior posterior angles of the parietal bones and the upper part of the occipital bone. 7026

822. A female fœtus showing the following malformations:—There is a large spinal meningocele in the sacral region, communicating with the spinal canal by a rounded aperture about the size of a penholder. The abdominal wall is incomplete, and continued on as a delicate membranous structure, which has been cut away in order to show the abdominal contents. The sac thus formed contained the intestines and liver, but at the left side the large cloaca to be mentioned presently opened on the surface. There is no anus and no external genital organs, but at the upper and inner aspect of each thigh is a nipple-like projection of skin representing the labia majora. The cloacal aperture common to the bladder, uterus, and rectum opened on to the surface by an oval opening about an inch in its longest diameter; this was situated at the upper part the lower part being closed in by integument, which has been removed to show the interior to greater advantage. The cavity is rugose, and at the upper and right-hand side is a round opening communicating with the gut, which is attached to the abdominal surface of this cloacal cavity, which represents the bladder. The gut runs for some little distance beyond this opening, and ends as a *cul-de-sac*. On the peritoneal aspect of the bladder is seen the left ureter, which has been traced to the kidney. A bristle passed along this does not enter the bladder, but remains in its wall close to the small round opening seen on the inner surface of the bladder. This opening is artificial, for in the recent state it was bridged over by a delicate transparent membrane, which was dilated into a cyst. On removing the wall of this a few drops of turbid fluid escaped. It will be seen on close examination that this opening is rugose internally. To the left of the ureter, on the peritoneal aspect, is seen a short convoluted tube representing part of the body of the uterus and the left broad ligament, Fallopian tube, and ovary, all of which can be plainly recognized. The end of the uterus corresponds with the aperture above mentioned, and is close to the ureter, so that it is highly probable that the opening is common to ureter and uterus alike, and, as far as the latter is concerned, represents the cervix, or more probably the vagina. On the right side the right broad ligament, ovary, and Fallopian tube, and part of the fundus uteri can be seen, but there is apparently no opening into the bladder.

The child lived twenty-four hours. 5343

823. A malformed male fœtus at the full period of gestation. The liver, spleen, stomach, and intestines protrude from the abdominal cavity owing to non-development of the walls, the skin being continued on as a membranous sac, the greater part of which has been removed; the sac is intimately blended with the surface of the right lobe of the liver. On the left side, just below the margin of the opening in the abdomen, is the extroverted bladder; to the right of this is the termination of the gut, projecting nearly an inch beyond the abdominal parietes. Underneath the gut the penis, in a condition of hypospadias, can be seen; a piece of glass has been passed along the urethra. The left testis is situate in the abdominal cavity below the kidney. The right one cannot be seen. The umbilical cord is situate above the protrusion of the viscera. 916

824. A fœtus showing remarkable malformation (*fœtus retroflexus*). The head, upper limbs, and upper part of trunk are normal. The pelvis and the lower limbs appear to be rotated so as to look directly backwards. The limbs are right and left, but are so retroflexed that the back of the knee and shoulder of each side are contiguous. At the anterior surface of the abdomen, quite at the lower part, the viscera protrude, having been enclosed in a membranous sac continuous with the amnion, which, together with the placenta, has been preserved. The bladder is extroverted, and a bristle has been passed through the vesical orifice and through a cloacal aperture between the two limbs.

825. A malformed male fœtus, showing anencephalus, spina bifida, and angular spinal curvature. There is ectopia viscerum, the viscera being exposed by the

removal of part of the thin membranous sac enclosing them. The viscera outside the abdomen are liver, spleen, stomach, and small intestine. Both feet are in the position of talipes equino-varus.

826. A fœtus between the fourth and fifth month of utero-gestation. The abdominal parietes have failed to close in the middle line, leaving an oval opening about $\frac{3}{4}$ inch from above down, through which protrude the stomach and intestines with the liver. The margins of the opening are thin and membranous. Immediately above and to the left of this is seen the heart, with its apex pointing upwards and to the left shoulder; a narrow band of membrane separates the heart from the liver. The aorta passes into the chest by a small round opening. The pulmonary artery cannot be seen.

The attitude of the fœtus is abnormal: the left arm is straightened out and extended over the left side and back. The thighs are insufficiently flexed on the body, and the feet extended. 4630

827. A full-term fœtus measuring only 1 ft. in length, in which only the right limbs are developed. The lower limb is in a position of equino-varus; the upper limb is greatly deformed by the absence of the radius. The intestines terminate in blind extremities in two places, one of which is the cæcum, the other the ileum. The rectum has been opened and has blood-stained material. 8466

828. A fœtus between the third and fourth months of gestation. The development of the left lower limb has been arrested. The foot is in a position of talipes calcaneus. The right is twisted upon itself so that the outer border is at a right angle with the outer border of the leg, while in the anterior half the metatarsus and phalanges are twisted inwards. There is no trace of an anus. 4603

829. A mouse wanting the right fore-limb. On the trunk on this side there is a slight elevation and some puckering of the skin, representing a rudimentary limb. 999

830. A male fœtus, apparently at the full term. The bony skeleton has failed to develop, so that in some parts there is no evidence of any skeleton at all, and scalp, trunk, and limbs look like a wrinkled roll of leather. A section has been made along the posterior aspect of the right leg and tarsus. This shows that the early condition of temporary cartilage exists. The centres of ossification in the tarsal bones are distinctly seen. The tibia is much more advanced in development, but is very flexible; the bony matter is, however, very spongy in appearance. The case appears to be one of simply retarded ossification. 3847

831. A malformed male fœtus, showing rudimentary ear and limbs. The lower jaw is ill-developed, resulting in a receding chin. The head is covered with yellow hair, and there is a wisp of whiskers on the right side of the neck. The right upper limb is very short, consisting apparently of a rudimentary hand with two fingers; the left is somewhat similar, with a slight indication of a third digit. The legs are also short, curled up, and deformed, the right having three digits and the left four. 6981

832. A deformed female fœtus with transposition of the viscera and agnathia. The child has a very small mouth (*microstoma*) and tongue (*microglossia*), which has been exposed by an incision in the neck, the lobules of the ears meet in the neck, these deformities being due to the non-development of the lower jaw (*agnathia*). 6912

833. A fœtus with transposition of the viscera, the heart and spleen being on the right side and the liver and cæcum on the left. The lower jaw is ill-developed and the tongue is small and led to difficulty in feeding, owing to the inability to suck and choking from swallowing its tongue. It was fed by a tube passed into the œsophagus (*gavage*). 6603

834. A fœtal male kitten. Projecting from its abdominal wall is the hinder portion and legs of another fœtus (*parasitic fœtus*). It is attached to the host at the lower part of the thorax and upper part of the abdominal wall. The parasite is also of the male sex. 1591

835. A kitten with a parasitic fœtus attached. The hind limbs of the parasite are attached to the integuments of the upper portion of the abdomen of the host, the fore limbs to the upper part of the thorax and left side of the neck; a web of skin unites them as far as the paws, which are spread out. 4194

836. Part of the shell of a hen's egg within which, and attached to it at one part, is a smaller egg, which was surrounded by albumen. The specimen was presented by the late Dr. Wilson Fox, at whose breakfast-table the egg was served. 5323

837. The shell of a normally formed hen's egg which was found included in another.

838. A female double monster with fused heads and chests, with two faces (*Janus*). There is ectopia abdominalis. The fused head measures 12 cm. × 9 × 8½. The mouth is smaller and the eyes are nearer together than in the normal face. 7529

839. A double monster, the heads and thorax being fused. The left and right ears of the fœtus are fused on one side; on the side on which the face is they are distinct. The fœtus is a male. 6906

840. A double monster at about full term. The bodies are united by the anterior walls of the thorax and abdomen as far as the umbilicus. Above and below they are normally formed. Both are of the male sex. There is ectopia of the liver, which is covered by a thin membrane. 4649

841. A monster kitten having two bodies united above the umbilicus, but distinct and normally developed below. They are united by the under surfaces of the thorax and abdomen. The right fore leg of one and left of the other are normally developed, but the left and right fore limbs of the respective trunks are blended as far as the tarsus, but free and well-developed beyond this point. The necks are twisted, so that the back of the head forms a line with the side of the bodies, and the face looks towards the side on which are the normally-developed fore legs. 1309

842. A fœtal kitten with single head, but double body. The two trunks are united as far back as the umbilicus, but then divided, forming two well-developed portions of the male sex. The fore legs are three in number; one fully formed one is placed at each lateral aspect, and corresponds with the right and left legs of the respective trunks. The third leg is situated on the back, and is attached by a broad band of tissue to the trunk; it is malformed, having only three digits. 4191

843. A fœtal kitten. Above the level of the umbilicus the body is single, below double, the two portions being normally formed and both of the female sex. There is double hare-lip, and the lower jaw and tongue have failed to unite in the middle line. 4195

844. A pig showing a similar monstrosity, with the exception that in the nape of the neck are two ears blended at their attached parts below, and the two limbs on the apparent dorsum of the monster are not united. The palate is cleft. 4664

845. A similar specimen. There is a fleshy process on the top of the head. 4199

846. A malformed pig showing fusion of two bodies above the umbilicus; below this point the two bodies are quite distinct and are both of the female sex. The fusion is anterior, and involves the whole of the body above the umbilicus. The four fore limbs are distinct and project in pairs on each side. The head, placed laterally, is normal when viewed from the front, but looked at behind it is seen that there are two ears fused at their bases and situate close to the occiput at its lowest part. Immediately above these are two eyes fused together, but the corneæ can be very distinctly made out. Still higher is a proboscis-like projection, broad at the base, and doubled on itself (fronto-nasal process). At its free end is a slit-like aperture. 890

847. A monster duckling. There are two distinct heads and necks, and two trunks blended together. There are four wings, but only three legs, the middle one being situate on the dorsum and attached to the trunks in the middle line. 3872

848. An anencephalous duckling having a double trunk with four legs and four wings. The beak is malformed, the upper mandible being considerably shorter than the lower. The tongue also projects beyond the upper beak. 1752

849. A malformed duckling. There is anencephalus and want of union of the neural arches of the upper vertebræ. A delicate membrane covers in the cranial cavity. The trunk is double; there are four legs and four wings. 1755

850. Half of a double apple, with a single stalk. There is a distinct eye to each. On the outer surface the line of union is marked by a deep sulcus. 5023

851. The genital organs of an hermaphrodite fœtus. Below is the penis and clitoris. Above this is seen the vagina and cervix with the slender body of the uterus with the right round ligament and ovary. The left horn of the uterus is represented by a slender thread which can be traced out towards the left appendages, consisting of a rounded body (the testis) to which is attached a minute tongue-like process (the ovary), winding below this towards the cervix is the vas deferens. Immediately below the ovo-testis is the gubernaculum testis and below this the round ligament. (Obstet. Soc. Trans. vol. 38, p. 265.) 7366

852. A duckling having a supernumerary malformed leg on the left side, situated close to the tail. There are two complete digits looking in opposite directions, and attached by a web to one of them is the terminal portion of a third, but the proximal portion is not developed. 3775

853. A young toad having a supernumerary leg projecting outwards and forwards from the gluteal region, just above and posterior to the right hip-joint. This additional limb is malformed at the extremity, where it seems made up of two symmetrical halves, each having three digits, and being separated from each other by a very small one. There is free movement in the limb. 1010

854. The organs from a case of complex or vertical hermaphroditism, from a child nine months old, who died from the effects of an operation for the radical cure of a right inguinal hernia. The external organs of generation are those of a male with undescended testes. The penis is normal in general appearance, but there is a slight degree of hypospadias; the prepuce is deficient at the underpart and envelops the glans like a cowl, so that there is no frænum. The corpus spongiosum terminates behind in a small well-marked bulb. The bladder is normal in size and shape, and its neck is surrounded by the prostate gland. Projecting from the posterior part of the prostate, and taking a direction upwards and to the right, is a vagina, uterus, and broad ligaments, round ligaments and Fallopian tubes, with the testes in the position of the ovaries. The deviation of the structures to the right was due to the right broad ligament having been drawn down with the sac of the hernia. The vagina and uterus have been laid open from behind; the former is traversed by well-marked rugæ, and passing down the anterior wall is a distinct ridge indicating the remains of the original antero-posterior septum. A small orifice leads into the cervical canal, but there is no projection of the external os. The lower segment of the uterus is elongated. The round ligaments are normal. The testis is attached to the cornu of the uterus by a band of tissue representing the ligament of the ovary. Close to the Fallopian tube is the convoluted vas deferens, 10 centimetres in length, and terminating at about the middle of the uterine wall at its postero-lateral aspect; but it is probable that by microscopic examination the tube could be traced downwards in the vaginal wall to its termination in the prostate. There is no trace of vesiculæ seminales.

The hernia on the right side was found at the operation to contain the uterus and broad ligaments, Fallopian tubes and testes, the latter being thought to be ovaries. The contents were reduced and the pillars of the ring sutured. The child became febrile, and died eleven days later, August 16th, 1885. At the post-mortem examination it was found that the hernia had again descended and was adherent to the sac, which had not been removed. The family history is interesting. The mother had had fourteen children and eight miscarriages. Seven of the children were dead, and none of them showed any sexual abnormality. The eldest living girl has a bifid nipple. The fifth and sixth children are boys aged six and twelve years. The sexual condition of each is the same; the penis is well formed, but there are no testes in the scrotum or inguinal canal. The external condition is therefore almost identical with that of the child from which the specimen was taken. One of the mother's nieces was always looked upon as being an hermaphrodite. She had a lump in one labium (? prolapsed ovary), and is said to have passed urine through the umbilicus. She had had one child "taken from the side." Another niece was born with united labia.

For further account and drawings, *vide* Path. Trans. vol. xxxix. p. 219.

855. A female monster with hydrocephalus, hare-lip and cleft palate, seven digits on each extremity, the toes and thumbs showing syndactyly. The vagina is imperforate below and distended above with mucus to the size of a pigeon's egg (hydrocolpos); on the top of this is placed the anteflexed uterus, which is raised up to the level of the navel and third lumbar vertebra. Between the urethra and the rectum, which passes down on the right side of the pelvis, is a solid fleshy septum, $1\frac{1}{2}$ cm. in length by 3 mm. thick at its narrowest part. The distended vagina has a smooth shiny lining, but at the lower end it has the white corrugated appearance of the normal infantile vagina. The liver shows post-mortem emphysema. The brain has been removed. The legs are stunted. The intestine, which was normal, has been removed; a long sigmoid flexure rested on the uterus. The bladder and urethra are normal. 9322

856. A wax model of the generative organs of a male child. The scrotum is bifid and the testes undescended. The penis is very short and encircled by the scrotal folds.

857. A wax model of the external organs of generation of a male child which was christened as a female. The scrotum is bifid and does not contain testes. The two halves meet above the penis, which resembles an enlarged clitoris. There is hypospadias. The swelling in the right groin was a hernia.

858. Part of the trunk of a fœtus with a unicorn uterus and a single large right suprarenal capsule. The right horn of the uterus is rudimentary and represented by a slender cord beneath the peritoneum, which runs up to the lower end of the right ovary, from which depends the round ligament, thicker than on the normal side. The Fallopian tube passes upwards and outwards, and has a normal fimbriated extremity. The right suprarenal capsule is very large, and there is complete absence of the right kidney and ureter. The left suprarenal and kidney are normal and the ureter is present and somewhat dilated at its upper part. The left horn with the ovary and Fallopian tube with the hydatid of Morgagni are normal. 6527

859. A male syreniform monster (*sympus dipus*), showing the two lower limbs enclosed in one integument. The lower limbs are rotated outwards, so that the great toes are outermost, and the fibulæ lie between the tibiæ. There are only nine toes present. The penis is constricted at its base and the scrotum rudimentary. (For skiagram of this fœtus, see Obstet. Soc. Trans. vol. 38, p. 118.) 7005

860. A male fœtus with a left diaphragmatic hernia which contains the whole of the small intestine and the stomach, spleen, and part of the large intestine. The left lung is displaced upwards and the heart is displaced to the right. 8888

OBSTETRICAL INSTRUMENTS.

This collection of old obstetrical instruments was discovered when the separation took place between University College and University College Hospital in 1906. They were found in an old chest, where they had remained for at least 40 years, their existence having been forgotten. They were probably mainly collected during the professorship of Dr. D. D. Davis (1828–1840).

861. A modified French long curved forceps, with pin-lock, long hook handles, short shank, and curved blades which are slightly grooved internally, probably to give an extra grip. (Maker: E. Wing, 1 Drury Lane.)

862. A short curved forceps. The blades are held together by a tongue of metal in the right blade fitting into a slot in the left, and they are then held together by a sliding ring to which is attached a spring flange which fitted into grooves on the back of the handle. The end of the spring has been broken.

863. A pair of Beatty's straight short forceps, the lock of which is made by passing one blade through the broad shank of the other.

864. A pair of long, slender, straight forceps with hooked handles and a modified English lock. One blade is concave and the other is concavo-convex. The instrument is 44 cm. long.

865. A pair of long straight forceps with a pin-lock fastened by a sliding bolt. The handles are very long, 21 cm., shanks 6 cm., blades 15 cm.

866. A pair of short curved forceps (Dr. Davis's forceps) with much-curved blades, made by Botscham, Worship Street. The posterior pelvic curve of the blade is very marked.

867. A similar pair, the fenestra being slightly larger and the pelvic curve more marked.

868. A similar pair (Botscham) (Dr. Davis's forceps).

869. A similar pair (Dr. Davis's forceps).

870. A similar pair (Dr. Davis's forceps).

871. Dr. Davis's forceps, with a pin in the lower blade, to which was probably fixed a shoulder for locking.

872. A pair of short straight forceps with slightly curved blades, the points being widely separated ($2\frac{3}{4}$ inches).

873. Dr. Davis's forceps, the blades widely diverging, the points 3 inches apart.

874. Another pair.

875. A pair of short curved forceps, roughly finished.

876. A pair of straight forceps with metal ring-handles; square ends to the blades, which are separated 2 cm., fastened by a pin which is missing.

877. A pair of similar forceps, of lighter build.

878. A pair of short curved forceps, the blades covered with leather.

879. Dr. Davis's forceps, with shank 3 inches long, to which are articulated blades which are covered with leather and can be flexed, but are prevented from extending by a rachet.

880. A pair of short straight forceps, the handles and blades covered with leather.

881. A pair of short curved forceps partly covered with leather, the blades acutely curved forwards at their extremity.

882. A pair of straight forceps with ring-handles and pin-hinge.

883. A pair of short curved forceps with handles tapering to the end, and fixed by a slot or tongue and locked by a sliding ring.

884. A similar pair.

885. A pair of short straight forceps with wooden handles. Blades slightly curved and separated $4\frac{1}{2}$ cm.

886. A pair of short straight forceps with very open blades, the ends of which are 5 cm. apart.

887. A pair of short straight forceps with wooden handles.

888. A pair of short straight forceps with wooden handles.

889. A pair of short straight forceps with wooden handles fastened by brass pins.

890. A pair of short curved forceps, blades bent slightly backwards and then sharply forwards, the ends separated 5½ cm.

891. A pair of short curved forceps, wooden handles, slender blades, almost meeting when locked.

892. A pair of short straight forceps made by Savigni; ends 4½ cm. apart.

893. A pair of short curved forceps with wooden handles. (Maker: E. Wing.)

894. A pair of Dr. Davis's forceps. (Maker: Botscham.)

895. A small pair of long curved forceps with solid blades divided into three pieces by hinges; the points of the blades meet when locked. (Maker: Botscham.)

896. A pair of slender long forceps articulating at the end of the handles, which are incurved, by means of a flat pin passing through slots in the incurved ends, one of which is perforated, through which a pin is passed, forming a hinge which permits slight opening of the blades.

897. A pair of short straight forceps with hook-handles which are hinged just below the lock, which is formed by the curved shank of one blade passing through the fenestra of another. (No maker's name.)

898. A pair of straight forceps with handles terminating in hooks of unequal size; one fenestra resembles that of an ordinary forceps, the other is larger and not closed, and the lock is formed by closing its limbs with a screw-pin.

899. A pair of long straight forceps, 43 cm. long, with hook-handles and lock formed by passing one blade, which has a shoulder, through the other.

900. A heavy pair of long curved forceps with hook-handles, a pin-lock, and powerful blades separated 3 cm. at their extremity, with a shallow groove on their inner surface. (Maker: Capron, Paris.)

901. A pair of long curved forceps with hook-handles, screw-pin lock. (Maker: L. Rover & Son.)

902. A pair of slender, long, straight forceps with the English lock and hook-handles.

903. A similar pair.

904. A pair of long curved forceps with hook-handles and a pin-joint, which is fastened by a sliding bolt.

905. A cephalotribe with a lock formed by a large pin; the handles are held together by a spring in one end of the pinion and are approximated by means of a key working a ratchet on the pinion-thread. (Maker: Mette of Christiania.)

906. A craniotomy forceps with blades curved on the flat and English lock. (Maker: Wing.)

907. A craniotomy forceps with blades curved on the edge and English lock. (Maker: Botscham.)

908. A craniotomy forceps with an English lock. The shanks are curved and the blades are bent back and have a curve conformable to that of the fœtal skull. The male blade is of soft metal and has apertures into which spikes on the female blade fit. (Maker: Botscham.)

909. A similar craniotomy forceps.

910. A slender pair of bone forceps with English lock and spikes on the inner surface of the blades.

911. A pair of powerful osteotomy forceps, the fenestrated male blade of which fits into the fenestra of the female blade, which has a cutting-edge.

912. A perforator (29 cm. long) with long handles and short cutting-point.

913. A Dr. Churchill's perforator, with short points.

914. A perforator, on the principle of the bistouri caché. The instrument was evidently introduced closed, and the blade extruded and withdrawn, and the sheath opened like a pair of scissors.

915. An osteotomy forceps, the male blade of which carries at its extremity a guarded cutting-wheel.

916. A similar forceps.

917. A double crotchet with English lock and interlocking teeth.

918. A similar instrument.

919. Dr. Davis's guarded crotchet, the guard of which was covered with leather.

920. A vectis, consisting of a bent strip of copper covered with leather and slightly curved at each end.

921. A vectis with a straight handle and large slender fenestrated blade which has been covered with leather.

922. A vectis with a pelvic curve like that of the upper blade of a long curved forceps.

923. A vectis with powerful fenestrated blade well-curved and transversely grooved on the cephalic surface. (Maker: Savigni.)

924. A vectis with slender slightly-curved fenestrated blade, and handle terminating in a sharp hook.

925. A hinged vectis, the handle covered with leather.

926. A similar instrument, the blade of which is still covered with leather.

927. A hinged lever, the lock of which is fixed by a sliding bolt. (Maker: Savigni.)

928. A lever, the curve of which is alterable by turning a screw at the end of the handle, which pulls on the end by means of a metal rod.

929. A crotchet and blunt hook made of a rod of iron, 5 mm. in diameter. The crotchet has a single blunt point.

930. A crotchet and blunt hook, the crotchet-end having a broad, flat, sharp point.

931. A crotchet and blunt hook, the crotchet having a flat end with two points. The shank is bent to facilitate traction.

932. A single crotchet, with a flattened bluntly-pointed hook and wooden handle.

933. Mauriceau's guarded crotchet.

934. A guarded crotchet with English lock and wooden handle.

935. A double crotchet with hook handles articulated by the English lock.

936. A similar pair, somewhat smaller.

937. A double crotchet with wooden handles and English lock.

938. A crotchet with wooden handle and broad flat-pointed hook with sharp edge.

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