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Contributors

Western Infirmary, Glasgow.
Coats, Joseph, 1846-1899
Royal College of Physicians of London

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CATALOGUE

OF THE

PATHOLOGICAL MUSEUM

OF THE

WESTERN INFIRMARY, GLASGOW.

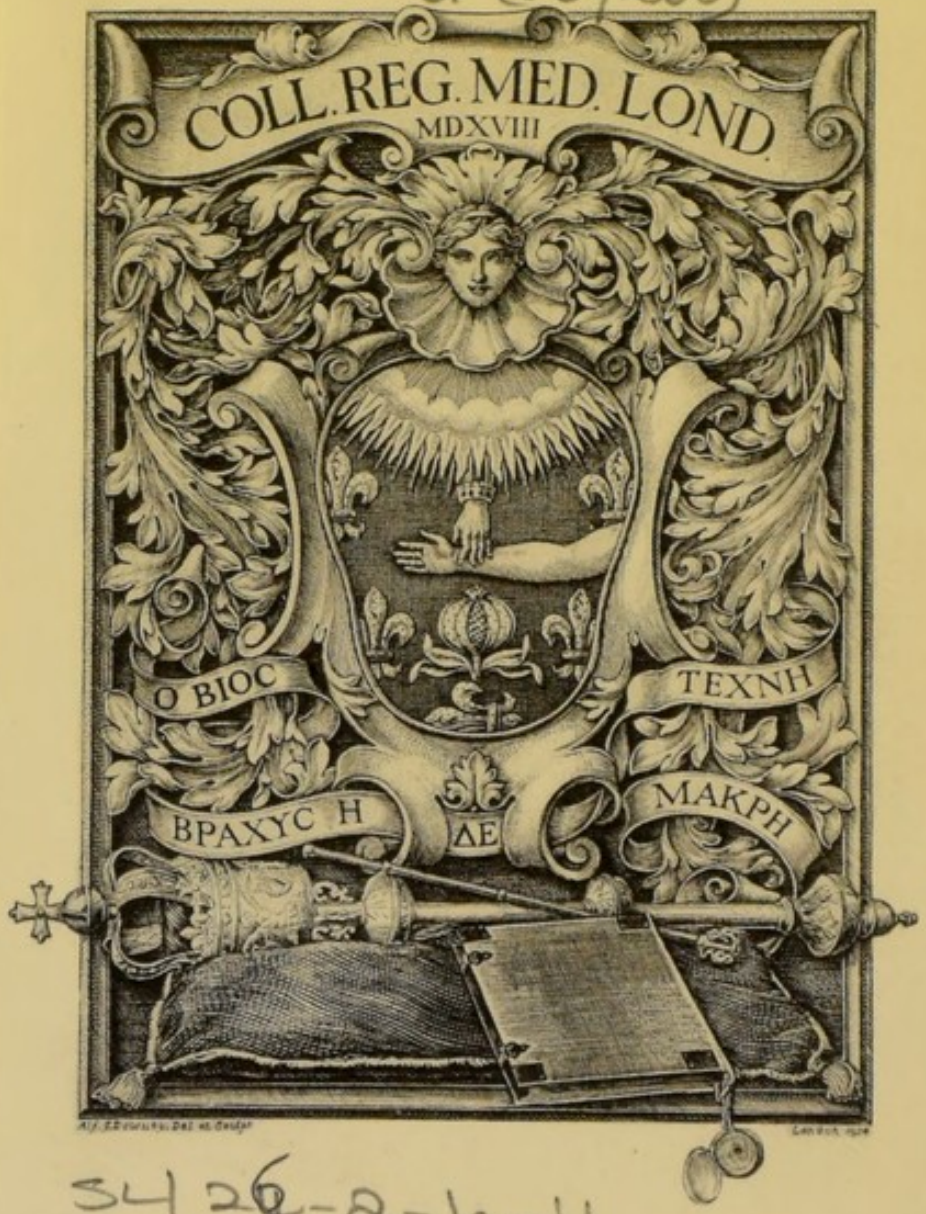
COMPILED BY

JOSEPH COATS, M.D.

GLASGOW:

PRINTED BY ALEX. MACDOUGALL, 81 BUCHANAN ST.

1885.



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PREFACE.

In compiling the Catalogue of the Pathological Museum of the Western Infirmary, the Editor has endeavoured to keep before him the position of the Museum and the uses to which it ought to be put. The Museum is connected with and derives its material from a wide field of clinical observation, and a large school of medicine. It has been the editor's endeavour, therefore, on the one hand, to keep up in the Catalogue the connection between the preparation as preserved and the case as observed in the wards during life, and on the other hand, to make the Museum available as a means of teaching. It will be seen in this way that the Museum aims at being something more than an appanage of the Pathological Department.

In the regular work of this department the aim has always been to obtain a clinical history of the cases dealt with, and these clinical histories are entered in the Pathological Reports. In composing the descriptions of the specimens for this Catalogue, resort has been had to these records, which have been found, however, in a considerable number of cases to be defective. In order to supplement them and to ensure accuracy, proof copies of the descriptions have been sent to the physicians and surgeons, with the request that they would correct and amplify them as they thought fit. There have been various degrees of compliance with this request, but in some cases a very large amount of care and labour has been expended on the elaboration of the clinical facts. The Catalogue has thus, to some extent, assumed the characters of a careful and accurate collection of cases, with the advantage

that each case has something to show for itself. It is hoped that the physicians and surgeons will see the advantage of this method, and will, in the future, do what they can to keep up this character in the Catalogue. It may be hoped also that future editors will see the importance of preserving this principle.

In writing the descriptions of the specimens the object has been to direct the attention of the student to the visible and salient points in the preparations, adding such other facts in the appearances observed elsewhere as seemed to bear on the lesions exhibited. With the Catalogue in his hand the student is able intelligently to survey the specimen and to study the case.

It may be added that the Western Infirmary was opened in 1875, and that the Museum as it stands contains the accumulations of nearly ten years. While the Museum has been formed on the principle of putting up whatever appeared sufficiently illustrative, clinical as well as pathological aspects being taken into account, yet, by a natural process, some departments have obtained a larger representation than others. The collection of aneurisms comprises a large number of specimens, and, as many of these contain careful clinical histories by Professor Gairdner, they form a very valuable series. The series of affections of the heart is also a somewhat extensive one, considering the size of the Museum, and the same may be said of the calculi. It will be found also that there is a good collection of uterine myomata, some of them of very unusual, if not unique, characters.

November, 1885.

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CATALOGUE OF

THE PATHOLOGICAL MUSEUM.

SERIES I.

BONES, JOINTS, MUSCLES.

1. Calvarium, in which the bone is exceedingly thin.

2. Consolidated Spina-Bifida. (*Dr. J. G. Lyon.*)
The membranes of the cord are seen to pass through into the obliterated sac, but it is not apparent that any part of the cord does so.

3. Spina Bifida.
The preparation presents a large flat partially obliterated sac, attached in front to the lower two lumbar and upper sacral vertebræ. A section has been carried in the middle line through the sac into the vertebral canal, and then carried outwards so as to separate the left half of sac and arches. The canal thus exposed shows, at upper part, the lower end of the spinal cord, in connection with which there is a small flask shaped cavity, which partially occupies the tumour. The neck of the flask is obviously connected with the spinal cord, but whether with the central canal or subarachnoid space cannot be made out in the matted condition of the parts.

4. Malformation of Rib.
The osseous rib becomes unduly flat, and divides into two branches, which are continued as cartilaginous rib, the latter again uniting into one. An oval aperture is thus left. *Path. Reports,* No. 24.

5. Fractures of Ribs—Development of Callus. (*Dr. D. Yellowlees.*)

The ribs are those of an insane patient, and the history of the fractures is not known. Their texture is firm, but at intervals they present spindle-shaped thickenings, and on dividing the ribs longitudinally each thickening is found to represent a fracture and the surrounding callus. One of the swellings was prepared for microscopic examination, and it was found that in the mass of callus there was not only new formed bone and connective tissue but masses of cartilage, chiefly fibro-cartilage. [The fact is to be noted that in the fractures of animals the callus normally contains cartilage, and that here in undiscovered fractures of the ribs, where rigidity could not be ensured, cartilage is also present.]

6. Fracture of Upper End of Femur, with great Displacement. (*Prof. Geo. Buchanan.*)

The fracture has taken place just below the neck of the femur, and the lower fragment has been carried upwards, so that the lesser trochanter lies immediately under the head of the femur, and this fragment is fixed by dense fibrous connections along the lower surface of the neck. There has been very great production of callus, so that enormous thickening around the head of the bone is present. Union is very firm but not complete. *Path. Reports,* 3rd February, 1879. No. 421.

7. Dislocation and Fracture of Cervical Vertebræ. (*Dr. A. Patterson.*)

The fourth and fifth vertebræ are considerably separated, partly by tearing of ligaments and dislocation, partly by a fracture of the body of the fourth vertebra. There was considerable hæmorrhage in the neighbourhood.

This preparation was obtained from the body of a tall, powerful man, who, whilst engaged in carrying bags of grain, stumbled and fell, the bag resting on the back of his neck. He lived until the fourth day, completely paralysed from the seat of injury downwards. The blood effused at the immediate seat of injury made its appearance at the surface in the form of ecchymosis only a few hours before death. *Path. Reports,* 19th February, 1877. No. 192.

8. Fracture of Cervical Vertebra. (*Dr. H. C. Cameron.*)

The seat of fracture is the fifth cervical vertebra, the body of which is seen to be almost completely destroyed. The

osseous tissue of the body has been displaced outwards, and forms a swelling on the outer aspect on either side. Besides this, the spinous process and part of the arch of this vertebra have been broken off and carried downwards, so that a gap is left through which, before removal, the cord was visible from behind. These structures impinge somewhat on the spinal canal and on the cord, which was considerably softened at this part.

The case was that of a man aged 60. A heavy door fell on him, knocking him down and pressing him over a trestle. There was motor paralysis of legs and loss of power in arms. Complete loss of sensation was detected in legs and lower part of trunk. In the legs, no response was obtained with the continuous or interrupted current. *Path. Reports*, 30th November, 1881. No. 739.

9. Fracture of Pelvis. (*Dr. G. H. B. Macleod.*)

The specimen is a good example of the lines of fracture taking place as the result of a heavy weight passing over the bone. Posteriorly, the lateral mass of the sacrum is fractured on the right side, and this fracture extends through the body of the bone towards the middle line below; on neither side was there any disjuncture of the sacro-iliac synchondrosis. In front the greater part of the pubic bones, with the symphisis, is completely separated from the rest of the pelvis, the cartilage being detached from the right bone. On the left side the ramus and part of the body of the ischium, and part of the body of the os pubis is displaced in separate fragments. A large portion of the ala of the left ilium is seen comminuted and detached from the body of the bone.

The bone was removed from the body of an old woman, aged 70, who had been knocked down and run over by a cart. On admission she was in a state of shock, and complained only of pain in the back. The urine had to be withdrawn, and was found to be bloody. There was little bruising externally. She died within forty-eight hours of the receipt of the injury. At the *post-mortem* there was considerable extravasation of blood, but entirely located beneath the peritoneum, this membrane remaining intact.

10. Fracture of Patella. (*Dr. H. C. Cameron.*)

The specimen was taken from a patient who died suddenly from aneurism of the aorta after having been under treatment for fracture of the patella for six weeks. It illustrates a possible cause of weak union. The supra-patellar aponeurosis

is seen overlapping the fractured surfaces, and to this may be attributed the fact that union has not occurred in front, while it has to a considerable extent behind. (For a full discussion of this case see paper read before the Glasgow Pathological Society by Mr. Maylard, published in *Glasgow Medical Journal* for February 1884).

11. Transverse Fracture of Patella—Partial Union. (*Dr. G. T. Beatson.*)

The patella presents a transverse fracture, which on the articular surface is double. On longitudinal section it is seen that the fracture, which is single in front, divides into two limbs towards the articular surface, its section being like a **Y**. There is thus separated a piece of patella consisting chiefly of cartilage. There is osseous union at the dense layer forming the anterior surface of the bone, but except here the union is soft, and the piece included within the limbs of the **Y** is slightly movable. The aponeurosis in front of patella is continuous, but on careful examination it is seen that there is some displacement of the fragments under the aponeurosis, the lower fragment projecting about $\frac{1}{16}$th of an inch beyond the upper.

The case was that of a woman aged 30, who sustained a compound fracture of the femur and a fracture of the patella. After three months of treatment the leg was amputated. The patient ultimately recovered, and was dismissed three months and a half after the amputation. *Path. Reports*, 1st July, 1884. No. 1210.

12. Fracture of Patella; Wiring; Ligamentous Union. (*Dr. H. C. Cameron.*)

The preparation shows, on the anterior surface and to the right, one of the ends of the wire knot, the sulcus in which it lies indicating the line of separation between the two fragments. On the posterior surface the articular surface of the patella is seen covered with cartilage in its upper part, but the surface of the lower fragment is covered with soft lobulated fat. The section is carried longitudinally through the centre of the specimen, and shows above the bony surfaces of the upper and larger fragment, and below those of the lower and smaller. Between the two is a dense entirely fibrous band uniting completely and firmly the two fragments. No bony tissue can anywhere be detected in this bond of union, but only slight movement is obtained in bending one fragment upon the other. The upper fragment measures $1\frac{1}{2}$ inches, and

the lower $\frac{7}{8}$ inch, while the ligamentous structure is $\frac{5}{8}$ inch. The ends of the fragments are rounded.

The man, aged 45, was admitted for operation in May, 1882, having seven months previously fractured his patella. Great weakness of his limb and inability to use it actively was his condition on admission. An interval of $1\frac{1}{2}$ inches existed between the fragments (See vol. ii, Ward xx.) He left with good union, and was able some months later to play football. In March, 1884, he was re-admitted for fractured skull, from which he died (See vol. v, Ward xx.)

13. Necrosed Bone from Femur. (*Dr. J. G. Lyon.*)

The sequestrum is in two pieces. One of these forms an exceedingly irregular tube, measuring $4\frac{1}{4}$ inches in greatest length. The external surface presents here and there the smoothness of the natural surface of the bone, but for the most part it is worm eaten in appearance. At the lower part of this fragment there is seen some remains of the cancellated tissue, and the shaft is here thicker than elsewhere. On passing upwards the worm eaten appearance increases, and at the upper part there are gaps in the continuity of the bone. The other fragment measures about 2 inches, and comprises merely a portion of the circumference of the shaft. In its inner part it shows some cancellated tissue.

The patient was a girl aged 17 years. Seventeen months before admission she had what was called rheumatic fever, which affected the left "leg" most severely. The thigh became swollen and painful. It was poulticed, and an opening formed on the outer aspect above the knee. This opening closed, but months afterwards another formed 4 inches above the knee on the outer side of the thigh. This remained open, and through it and a small cloaca in the new bone some dead bone was found. On 2nd October, 1880, the cloaca was enlarged by chiselling, and the sequestrum broken up and removed. The parts preserved are the main fragments, the lower part of the sequestrum, which reached to the epiphysis, having been broken up.

14. Piece of Necrosed Bone Removed from the Tibia. (*Dr. A. Patterson.*)

The portion of bone is from the outer part of the shaft, and it presents on its convex surface the smooth aspect of the surface of the tibia. This is at one place interrupted by a worm eaten appearance, and on the other surface the bone is rough and irregular in the highest degree.

The preparation was removed from a boy aged 10, on 15th February, 1880.

15. Necrosis of Stump of Femur.

The preparation shows the end of the stump with a piece of necrosed bone, the neighbouring living bone being considerably thickened by new formation of bone.

The specimen was taken from a patient who died of phthisis. The leg had been amputated for injury three years previously.

16. Rarefication and New Formation of Bone from Inflammation. (*Dr. A. Patterson.*)

This preparation indicates the effects of inflammation, on the one hand rarefying and on the other producing new formation of the bone. The inflammation affected the elbow-joint, and the preparation shows the lower half of the humerus and the upper halves of the radius and ulna. The articular surfaces are almost completely removed, being left here and there only in small smooth patches. On the three bones, and more especially the humerus and ulna, a worm-eaten appearance (rarefying osteitis) is seen extending beyond the articular surfaces. On the surface of the bones there are, scattered about irregularly, numerous little nodular and spinous projections of new bone.

The bones were obtained from the arm of an old woman, aged 63, the limb having been amputated on account of disease of the elbow. The affection commenced about five months previously with acute pain in the joint. This was soon followed by suppuration and complete disorganisation of the joint.

17. Tibia and Fibula from Syme's Stump.

These bones were removed from a patient who, some years previously, had had Syme's operation performed. The fibula is anchylosed to the tibia, and the under surface of each is covered with a thin layer of compact bone.

18. Bones. Osteo-Porosis. (*Dr. G. H. B. Macleod.*)

The preparation shows the bones of the leg macerated. The shaft of the femur is three times as thick as normal, but is a mere shell, so thin that it has been broken in several places by stripping off the periosteum. The original size of the shaft as shown in transverse section is represented by a very thin cylinder in the interior, no thicker than paper, from the anterior part of which there spring a series of concentric arches (four can be indistinctly traced) of new but very thin bone, evidently successive attempts at the formation of a new shaft. A prominence, $1\frac{1}{2}$ in. long, on the outer side of the bone has the

appearance of a node. This node also consists of a mere shell of bone, supported by firm bony trabeculæ, remains of cancellous bone.

Similar trabeculæ are seen in the interior of the old shaft and between the thin layers of new bone, while the epiphysis consists merely of a cartilaginous shell with trabeculæ in its interior. Above the inter-epiphyseal cartilage, which is intact, the medullary cavity of the femur is much expanded, its walls being formed of plates of bone so thin as to be quite flexible, and presenting a reticulated appearance when held up against the light.

The shaft of the tibia is a mere shell of bone, so thin as to be semi-translucent before being dried, but still retaining perfect rigidity. When sawn open the bone shows traces of lamellation on its inner surface. There is no enlargement of the epiphysis, and the inter-epiphyseal cartilages are entire. The cancellous bony tissue of the epiphysis is much rarified, as are also the ends of the bones, only a few trabeculæ remaining.

The shaft of the fibula is completely hollowed out from end to end, and is so thin that before being dried it was quite flexible, and had very much the appearance of a large quill. The epiphyses are mere capsules of cartilage.

There was true anchylosis, by very cancellous bone, between the outer condyle of the femur and tibia, and between the femur and patella. In the other parts of the joint the synovial membrane was completely destroyed, the ends of the bones being covered only by pulpy granulations.

In all the bones the medulla was soft and pulpy, resembling very closely in colour and consistency fresh milt-roe of fish, and was very oily. In the epiphysis and what remains of the cancellous ends of the bones, and in the new bone uniting the femur and tibia, the medullary tissue was dried-looking, and yellow, like butter. When dried the bones are white and smooth, without a trace of caries or necrosis, even in the joints; even the trabeculæ and thinnest laminæ are firm, smooth, and polished. The periosteum all over was apparently normal, and there was no appearance either of separation or of undue adhesion between it and the bone.

The case was that of a boy, æt. 13, admitted 17th November, 1880, with anchylosis of the left knee joint and extensive sinuses in the lower part of the thigh. Amputated 1st Dec.—Result, recovery.

19. Caries of Wrist. (*Professor Geo. Buchanan.*)

A cavity exists occupying the place, in great part, of the

carpal bones and wrist-joint. The lower end of the radius is eroded, and in a cavity of it there is a spongy worm-eaten sequestrum. The upper row of carpal bones is entirely gone, and the lower row nearly so, the heads of the metacarpal bones being exposed and carious. *Path. Reports*, 16th November, 1875. No. 42.

20. Tubercular Disease of the Middle Phalanx of the Index Finger. (*Dr. H. C. Cameron.*)

There is great thickening of the soft parts and of the skin, and three sinuses penetrate to the bone, while there are several prominences in the skin, as if about to form sinuses. The disease is localised in the middle phalanx and especially at its proximal extremity. This extremity is largely replaced by pulpy tissue, the cartilage having disappeared and the bone having been eroded. The rest of the phalanx is also somewhat destroyed. The other bones of the finger are not affected. *Path. Reports*, 26th March, 1882. No. 816.

21. Morbus Coxæ. (*Dr. G. H. B. Macleod.*)

The acetabulum and head of femur are preserved, and it is seen that the cartilages are completely gone, the articular surfaces being covered with granulation tissue in pretty thick layers. The head of the femur is considerably atrophied. There was a large abscess in the thigh. *Path. Reports*, 24th June, 1876. No. 109.

22. Tubercular Disease of Ankle.

The exact relation of parts is made out with a little difficulty as follows:—There is no proper ankle-joint, but the lower end of the tibia is anchylosed to the astragalus, which again is anchylosed to the os calcis; so that tibia, astragalus, and os calcis form a continuous solid bone. Between the astragalus and scaphoid there is a cavity filled with soft granulations, and the head of the astragalus is denuded of cartilage and considerably eroded, while the scaphoid is also bare of cartilage, and reduced to about half its thickness. A sinus or sinuses have communicated between the surface and this cavity. In sawing through the bones of the foot they were found generally to be exceedingly soft, and, in fact, they can be cut with a strong knife.

23. Caries of Ankle-Joint. (*Dr. H. C. Cameron.*)

The preparation shows a section through the articulation between tibia and astragalus. The cartilages have disappeared,

and the synovial membrane is in the form of a pulpy tissue. It was found on dividing the parts that the bones of the foot generally could be cut with a strong knife. *Path. Reports*, 2nd November, 1882. No. 866.

24. Caries of Tarsus with Necrosis of Internal Cuneiform.

25. Retro-Pharyngeal Abscess from Disease of Vertebræ. See also following preparation. (*Dr. W. T. Gairdner.*)

In the preparation the anterior wall of the abscess is shown undermining and bulging forward the posterior wall of the pharynx, which is considerably thinned; this bulging is shown in the preparation by the removal of the anterior wall of larynx and trachea. The abscess was a very irregular one passing down along the bodies of the vertebræ from the second cervical to the third dorsal; it was everywhere lined with a yellow gelatinous membrane, which is partly preserved in the preparation.

The abscess had extended to the spinal canal, and caused softening of the cord, see next preparation. *Path. Reports*, 12th April, 1883. No. 970.

26. Tubercular Abscess affecting Dura Mater of Cord. (*Dr. W. T. Gairdner.*)

This was a case of tubercular disease of the cervical vertebræ resulting in abscess, as shown in preceding preparation. The abscess extended into the spinal canal, causing a gelatinous thickening of the dura mater for about $2\frac{3}{4}$ inches of its length. This condition is shown in the preparation, and in some places the thickening amounts to half an inch. The surface is very irregular, and it formed part of the wall of an abscess lying in front of the cord. The cord was pressed on and softened in this region.

The case was that of a man who was affected with progressive loss of motion beginning in the arms, and extending till there was almost complete paralysis of all the limbs. Sensation was also impaired latterly. Invasion of the disease was rapid, only sixteen days before admission, when he first had paralytic symptoms in the right arm, and stiffness in the right side of the neck, no evidence existing, apparently, of previous disease of the bones. While under observation, temperatures were only slightly elevated, at first almost normal, afterwards averaging about 100°—absolute maximum, 101°. Death

occurred, about three months after the first symptoms, by mere asthenia, without any new phenomena, except difficult respiration shortly before death, and possibly disorder of articulation and deglutition for some time before. *Path. Reports*, 12th April, 1883. No. 970.

27. Tubercular Disease of the Bodies of two Vertebræ with Abscess. (*Dr. Jas. Finlayson.*)

The vertebræ affected are the second and third lumbars, and, as shown in preparation, the cartilage between these is almost entirely destroyed, while the bone is eroded only to a very limited extent, and that only in front, as shown in the section, and still better in the following preparation, which is a drawing of the appearances in the fresh state. The bodies of these vertebræ are infiltrated with a yellowish-white material, which has displaced the normal red bone marrow without, however, immediately destroying the bone. This infiltration extends, in the case of the third vertebra, almost through its entire thickness from above downwards in its anterior part, but much less deeply in the second.

An abscess existed in connection with this disease, a portion of which has been preserved in the preparation. The abscess extended from the front of the sacrum as high as the level of the second lumbar vertebra, and had a very irregular outline.

In addition, there was in this case tubercular peritonitis, rupture of the intestine, acute peritonitis, and amyloid disease affecting the spleen.

During life, the patient, a lad aged 21, complained of pain in the back, with hectic fever. After a time a marked Pott's curvature was detected. Death resulted from acute peritonitis. *Path. Reports*, 31st May, 1883. No. 988.

28. Water-Colour Painting of the above, made in the Fresh State.

29. Acute Curvature of Spine, after Healing of Disease of Vertebræ. (*Dr. W. T. Gairdner.*)

The preparation is the lateral half of the cervical vertebræ sawn longitudinally. It is seen that the anterior portions of the third and fourth, and, to a certain extent, of the second vertebræ are atrophied, the section of the second especially being in the form of a wedge, the thin end of which is directed forwards. This atrophy has caused a deep concavity, but this concavity as well as a portion of the anterior aspect of the bodies is occupied by a mass of dense bone which lies mainly

in front of the third vertebra, but is separated from it by ligamentous structures. With the concavity in front there corresponds a marked convexity behind, with an extreme narrowing of the spinal canal. The point of greatest constriction is near the upper extremity of the third vertebra, where the total width from before backwards is about $\frac{1}{4}$ of an inch.

The patient was discharged from the army, presumably on account of incipient paralytic symptoms, more than four years before his death; but there was evidence that he had served 17 years previously to his discharge without appreciable inconvenience from his disease, which, however, presented itself in the form of a swelling in his neck during adolescence, noticed as such by his father at the time, but attributed to stooping in his work. Age at enlistment, 18, at discharge, 35, at death, 39. Admitted to the Infirmary in an insensible state from drink, previously to which he was stated to have been walking about with a companion. Paralysis of arms, and also, but to a less extent, of legs, after admission. Death evidently due to paralysis of respiration. There was no recent disease, other than the paralysis, and no important disease of any of the internal organs of chest or abdomen. (See *Glasgow Medical Journal*, March 1879, p. 248.) *Path. Reports*, 26th June, 1875. No. 14.

30. Humerus, Radius and Ulna, and Femur, from a case of Rickets.

The humerus shows very marked swelling of the upper end of the shaft, giving the bone a strikingly clubbed appearance, the enlarged upper end contrasting with the thin shaft. The femur, which has been divided longitudinally, presents enlargement at both ends, and it can be seen, even with the naked eye, that the swollen part consists partly of cartilage and partly of ill formed bone.

The radius and ulna are from the right side, and they present a curvature forming nearly a right angle about the junction of middle and lower thirds of the bones. The curvature is with the concavity forwards and outwards, so that the hand must have projected somewhat outwards from the general direction of the forearm.

31. Spinal Column from the same case of Rickets.

There is a marked lateral curvature in the middle dorsal region. It will be noticed that the curvature is much more marked in the bodies of the vertebræ than in the spines, there being considerable rotation of the vertebræ as well as lateral displacement.

32. Enlargement of the Junction of Cartilaginous and Osseous Ribs, constituting the "Rachitic Rosary."

The preparation is from the chest wall of a child affected with rickets. The first eight ribs are shown, and it is seen that each presents a marked swelling at the junction of the osseous and cartilaginous portions. This swelling is seen better in the inside than the outside.

33. Curvature of Clavicle from Rickets. (*Dr. Jas. Finlayson, Children's Hospital.*)

The preparation shows the left clavicle from a child 5 years of age. The bone has a somewhat sharp bend with its convexity forwards situated about the junction of the inner and middle thirds of the bone. The prominence caused by this curve produced an appearance suggestive of fracture. The other clavicle presented a similar appearance, and the other bones showed the characteristic lesions of rickets. More particularly the rachitic rosary was very prominently seen in the chest wall.

34. Curvature of Tibia and Fibula from Rickets. (*Dr. H. C. Cameron.*)

The bones of this preparation were taken from the leg of a child amputated for extensive disease of the knee-joint, and are intended to show one of the common forms of curves occurring in rickets. The bend is an antero-external one, situated in the tibia a little below the middle of the shaft, and in the fibula on a lower level than that of the tibia—about the junction of the middle and lower thirds. The wedge of bone seen wired in position was removed to ascertain the relative thickness of the concave and convex borders of the shaft, but no difference was observable. Above and below, the superficial part of the bone has been removed to show the epiphyseal lines which, though somewhat irregular and widened, probably present no particular feature of interest.

It will be noticed that besides the curves the bones have lost their more marked normal anatomical characters; thus, the anterior border or "shin" of the tibia is rounded, and the section of the shaft at its most affected part oval instead of triangular. The fibula is similarly affected, presenting at no part except the extremities the regular anatomical features. The tendency in both bones has been to present at the most curved parts a defined margin with flattening at the sides.

35. Massive Fibroma of Lower Jaw removed by Operation. (*Mr. E. Maylard.*)

The preparation embraces the tumour, which is about the size of the fist, with rather more than half of the lower maxilla—namely, from the right maxillary articulation to the left side of symphisis. The tumour surrounds the jaw, completely burying the bone from the symphisis up to the neck of the condyle. In section it is seen that the bone of the jaw remains comparatively unaffected, but the molar and tricuspid teeth, which project from the upper surface of the tumour, are loosened and somewhat displaced. The tumour is lobulated on the surface, but otherwise it seems to surround the bone equally. Its tissue is composed of dense fibrous tissue.

The case was that of a woman aged 28. She first noticed the tumour a year before admission, when it commenced as a small swelling projecting from the outer surface of the maxilla. Within the last month or two it began growing much more rapidly. The operation was quite successful, and at this time, three months afterwards, there is no appearance of recurrence. (For fuller account see Transactions of Pathological Society of Glasgow, and *Glasgow Medical Journal* for 1885.)

36. Cyst of Head of Fibula. (*Prof. Geo. Buchanan.*)

"A. L., æt. 12, a healthy well developed country lad, was sent to consult Professor Buchanan concerning a large oval-shaped tumour on the outer side of the right leg, extending downwards from the fibular articulation for about six inches, and measuring from its inner side to the middle of the leg behind, over its most prominent part, eight inches. On the inner side it was pretty well circumscribed; a slight furrow existed between it and the tibia, but behind, its limits were lost in the sural muscles. It was immovably fixed, smooth and uniform in its outline, felt hard on palpation, with here and there a spot which gave a semi-elastic sensation, with eggshell crackle, on firm pressure. The skin was freely movable over it, and showed very plainly the blue veins coursing over the tumour. No pain was felt on manipulation, or in walking, which was not in any way interfered with. The glands in the groin were unaffected. He gave the following account of its causation and history:—Twelve months ago he had fallen from a tree and bruised his right leg below the knee joint, the effects of which were soon relieved by fomentations, but there was left a slight thickening of the tissues where the blow was struck. Shortly after he received another bruise on the same part by falling over a stone, causing it to become swollen and

painful. Treatment by rest and fomentations relieved the pain and reduced somewhat the swelling, which after a little began slowly to increase in spite of the counter irritation applied to discuss it. It went on increasing but slowly at first, then rapidly for a short period, and lately had been stationary, or not increasing to any appreciable extent.

"*4th February.*—After a consultation, it was agreed, as the tumour was considered to be malignant, to amputate the limb through the knee-joint, and patient was put under chloroform; but Professor Buchanan, prior to doing this, cut down on the tumour on its outer side to make certain of its nature. Cutting through the skin a bony shell was laid bare, through which, when the knife was plunged, a dark-coloured serous fluid spurted out with considerable force. Passing the forefinger through the opening thus made, he found that the bone was expanded to a mere shell without any solid contents, and suspecting it to be a simple cyst, he prolonged the incision for nine inches on the outer side over the fibula. The tumour was then carefully dissected out, the shaft of the bone being divided by bone forceps one-and-a-half inches below the termination of the tumour. It was raised up and dissected from the structures behind, and disarticulated. The musculo-cutaneous nerve was so firmly adherent to the surface of the tumour as to necessitate its being separately dissected off, a procedure which led to its being isolated from all surrounding tissues for about four inches in its course. A vein and two small arteries were ligatured; a drainage-tube was inserted, the wound being sutured over it, and dressed antiseptically.

"*1st April.*—The wound had healed without any difficulty, and patient was now allowed to get up, but though he could bear the weight of his body on the affected limb, he could not walk on account of the loss of power over the extensor muscles of the foot, due no doubt to the injury to which the nerve was unavoidably exposed in the excision of the tumour. "Prickling" of the toes was complained of for six weeks after the operation, but this has slowly disappeared, leaving sensation normal.

"*8th April.*—Dismissed cured.

"*Remarks by Prof. Buchanan.*—Cystic tumours of the jaws are not uncommon, even serous cysts. But of bones of the extremities examples must be very rare, as I cannot find any reference to such a case as that here recorded. The most careful microscopic examination failed to detect in the reddish fluid which escaped anything resembling structure, except some blood cells, and the membrane with which

the cavity was lined was in all respects like a simple serous membrane.

"The measurement of the tumour was $3\frac{1}{2}$ inches long and $2\frac{5}{8}$ inches in diameter; it was of a fusiform shape."

In the accompanying figure it is seen that the cyst, whose wall is formed of a thin layer of bone, is somewhat lobulated in outline, and seems to be formed by an expansion of the bone.

37. Bursa Patellæ greatly enlarged and thickened from Chronic Inflammation. (*Prof. Geo. Buchanan.*)

The specimen is seen to present all the appearances of a large thick-walled cyst, having upon its unopened surface something of the shape of the front of the knee. On cutting into the cyst it was found to be filled with a gelatinous material, part of which may still be seen adhering to the wall

as a brownish, somewhat fungoid looking mass. In the fresh state this presented the characters of coagulated albumen. The walls of the cyst are about $\frac{1}{8}$th inch thick, white, and of hard, almost cartilaginous consistence.

The tumour was said by the patient to have existed for about three years. *Path. Reports*, 27th January, 1881. No. 623.

38. Adipocere.

It was obtained from a grave in the College Churchyard, where railway operations were progressing. The grave was full of water. There are several pieces of a whitish substance which has a greasy feeling and is rather brittle. It floats in water. Very little distinct appearance of structure can be made out, but in some parts there is a kind of fibrous appearance. Under the microscope these fibrous parts present remains of muscle and tendon, the former showing sometimes a trace of transverse striation, and the latter swelling slightly with acetic acid. The structure is very opaque, and liquor potassæ renders it rather more transparent, sometimes causing an irregular fibrous appearance to develop, suggestive of the structure of the skin. The substance melts with heat into a clear oil. *Path. Reports*, No. 142.

SERIES II.

ORGANS OF THE CIRCULATION.

1. **Heart of Fœtus.** (*Dr. J. G. Lyon.*)
It shows foramen ovale, ductus arteriosus, &c. A piece of whalebone has been passed through the foramen ovale.

2. **Atrophy of Heart in Phthisis.** (*Dr. Jas. Finlayson.*)
From a girl 16 years of age. The heart only weighed four ounces and three-quarters, and is almost entirely devoid of external fat. Illness of six months' duration, with intense pyrexia and ulceration of the bowels as well as lung disease. *Path. Reports*, 5th October, 1876. No. 140.

3. **Enlargement of the Left Ventricle in Cirrhosis of Kidney.** (*Dr. Jas. Finlayson.*)
The heart as a whole weighed 19 oz., the enlargement being entirely of the left ventricle and without valvular disease. In preparation right ventricle is opened, and is seen to be pushed upwards and partially filled up by the prominent septum. The kidneys showed advanced interstitial nephritis.
The case was one of eight years' duration. The patient was 19 years old, and employed in the spirit trade. *Path. Reports*, 27th October, 1876. No. 149.

4. **Fenestration of Aortic and Pulmonary Valves.**
In both sets of valves the marginal parts show distinct tendinous cords, and in the case of the pulmonary there is a little pouch between two of the curtains. *Path. Reports*, No. 705.

5. **Extreme Fenestration of Aortic Curtains.** (*Dr. D. Yellowlees.*)
There is no thickening of the aortic valve, but the curtains are somewhat deeper than normal, and the line of contact is

considerably farther from the edge than usual. The free part of the curtain beyond the line of contact is very thin, and in some places highly fenestrated, so that actual tendinous cords are in some places present. The edges of the curtains are inserted somewhat high in the aorta, and in one case the aortic wall forms a distinct projection into which the angles of the curtains are inserted. *Path. Reports*, 6th January, 1881. No. 609.

6. **Deformity of Aortic Valve.** (*Prof. Geo. Buchanan.*) The principal fact here is coalescence of the proximal borders of the curtains, and the formation of little tendinous bands passing up from the coalesced curtains on to the wall of the aorta, these resembling chordæ tendineæ. In the coalesced portion of the curtains there are calcareous masses. The heart was enlarged (weighing 14½ oz.), chiefly the left ventricle. *Path. Reports*, 17th January, 1878. No. 287.

7. **Malformation of Aortic Valve (Congenital)—Coalescence of two Curtains.** (*Dr. W. T. Gairdner.*) The curtains are a large and a small one. The large is posterior and right, the small anterior and left (cut through on opening the vessel.) In the middle of the large curtain there is some thickening and calcareous deposition at the margin. Deep in the pouch a very partial septum is visible, which passes about ¼ inch up the sinus. Otherwise the curtain is of normal thickness. The heart was slightly enlarged, weighing 12 oz. The case was one of renal disease, and there were no cardiac symptoms. The valve, with its two curtains, seems to have acted perfectly. *Path. Reports*, 26th January, 1880. No. 516.

8. **Peculiar Malformation of Aortic Curtain (probably congenital) — Mitral and Aortic Disease — Adherent Pericardium.** (*Dr. M'Call Anderson.*) The aortic curtains are thickened and contracted, forming three thickened bands of a crescentic shape. From the points of junction of these bands there pass upwards groups of small tendon-like bands, some of which are free except at their extremities, and some partially attached by their lateral borders to the aortic wall and each other. These bands are inserted above at a level corresponding with the normal insertion of the curtains. The mitral valve is much thickened both in its curtains and chordæ tendineæ, and the apices of the musculi papillares are to a considerable extent transformed

into fibrous tissue. The mitral orifice is only slightly contracted. The pericardium was firmly adherent throughout, and the heart much enlarged, weighing 25½ oz. The enlargement was chiefly of the left ventricle. During life there were the usual symptoms of valvular disease, which began five years before death. The patient was a man, aged 23, and there was no history of rheumatism. *Path. Reports*, 27th September, 1877. No. 250.

9. **Globular Vegetations in the Left Ventricle.** (*Dr. M'Call Anderson.*)

The case was one of great enlargement of the heart, which weighed 24 oz., without valvular disease. The thrombi are of various sizes, and they are seen to project between the trabeculæ. *Path. Reports*, 7th June, 1876. No. 102.

10. **Globular Thrombi in Right Ventricle.** (*Dr. W. T. Gairdner.*)

Larger and smaller white thrombi are visible. The heart was somewhat enlarged and the ventricles dilated, but there was no valvular disease. There were similar thrombi of smaller size in the left ventricle. There was the unusual combination of phthisis pulmonalis with hæmorrhagic infarction, the pulmonary artery being largely plugged. The kidneys were in a state of granular atrophy, weighing 3 and 3¼ oz. There was also a softening of pons varolii. During life the symptoms were those of Bright's disease and phthisis pulmonalis, with extreme dyspnœa and urgency on admission. *Path. Reports*, 21st July, 1882. No. 843.

11. **Gigantic Thrombus in Left Auricle; Mitral Contraction.** (*Dr. W. T. Gairdner.*)

The mitral orifice is so contracted as not to admit the tip of the finger, and there was also thickening of the tricuspid valve. In the left auricle there is an enormous thrombus. It is adherent to the anterior wall of the auricle, and consists of a globular part 2 inches in diameter, and an irregular tail hanging from the lower border of this, and extending nearly to the mitral orifice. On cutting into the globular part a brown juice escaped, and the preparation shows an internal cavity. The symptoms were chiefly of abdominal disease requiring paracentesis; on one occasion only, a murmur was detected over the heart, but could not be carefully examined. *Path. Reports*, 2nd July, 1884. No. 1212.

12. Large Thrombus in Left Auricle and at Mitral Orifice. (*Dr. W. T. Gairdner.*)

The preparation shows left auricle displayed by removal of part of its wall and the mitral valve opened up. In the auricle there is the half of a globular thrombus, which measured 1½ in. in diameter. The central parts of this thrombus contained a light brown pus-like fluid, and all that remains in preparation is the rind of thrombus, which contained the fluid as in a cyst. The thrombus was prolonged into the appendage, although in preparation the connection has been separated. This portion distends the appendage, and is also hollow. A smaller thrombus is situated immediately below the globular one just at the border of the mitral orifice. This orifice is greatly contracted by the usual thickening and funnel-shaped deformity, and the thrombus, acting as a valve, almost closed the orifice.

There were infarctions in the spleen, kidneys, and lungs. The latter being explained by presence of thrombi in the right auricle.

The patient suffered from symptoms of cardiac disease, latterly with extreme dyspnœa. A V. S. murmur was detected, with great enlargement both of heart and liver. Treatment ineffectual throughout. *Path. Reports*, 22nd October, 1881. No. 718.

13. Thrombus in Pulmonary Artery. (*Dr. W. T. Gairdner.*)

This preparation is from the case of acute pericarditis, with thrombi in right auricle preserved as No. 46. The thrombus is pyriform in shape, and occupies the first part of the pulmonary artery, almost occluding it; but it also passes partly into the principal branch. The thrombus was softened in the centre, so that there was merely an external rind with fluid contents. *Path. Reports*, 6th June, 1883. No. 994.

14. A Localised Dilatation or Aneurism of Left Ventricle. Obstruction of Coronary Artery. (*Dr. G. P. Tennent.*)

The external configuration of the left ventricle is greatly altered, there being a large rounded bulging of the apex region, especially on the anterior aspect. On viewing the heart from the inside, this bulging is seen to be due to a localised dilatation of the ventricle forming a distinct pouch with comparatively thin walls, having a diameter of about 2½ inches. The tissue of the ventricle passes partially into the sac, and musculi papillares are seen to be partially flattened out on its

internal surface, the greater part of the wall of the sac, however, being composed of fibrous tissue. The general wall of the ventricle is normal, as is that of the right ventricle; the latter presenting, however, a general dilatation. The organs generally presented evidences of venous engorgement.

On examination of the coronary arteries, they are found considerably atheromatous. The descending branch of the left is rigid, and at a point about an inch from the bifurcation is found to be occluded by thrombus, the artery beyond this being collapsed and fibrous. This vessel is distributed to the affected portion of the wall of the ventricle. The right coronary artery is very tortuous and dilated, and posteriorly passes beyond the septum to supply a considerable portion of the left ventricle.

The patient was a woman who had suffered from symptoms of cardiac disease for about 18 months. *Path. Reports,* 17th January, 1883. No. 916.

15. Acute Endocarditis of Aortic Valve. (*Dr. W. T. Gairdner.*)

Along the line of contact of all the three curtains there is an irregular warty condition, the projections being continuous and somewhat soft. The curtains are somewhat thickened from chronic endocarditis, the acute attack having supervened on an older endocarditis. The patient was a miner, aged 45, who had an attack of rheumatic fever 18 months before admission. *Path. Reports,* 21st April, 1876. No. 91.

16. Acute and Chronic Endocarditis, with Prominent Vegetations, affecting Aortic and Mitral Valves. (*Dr. M'Call Anderson.*)

The aortic curtains are considerably shortened, and from their edges project pendulous irregular vegetations, which are very brittle. There are also prominent vegetations on the auricular surface of the mitral valve, and one patch on its ventricular aspect. There is also a small patch over the unprotected spot.

The heart was greatly enlarged, weighing 18¼ oz., and its tissue presented well marked fatty degeneration. *Path. Reports,* 23rd or 24th August, 1883. No. 1032.

17. Acute Endocarditis of Mitral, in Case of Chorea. (*Dr. M'Call Anderson.*)

The edges of the valve on the auricular side are fringed with warty vegetations, some of them somewhat bulky.

The case was that of a girl aged 20, who had had two attacks of chorea, the second having begun with a severe fright. This attack was very severe, so that she could not speak or swallow, and she died. There was no history of rheumatism. *Path. Reports*, 15th March, 1882. No. 790.

18. Acute Endocarditis of the Aortic, Mitral, and Pulmonary Valves. Peculiar Localisation. (*Dr. W. T. Gairdner.*)

There are here very prominent warty vegetations attached to the valves mentioned, and it is peculiar that these have a somewhat limited localisation. This is best seen in the aortic and pulmonary valves. In the aortic about the halves of two of the curtains (the left and anterior) are occupied by a very prominent almost mulberry-like excrescence, which projects at least a quarter of an inch from the ventricular surface. The remaining curtain has merely a small warty projection here and there along its line of contact. One of the curtains of the pulmonary valve also presents a limited but very prominent excrescence. In the case of the mitral the outgrowths are present all round, but much more prominent in some parts than others.

In addition, there was in this case embolism of the pulmonary artery and of the spleen and kidneys, as well as atrophy and œdema of the brain, with cortical softenings. No embolism of the cerebral vessels was found.

The patient was a woman aged 40, admitted with dyspnœa, œdema, &c., and loss of power on left side, with stupidity. *Path. Reports*, 7th December, 1882. No. 885.

19. Acute Endocarditis, Aneurism of Aortic Valve, &c. (*Dr. M'Call Anderson.*)

The aortic valve is seen to be much disorganised and coated with fibrinous deposit. One of the curtains is completely broken down, a portion of it hanging loose and covered with bulky vegetations. Another is the seat of an aneurism whose ventricular surface is exceedingly rough and shaggy, and presents an open mouth. On the aortic side the curtain is smooth, and the aperture of the aneurism presents rounded margins. The mitral curtains are thickened, and present a few warty vegetations. The heart was greatly enlarged, weighing 23 oz. *Path. Reports*, 29th January, 1877. No. 180.

20. Aortic Valvular Disease with Aneurisms of the Valve. (*Dr. W. T. Gairdner.*)

The curtains present very abundant projections, partly

festooned. Two of them present valvular aneurisms in the form of little pouches, projecting towards the ventricles. They are both situated to the side of a curtain, and slightly down from its edge. The left ventricle is greatly hypertrophied with the usual elongation of the heart.

There was an aneurism of a branch of the posterior cerebral artery, and cerebral hæmorrhage. Also embolism of the spleen. *Path. Reports*, 13th February, 1880. No. 525.

21. Acute Endocarditis of Mitral Valve. (*Dr. Jas. Finlayson.*)

There are abundant warty vegetations along the line of contact of the mitral curtains, with very slight thickening of the curtains generally. One small vegetation existed on a curtain of the aortic valve. In addition, there was acute pericarditis and pleurisy, and infarctions in spleen.

Acute rheumatism, affecting various joints, existed for six weeks before death. High temperature, delirium, generalised bronchitis, and albuminuria developed after admission. The patient was a woman 48 years old. This was her first attack of rheumatism. *Path. Reports*, 17th December, 1875. No. 52.

22. Acute Endocarditis affecting Left Auricle. (*Dr. M'Call Anderson.*)

There were warty vegetations on the curtains of mitral valve, especially the anterior curtain. In addition, the large patch, shown in the preparation, of fibrinous deposit on the left auricle was found, it is very irregular in outline, and presents a shaggy surface. There was very slight endocarditis of aortic valve.

There was a large embolic infarction of the spleen (see No. 82), the organ itself weighing 26½ oz. There was also embolism of the left middle cerebral (see Series IX, No. 16.) The kidneys were much enlarged, weighing each 12½ oz., and having the characters of the large white kidney with tubular hæmorrhage. *Path. Reports*, 12th June, 1883. No. 996.

23. Ulcerative Endocarditis. (*Dr. J. C. Renton.*)

The appearances are considerably destroyed, as the *post-mortem* was made in a private house, and the structures had to be transferred. The aortic curtains were found fringed with an exceedingly soft and friable material. It formed a very abundant deposit on the right semilunar curtain, and where this existed the valvular structure is disorganised, so that when

the deposit was scraped off a circular gap, seen in the preparation, was left. On the other curtains there is very little deposit, except in the parts adjoining that just described. In addition to these conditions there is some thickening of the semilunar curtains, and also a localised thickening of the endocardium of the ventricle, extending along the base of the curtains in the form of a dense tendinous-looking layer. The mitral orifice is also furnished with a very abundant fringe of soft vegetations. The spleen was greatly enlarged, weighing 13½ oz., and before opening it, several hard parts were detected in it, which felt like infarctions, but in cutting into them little more than fluid blood was found. There were hæmorrhages in the walls of the intestines, in the brain and its membranes, and in the kidneys. (Series VI, No. 23.) It should be added that the pericardium was completely adherent.

The patient was a man aged 34, who had had previous attacks of acute rheumatism. The fatal illness lasted only about a week. *Path. Reports*, No. 537; also the *Glasgow Medical Journal* for October, 1880.

24. Aortic, Mitral, and Tricuspid Valvular Disease. (*Dr. W. T. Gairdner.*)

The aortic valve is converted by the coalescence of its curtains into a diaphragm with thickened edges. The normal division is indicated by groups of adherent tendinous bands, which pass at three points from the diaphragm on to the aortic wall. The mitral valve is greatly thickened, and its curtains coalesced, and there is frequent calcareous deposition in its curtains, the calcareous matter being exposed at one point as a rough surface immediately beneath the aortic valve. The tricuspid curtains are not remarkably thickened, but they are coalesced, so as to form a funnel-shaped projection into the ventricle, at the apex of which the orifice barely admits the tip of one finger. There was also a partial malformation of the pulmonary valve, the curtains being slightly coalesced, and tendinous bundles passing from them to the wall of the artery. There were a few small infarctions in the spleen.

The murmurs, as observed during life, were difficult of analysis, but were said to be V. S. and V. D. with a most questionable trace of A. S.; diagnosis of "valvular lesions probably both of aortic and mitral valves, if not also of right side." Heart and liver much enlarged; lividity, orthopnœa, dropsy, &c. Pericardium was adherent. *Path. Reports*, 16th December, 1880. No. 604.

25. Retraction of Aortic Curtains, Peculiar Deformity of Mitral and Tricuspid Valves. (*Dr. W. T. Gairdner.*)

The aortic curtains are markedly shortened and thickened so as to present the appearance of crescentic elevations, and, before opening the vessel, the valve was found absolutely incompetent. The left ventricle was greatly hypertrophied. The mitral and tricuspid valves present a much more membranous appearance than normal. They form an almost continuous diaphragm, composed of comparatively soft membrane without much thickening, to the edges of which the chordæ tendineæ are attached. The orifices are at the apices of these diaphragms, but although somewhat contracted are not greatly so, the mitral admitting one finger very freely, and the tricuspid three. The pericardium was completely adherent.

The case was that of a man, aged 29. Signs of acute pericarditis were present 13 months before death. These subsided but left signs and symptoms of aortic regurgitation, which had been present along with the pericarditis. Latterly, the usual symptoms of severe cardiac disease supervened. *Path. Reports*, 4th May, 1882. No. 810.

26. Aortic Valvular Disease, Tear of Valve, Aneurism beneath Valve. (*Dr. W. T. Gairdner.*)

The curtains of the aortic valve are considerably thickened and their edges coalesced. There is no coalescence between the posterior and right semilunar folds, but instead of that a space of about an eighth of an inch. In the neighbourhood of this space both curtains show abundant shaggy prominences. In the half of the posterior curtain next this space there is a deep tear, extending from its edge nearly to its middle, and of such a character as to make of the marginal part of the curtain a flap, on which are rough projections like those just referred to. Immediately beneath the aperture between the two curtains, there is the rounded aperture of an aneurism $\frac{3}{8}$ of an inch in diameter, the borders of the aperture being partly formed by the proximal curtains. The aneurism projects backwards for a distance of about $\frac{3}{4}$ of an inch, lying behind or in the aortic wall in a position corresponding with the pouch of the posterior curtain. The aneurism can be seen externally as a prominence somewhat elongated from side to side at the base of the aorta, between it and the right auricle, near the septum. The aperture is immediately above the undefended space, although separated from it by a distinct ridge of firm tissue. The internal wall of the aorta, corresponding with the position of the aneurism, presents a transverse

tear, apparently extending through the internal coat. This tear is about half an inch in length and passes beyond the edge of the aneurism. There is no communication between aorta and aneurism, however, nor between aorta and pericardial sac.

In addition to these lesions the mitral valve was contracted, and there were embolic lesions in kidneys and spleen. There was also atrophy of the brain. The symptoms were those of cardiac valvular disease generally, with physical signs mainly of aortic regurgitation, but also of mitral disease. *Path. Reports*, 13th November, 1883. No. 1059.

27. Acute Endocarditis of Aortic Valve, Disorganization and Thrombosis of Valve. (*Dr. G. P. Tennent.*)

The valve is greatly altered. Viewed from the ventricular aspect, shaggy masses are seen pouting out, some of which hung into the ventricle. From the aortic aspect the valve is seen to be mostly replaced by large excrescences, and there are various tears in the remaining valvular structures. In one of the curtains there is a considerable aperture surrounded by shaggy projections, apparently a valvular aneurism which has ruptured. *Path. Reports*, 25th July, 1884. No. 1224.

28. Aortic Valvular Disease with Exposed Calcareous Material. (*Dr. M'Call Anderson.*)

Two of the curtains are nearly completely coalesced and greatly thickened, there being a thick, hard septum at their point of union. The ventricular surface of the coalesced curtains presented shaggy fibrine, on partially removing which an exposed calcareous surface was found. The heart was enlarged entirely from hypertrophy of the left ventricle.

A portion of kidney is preserved, showing a small cicatrix from an old embolic lesion. *Path. Reports*, 24th November, 1879. No. 491.

29. Great Contraction and Funnel Shaped Deformity of Mitral Valve in a Boy of 13. (*Dr. G. P. Tennent.*)

The greater part of auricle and whole of ventricle have been removed. It is seen that the curtains of mitral valve and chordæ tendineæ are greatly thickened and coalesced, so as to form a funnel which projected into the ventricle. At the apex of this funnel there is a small orifice not larger than the diameter of a goose quill, and fringed with small warty projections. Besides this orifice there are three small ones

between the thickened chordæ tendineæ of right segment of valve. The right ventricle was greatly dilated.

The patient died, apparently from the effects of an acute pleurisy of ten days' duration; but he suffered from general œdema, dyspnœa, and pain in precordial region. There were also symptoms of acute Bright's disease, and the kidney showed a generalised fatty degeneration. *Path. Reports*, 20th May, 1882. No. 822.

30. Contraction and Calcareous Infiltration of Mitral Valve. Thrombus in Left Auricle. (*Dr. D. C. M'Vail.*)

As seen from the auricle, the mitral orifice is greatly contracted, only admitting the merest tip of the finger, and fringed with rough calcareous projections. In the left auricular appendage there is a large globular thrombus, and there was one of somewhat similar size opposite the foramen ovale. The aortic curtains are thickened and partly coalesced. The pericardium was firmly adherent throughout.

There was a large hæmorrhagic infraction of right lung, with plugging of corresponding artery. The uterine veins also presented thrombosis. *Path. Reports*, 2nd October, 1882. No. 853.

31. Great Contraction of Mitral Orifice, very large Thrombus in Left Auricle, Coalescence of Aortic and Tricuspid Curtains. (*Dr. Jas. Finlayson.*)

The chordæ tendineæ and neighbouring parts of the mitral valve are greatly thickened, coalesced, and calcareous, so that the papillary muscles appear almost directly inserted into a rigid diaphragm. The mitral orifice is a slit-like opening at the apex of this diaphragm, about $\frac{3}{4}$ in. in length. On the auricular surface of the altered valve there are frequent calcareous projections. An enormous thrombus occupies the left auricle, having its seat mainly just opposite the mitral valve, but extending downwards along the posterior surface of the auricle to within half an inch of the orifice. The thrombus attains a thickness of an inch and an eighth. It is stratified on the surface, and on section presents various grades of colour, the part next the wall of the auricle having a white, almost fibrous, appearance. This thrombus was continued a short distance into the right pulmonary vein, but did not obstruct it. The aortic curtains are considerably thickened and coalesced, so that before division they were seen to form a diaphragm with triangular aperture. The tricuspid curtains are also coalesced, and the orifice narrowed, but there

is no great thickening. The heart was greatly enlarged, weighing, with the thrombus, 23½ oz., and its muscular tissue, especially that of the right ventricle, presented very marked mottling from fatty degeneration.

The case was that of a labourer aged 37, who had suffered for two years from symptoms of cardiac disease. There was irregular action of the heart, a double murmur at apex and mid-sternum, and evidences of hypertrophy. *Path. Reports*, 25th July, 1883. No. 1015.

32. Contraction and Calcareous Infiltration of Mitral Valve. (*Dr. Jas. Finlayson.*)

The curtains of the mitral valve are coalesced, and without being very extremely thickened, they have undergone a very remarkable calcareous infiltration, rendering them very hard. On the auricular side calcareous masses project like irregular warts, one of them as large as a good-sized cutaneous wart. The orifice, while displaced downwards, as in the usual funnel-shaped deformity, is greatly narrowed, forming an elongated slit, ⅜ of an inch in length. This orifice is fringed with small, apparently recent, vegetations. There was slight thickening of the aortic valve and vegetations on the tricuspid. The heart was enlarged, weighing 13¾ oz., and the enlargement was mainly of the right side. There were frequent hæmorrhagic infarctions of the lung, and a large thrombus was found in the main trunk of the pulmonary artery.

The patient was a woman, aged 32. There was a history of breathlessness for years without distinct rheumatism till a month before death, when there was pain in the shoulder. Latterly there was great dyspnœa and other cardiac symptoms, and a loud harsh systolic murmur was detected; the action of the heart was described as "thumping." *Path. Reports*, 2nd February, 1883. No. 925.

33. Extreme Contraction of Mitral Orifice without Murmur during Life. (*Dr. W. T. Gairdner.*)

The mitral orifice is in great part closed by a membranous funnel-shaped diaphragm, which does not consist, to any great extent, of coalesced chordæ tendineæ, the latter passing generally over the membrane, and inserted at its base. There are several apertures, the largest being oval in shape, and ½ an inch in long diameter, situated at the apex of the funnel: to the left of this there are several smaller ones. The larger aperture lies in a peculiar manner between two heads of a large papillary muscle which partly obstructs it. The mem-

branous diaphragm is in some places very thin, and nowhere exceedingly thick, although in some parts there is calcareous deposition.

During life this patient was examined by several medical men, among them Dr. Gairdner, and no murmur was detected. The inferences from the previous history were that the disease may have been of very long standing, possibly congenital. The patient was the mother of a large family, and had suffered much mental anxiety and distress. The case is related by Dr. Gairdner in the Glasgow Pathological Society's Transactions for 13th May, 1879. See *Glasgow Medical Journal. Path. Reports*, No. 444. Private Case.

34. Mitral and Tricuspid Disease. (*Dr. Jas. Finlayson.*)

The mitral valve is much altered, its curtains thickened and coalesced, and the chordæ tendineæ thickened and shortened. The orifice admits only one finger easily. The tricuspid curtains are also thickened and hard, and the orifice only admits two fingers. The aortic curtains were slightly thickened, but the valve was found to be competent. Globular vegetations are present in the right auricular appendage. The heart is not much enlarged, it weighed 12 oz. There was what appeared to be an acute fatty degeneration of the renal epithelium.

The patient, a woman of 28, had rheumatism when 16 years old, and suffered from symptoms of heart disease since then. Great aggravation of symptoms, with œdema, &c., existed for a short period before death, and latterly albuminuria. *Path. Reports*, 23rd October, 1876. No. 145.

35. Disease of Mitral Valve with Calcareous Deposition. (*Dr. M'Call Anderson.*)

The curtains are much thickened and coalesced. In the anterior curtain, and at the angle between the two, there is a calcareous mass of considerable extent and thickness. *Path. Reports*, 26th October, 1876. No. 148.

36. Mitral Stenosis with Calcareous Infiltration. (*Dr. M'Call Anderson.*)

The valve presents the usual funnel-shaped deformity, and the aperture only admits one finger. There is frequent massive deposition of lime salts and, at one place, a ragged surface, as if a piece of calcareous matter had been recently carried away. Embolism of the superior mesenteric artery was found. See No. 79 of this series.

37. Vegetations upon the Semilunar Valves of the Pulmonary Artery. (*Dr. J. Wallace, Greenock.*)

The vessel has been opened by a longitudinal incision, dividing one of the valves near its centre; the remaining two are seen intact. At the middle of each valve, close to the margin, is a small ragged projection, which on two of the valves is somewhat pedunculated. The largest vegetation is in size about that of a large pea.

The specimen was removed from a patient who died of passive congestion of the lungs. The symptoms referable to the heart during life were—increased area of cardiac dulness, both to right and left, but specially in the latter direction, the apex beat being to the outside of and three inches below the nipple; presence of a V. S. murmur heard with equal intensity all down the sternum and at the apex, and frequent reduplication of the second sound. At the *post-mortem* examination the heart was found greatly enlarged, the right side being distended with blood. Tricuspid orifice admitted four fingers, and the mitral three. Aortic valves quite competent; arch of aorta slightly atheromatous. *Path. Reports*, 29th November, 1884. No. 1285.

38. Syphilitic Tumour of Heart. (*Dr. D. Yellowlees.*)

A portion of the anterior wall of the left ventricle is replaced by a circular tumour, over which the pericardium was adherent. The tumour projects somewhat into the ventricle, and the appearance of projection is exaggerated by a deposit of fibrin on its surface. The growth itself consists partly of fibrous tissue, and partly of a gelatinous structure. Not only does the growth replace a certain area of ventricular wall, but around it the muscular substance is partly converted into similar tissue, and the wall of the heart is considerably puckered.

The patient was a man who died of general paralysis, the heart was sent by Dr. Yellowlees, Gartnavel Royal Asylum. *Path. Reports*, 3rd July, 1875. No. 17.

39. Rupture of Left Ventricle of Heart, Thrombosis of Coronary Artery. (*Dr. D. Yellowlees.*)

There is a large irregular aperture of a generally oval shape and an inch in long diameter, situated in the anterior wall of the left ventricle, close to the septum; the wall of the heart is somewhat bulged around it, and the edges of the aperture are everted. The left coronary artery is highly atheromatous, and completely plugged by a thrombus. The muscular sub-

stance of the heart shows fatty degeneration. There is no valvular disease.

The case was that of a woman, 70 years of age, who had been long insane. She was apparently in a sound state of health till she sank suddenly on the floor shortly after the usual weekly warm bath, and died almost immediately.

40. Rupture of Left Ventricle of Heart, Aneurism and Obstruction of Coronary Artery. (*Dr. M'Call Anderson.*)

The pericardium was found distended with red serum, and a large clot was moulded on to the surface of the heart. A lineal ragged tear, about one inch in length, is present in the free margin of the left ventricle, about midway between the auriculo-ventricular septum and the apex. The branch of coronary artery going to this part of the heart wall is completely obstructed by an aneurism filled with clot, and both arteries are highly atheromatous. Fatty degeneration is only very slightly present, but the muscular tissue in the neighbourhood of the rupture was much softened.

The specimen was obtained from the body of a man, aged 60, who had been treated in the cutaneous wards of the Western Infirmary for a somewhat generalised eczema. There had been no complaint whatever of any heart trouble, and death was sudden, while the patient was alone in the bath-room applying his ointment. *Path. Reports*, 16th September, 1884. No. 1237.

41. Rupture of Left Ventricle of Heart, probably from Aneurism of the Heart. (*Dr. D. Yellowlees.*)

On the external aspect of the left ventricle near the base a longitudinal ragged aperture, about $\frac{3}{4}$ in. in length, is visible. Within the aperture the rough torn muscular tissue can be seen. The internal aperture is situated behind a curtain of the mitral valve, and is of much smaller size, being only $\frac{1}{16}$ in. in diameter. It has a rounded shape, and its edges are perfectly smooth, there being no appearance as if this aperture had been formed by rupture, but rather as if it were the aperture of an aneurism. The coronary arteries are healthy. The muscular tissue of the heart generally was found slightly fatty.

The case was one of sudden death, and the pericardium was found filled with blood. *Path. Reports*, 4th March, 1882. No. 785.

42. Fibroid Transformation of wall of left Ventricle. Hypertrophy of Heart, with double Apex. (*Dr. G. P. Tennent.*)

The extreme left lateral part of the left ventricle was found adherent to the pericardium over a limited area, by somewhat elongated fibrous connections. This part of the wall of the ventricle is converted into fibrous tissue, the muscular substance being almost completely replaced. This transformation extends through the entire wall, and affects a bulky papillary muscle, which is almost entirely fibrous. The affected portion of the ventricle is distinctly bulged outwards. Examination of the coronary arteries showed no obstruction, but the capillaries in the affected region are greatly diminished, as shown by injection of soluble Prussian blue. The heart, as a whole, is much enlarged, weighing 22 ozs., and there is a deep groove between the two ventricles producing a double apex. The aortic valve is considerably thickened, and the auriculo-ventricular orifices dilated. There was thrombosis in the veins, as shown in No. 85, and pulmonary infarctions, &c.

The origin of the fibrous transformation here is not perfectly clear, but it has probably originated in embolism of a small branch of the coronary artery—the circulation having been restored by anastomosis after the muscular tissue had already suffered softening. This is rendered the more probable by the fact that there were old embolic lesions in the spleen and kidneys, and the endocarditis of the aortic valve afforded a source of embolism when it was in the acute stage. *Path. Reports*, 6th November, 1884. No. 1253.

43. Hernia of the Pericardium. (*Dr. Jas. Finlayson.*)

The oval pedunculated sac projected from the pericardium on its right lateral aspect, the preparation showing the sac with neighbouring portion of pericardium. The sac measures about 1½ in. in its long diameter, and has a narrow neck about ½ in. in diameter. It communicates with the pericardium by an aperture large enough to admit a quill, and as at the time of the *post-mortem* the pericardium contained fluid, the sac was also found full, and could be readily emptied and refilled.

There was also in this case a peculiar perforation of the aorta, by a dissecting aneurism of the pulmonary artery, which finally burst into the aorta.

Patient, a woman æt. 29, in hospital only two days with extreme dyspnœa, anasarca, &c. The patient could not be carefully examined, as she was *in extremis*. *Path. Reports*, 21st June, 1883. No. 1002.

44. Acute Pericarditis. (*Dr. Jas. Finlayson.*)

Both layers of the pericardium present the shaggy and occasionally honey-combed appearance of acute pericarditis, with fibrinous exudation. The sac was filled with a turbid fluid approaching to the purulent condition.

The patient was a man æt 32 years. He had also consolidation of upper part of right lung. No history of rheumatism. *Path. Reports*, 9th March, 1884. No. 1153.

45. Acute Pericarditis and Chronic Endocarditis of Mitral, &c. (*Dr. W. T. Gairdner.*)

The surface of the pericardium is coated with shaggy fibrine, and the heart, as a whole, is enlarged, weighing 16 ounces. The mitral curtains are thickened and so coalesced as to form a funnel, the apex of which merely admits the tip of the finger. Fibrous bands pass from the septum to the opposite wall of the ventricle.

This was a case of old cardiac disease, with hemiplegia of three years duration, due to destruction of the corpus striatum, probably from embolism. The acute attack of pericarditis and pleurisy concurred with rheumatic pains developed with great intensity in the course of the chronic disease; but the original stenosis of the left auriculo-ventricular opening can scarcely be said to have a clinical history, having been discovered, solely through the physical signs, after the hemiplegia had first attracted attention, and without any very obviously cardiac symptoms. The brain and spinal cord beneath the lesion in the corpus striatum prevented typical descending sclerosis. (See *Glasgow Medical Journal*, April, 1879.) *Path. Reports*, 13th October, 1877. No. 254.

46. Acute Pericarditis—Globular Vegetation in Right Auricle and Pulmonary Artery. (*Dr. W. T. Gairdner.*)

Both surfaces of the pericardium are coated with a yellow fibrinous exudation, which presents the usual honey-combed appearance of acute pericarditis. The heart is much enlarged, and there are four large globular thrombi in the right auricular appendage. There is also a large globular thrombus in the right pulmonary artery. (See No. 13.) This, as well as some of those in the auricle, contained fluid, the remaining solid forming a thin rind.

Patient was a man, aged 55, whose symptoms began with ascites, followed by œdema, and other symptoms apparently of renal disease. The kidneys, however, after death presented nothing but hyperæmia. *Path. Reports*, 6th June, 1883. No. 994.

47. Tubercular Pericarditis. Adherent Pericardium. (*Dr. W. T. Gairdner.*)

The pericardial sac was completely obliterated, and the adhesions could not be separated. In the piece of heart preserved (the apex portion) a section has been made through the adherent layers of pericardium and wall of heart. The pericardium is seen to be very greatly thickened, and in the section two layers of an opaque yellow material are visible, these being caseated tubercles, one layer belonging to the visceral and the other to the parietal layer of the pericardium. Besides this lesion there was tuberculosis of the mesenteric glands and right lung.

The case was that of a girl aged 9 years, who suffered from general dropsy, &c. *Path. Reports*, 20th July, 1878. No. 350.

48. Hypertrophy of the Heart. Adherent Pericardium. Mitral Disease. (*Dr. M'Call Anderson.*)

The heart is enormously enlarged, weighing 33 oz. The enlargement is nearly uniform, but perhaps involves the right ventricle rather more than the left. There is disease of the mitral valve, consisting of a coalescence of certain of the chordæ tendineæ into a thick firm mass, which has become calcareous. The pericardium was completely and very firmly adherent.

There was the usual passive hyperæmia of the liver, kidneys, &c., and collapse of lower lobe of lung from old pleural exudation. *Path. Reports*, 15th March, 1880. No. 535.

49. Adherent Pericardium, Hypertrophy, and Dilatation of the Heart. (*Dr. Jas. Finlayson.*)

At the time of examination the pericardium was firmly adherent, but yet could be separated, though with some tearing. The heart is enormously enlarged, weighing 31 ounces. The enlargement is nearly homogeneous, and dilatation predominates over hypertrophy, the walls of the ventricles not being at any one point distinctly thicker than those of the normal heart. There is no definite thickening of the valvular structures. The aortic and pulmonary valves were found competent, but both auriculo-ventricular orifices were much dilated. The mitral admitted seven fingers, and presented slight thickening of its chordæ tendineæ, and the tricuspid admitted six fingers. The left auricle is much dilated and its endocardium thickened generally, with patches of special thickening and roughness on posterior wall close to the orifice. There was marked fatty degeneration of the muscular fibre of

both left and right ventricles, and it was particularly noticed that the external layers were specially affected. There was œdema and hyperæmia of the lungs and lower limbs, and nutmeg liver.

The patient was a tall, spare lad, 19 years of age. He is stated to have had rheumatism and "inflammation of right lung" four years ago, and a return of rheumatism six months since. His chief complaint was of palpitation, orthopnœa, slight hæmoptysis, and slight œdema of the feet. There was no albuminuria. In addition to the enlargement of the heart there was observed during life a ventricular systolic murmur, with a suspicion of a murmur before the first sound. There was a marked tactile snap and deep toned second sound over the pulmonary artery. Latterly slight jaundice. *Path. Reports*, 20th August, 1875. No. 24.

50. Rupture of Aorta into Pericardium. (*Dr. W. T. Gairdner.*)

Only the heart and great vessels were sent for examination, but the pericardium was found full of blood. The heart as a whole was enlarged, and there was an excess of external fat, especially over the right ventricle. The fat even penetrated through the muscular wall and presented itself frequently beneath the endocardium. Both ventricles were considerably dilated. The aortic curtains are slightly thickened and two of them partially coalesced. The arch of the aorta is considerably dilated and bulges toward the right auricle. On viewing the vessel internally a distinct rent of the internal and middle coats is discovered at the posterior aspect of the arch. The general direction of the rent is from below upwards, beginning $\frac{5}{8}$ths of an inch above the insertion of the curtains, and measuring about $1\frac{3}{4}$ in. in length. The course of the rent is rather zig-zag. The internal and middle coats have torn together except at the upper end, where the middle coat has given way for about half an inch beyond the internal. The external coat covers the rent for the most part, forming the sole wall of the vessel, but it is perforated in two places by pinhole orifices, one of them rather larger than the other.

The patient was a man of robust constitution and generally healthy appearance, actively engaged in professional business, but addicted to bouts of intemperance, from one of which he was emerging when he took ill. Symptoms were—severe thoracic pain with collapse nearly proving fatal, but so far recovered from as to allow him to pass two quiet nights. Seen

in consultation by Dr. Gairdner 34 hours before death, the heart's sounds were without murmur, but rather indistinct. Next day the heart's sounds improved and so did the general condition, but after another night's sleep he died suddenly with convulsions and coma. *Path. Reports*, 12th February, 1877. No. 197. Private case.

51. Atheroma of Aorta, with Calcareous Infiltration. The patches are frequent, and the calcareous plates are often bare.

52. Atheroma of Aorta, with Calcareous Plates and occasional Thrombosis. *Path. Reports*, 13th August, 1879. No. 462.

53. Atheroma of Aorta, Calcareous Plates. (*Dr. W. T. Gairdner.*)

The portion of the aorta preserved is continuously affected, its internal coat presenting generally a somewhat cicatricial appearance, except where calcareous plates are present. These are very numerous, and some are still covered with internal coat while others are partially free. The former present flat surfaces of a yellowish colour, the latter project as semi-transparent plates with irregular margins. In this case one of the coronary arteries was obstructed. There was considerable dilatation and hypertrophy of the heart (which weighed 20 ounces), but without definite valvular disease.

During life there were the general symptoms of heart disease, chiefly dropsy and dyspnœa, with large pleural effusion, but without any cardiac murmur. *Path. Reports*, 22nd November, 1882. No. 875.

54. Atheromatous Ulcer of Aorta.

There is an elongated gap in the aorta, communicating with a cavity behind of considerable area, the internal layers of the aortic wall being undermined considerably. *Path. Reports*, No. 858.

55. Atheroma and Dilatation of Aortic Arch, Incompetency of Valve. (*Dr. Jas. Finlayson.*)

The first part of the arch is highly atheromatous with frequent calcareous plates. It is distinctly dilated, measuring 4 inches in internal circumference. There is even something of a pouching, especially opposite the curtains of the valve. Two of these curtains are normal, while the third is some-

what thickened and contracted, as if by extension of the atheroma. The valve was found incompetent on testing. There was considerable enlargement of the left ventricle.

The patient was a man, aged 50, who had suffered for three years from attacks of dyspnœa and angina. There was no history of rheumatism or of syphilis. There were murmurs of aortic obstruction and regurgitation. Considerable benefit was obtained from large doses of iodide of potassium. *Path. Reports*, 18th January, 1882. No. 760.

56. Dilatation of the Aorta, with Calcareous Infiltration—Erosion of Vertebræ. (*Dr. Jas. Finlayson.*)

The arch of the aorta and the thoracic portion are markedly dilated, there being a narrower part just beyond the giving off of the great vessels. The dilatation of the arch is general, with no definite pouching, while in the thoracic aorta there are, besides the dilatation, one or two pouches, and, in the case of one of these, the greater part of the wall is absent. This part had impinged against the vertebræ, whose bodies were eroded, and it was found necessary to dissect off the aneurism from the surface of the bone. The aorta is atheromatous throughout, and there are numerous calcareous plates, sometimes presenting angles internally. The heart was very greatly enlarged, weighing about 27 oz., and the hypertrophy was mainly of the left ventricle.

The patient was a man, aged 54, a sailor. There was a history of rheumatic fever thirty years before death, and for some time back cardiac symptoms existed. He sustained an injury to the chest two and a half months before death, and dyspnœa increased from that time up till death. *Path. Reports*, 31st January, 1881. No. 621.

57. Aneurism of the Aorta Projecting into and Perforating Pulmonary Artery. (*Dr. D. C. M'Vail.*)

Just above the insertion of the aortic valves there is an aneurism about the size of a large chestnut, with an orifice nearly circular in shape and about an inch in diameter. The aneurism projects directly against, and pushes before it the first part of the pulmonary artery, which is rendered convex by it. The aneurism communicates with the pulmonary artery near its lower part by an oval aperture, $\frac{3}{8}$ths inch in diameter, and with rounded margin. The edge of the posterior semilunar curtains of the pulmonary artery crosses this orifice at its middle. *Path. Reports*, 23rd Sept., 1876. No. 136.

58. Aneurism of the Aorta Projecting into and Perforating Pulmonary Artery. (*Dr. W. T. Gairdner.*)

An aneurism, as large as the fist, occupies the base of the heart, originating, by an aperture large enough to admit two fingers, just above the aortic valve. The aneurism is insinuated forward, pushing aside and pressing on the pulmonary artery on the one hand, and the left auricle and auricular appendage on the other. The pulmonary artery is stretched over the aneurism, being much flattened thereby, and its posterior wall markedly thinned. In this posterior wall there is an oval aperture with rounded margins, about $\frac{3}{8}$ths inch in length, and about an inch above the pulmonary valve. It forms a communication between the aneurism and the pulmonary artery. There was no stratified clot in the aneurism, the aortic valve was nearly, if not quite, sufficient, and there was no thickening of the curtains. The heart was much enlarged, weighing $23\frac{1}{2}$ oz.

The case was characterised by great angina pectoris and dyspnœa, with lividity, lasting more than a year, and without any history of rheumatism. The aorta was found to be dilated: V. S. and V. D. murmurs heard very distinctly at first, were interpreted as being aortic in origin, but in the progress of the case became very soft, and almost or quite suppressed, giving way to V. S. murmur, regarded as mitral or tricuspid. Great hypertrophy and dilatation of both ventricles, with various pulse, became apparent in the course of observation. The liver also became enlarged; the urine scanty, of high sp. gr., and albuminous. The pulse was one of low tension, almost hyperdicrotous, with an occasional irregularity, but not a complete intermission; the low arterial tension increasing as the case proceeded. Anasarca became extreme, with pervigilium and orthopnœa. Death was at the last sudden, but only after a very lengthened agony. For details see Journal of Ward I, K. p. 11. *Path. Reports*, 23rd January, 1878. No. 290.

59. Aneurism of Aorta Perforating into Left Auricle. —(*Dr. W. T. Gairdner.*)

In the preparation two aneurisms are visible, a larger and a smaller, both having their seats immediately above the aortic valve. The smaller forms a shallow sac just behind the right segment of the valve. The larger is much more definitely sacculated and its aperture is in the posterior wall of the aorta, just behind the posterior segment. This opening is nearly an inch in diameter and its edges are rounded. The

pouch of the aneurism forms a nearly globular tumour which projects against the left auricle. On examining the left auricle (a flap of which is stitched down in the preparation) the aneurism is seen to form a somewhat pyramidal projection, at the apex of which there is an oval aperture about a quarter of an inch in diameter and with rounded, somewhat prominent margins. Just beside this aperture there is a smaller one which also has distinctly prominent margins.

Besides these aneurisms, there were two other partial ones in the aorta, one partly preserved just above the principal sac, and another on the posterior wall of the aorta just at the level of the giving off of the great vessels. The internal coat of the aorta had an almost continuous cicatricial appearance and presented frequent longitudinal folds. There was thrombosis of the innominate vein, globular thrombi in the heart, and hæmorrhagic infarction of the lungs. The valves were normal, but the heart was hypertrophied, weighing 16 oz.

The case was that of a woman aged 38, who complained of the general symptoms of heart disease, of a very severe character, the duration of the more severe symptoms being about thirteen weeks. For about four weeks before death the expectoration was persistently hæmorrhagic. There were the physical signs of cardiac hypertrophy, with V. S. and V. D. murmurs heard most distinctly at lower sternum, also at pulmonic and aortic cartilages and, though less distinctly, at apex. The V. S. element was conveyed into the neck. *Path. Reports*, 17th February, 1882. No. 776.

60. Aneurism of the Aorta Adherent to Heart. (*Dr. W. T. Gairdner.*)

The aneurism is a very bulky one, and is so situated at the base of the heart as to form with the heart a single structure, the two being completely incorporated. The pericardium, while slightly adherent over the whole heart, is firmly adherent to the aneurism, and, in fact, loses itself in the wall of the aneurism, which technically is altogether intrapericardial. The aneurism arises by a very large aperture from the ascending aorta, which is also dilated, and it comes off so immediately above the valve that the right semilunar curtain has no aortic wall above it, the edge of the curtain forming a part of the orifice of the aneurism. The sac of the aneurism lies entirely to the right of the aorta, and is projected between the pulmonary artery on the one hand, and the right auricle with the venæ cavæ on the other. On looking into the right

ventricle the aneurism is seen to bulge into its upper part, pushing down the conus arteriosus, and pressing backwards the tricuspid orifice. The sac of the aneurism measures in general four or five inches in diameter.

The patient was a man, æt. 38, in whom an aneurism had been detected more than four years before death. He was a railway porter, and was able, with certain precautions, to pursue his occupation in the intervals of hospital treatment. Angina pectoris was well marked, with palpitation and sleeplessness, relieved by hydrate of chloral. Iodide of potassium was given in large doses, with apparently good results. See Journals of Ward I, A 100, and L 21, for numerous and interesting details. There was a ventricular-diastolic murmur, as of aortic incompetency. Dulness on percussion, with heaving pulsation, and a shock which went along with the 2nd sound of the heart, corresponded with the situation of the aneurism. *Path. Reports,* 11th March, 1878. No. 308.

61. Aneurism of Aorta Perforating Pericardium. (*Dr. Jas. Finlayson.*)

The aneurism, which is of large dimensions, is situated behind the transverse portion of the arch, with which it communicates by a large rounded aperture, $1\frac{3}{4}$ in. in diameter, and situated on the upper and posterior wall of the transverse portion of the arch. The bulk of the aneurism being situated behind the arch, it must have pressed somewhat on the trachea and œsophagus, which have been laid open in the preparation. Passing down behind the arch, the lower extremity of the aneurism has projected into the pericardium, and at this point the wall is exceedingly thin, and a small ragged aperture, through which a piece of whalebone has been passed, forms a communication between the aneurism and the pericardium. The pericardium contained a bulky clot, which surrounded the heart, and was found to weigh 10 oz.

The patient was a man, aged 39, who suffered from bronchitis, latterly with attacks of so-called asthma, which had the characters, however, of laryngeal spasm. There was dulness on percussion at the upper part of the sternum, and the sounds of the heart were quite free of any murmur; they were heard very distinctly over the area of aneurismal impulse. For one day there was dysphagia. Death occurred during a fit of coughing. *Path. Reports,* 31st December, 1882. No. 905.

62. Aneurism of Aorta Dissecting Pericardium. *(Dr. W. T. Gairdner.)*

The aneurism is divided into two portions—the one at the base of the heart communicating by a large aperture with the ascending aorta; the other, which has an irregular communication with the first, is situated beneath the pericardium, partly at the base of the heart in front, and partly over the right ventricle behind. In the latter situation the pericardium is dissected off the surface of the heart, and a sac thus formed which contained softened blood-clot. This sac is not now very directly in communication with the rest of the aneurism, and the softened state of the clot seemed rather to indicate that it may have been latterly cut off from the circulation.

The diagnosis in this case was exceedingly interesting and complicated, but cannot be adequately indicated in a brief summary. (See Journal of Ward 1, D, p. 111.) The symptoms and physical diagnosis were considered to point to a tumour of some kind in the anterior mediastinum, closely approximating to the base and right side of the heart, but without any evidence to show the exact pathological relation of the supposed tumour to the great vessels. Orthopnœa existed on admission, and afterwards dropsy, and dulness on percussion progressively increasing on the right side of the chest. No laryngeal symptoms and no dysphagia. Dull percussion area at upper sternum and to right of heart: sounds muffled over this, almost normal in apex region. The history was obscure; symptoms extremely chronic. Death at last took place from increasing dyspnœa, without any evidence of direct pressure on the air-passages. *Path. Reports*, 15th December, 1875. No. 50.

63. Aneurism of the Aorta involving the Recurrent Nerve and Pressing on Trachea. *(Dr. Joseph Coats.)*

The aneurism is nearly globular in shape, with an average diameter of 1½ in. to 2 ins., and situated behind the great vessels and above the transverse arch with which it communicates. The left recurrent nerve is found adherent to, and partly embedded in, the aneurism, being considerably attenuated and spread out on the surface of the sac. The aneurism is also adherent to the trachea, and bulges considerably into its lower part.

In this case there was urgent laryngeal obstruction, for which tracheotomy was performed, but without obvious relief. *Path. Reports*, 29th September, 1875. No. 29.

64. Aneurism of Aorta with Pressure on Recurrent Nerve. *(Dr. W. T. Gairdner.)*

The aneurism was situated above the arch, and the aperture is so large that the aneurism may almost be described as a dilatation upwards of the arch. It is of a nearly globular form. The heart was not abnormal. The great vessels proceed from the wall of the aneurism, and their apertures are almost overlaid by clot. The left carotid is extremely narrowed, and the left subclavian entirely obliterated for about an inch from its aperture. The recurrent nerve is stretched over the aneurism and flattened against its posterior wall, and the trachea is bulged backwards and its left and anterior aspects rendered convex.

During life there were laryngeal symptoms (not at all of an urgent kind when first observed), and suppression of left radial pulse, with feebleness of right. After treatment for several months, with apparent relief, by iodide of potassium, a considerable enlargement of the tumour was detected, and signs of permanent pressure on the trachea became apparent, which led in the end to a fatal result. This preparation considerably resembles the preceding one. *Path. Reports*, 9th February 1876. No. 66.

65. Aneurism of Aorta bursting into Trachea, and involving Recurrent Laryngeal Nerve. *(Dr. M'Call Anderson.)*

The aneurism, which is of a generally rounded shape, and 2 inches in diameter, is situated immediately between the arch of aorta and trachea. Its aperture is on the posterior wall of aorta, at a point corresponding with the space between the left carotid and the left subclavian, the aperture being just large enough to admit the tip of index finger. The trachea has been laid open, and shows a rounded bulging internally of its anterior and left wall, the bulging having a longitudinal extension of about 1½ inches. In the midst of this there is a ragged aperture, in which can be seen the exposed and ruptured cartilage of one of the rings—this aperture is large enough to admit the tip of the index finger. There are two other small apertures. On endeavouring to trace the recurrent laryngeal nerve, it is found to lose itself on the posterior wall of the aneurism, emerging from it at its upper extremity, where it is shown in the preparation. Death occurred from hæmorrhage. The bronchial tubes were filled with dark red frothy material, and the lungs were highly infiltrated with blood, in some parts being almost solidified. *Path. Reports*, 20th November, 1882. No. 873.

66. Aneurism of Aorta, Pressure on Trachea, Rupture into Trachea. (*Drs. W. T. Gairdner and Joseph Coats.*)

The aneurism, which is about the size of a small apple, springs from the summit of the arch by an oval aperture measuring $1\frac{1}{4} \times 1$ inch. The aperture corresponds with the origins of the innominate and left carotid arteries, the former being carried somewhat into the sac so that its mouth is really inside the aneurism. The nearly globular sac passes upwards and backwards from the arch, and forms a bulky mass between the great vessels in front and the trachea behind. It presses against the trachea to which it is adherent, bulging in its anterior wall, especially on the left. Just at the edge of the cartilaginous rings on the left side there is an oval aperture which is in the soft posterior wall of the trachea, and measures about $\frac{3}{8}$ths of an inch from above downwards. This aperture communicates directly with the interior of the aneurism. The great vessels, especially the innominate, are somewhat flattened over the anterior surface of the aneurism. The left recurrent nerve passes over the surface of the aneurism but is not adherent and not atrophied. The right nerve, although near, hardly touches the sac.

Death took place from hæmorrhage into the trachea, and blood was found abundantly in all the air-passages, while the lungs were bulky with blood insufflated into the air-vesicles, especially in the lower lobe.

The patient, a man aged 36, came to the Dispensary complaining of his throat. He had urgent dyspnœa with occasional paroxysms, and his voice was greatly altered. No paralysis of the cords existed. The existence of an aneurism pressing directly on the trachea was inferred from physical signs. He was under treatment, in all, for about two months, and had suffered from his throat for about five months before applying at the Dispensary. When admitted to the Ward, his sufferings from pressure were extreme, and required the administration of morphia hypodermically. An interval of comparative ease took place, after which he suddenly coughed up a large quantity of blood and died. *Path. Reports,* 29th October, 1884. No. 1251.

67. Aneurism of the Aorta, Rupturing into Bronchus. (*Dr. M'Call Anderson.*)

The aneurism is a very bulky one, situated mainly in the concavity of the arch, but projecting considerably backwards. It somewhat opens out the arch, making it considerably wider and flattening it above. The aperture of the aneurism is a

very large one, about 2 inches in diameter, and it occupies almost the entire concave inferior aspect of the arch, and is so large as that the superior aspect of the arch virtually forms the roof of the aneurism. The great vessels come off just above the aperture, but in such a way that the current from the ascending arch has been carried directly to the innominate and left carotid, while the left subclavian has arisen at the part where the wall of the artery forms the roof of the aneurism. By its projection backwards, the aneurism impinges on the lower part of the trachea, and especially on the left bronchus, these parts being greatly flattened, and having a marked convexity backwards and downwards. In this left bronchus, at a distance of $1\frac{1}{4}$ and $1\frac{5}{8}$ inch from the bifurcation, there are two oval apertures, whose long diameter (about $\frac{1}{4}$ inch in length) is transverse to the calibre of the tube. These apertures lie between cartilaginous rings which they partially expose. They communicate directly with the aneurism, which here contains no clot. In the space between the rings immediately above the upper aperture, there is a bulging of the mucous membrane, which is here considerably thinned. There was a bulky clot in this bronchus, and the lung was highly œdematous and of a deep brown colour.

The patient was a sailor, aged 58, who had complained of shortness of breath, &c., for ten months, and of pains for five months. Aneurism was detected, and the breathing was found to be very feeble over left lung. *Path. Reports*, 18th July, 1882. No. 842.

68. **Aneurism of the Aorta which Projected through the Sternum and beneath the Skin.** (*Dr. W. T. Gairdner.*)

Of the aneurism little more is preserved than the orifice, which is situated in the ascending and transverse arch, being $3\frac{1}{2}$ inches in diameter. The aneurism had disintegrated the manubrium sterni, had destroyed both sterno-clavicular articulations, eroded the heads of the clavicles, and exposed both first ribs for some distance. It formed a large tumour under the skin externally at the root of the neck, being about 6 inches in diameter and nearly globular in shape. At one part the skin was very thin. The trachea was displaced backwards and considerably stretched, and there are several ulcers in its mucous membrane exposing the cartilaginous rings. The recurrent nerve is not at all involved in the aneurism, which terminates before that part of the aorta round which the nerve hooks.

There were no special laryngeal symptoms during life. The

patient attributed his disease to great exertions during the Indian Mutiny (1857), 19 years before his death. When first admitted, he suffered from severe pains in the head, neck, arms, &c., with a moderate amount of dyspnœa, not spasmodic. There was a previous history of rheumatic fever. Four months' continuous treatment by rest, spare diet, and iodide of potassium, produced great improvement in the symptoms and diminution of the tumour. Soon after leaving the hospital, a sudden enlargement of the tumour took place, with threatening of external rupture. For this he was readmitted, and electro-puncture—confessedly as a forlorn hope—was employed, without appreciable benefit. Death took place twelve days afterwards, from exhaustion and respiratory distress (still without laryngeal spasm). Dr. Gairdner specially remarks, that the evidence of direct pressure on the lower third of the trachea is such as to give peculiar importance to the absence of laryngeal phenomena; as it was probably only by the luxation of the sterno-clavicular articulations giving room for expansion forwards, that death by suffocation, at a much earlier period, was averted. *Path. Reports*, 26th January, 1876. No. 62.

69. **Very Large Aneurism of Aorta, penetrating through Sternum, causing Necrosis of Skin, and rupturing externally.** (*Dr. W. T. Gairdner.*)

The preparation includes an aneurism with a part inside and a part outside the chest, and the greater portion of the anterior chest wall. A piece has been removed from the right side of the chest so as to show the relations. There is a large aneurismal cavity behind and another in front of the sternum. That inside the chest communicates with the aorta, this vessel forming part of the wall of the aneurism for a distance of about two inches, and it is as if two vessels communicated with the aneurism. The aneurism begins about two inches above the valve, and ends about the middle of the transverse arch. The bulk of the internal sac is to the right of the arch, but it projects to some extent backwards. It also extends somewhat downwards so as to hang into the pericardium. This sac is almost empty, but at its anterior part there is a firm clot which closes the connection between the internal and external sacs. The external sac forms a bulky tumour, occupying the middle line but extending more to the left than the right side, the left nipple being at its extreme left border. The tumour measured $7\frac{1}{2}$ inches transversely, 6 inches from above downwards, and $4\frac{1}{2}$ inches from before backwards, *i. e.*, from level of sternum to summit. The middle part of the

skin over the tumour is in the form of a hard cake, which is nearly black on section. The cake is circular in form, measuring 5½ inches in diameter, and is definitely demarcated from the neighbouring soft skin. At three places towards the edge it was partially separated, and there was soft recent blood here. This sac was mostly filled with soft recent clot, but there are also firm stratified clots, especially in the deeper parts where they close the communication with internal sac. At the place of section the divided cartilaginous ribs are visible, and on looking into the sac these are seen to end in rounded extremities, there being here no sternum. In fact, except the manubrim and extreme lower part, there is no sternum remaining.

The case was that of a man aged 38. The apparent duration of symptoms was about two years, these being pain, cough, dyspnœa, or shortness of breath. The external swelling was observed about a year before death, and was considerable on admission two months afterwards. The treatment was mainly by iodide of potassium. Latterly galvano-puncture was resorted to on two occasions, four and three months respectively, before death. The result was not satisfactory, increase of the external tumour becoming apparent after each operation; and ultimately, notwithstanding the application of cold and hydrostatic pressure, pointing took place towards the surface, with a glazed and manifestly necrotic condition of the external tissues, and with exudation of a thin serous fluid. There was leakage of blood externally on several occasions during the last few weeks, and more considerably just before death. *Path. Reports*, 10th April, 1882. No. 799.

70. Aneurism of Aorta Penetrating Chest. (*Dr. W. T. Gairdner.*)

The aneurism has arisen from the left side of the aortic arch by a large aperture, and it has pushed the arch very much to the right. The aneurism has projected against the chest wall somewhat to the left of the middle line, and has extended through the wall eroding the ribs, the second rib being entirely destroyed in an inch of its course and the third thinned, so that at one part it measures only ¼ inch from above downwards. Outside the chest and between the clavicle and the nipple a bulging tumour is formed, part of which has been preserved. This tumour had no proper sac, but, as shown in the preparation, strata of clot were accumulated under the skin, and the blood had diffused itself as far down as the lower edge of the chest and outwards to the axilla, and even slightly to the inner

aspect of the arm. The clot has also partly insinuated itself under the periosteum of the second and third ribs, dissecting it up from the bone. The left lung was greatly compressed by the sac.

The case was that of a woman, aged 42. The aneurism was attributed to a strain. Galvano-puncture was performed on three occasions, at intervals of less than a month, the last occasion being seven weeks before death. It was apparently followed at first by diminution, but afterwards by increase in the swelling. A fortnight after the last operation, suppuration took place in the course of one of the needle punctures, but this afterwards subsided. Increase in the size of the tumour, however, was followed by pointing externally at the same spot. Collodion was painted to avoid bursting, but a slight oozing ultimately occurred. *Path. Reports*, 1st May, 1879. No. 438.

71. Aneurism of Aorta; Erosion of Sternum; Occlusion of Carotid; Pressure on Pneumogastric; Gangrene of Lung. (*Dr. W. T. Gairdner.*)

The arch of the aorta is greatly dilated, but in addition to this a sacculated aneurism, which is now filled with stratified clot, projects anteriorly where it has eroded the sternum and disorganised the left sterno-clavicular articulation. The left carotid artery is completely occluded at its origin, being here only represented by a dimple in the internal surface of the aorta. Above its origin a brown grumous material fills it. The left pneumogastric nerve is stretched over the dilated arch and is adherent to the aneurism, although not very intimately. There were large cavities in the left lung, which had the aspect of gangrenous cavities rather than of phthisical ones, one apparently forming by necrosis, but there was no gangrenous odour. There were several small areas of softening in the brain, but confined to the convolutions.

In this case during life a very marked subsidence of the aneurism occurred under treatment, this corresponding with the fact that the aneurism is now full of solid clot. At the earlier period the pressure on left carotid and pneumogastric must have been very considerable. *Path. Reports*, 10th June, 1884. No. 1202.

72. Aneurism of the Aorta Eroding Vertebræ, and stretching Recurrent Laryngeal. (*Dr. W. T. Gairdner.*)

The aneurism passes off from the posterior aspect of the last part of the arch, and the thoracic aorta, the entire calibre of

the vessel forming for a distance of 3 inches part of the aneurism. The aneurism projected directly against the dorsal vertebræ, three or four of which were eroded, and the gap shown in the wall of the aneurism corresponds with these vertebræ, the proper wall of the aneurism being awanting here. The recurrent nerve is somewhat stretched over the upper part of the aneurism and flattened, but it can be easily traced quite round.

The case was that of a man, aged 51, who was long affected with laryngeal symptoms, chiefly loud cough with unclosed glottis. The principal other symptom was pain on left side. The illness was referred to an accident 12 years before death, when he fell between a vessel and the quay, and received a crush in his chest. *Path. Reports*, 15th March, 1883. No. 953.

73. Aneurism of the Thoracic Aorta, causing Erosion of the bodies of the Vertebræ. (*Dr. G. P. Tennent.*)

The aneurism is a tolerably sacculated one, springing from the posterior wall of the aorta by a rounded aperture about one inch in diameter. It projects directly against the bodies of the vertebræ, whose eroded surface is seen exposed in the aneurism.

There were two other aneurisms of the aorta, a globular sacculated one of the arch, and a small one in the abdominal aorta at the origin of and partly involving the superior mesenteric artery. The internal coat of the aorta was everywhere in an advanced state of sclerosis. The heart was large and dilated, and the patient, a man, suffered chiefly from cardiac symptoms. *Path. Reports*, 27th February, 1882. No. 782.

74. Aneurism of Thoracic Aorta, which had produced Erosion of the Vertebræ.

The aneurism is represented almost entirely by a nearly circular gap in the posterior wall of the aorta, the gap being about an inch and a half in diameter. The aneurism is about the middle of the thoracic aorta, and it formed a small nearly globular sac, which projected directly against the vertebræ, eroding one of the bodies considerably. This preparation and the next illustrate the fact that when an aneurism of the aorta springs from its posterior aspect so as to impinge against the vertebræ, the proper wall of the aneurism readily undergoes atrophy, and there is therefore considerable danger of rupture.

75. Aneurism of Abdominal Aorta, Erosion of Vertebræ—Rupture. (*Dr. G. P. Tennent.*)

The aneurism is exposed by removal of its right wall. It extends from the diaphragm above to the fifth lumbar vertebra, but it is considerably wider in its upper part, where it extends to both sides of the middle line, than below where it is confined to the left side. On its upper surface the pleura is visible, and the aneurism pushes it upwards causing a convexity into the pleural cavity. In the broader part of the aneurism the last dorsal and first and second lumbar vertebræ are exposed and the bodies are very markedly eroded, especially the first lumbar. The aorta is seen to pass over the anterior surface of the aneurism and its wall is apparently intact in front. Its posterior wall presents a very wide gap, the appearance being very much as if the posterior wall were destroyed or turned outwards. This gap corresponds with the first lumbar vertebra and communicates directly with the wide part of the aneurism. Hæmorrhage occurred from the lower part of the aneurism, and the sub-peritoneal tissue was greatly distended with blood, the mesentery, with the bowels, the pancreas, &c., being carried forwards greatly. *Path. Reports*, 26th March, 1884. No. 1166.

76. Aneurism of Abdominal Aorta, Rupturing behind Peritoneum, Blood extending into Peritoneal Sac. (*Dr. G. P. Tennent.*)

The aneurism is a bulky one, which has its origin from the aorta, beginning about 2 inches beneath the diaphragm, and extending for about $3\frac{1}{2}$ inches. To this extent the aorta forms part of the wall of the aneurism, the latter being to some extent an expansion of the vessel. The aneurism extends chiefly backwards and to the left, but it also forms a considerable bulging forwards, and a portion of the pancreas remains attached to its anterior surface. Immediately beneath the pancreas the cœliac axis projects from the aneurism, and is completely plugged with old stratified clot. The renal arteries, coming off from the aneurism at its lower end, are pervious. The aneurism, in pressing against the vertebræ, caused slight erosion of the first lumbar. The retro-peritoneal tissue of the left side was filled out with an enormous infiltration of clot, so that the descending colon was carried forward. Blood also infiltrated the great omentum, and there was a large accumulation, weighing 24 oz., in the peritoneal cavity, and a smaller clot, weighing $4\frac{3}{4}$ oz., in the lesser peritoneal sac.

The aorta, in all its course, was found highly atheromatous, and presented several small pouches.

The case was that of a man who had been a soldier. He complained of pain in the back and legs, and a tumour in the abdomen. The pain was very severe. *Path. Reports,* 13th April, 1883. No. 971.

77. Dissecting and Sacculated Aneurisms. (*Dr. Jas. Finlayson.*)

The preparation shows aortic arch and aorta down to the lower extremity of thoracic portion divided longitudinally. There are two distinct aneurisms—an ordinary sacculated one filled with clot, filling up the hollow of the arch of the aorta —and a dissecting one. The latter communicates with the aorta by a transverse aperture immediately distal to the origin of the left subclavian and on the superior aspect of the wall of the aorta. At this point the clot in the sacculated aneurism projects so as considerably to narrow the calibre of the vessel. The dissecting aneurism is continued down the entire subsequent course of the aorta, and, as shown in a transverse section hung separately, it nearly surrounds the vessel, much reducing its calibre. A tolerably bulky clot occupies the aneurism. The abdominal aorta is not preserved, but it was found that the aneurism was continued down to the bifurcation, at which level it formed another communication with the aorta by a crescentic aperture, 3-8th in. in diameter, and just opposite the left common iliac, which must have received blood from the aneurism. There was another very small aperture 2 in. above the bifurcation. The large vessels springing from the arch on the proximal side of the dissecting aneurism are not interfered with.

The pneumogastric nerve passes directly on to the surface of the large true aneurism, and the recurrent was traced emerging from its posterior aspect, but the parts between are so involved in the wall of the aneurism that the connection could not be made out. There was considerable enlargement of the left ventricle, the heart weighing 20 oz.

The patient was a woman, aged 37, who had been delivered of a child 3 days before admission. She was supposed to have heart disease, but died soon after admission, and no examination could be made. Before death there was great dyspnœa, and the urine was highly albuminous. *Path. Reports,* 4th January, 1883. No. 908.

78. Dissecting Aneurisms. (*Dr. M'Call Anderson.*)

These are three in number, two in the aorta and one in a branch of the abdominal aorta, probably the renal artery. The first is in the arch of the aorta and is embedded in the wall: it is about the size of a small apple, but forms about half of a sphere, a flat surface corresponding with the inside of the vessel, while the outer surface is convex. The external coat of the aorta is perfectly continuous over the aneurism, and on microscopic examination it is found that the aneurism actually lies between layers of the middle coat. At the borders of the aneurism, the split in the middle coat is partially filled up with connective tissue, and throughout the aneurism a thin layer of new formed connective tissue presents the characters of an internal coat. The aneurism communicates with the aorta by an aperture situated $1\frac{1}{2}$ inches above the aortic valve, and this aperture is continuous with a tear in the internal coat, which occupies the right side of the aorta and extends a considerable distance longitudinally; this rent gapes widely, so that a considerable surface is exposed which is devoid of internal coat. The upper part of the aneurism is packed with dense clot.

The second aneurism is in the thoracic and abdominal portions of the aorta; the aperture of this aneurism is in the form of an oval opening of small size, situated in the abdominal aorta. The aneurism is continued far above as well as below this aperture; above, it reaches as high as the left subclavian, the upper 4 inches being packed with dense clot; below, it is continued into both common iliacs, which are bagged out as far as their bifurcations. Besides the aperture just mentioned, there is another and smaller one just above the bifurcation of the aorta, and it seems probable that the circulation has been partly carried on through the aneurism in preference to the aorta, which is greatly narrowed just beneath the upper aperture. In this aneurism there is the same new formation of an internal coat as in the other, and at parts this presents abundant spindle cells.

The third aneurism forms a bulbous thickening of the first part of what is probably the renal artery, and is filled with firm clot.

The vessels generally were found rigid, with calcareous infiltration of the middle coat. *Path. Reports*, 24th November, 1879. No. 490.

79. Embolism of Superior Mesenteric; Hæmorrhage &c., in Small Intestine. (*Dr. M'Call Anderson.*)

The superior mesenteric artery is plugged just where the colica dextra is being given off, a portion of the plug passing into, and distending this branch for a short distance. The portions of intestine supplied by the plugged arteries are ascending colon (probably a part of tranverse), ileum, and possibly the lower part of jejunum.

On opening the abdomen, the state of the intestines at once attracted attention as they presented a frequent dark red appearance, and were occasionally glued together by soft recent fibrine. The parts affected were chiefly the ascending colon and ileum, but, to some extent also, the jejunum and first part of tranverse colon. On opening the intestine, a dark brown pultaceous material was found in the colon and ileum, and the mucous membrane of these parts was soft and frequently pulpy,—sometimes suggesting gangrene. The mucous membrane and, to a certain extent, the other coats, as well as occasionally the mesentery, were very greatly infiltrated with blood.

There was also embolism of the spleen and kidney.

During life, there had been symptoms of heart disease for a long period; for the last 48 hours there were violent colicky pains and bloody fæces. *Path. Reports,* 30th January, 1880. No. 519.

80. Embolism of Splenic Artery. (*Dr. W. T. Gairdner.*)

One of the principal branches at the hilus of the spleen is seen to be distended with clot. The spleen was the seat of several infarctions, the largest of which had its apex at this obstructed artery. The spleen was much enlarged, weighing 10 oz. The left ventricle of the heart was much enlarged, apparently as a result of chronic Bright's disease, and at the apex of the ventricle there was a large softened globular vegetation.

The patient, a woman, 31 years of age, presented the usual symptoms of chronic Bright's disease, which was traced carefully for four years. It assumed in the main the dropsical form, and was connected in the first instance with two successive pregnancies. The urine was at one time in excess, but latterly diminished, and the dropsy was incontrollable. The terminal symptoms, and the splenic lesion, were probably due to the formation of the vegatation in the heart. *Path. Reports,* 26th Sept., 1875. No. 28.

81. Embolic Infarction of the Spleen.

The infarction is of a yellow colour, and occupies the upper extremity of the organ. It measures $1\frac{3}{4}$ in. vertically and 3 in. transversely, having a general wedge-shaped outline. A small infarction of a similar character was present near the lower extremity of the spleen, a portion of which is shown in the preparation. The organ as a whole was greatly enlarged, measuring about 7 in. in length, and weighing $26\frac{1}{2}$ oz. The origin of the embolism is shown in No. 22.

82. Embolic Infarction of Spleen. (*Dr. W. T. Gairdner.*)

A yellow wedge-shaped infarction is shown. The source of embolism was an acute endocarditis with prominent warty outgrowths on the aortic and mitral valves. There was also embolic infarction of the kidneys. In addition, acute endocarditis of the pulmonary valve with prominent vegetations, and embolism of the pulmonary artery were present.

Patient was a married woman, æt. 40. Besides the symptoms, which may have been the result of the lesions above described, there was left hemiplegia, and mental disturbance, due to atrophy of cerebral convolutions with cortical softenings. Death was apparently due to this cause. *Path. Reports*, 7th Dec., 1882. No. 885.

83. Infarction of Kidney, partly absorbed. (*Dr. W. T. Gairdner.*)

Half of the lower portion of left kidney has been preserved. At the edge a deep depression is seen, at the bottom of which, as seen on section, there is a yellow caseous material which extends in the form of a wedge into the kidney.

The case was one of aortic valvular disease with thrombi on the curtains. Besides this evidence of old embolism of the kidney there were recent infarctions in these organs, and one of intermediate date in the spleen. *Path. Reports*, 13th Nov., 1883. No. 1059.

84. Thrombosis of Left Common Carotid Artery. (*Dr. W. T. Gairdner.*)

The carotid artery was completely plugged by a firm grey thrombus, from its origin at the aorta till the emergence of the internal carotid inside the skull. At the aortic end the artery was considerably thickened, with slight cicatricial contraction, which extended slightly into the innominate. In this neighbourhood the thrombus was very firmly adherent, although elsewhere (as in preparation) somewhat loosely attached to the wall.

Inside the skull the end of the thrombus peeped out of the cut end of the internal carotid, which was empty from this point to its division. The anterior cerebral, and the first part of the middle cerebral were also empty, but about half-an-inch from its origin the latter was filled with a plug, which, at first pale, became red as it passed into the branches of the artery. A very extensive softening of the middle parts of the corona radiata was found, the convolutions being undermined. In the neighbourhood of the fissure of Sylvius a yellow exudation existed in the sulci.

The lungs presented the usual characters of phthisis pulmonalis with cavities.

The patient was a man, aged 32, who was suddenly attacked with right hemiplegia and aphasia 29 days before death. After admission there was a gradually increasing lethargy and advancing rigidity of right arm, but no change as regards the aphasia. Two days before death pain on movement was observed in *left* lower limb, and afterwards a degree of rigidity in *left* arm. About a fortnight before death, temperature, previously normal or subnormal, suddenly rose to 104°, with very distinct rigor, contrasting strongly with the previous apyretic state, but without any very obvious change in the cerebral symptoms; temperatures were upwards of 104° on three successive days, and thereafter continued febrile till the end. *Path. Reports*, 30th June, 1884. No. 1209.

85. Thrombosis of Left Innominate, Subclavian, and Jugular Veins. (*Dr. G. P. Tennent.*)

At the lower extremity of the preparation is the superior vena cava laid open. The rounded bulbous extremity of a thrombus projects from the left innominate into the cava. The left innominate is itself completely plugged, and so are the subclavian and jugular veins on the same side. The innominate has been cut through near its termination, and the coagulum, partially softened in the centre, is visible. There was very great œdema of the left arm, while the right was emaciated. For state of heart see No. 42.

86. Marasmic Thrombosis of the Veins of the Leg. (*Dr. Jas. Finlayson.*)

The vein preserved is seen to be distended with clot, and at one or two places—viz., in the situation of the valves, there is a very aggravated distention. The thrombosis existed from the calf upwards to the bifurcation of the vena cava. There was also thrombosis of the pulmonary artery.

The case was one of phthisis pulmonalis, with caries of the vertebræ, and great weakness. Swelling of the leg occurred suddenly after exposure to cold in washing the feet in warm water two months before death. Death was sudden. Reported in *British Medical Journal*, 28th April, 1877. *Path. Reports*, 12th Sept., 1876. No. 130.

87. Thrombosis of Veins of Leg. (*Dr. W. T. Gairdner.*) Transverse and longitudinal sections of the affected veins are shown, and they are seen to be distended by somewhat dark adherent clot. In one of the longitudinal sections a rounded varicosity is shown. These are pieces from the veins of the legs which, on both sides, appeared to be completely plugged.

There was enlargement of both ventricles of the heart with thrombi in them, and embolism with infarction of the lungs.

The patient was a woman, aged 60, whose illness had lasted 5 or 6 weeks, although she had been subject to palpitation for years before. The symptoms were, great dropsy of the lower limbs, and a corded condition of the left saphena vein throughout, with a completely consolidated varicose swelling near the knee; to this she attributed a date of 35 years back, affirming it to have been solid all that time. The more recent illness was chiefly determined by the pulmonary hæmorrhages resulting from the embolisms; and she insisted upon their not being of more than five or six weeks' duration, previously to which she affirmed that she was "the hardest working woman in Glasgow, and had not had occasion to spend a shilling in medicine for fourteen years." *Path. Reports*, 2nd Jan., 1882. No. 754.

88. Obstruction of Thoracic Duct and Internal Jugular Vein. Chylous Ascites. (*Dr. G. P. Tennent.*) The parts preserved are the left innominate, internal jugular, and subclavian veins. The internal jugular was found pervious about the angle of the jaw, but from this level it became (as shown in the preparation), rapidly narrowed, and for a distance of about an inch and a half before its junction with the innominate, it forms a solid cord around which the tissues are considerably condensed. At its junction with the innominate there is merely a cicatrix and no communication. The thoracic duct, which has been injected with wax coloured with vermillion, is inserted into the obliterated jugular vein. It was found considerably dilated, and as it approaches its termination it bifurcates, and again unites just at its insertion.

There was a large quantity of milky fluid in the abdominal cavity, and vessels filled with an opaque white material were observed in various places, forming considerable plexuses near the tail of the pancreas.

In addition, the heart was greatly dilated and hypertrophied, and there was partial adhesion of the pericardium, fatty degeneration of the muscular fibre, and warty vegetations on the aortic and mitral valves. *Path. Reports*, 14th November, 1882. No. 871.

89. Fluid from Abdomen in Chylous Ascites (from preceding case).

The fluid, when removed, had a general turbidity, but it has now deposited a somewhat floculent white precipitate.

90. Obstruction of Thoracic Duct and Thrombosis of Veins of Neck. (*Dr. G. P. Tennent.*)

The preparation shows the innominate vein laid open, and the left subclavian and internal jugular. At the point of junction of these veins, and for a short distance in all three, there is, in addition to thrombosis, a considerable contraction of the calibre, and here the thrombus is evidently old, from its pale colour and the fact that it has begun to soften in the central parts. In the case of the internal jugular, the contraction gives place to a considerable dilatation about half an inch above the junction, where it is filled with clot, which being much redder, is evidently more recent. The thrombosis terminates inferiorly about the middle of the innominate vein.

The thoracic duct, as it enters the vein where it is occluded, is completely obstructed. A considerable portion of the duct is preserved, injected with red material, and it shows considerable dilatation.

The cavities of the heart were considerably dilated, and there were many globular thrombi in the right auricle. The peritoneal cavity contained a small quantity of somewhat milky fluid.

The case was that of a boy aged 10, who suffered from severe cardiac symptoms. He recovered considerably till a week before death, when it was noted that ascites had rapidly developed. Paracentesis was performed three times, 23 oz. of distinctly chylous fluid having been removed on each occasion. *Path. Reports*, 27th December, 1882. No. 940.

91. Varicose Vein of Leg.

The left internal saphena vein is extremely varicose. The portion removed extended from the middle of the thigh to the lower part of the leg. The vein is much twisted in parts and presents numerous pouch-like projections (the largest were situated on the inner side of the knee). From one of the pouches is seen a secondary projection which appears much more translucent than other parts, indicating the thinness of its walls. The pouches generally will be seen to be of a more translucent character than the narrower less dilated portions of the vein. The vein was readily distended from above, thus indicating the complete ineffectiveness of the valves. *Path. Reports*, 13th December, 1884. No. 1272.

92. Part of Femur from a case of Leuchæmia. (*Dr. Jas. Finlayson.*)

The parts preserved in this and the following two preparations are the heart and pericardium, femur, and part of intestine.

In this case there was a moderate enlargement of the spleen, which weighed 1 lb., and there was also considerable enlargement of the lymphatic glands in the abdomen, axilla and groin. The glands in the neck were also enlarged, and one of them had suppurated and had been opened.

The more remarkable conditions were as follows:—The medulla of the femur, and presumably of other bones, was converted into a dark red tissue, found on microscopic examination to be composed of round cells, to the almost complete exclusion of fat. The root of the lungs, as shown in next preparation, is occupied by a massive tumour, which surrounds the bronchi and great vessels, and is continuous with a tumour which occupies the upper part of the pericardium. Both visceral and parietal layers of pericardium are enormously thickened at the basal parts, and, in fact, converted into a mass of soft pale tissue. The kidneys were the seat of numerous pale tumours, the right weighing 11 oz. The liver was much enlarged, weighing 5 lbs., and the tissue pale, but without any definite tumours. In the intestine, as shown in No. 94, there was a general enlargement of the Peyer's patches and solitary follicles, the latter especially in the large intestine where the mucous membrane was dotted over with nodules as large as split peas. In all the tumours the tissue has essentially the same structure—viz., round cells, which are to some extent infiltrated among the normal tissues.

The patient was a man æt. 25. In addition to the glandular

swellings, there was great excess of white blood-corpuscles, and evidence of a mediastinal tumour. Latterly albuminuria, general dropsy, &c., occurred. Reported by Dr. Gowans in *Glasgow Medical Journal*, October, 1876. *Path. Reports*, 11th July, 1876. No. 114.

93. Heart and Pericardium in Leuchæmia. (See preceding preparation,)

94. Intestine from Leuchæmia. (See two preceding preparations.)

95. Greatly Enlarged Spleen, from a Case of Acute Peritonitis. (*Dr. M'Call Anderson.*)

The spleen is greatly enlarged, weighing 42 ounces and measuring 8 inches from above downwards. Its tissue is firm. The liver was also greatly enlarged, weighing 90 ounces, and so were the kidneys, weighing 8½ and 9 ounces respectively. The hepatic cells and renal epithelium presented a high degree of cloudy swelling. The peritoneal cavity contained a considerable amount of turbid fluid, but without fibrine. This fluid, examined a few hours after death, contained innumerable bacteria.

The case was that of a man, aged 61, a forgeman. He was admitted with general dropsy and ascites. Paracentesis abdominis was performed several times, and after the last tapping the temperature went up to 104° F., and the patient died in a few days. *Path. Reports*, 8th May, 1879. No. 439.

96. Tubercular Masses in Spleen.

These masses are yellow in colour, and of various sizes, up to that of a small marble. They are sown throughout the spleen, which is considerably enlarged, weighing 10 ounces. There was also scrofulous enlargement of the lymphatic glands, miliary tuberculosis of the lungs, liver, and kidneys, tubercular ulceration of the intestine, scrofulous tubercles of the brain, and tubercular meningitis. The patient was a negro. *Path. Reports*, 23rd April, 1880. No. 548.

97. Scrofulous Enlargement of Mesenteric Glands. (*Dr. W. T. Gairdner.*)

Some of the glands, as will be seen, are greatly enlarged; and many of them were found to be highly caseous. There was also tubercular peritonitis. *Path. Reports*, 18th July, 1881. No. 696.

98. Masses of Enlarged Lymphatic Glands (Lymph-adenoma) removed on two separate occasions. (*Dr. A. Patterson.*)

The masses consist of glands which retain their capsules, though to some extent mutually adherent. They present no trace of caseous metamorphosis, their tissue being of a generally grey colour, and closely resembling that of a normal lymphatic gland. Under the microscope, the structure is also that of a lymphatic gland, except that there is an occasional development of spindle-celled tissue. One of the glands has been converted into a putty-like mass, the capsule retaining this mass. *Path. Reports*, 14th August and 18th November, 1878. Nos. 357 and 389.

99. Scrofulous Disease of Mesenteric Glands. (Tabes Mesenterica.)

A portion of intestine and mesentery of a child is shown. In the mesentery are numerous prominent and enlarged glands, one of which has been cut into.

100. Supernumerary Spleens.

The tissue from the neighbourhood of the spleen is preserved, showing two supernumerary spleens, one the size of a pea, and the other of a small hazel nut.

101. Rupture of the Spleen. (*Prof. Geo. Buchanan.*)

The rupture is a small one, three-quarters of an inch in length, at the lower extremity of the spleen; but there was considerable sub-peritoneal hæmorrhage in its neighbourhood. There was, in addition, a double fracture of the pelvis.

The patient, a servant girl, fell down four stories, and only survived a few hours. There were no external marks of injury whatever. *Path. Reports*, 19th Feb., 1876. No. 74.

102. Peri-Splenitis from Ascites.

This preparation is from the same case as Series V, No. 6, and shows a thickening of the capsule of the spleen similar to that of the liver, and affecting especially the convex surface. The organ itself is not enlarged, weighing $2\frac{1}{4}$ oz., and there is the merest trace of amyloid disease, only detected by microscopic examination. The peritoneum was thickened generally. In this case there was prolonged ascites, and the fluid was removed by paracentesis as often as nine times. *Path. Reports*, No. 956.

103. Two Amyloid Spleens (Sago Spleen).

In these two spleens, the structures affected are the Malpighian bodies, which are enlarged and transparent, so that they appear on the cut surface as rounded clear areas like grains of boiled sago. They were removed from a case of psoas abscess, and a case of phthisis pulmonalis.

104. Diffuse Amyloid Degeneration of the Spleen (Lardaceous Spleen). (*Dr. W. T. Gairdner.*)

A slice of the spleen is shown, and it can be gathered that the organ was very greatly enlarged. It weighed 21 ounces. The amyloid disease was not confined to the Malpighian bodies, but affected even more the splenic pulp. The case was one of syphilitic disease of the liver and parenchymatous nephritis. Amyloid disease was present in the liver and kidneys. *Path. Reports*, 12th November, 1880. No. 588.

105. Diffuse Amyloid Degeneration of the Spleen. (*Dr. Jas. Finlayson.*)

The spleen was considerably enlarged, weighing 10 oz.; it was firm, and felt like an amyloid spleen, but did not present the sago character. On examination it was found that amyloid degeneration was present, in a very high degree, in the pulp.

The case was that of a man, aged 33, affected with aortic valvular disease, with dropsy and albuminuria. There was found *post-mortem* evidence of old disease at the apices of both lungs, in the form of great contraction with pultaceous matter in the midst of the contracted tissue, but no active disease. The organs generally were amyloid, liver, kidneys, and intestine very much so. A perforating ulcer of the duodenum was also found. *Path. Reports*, 21st April, 1879. No. 437.

SERIES III.

RESPIRATORY ORGANS.

1. Fracture of Thyroid and Cricoid Cartilages, Inflammation and Œdema of Mucous Membrane. (*Dr. Hislop.*)

A young man about 23, was running on the pavement and fell against an iron rod striking it with his neck. A large amount of blood (about a pint and a half) was discharged from the larynx. He got on fairly well for a few days, but was suddenly seized during the night with a suffocative attack, the breathing loud and crowing. He died soon after.

The thyroid and cricoid cartilages are fractured in the middle line in front, where there is a considerable cavity in the soft parts in front of the larynx, communicating with the interior of the larynx. The left wing of the thyroid is perfectly loose and is easily flapped backwards and forwards, and outside it the soft parts are torn so as to form a cavity continuous with that in front. The mucous membrane of the larynx is also torn at the ventricle of Morgagni, so as to form a free communication by a ragged aperture with the cavity of the larynx. The inferior cornu is bare, and the corresponding portion of the pharynx is torn so that the cornu projects into it; there is also a considerable tear in the opposite wall of the pharynx. The cricoid cartilage is loose on the left side so as to bulge inward at and especially under the glottis. This bulging is added to by inflammatory and œdematous swelling of the mucous membrane. [Death had occurred either from a dislocation of the fractured cartilages or a sudden increase of the œdematous swelling of the mucous membrane.] *Path. Reports*, 6th December, 1884. No. 1267.

2. Diphtheritic Exudation in Larynx. (*Dr. Eben. Duncan.*)

The larynx is seen to be almost occluded by an exudation. In this case tracheotomy was performed during life with considerable relief temporarily.

3. **Cast of Trachea Expectorated** in the same case as the preceding.

4. **Larynx and Trachea in Diphtheria.** (*Dr. Jas. Finlayson.*)

The mucous membrane of the larynx is much thickened, and it is covered by a somewhat adherent exudation of yellow colour, which is present especially on the posterior surface of the epiglottis and in the larynx, although by no means filling it up. The exudation extends to the trachea in patches, which are present even down to the main bronchial tubes.

There were several condensed patches in the lungs. The liver and spleen were considerably enlarged.

The patient was a man aged 20, whose illness began about a fortnight before death with feebleness, followed by cough and loss of voice, also difficulty in swallowing; there was a very copious muco-purulent expectoration. Laryngoscopic examination showed great swelling of the mucous membrane and a whitish exudation. Death occurred in connection with his being lifted up to the night stool, with some appearance of a suffocative seizure. Tracheotomy and artificial respiration were tried in vain. *Path. Reports*, 5th July, 1881. No. 687.

5. **Diphtheria, with Exudation in Nares and Fauces.** (*Dr. G. P. Tennent.*)

The preparation includes fauces, soft palate, and larynx, but the parts chiefly displayed are upper aspect of soft palate and naso-pharynx. The upper surface of soft palate is coated with a white fibrinous exudation, which extends continuously to fauces and pharynx, forming a tubular cast of these parts. The exudation also extended to the larynx and trachea, and also into the bronchial tubes, even into comparatively fine ones. The case was that of a boy aged 1 year. Tracheotomy was performed. *Path. Reports*, 7th October, 1884. No. 1241.

6. **Diphtheritic exudation on Tonsils, Pharynx, Larynx, Trachea.** (*Dr. A. Patterson.*) *Path. Reports*, 18th April, 1878. No. 318.

7. **Exudation in Larynx and Trachea in Diphtheria —Tracheotomy.** (*Dr. Jas. Finlayson.*)

In the upper part of the trachea there is a soft grey membrane almost filling the tube, and extending from the inferior aspect of the vocal cords about half way down the trachea. It is comparatively loose, but adheres somewhat about the level of

a longitudinal wound which has been made in performing tracheotomy. There was no exudation or obvious change in any part above the larynx.

The patient was a boy aged 7, who had complained of cough and hoarseness for a week, the cough becoming croupy after 3 days. On admission the voice and cough were very hoarse and with a croupy character, but without much obstruction except when asleep. There was a sudden failure of breathing, and tracheotomy was performed, but without effect, although artificial respiration was used. *Path. Reports*, 3rd March, 1881. No. 635.

8. Syphilitic Laryngitis, Œdema Glottidis. (*Dr. W. T. Gairdner.*)

The parts have considerably shrunk, but even yet it can be seen that the tissue around the epiglottis and in the arytenoepiglottidean folds is greatly thickened, the œdematous thickening being so great in the fresh state as to conceal the interior of the larynx. Viewed through an incision in front, the larynx is seen to be greatly contracted and considerably ulcerated.

The patient died from suffocation a few hours after admission, and no history was obtained. *Path. Reports*, 1st October, 1875. No. 30.

9. Syphilitic Stenosis of Fauces. (*Dr. Walker Downie.*)

The preparation includes tongue, soft palate, fauces, pharynx, larynx, and trachea. The fauces are completely occluded, with the exception of a small round aperture about one-eighth of an inch in diameter. In the general adhesion of parts the uvula pillars of fauces and tonsils are enveloped. The nasal surface of soft palate is seen above, and the buccal surface is visible, terminating posteriorly in the adhesions. The preparation has been opened up so as to show the interior of the larynx, pharynx, &c. The larynx seems normal, except that the mucous membrane of the epiglottis is irregular. The pharynx presents great irregularity of its mucous membrane, and becomes gradually narrowed on passing upwards so as to form a funnel at the end of which is the small aperture mentioned above.

M. M'D., steam loom weaver, aged 22 years. In August of 1881, when four months' pregnant, her throat became painful and red in appearance, but she complained of no difficulty in swallowing. At this time she had the usual symptoms of syphilis, including falling out of hair, spots on arms and

chest, &c. When near full time her throat was seen by a doctor, and from that date until the child was about a year old she had been having occasional treatment for her throat and was then taken to the Royal Infirmary. The doctor there indicated to her the specific nature of the disease, and sent a note to the medical man then in attendance recommending certain lines of treatment, which on being adopted seemed to cause the throat to heal up quickly. From that time contraction of the fauces seemed to set in, as difficulty in swallowing increased rapidly, and the pharyngeal opening, through which she both fed and breathed, steadily became smaller and smaller. About twelve months before death it was stated that the opening appeared to be about one-fourth of an inch in diameter, and when first seen at the Dispensary, three weeks before death, it was little over one-eighth of an inch, and a No. 6 gum elastic catheter was firmly caught when introduced through the orifice on 28th February, 1885. At this time she was able to take sufficient food in the form of porridge and milk, tea with bread, bacon, and finely minced meat with fat, to nourish her, but she swallowed it very slowly. There was considerable dyspnœa on exertion, but she was able to go about quietly without difficulty of breathing. She was admitted to the Wards about a fortnight before death, and while there great difficulty of breathing supervened, and she died apparently from suffocation.

10. Tubercular Ulceration of the Larynx and Trachea.

(*Dr. W. T. Gairdner.*)

The ulceration affects the trachea almost continuously, and the cartilaginous rings are frequently exposed and occasionally eroded. The epiglottis is largely eaten away—its superior edge being entirely gone, and its substance to a great extent. The vocal cords are preserved, but there is ulceration in their neighbourhood. There were cavities in the lungs, tubercles in bronchial mucous membrane, and tubercular ulcers of small intestine. The symptoms appeared to have been only of ten or twelve weeks' duration previously to death, and he was at work till the day before admission, which was exactly four weeks before death. *Path. Reports*, 5th April, 1880. No. 543.

11. Tubercular Ulceration of Larynx and Trachea.

(*Dr. Jas. Finlayson.*)

The lower part of the trachea presents comparatively slight ulceration, but it is very marked in the middle parts,

the cartilages being frequently exposed; towards the larynx it again diminishes, but it even extends to the base of the epiglottis. Where the ulceration is not continuous it is seen to assume frequently a circular or crater-shaped form.

The case was one of phthisis pulmonalis, in a man æt. 29, with tubercular ulceration in the bronchi and small intestine. There was also pneumothorax. *Path. Reports*, 10th March, 1879. No. 432.

12. Laryngeal Phthisis.

A large ulcer occupies the left side of the larynx, partially destroying the epiglottis. There is a smaller ulcer on the right side of the epiglottis, and the mucous membrane generally is irregular.

13. Laryngeal Phthisis.

A ragged ulcer occupies the posterior part of the right vocal cord. There are also ulcers below the cords.

14. Tubercular Ulcer of Larynx, with great thickening of the mucous membrane of epiglottis, &c.

15. Tubercular Ulceration of Larynx, Necrosis of Cartilage. (*Dr. W. T. Gairdner.*)

The ulceration is very extensive, involving the mucous membrane of the entire larynx and epiglottis, and extending even below the vocal cords. The ulceration has for the most part simply destroyed the mucous membrane; but at the posterior part on the right side it has passed much deeper, and a considerable piece of necrosed cartilage (in situation corresponding with the arytenoid cartilage) is exposed in the ulcer. This piece of cartilage is discoloured and loose. In the trachea the mucous membrane generally is highly infiltrated, and there were three or four deep ulcers. One of these, the size of a threepenny piece, is seen in the preparation, and a portion of the cartilaginous ring is exposed in the floor of the ulcer.

In the lungs there were numerous condensations but no cavities. The liver and spleen were amyloid.

The patient was a man aged 42. He complained of cough and spit for eighteen months, and hoarseness for eight months. Occasional slight hæmoptysis. He was unable to swallow solid food, and even liquids were latterly rejected through the nose. Respiration noisy, but not so as to raise question of tracheotomy. Emaciation extreme. Death by asthenia. *Path. Reports*, 9th March, 1878. No. 307.

16. Tubercular Ulceration of Bronchial Mucous Membrane. *(Dr. W. T. Gairdner.)*

The case was one of advanced phthisis pulmonalis, and in the part preserved the bronchial mucous membrane is the seat of superficial ulcers and miliary tubercles. *Path. Reports,* 14th April, 1876. No. 89.

17. Congenital Atelectasis of left Lung—Hypertrophy of right Lung. *(Dr. M'Call Anderson.)*

The left lung forms an elongated generally fleshy structure, measuring 7½ ins. from apex to base. On section it is seen that no crepitant lung tissue exists, except in the middle part of the lung where there is a very limited amount of it, and it is also pigmented in the usual way. The upper lobe of the lung is entirely unpigmented, and is converted into a series of cavities having a diameter of from half-an-inch to an inch, and with tolerably thick well defined walls. These cavities communicate freely with the main bronchus, and are in fact dilated bronchial tubes. The lower part of the lower lobe is also unpigmented, and contains two or three cavities; but although otherwise mostly fleshy, there is some appearance of lung tissue in it. There are two sacculated cavities in the crepitant pigmented middle part of the lung.

The right lung is greatly enlarged, and its anterior part especially projects forward in a very unusual fashion, the edge reaching, at the time of the examination, 2 ins. beyond the left nipple. This piece of lung is, in a certain way, distinguishable from the normal lung, forming a kind of enlarged portion of it, and demarcated by a groove at the upper and lower extremities. There is no special emphysema of the anterior margins, but the air vesicles throughout the lung are larger than normal. This projecting piece of lung, along with the enlarged heart, largely filled the left side of the chest.

The main bronchi of the two lungs are nearly equal in diameter, but the blood-vessels are about half the size on the left side, the pulmonary artery and vein being ⅜ths of an inch in diameter on the left side, and ¾ths of an inch on the right. For condition of heart see next preparation.

The case was that of a man aged 46, and no observation of the conditions above described was made during life. He had a slight cough and spit since boyhood, and considerable hæmoptysis 14 years before death. Six months before death he was in the Royal Infirmary with swelling of the abdomen and legs, which disappeared, but returned 4 weeks before

admission. Latterly he complained of cough and dyspnœa. *Path. Reports*, 24th November, 1882. No. 878.

18. Enlargement of Right Ventricle and Pulmonary Artery from preceding case.

The heart is greatly enlarged and was found considerably displaced towards the left. The enlargement is entirely of the right ventricle, the left being probably smaller than normal, and very remarkably removed upwards from the apex, which is formed entirely by the right ventricle. The pulmonary artery is thickened, being at least $\frac{2}{3}$rds as thick as the aorta. The tricuspid orifice admits six fingers, and the mitral three.

19. Deformity of the Lung from Collapse of Lower Lobe, due to Pleural Effusion. (*Dr. Jas. Finlayson.*)

The right lung, which is preserved, was found greatly compressed and floated up by a large pleural effusion. The lower lobe is completely collapsed and forms but a comparatively small appendage to the lung. The middle lobe is also collapsed and firmly adherent to the upper lobe, which latter is emphysematous. There was great hypertrophy and dilation of the heart and passive hyperæmia of the liver, kidneys, &c.

The history showed pulmonary symptoms for six months before death. The man was 55 years old. *Path. Reports*, 30th March, 1880. No. 541.

20. Pieces of Emphysematous Lung, dried and cut through so as to show the Internal Structure.

The air spaces are seen to be very greatly enlarged, in some places to such an extent as almost to be in the form of bullæ.

21. Emphysema of Lung. (*Dr. W. T. Gairdner.*)

The part preserved is the anterior margin of the right lung. The margin is bulky and irregular, presenting rounded bulgings. In all of these the air spaces are much enlarged, but this is especially manifest in one towards the lower part of the preparation, which has been partly laid open. This swelling is little more than a rounded cavity divided by thin partitions.

During life there were the usual symptoms and signs of bronchitis and emphysema, barrel-shaped chest, lividity, depression of liver, &c. The patient suffered from bronchitis from 6 years of age till death at age of 27. *Path. Reports*, 5th December, 1884. No. 1266.

22. Interstitial Condensation of Lung. Potter's Phthisis. (*Dr. W. T. Gairdner.*)

The surface of both lungs, as seen in the preparation, is exceedingly irregular, being contorted by deep cicatrices and occasional intervening emphysema. The emphysema is very well marked in the left lung, there being in some places distinct bullæ. In both lungs there is a very marked condensation involving about the lower half of upper lobe and the upper fourth or sixth of lower lobe. The condensed part is dense and heavy, and of a deep slaty colour, bronchi and vessels being invisible in the homogeneous mass. There are no cavities.

Patient was a potter, æt. 40, who had suffered for at least a year from symptoms attributed in the first instance to exposure when under the influence of drink, but also in all probability to dust inhaled in his occupation. The expectoration was appreciably carbonaceous (though he had never worked underground); there had been no hæmoptysis. The temperatures while under observation were mostly normal or sub-normal (once only 101·5°). A notable feature in the case was the extreme feebleness of the radial pulses, and the permanent acceleration of their rate, out of proportion to the other symptoms. The patient was cyanotic; and albuminuria, with dropsy, were present throughout the period of observation; but although breathlessness was a leading symptom, orthopnœa was by no means constantly present, nor were the physical signs very appreciably different from those of very advanced bronchitis and emphysema, with dilatation of the right side of the heart, but with dull percussion in the inter-scapular regions. *Path. Reports*, 7th February, 1877. No. 185.

23. Cavities in Lung from Dilatation of Bronchi. (*Dr. M'Call Anderson.*)

Both lungs were beset with large cavities, and one lung is preserved. All the large cavities are wedge-shaped, and directly continuous with large bronchi, whose mucous membrane is continued a certain distance into the cavities. On cutting up the bronchial tubes apart from the cavities, they are found to be in nearly every case dilated, often with bulbous dilatations at the ends. The cavities were filled with creamy pus. Between the cavities the lung tissue is beset with small, hard pigmented bodies. Amyloid degeneration existed in the liver, kidneys, spleen, and intestine. *Path. Reports*, 2nd February, 1877. No. 182.

24. Fibroid Phthisis, with great thickening of Pleura and Cavities, (*Dr. M'Call Anderson.*)

The thickening of the pleura sometimes attains to ¼th of an inch, and it forms a complete cap at the apex of the lung. There were numerous cavities, one of which, at the extreme apex, is preserved. These cavities were found to be, in many cases, bulbous dilatations of the bronchial tubes, and their walls showed, under the microscope, an imperfect lining of ciliated epithelium. Outside the cavities there is a dense fibrous pigmented tissue. *Path. Reports*, 12th January, 1882. No. 612.

25. Fibroid Phthisis, with Emphysema, Bronchiectatic Cavities, and Cystic Cavities of Pleura. (*Dr. M'Call Anderson.*)

The pieces of lung preserved are from the upper lobe. This lobe was much contracted and adherent to the chest wall, while the pleura, as shown in the preparation, is greatly thickened. In the midst of the fibrous tissue, which largely replaced that of the lung, there are highly emphysematous portions, the emphysema going on in some cases to the formation of considerable cavities, which, however, are not at the margins, but in the midst of the lung. In addition, there are various proper cavities, which are all lined with distinct membranes, in which microscopic examination detected ciliated epithelium. Several of the cavities were traced into open connection with bronchial tubes, of which they formed bulbous dilatations. One of the pieces of lung shows a peculiar condition of the pleura in the form of a row of small cysts separated by thin partitions, these also being the result, apparently, of contraction of the lung tissue. *Path. Reports*, 12th January, 1881. No. 612.

26. Pneumothorax in Phthisis Pulmonalis. (*Dr. W. T. Gairdner.*)

The preparation shows parietal and pulmonary pleuræ, the latter with three apertures communicating with cavities in the lung. The borders of these apertures are rounded, and they present the appearance as if a portion of the pleura had been punched out (slough of pleura). The pleural cavity in its lower part was found filled with air, while above, the lung was adherent.

The case was one of great interest, and is fully recorded in Journals of Ward I, at two different dates, B. 152, and J. 1. In the latter the pulmonary symptoms and physical signs will be found in detail; but it is impossible to give

any adequate account of them here. *Path. Reports*, 16th April, 1878. No. 315.

27. Pneumothorax. Cavities in Lung. Slough of Pleura. (*Dr. Jas. Finlayson.*)

This preparation illustrates the mode of occurrence of pneumothorax. The lung tissue is seen to be largely occupied by cavities, and at one part the pleura, over an area as large as a shilling, is dead. In the fresh state it presented a dead white colour, which contrasted with the surrounding hue. At one edge the slough has begun to separate, and a communication is shown between the pleural cavity and the lung. The pleura was covered by a fibrinous exudation, and it contained gas and pus.

Thirteen days before death there was a sudden occurrence of pain in the side corresponding to the lesion, with great breathlessness, &c. Simultaneously there occurred amphoric respiration, metallic tinkling, &c., with a subsequent development of splashing sounds on succussion. The patient was a girl, 23 years old, and her phthisical history went back a year. *Path. Reports*, 17th December, 1876. No. 170.

28. Cavity in Lung, simulating Pneumothorax. (*Dr. W. T. Gairdner.*)

The whole lung is preserved, and it is seen that a cavity occupies its entire extent, from apex to base, with the exception of a small portion at the lower part in front, where there is some condensed tissue. The immense cavity is seen to be partially divided by partitions and trabeculæ, which, as well as the general wall, are frequently pigmented.

During life there were signs construed as due to pneumothorax, but specially noted as being without evidence of distension, and without history of a sudden attack of pneumothorax. The case is recorded with every available detail as observed during more than four months (November to March 1875-6), in Journal A. of Ward 6, p. 58, where also a summary of the details, too long for insertion here, will be found. The following extract from a clinical lecture on 14th December, taken from the notes of Mr. D. M'Vail, will show that while the case passed generally for one of pneumothorax, the alternative diagnosis of a very large intra-pulmonary excavation was duly considered and presented at that date:—"Signs now are—marked cavernous phenomena; strong (metallic) after-tone with breath-sound, cough and râles. With the breath-sound it follows expiration, and is best heard behind.

The ringing sound after the cough and râles proves the presence of cavity, but does not indicate whether it is in the lung or not. Signs are distributed largely over the side, and indicate a cavity so large as not likely to be in the lung. The bell-sound, too, is completely conveyed from front to back. The evidence otherwise of pneumothorax is incomplete. All these signs might be due to an excavation in the lung; but so large a cavity, continuous and smooth-walled, is not likely. The absence of symptoms of the onset of a pneumothorax, the absence also of signs of displacement of the heart, and the absence of distension or bulging of the intercostal spaces, would bear out the idea of excavation." See Journal, p. 98. *Path. Reports*, 18th March, 1876. No. 79.

29. Gangrenous Cavity of the Lung. (*Dr. G. P. Tennent.*)

The lower lobe of the lung is occupied in nearly its whole extent by a large irregular cavity, with very ragged walls, and only in one or two places with any definite lining. The cavity contains shreds of slough, and it exhaled a highly gangrenous odour. The rest of this lobe of the lung is in a state of complete grey hepatization, and the base of the lung was firmly adherent to the diaphragm.

The case was that of a man aged 40, who, after recovery from a fracture of the femur, was attacked with symptoms referrible to the abdomen, and indicating intestinal obstruction. These symptoms subsided, and patient was then attacked by an acute pulmonary disease, but no gangrenous odour was perceived till just before death. On *post-mortem* examination a loop of intestine, 2 or 3 feet in length, showed appearances as of comparatively recent constriction, but no hernia or other cause of obstruction was found. *Path. Reports*, 9th February, 1882. No. 770.

30. Gangrenous Cavities of Lung from Perforation from Œsophagus into Bronchus. (*Dr. Jas. Finlayson.*)

This specimen is from the same case as No. 2, Series IV. The portion of lung preserved is from the apex region, where the cavities were more numerous, although present in other parts as well. In addition to the cavities, there was a condition approaching grey hepatisation, but this was mainly present in the upper lobe, and especially towards the apex. The cavities were filled with a thickish material which exhaled a highly fœtid odour. See *Glasgow Medical Journal*, Vol. 19, p. 313. *Path. Reports*, 28th November, 1882. No. 882.

31. Foreign Body in Right Bronchus, Gangrenous Cavities in Lung. (*Dr. A. Napier.*)

The lung is that of a child 4 years of age, shown in longitudinal section; the main bronchus being also laid open and extended by a piece of whale-bone. Behind the whale-bone is a piece of elder pith (determined to be so by microscopic examination) which was found in the bronchus as shown. It is about half an inch in length and $\frac{5}{16}$ths in diameter, forming a short cylinder with irregularly cut extremities. It weighed 4 grains. The wall of the bronchus is considerably ulcerated where it lies, so that a considerable depressed bed has been formed. The lower lobe of the lung shows numerous irregular ragged cavities, which at the time of the *post-mortem* were filled with very fœtid pus. The cavities have no proper lining membrane and the tissue of the lung is condensed throughout, the colour in the fresh state being red in the upper and greyish-green in the lower lobe, which latter exhaled a very fœtid odour. The pleura is coated with a somewhat thick fibrinous layer, which is seen hanging from the surface. On the posterior surface of the lung there is a shallow wound.

The date at which the foreign body passed into the bronchus is not known, but the acute symptoms began between three and four weeks before death. These symptoms consisted, in the first place, in a "stomach attack" with acute fever (temperature of 103° and 104° F.) and a peculiar cough accompanied by a suppressed sneeze. There were soon evidences of acute pleurisy followed in about ten days from onset by expectoration of a fœtid thin fluid pus, which afterwards became very abundant. Under the impression that the pleural exudation had become fœtid, an aspirator needle was inserted, and an incision afterwards made with resection of part of the seventh rib, but no pus was found in the pleura. The patient survived the operation seven days.

See paper by Dr. Napier in *Glasgow Medical Journal* for January, 1885.

32. Aneurism Springing from Wall of Pulmonary Cavity. (*Dr. Jas. Finlayson.*)

This cavity existed in the posterior part of the lower lobe of left lung. Its internal wall was smooth, and presented at one point a soft brown projecting mass, on removing which a white sessile aneurism was discovered. The aneurism is seen in the specimen as a small white body, about the size of a split pea, springing from the wall of the cavity. A bristle inserted at the rupture in the coat of the aneurism is seen to

issue from the pulmonary artery at the upper and back part of the specimen.

The patient was a man 21 years old, and the illness was dated back 18 months. *Path. Reports*, 27th June, 1881. No. 683.

33. Aneurism of the Pulmonary Artery in a Phthisical Cavity. (*Dr. W. T. Gairdner.*)

The cavity is a large one, with rather rough walls; the aneurism is globular in shape, and about ⅜ths inch in diameter. On one of its surfaces there is a small aperture. Its wall is very brittle, and it was traced into communication with a branch of the pulmonary artery.

There had been frequent hæmorrhages, and death occurred from a renewal of the bleeding. *Path. Reports*, 4th January, 1876. No. 57.

34. Cavities in the Lung with Aneurisms. (*Dr. Jas. Finlayson.*)

There were several cavities in this lung, mostly of moderate size. In the one preserved there are two aneurisms—one the size of a filbert and the other of a hazel nut. They are attached to a bridge which spans the cavity, and they almost fill the cavity.

For four months before death there were frequent attacks of hæmoptysis—sometimes as much as 20 or 30 oz. Death occurred during a violent vomiting of blood (44 oz.) See *British Medical Journal*, 28th April, 1877. *Path. Reports*, 28th September, 1876. No. 138.

35. Cavity in the Lung, with an Aneurism in its wall. (*Dr. W. T. Gairdner.*)

There were many cavities in this lung, and that preserved is one of the smaller. In its wall is seen a pretty large vessel to which is attached a nearly globular aneurism about the size of a small hazel nut. There is a large rent in the aneurism; part of its wall being apparently torn away. A piece of whale-bone introduced into one of the primary branches of the pulmonary artery passes into the aneurism.

During life there was repeated and increasing hæmoptysis for four days before death, only slight traces having been previously observed. All the other symptoms and signs were those of chronic phthisis, at first laryngeal, afterwards with much diarrhœal complication. *Path. Reports*, 23rd Oct., 1876. No. 147.

36. Miliary Tuberculosis of the Lungs. (*Dr. Jas. Finlayson.*)

The tubercles are of small size, and sown throughout every part of the lung. At the roots of the lungs there are groups of large pigmented glands. There were tubercles also in the kidneys, liver, spleen, and possibly in the pia mater.

Patient was a boy, aged 10. The history points to a period only two or three months before death. *Path. Reports*, 19th March, 1880. No. 538.

37. Miliary Tuberculosis of the Lung in an Adult. (*Dr. W. T. Gairdner.*)

The miliary tubercles are seen as white specks in every region of the lung from apex to base. At the apex there is evidence of an old but comparatively slight phthisis. Tubercles were present in liver, kidneys, and pia mater (tubercular meningitis), and there were tubercular ulcers of the intestine.

The case was that of a man, aged 26, admitted to the hospital in a state of lethargy, approaching and graduating into coma, with typhomania, but without paralysis. The diagnosis was held to be doubtful, until a specimen of the urine was obtained with some difficulty (indicating possible ischuria renalis, or advanced Bright's disease), but the urine was found to be non-albuminous, and of high specific gravity. There were signs of tubercular changes in the upper part of both lungs, corresponding with the history afterwards obtained, that patient had been suffering from chronic phthisis, but had only obtained admission to hospital in consequence of a dangerous aggravation of the original disease. No further details were available for diagnosis, till at a late period a history was obtained from his wife of pain in the head, and vomiting extending over a period of six months, and afterwards a severe cough, which appeared to increase or develop anew the head symptoms. No delirium or paralysis was observed, however, up to admission, and no suspicion, apparently, was entertained of danger from the head symptoms. After admission, on the other hand, the chest symptoms were entirely in abeyance, and the death was from pure coma. *Path. Reports*, 8th January, 1878. No. 282.

38. Acute Pneumonia in a case of Phthisis. Exudation on Pleura and in Cavity. (*Dr. G. P. Tennent.*)

A large cavity at the apex of the lung is visible, and a portion of the lung beneath it. This part is in a state of grey

hepatisation, as was the rest of the lung. The surface of the lung is coated with a thick fibrinous exudation, except where adhesion has existed. In the cavity there is also a yellow fibrinous exudation of considerable thickness, lining about half its extent. *Path. Reports,* 8th October, 1882. No. 856.

39. Chronic Induration of the Lung, with great Contraction—Thrombosis of Pulmonary Artery. (*Dr. Jas. Finlayson.*)

As seen in the preparation, the left pleura was greatly thickened, and the lung converted into a tough deeply pigmented fibrous looking structure. The pericardium and heart were carried considerably to the left and upwards. In this lung the pulmonary artery contained, as shown in the specimen, a large stratified thrombus, which presented some softening in its central parts. The thrombus completely fills the main pulmonary artery, but does not extend farther than its first branches.

There were globular thrombi in right auricle—great dilatation of right ventricle—and granular kidney.

The case was that of a man, aged 57, a brass-moulder, who had been very intemperate. The illness was dated back obscurely for two years, and referred to the heart. There had been no rheumatism, and latterly the symptoms were mainly those of pain in the left side and general feebleness. The urine was highly albuminous, and there was extreme dropsy. A systolic murmur was heard at the apex. *Path. Reports,* 23rd November, 1882. No. 876.

40. Iron-Grey Condensation of the Lung (Chronic Pneumonia). (*Dr. W. T. Gairdner.*)

An elongated section of the lung is preserved, and the whole lung was in a somewhat similar condition. It was bulky, solid, and entirely non-crepitant, except in the anterior part of the upper lobe. On section, the cut surface was remarkably smooth, and the colour iron-grey. Under the microscope there is great increase of the connective tissue of the lung at the expense of the lung alveoli. The left kidney was much atrophied and granular with cysts.

The patient was a man aged 62, who, during a residence of six weeks, presented signs of pneumonia of the upper lobe, gradually extending to lower. The disease appeared to have arisen insidiously out of "a bad cold," and had taken on a typhoid character on admission, with temperature 104·2°, afterwards declining to slightly over normal. The urine was

albuminous from the tenth day after admission; previously to which chlorides were deficient. The physical signs persisted, and death was from semi-asphyxia. *Path. Reports,* 6th February, 1882. No. 768.

41. Thrombi in Pulmonary Artery. (*Dr. W. T. Gairdner.*)
Both lungs are preserved, and are seen to be small in size (senile atrophy). Both pulmonary arteries are completely occluded by thrombi, and these are partially adherent to the wall, and are traceable into arteries the size of a crow quill or under. The section of the thrombus on the left side, and to a less extent on the right, is seen to be divided into four, indicating a peripheral origin. The thrombi in the two lungs meet and coalesce (the coalesced portion is hung separate), but do not penetrate beyond the bifurcation. The weight of the lungs was, right, 13 oz.; left, 9½ oz. The heart was dilated, especially the right ventricle, and loaded with fat externally.
The symptoms during life were mainly those of Bright's disease. *Path. Reports,* 25th October, 1875. No. 34.

42. Hæmorrhagic Infarction of Lung. Pleurisy.
In this preparation the infarction has been cut into. The pleural surface of the infarction and its neighbourhood is seen to be coated with a veil of fibrine, and the pleural surface generally has a thinner layer.

43. Hæmorrhagic Infarction in Lung, with Embolism. (*Dr. Jas. Finlayson.*)
The specimen shows in section one half of the consolidated portion of the lung, with the vessel leading to it laid open so as to exhibit the plug with which it is filled. The consolidated area is triangular in shape, two of the sides of the triangle being formed by the pleural surface. The cut surface is of a reddish colour, and one of the vessels seen in transverse section is blocked by a thrombus. The heart was greatly enlarged and thrombi existed in right auricle and ventricle, and in left ventricle. There was an old history of rheumatism and heart disease; latterly hæmoptysis was a marked feature in the case. *Path. Reports,* 27th June, 1881. No. 684.

44. Hæmorrhagic Infarction of Lung.

45. Lungs of Sheep, containing Growths from Glanders.
These growths are mostly of small size, composed of a grey

tissue, with a tendency to caseous degeneration. Under the microscope they present a granulation tissue with degeneration. Glanders was prevalent in the district where these animals lived.

46. Lympho-Sarcoma of Mediastinum, incorporating portion of Lung, &c. (*Dr. J. T. Moore.*)

A bulky soft tumour occupied the left side of the chest, extending above the clavicle, and half way down the thorax. A considerable portion of this tumour is preserved, and in section it is shown that the upper lobe of the lung is largely replaced by the tumour, its vessels and other structures being hardly distinguishable. The tumour surrounds the arch of the aorta, which is shown laid open at the bottom of the incision, and the great vessels spring from the aorta in the midst of the tumour mass. The left innominate passes through the midst of the tumour, a piece of whale-bone in the preparation indicating the position of it in section, and this vessel is much narrowed. The lower part of the trachea, which is laid open from behind, shows the tumour tissue in its wall, presenting internally. There is also an extension to the right main bronchus, while the left is almost entirely replaced by tumour tissue which pouts into it, and by and bye completely replaces it. There were numerous isolated tumours in the subcutaneous tissue of the abdomen. There were also numerous tumours in the pancreas, which was greatly enlarged, especially the tail part. The left supra-renal capsule was very greatly enlarged by numerous tumours, and there were a few small ones in the right capsule, which was not enlarged.

The case was that of a young lady aged 29, who was in good health till 4 or 5 months before death, and even up till death remained generally well nourished. At the period indicated, she began to be troubled with breathlessness and weakness. A few months afterwards loss of respiratory murmur and dulness on percussion were detected on the left side, and some time after a swelling appeared above the clavicle. Great œdema of the general integument, but especially of the left arm, occurred some time before death. *Path. Reports*, 27th August, 1883. No. 1035.

47. Lympho-Sarcoma of Root of Lung. Penetration of Tumour into Bronchus and Vena Cava. (*Dr. W. T. Gairdner.*)

The lower part of the trachea and the main bronchi are preserved, and are seen to be surrounded by a tumour, which,

in the specimen, is greatly reduced in size, but was of massive proportions, occupying the mediastinum. Of great interest was the extension of the tumour. It was found to have penetrated into the right bronchus, incorporating its tissue and bulging its wall inwards. The bronchus going to the upper lobe of the lung was greatly obstructed by the bulging and by the prominence of the tumour. The upper lobe of this lung was completely condensed, and the bronchial tubes somewhat distended with a yellow material. Turning to the superior vena cava it is found that about half-an-inch from its orifice it is completely occluded, not by a thrombus, but by the vein being incorporated in the tumour, which has partly penetrated within its coats. The azygos vein, at its opening into the vena cava, is completely incorporated in the tumour, and its orifice cannot be found. The innominates are also incorporated to a great extent, especially the left, and in this vein it is made out that the tumour has broken through the posterior wall and presented itself within the vein, replacing the clot, a thin brownish layer of which still remains.

The branches of the superior cava are filled with thrombi, which are traced into the neck and the arm. The thrombi are old, presenting partial breaking down and abundant formation of blood crystals.

The following is a summary of the clinical features:—Mrs. C., a middle aged woman, presented peculiarly distributed dropsy of upper part of body, suggestive of venous obstruction and mediastinal tumour. Dyspnœa, but no paroxysmal attacks. Obscure affection of right lung, affecting chiefly the upper lobe, but considered to indicate malignant disease rather than tubercle. Increasing dyspnœa and lividity, and changes from day to day in the amount and distribution of the dropsy. Entire absence of fever throughout. There were well-marked varicosities in the superficial veins below the mammæ, to which however she attributed a duration much greater than the obvious symptoms of the disease—the latter apparently dating from not more than three months before death, and having been of gradual rather than sudden origin. The following appears in the first report of the case on admission:—"Altogether, the evidence derived from the localisation of the dropsy seems strongly to point in the direction of obstruction of the venous and lymphatic trunks either within the thorax, or at least in some way influencing the circulation through the superior cava; at the same time it is to be observed that there is no cyanosis, no obvious fulness of the veins, and, as far as hitherto noticed, none of the kind of paroxysmal dyspnœa

often associated with mediastinal tumour." *Path. Reports*, 28th May, 1879. No. 445.

48. Lympho-Sarcoma of Mediastinum, involving Blood-Vessels, Bronchi, and Lung. (*Dr. M'Call Anderson.*)

The parts preserved are, tumour with the great vessels proceeding from the heart, and portion of trachea and right lung. The tumour is a bulky one, occupying the mediastinum, but extending considerably to the right, its transverse diameter being about 5 ins., and its antero-posterior about 4 ins. The tumour surrounds the great vessels at their origin, pouting somewhat into the pericardium in lobulated masses, and involving the vessels as follows:—The aorta passes through its midst, and the right innominate and first parts of subclavian and carotid are buried in it, emerging at its summit. The left carotid is nearly surrounded by the tumour just at its origin, and the left subclavian not at all. The right pulmonary vein is embedded in the tumour, which also involves the wall of the left auricle, forming bulging projections into it. The main pulmonary artery is not involved in the tumour, but its right branch passes through its midst and is considerably obstructed. The superior cava is involved in the tumour, and from its origin onwards its wall is entirely replaced by tumour tissue, all trace even of its calibre disappearing in the general mass shortly after its origin. The same applies to the right innominate and internal jugular, and the first part of the left innominate—the distal part of the left innominate is entirely occluded by thrombus, which, at its proximal portion, merges in tumour tissue. The extreme lower part of the trachea is involved in tumour tissue, which projects internally to a slight extent. The same applies to the left bronchus, while the right becomes entirely replaced by tumour tissue, and its calibre gradually disappears. A section of the lung, made a short distance from its root, shows that tumour tissue has largely replaced the upper lobe, some of the lung pigment remaining apparent in some places, but the mass being generally pale in colour. The left pneumogastric nerve passes down in front and skirts the tumour, but the recurrent is embedded in it.

The patient was a man aged 51. He was subject to a severe cough for 16 weeks. Œdema of the upper extremities came on 8 weeks before death, and latterly there was great distension of the veins of the neck, upper extremities, chest, and abdomen. The right radial pulse was weaker than the left. *Path. Reports*, 20th February, 1883. No. 938.

49. Cancer of Root of Lung—Enlarged Glands involving Pneumogastric and Recurrent. (*Dr. W. T. Gairdner.*)

The right lung was collapsed and adherent to the thoracic wall. At its root there is a tumour which completely obstructs the main bronchus, filling its calibre and extending into the lung parenchyma along the bronchus. The obstruction of the bronchus is of considerable extent, existing onwards to near the middle of the lung, and involving the principal branches. There were enormous masses of rounded tumours in the neck, and buried in these the right pneumogastric and recurrent nerves were traced, being apparently to a great extent incorporated. There were isolated secondary tumours in the left wall of the thorax, and on the right side of the frontal bone. Under the microscope the tissue is seen to be cancerous, cells of comparatively small size in a distinct stroma.

The patient was an unmarried woman, æt. 60. The whole of the facts are recorded in great detail in Journal I, of Ward 9, under date 22nd June, 1878, the patient remaining under observation for about six weeks. There was no difficulty in the diagnosis, except to determine how far the glandular enlargements in the neck and thorax, displacing the trachea towards the left and involving the right lung in disease, might have been connected with the right lobe of the thyroid (decided negatively), or so placed as to implicate the nerves. There was obstruction both of laryngeal and tracheal respiration, and of deglutition, the latter perhaps more prominent in her statement, and of about six weeks' duration on admission. There had been cough for a somewhat longer period (about six months), but it had been of gradual accession and not severe. The cough revealed imperfect closure of the glottis, but was not convulsive or brassy in character, and there had been no stridulous inspiration, and no very obvious aphonia. The right lung was extensively invaded, and the liver depressed. The patient died without any extreme or paroxysmal dyspnœa, but complaining of great agony from the throat for a few days before death. *Path. Reports*, 5th August, 1878. No. 353.

50. Cancer of the Root of the Lungs involving Bronchi. (*Dr. W. T. Gairdner.*)

The tumour has its centre at the root of the left lung, and the main bronchus, through which a piece of whale-bone has been passed, is almost occluded, its walls being incorporated in the tissue of the growth. This narrowing of the calibre

involves also some of the primary and secondary branches. In addition, the growth has extended into the lung tissue in some parts, even to the periphery. The lung, as a whole, was almost entirely collapsed. There were isolated secondary tumours in the other lung, in the bodies of the vertebræ, in the ribs and in the liver and kidneys.

The physical signs throughout were those of condensation without increase of volume of left lung, with perhaps some retraction indicated by slight displacement of the other viscera. Expectoration was insignificant, and the other symptoms not at all characteristic. *Path. Reports*, 23rd October, 1875. No. 33.

51. Empyema with Calcareous Masses in Pleural Cavity. (*Dr. W. T. Gairdner.*)

The left lung and pleural cavity are here preserved. The lung is completely collapsed, and what represents the pleural cavity contained pus, and still shows a number of solid calcareous masses, some of them of large size, and others broken up into small bits. One of the larger is adherent near the anterior part of the cavity. The cavity mentioned here only represents a portion of the true pleural cavity, the upper part being adherent. The parietal layer of the pleura was found firmly incorporated with the wall of the chest, and especially the periosteum of the ribs. In addition, there was scattered condensation of the other lung, and amyloid disease of various organs.

The symptoms and history could not be fully reported owing to patient's extreme exhaustion from diarrhœa; but extensive condensation of left lung was detected with constantly purulent, and sometimes bloody, expectoration; highly albuminous urine, sp. gr., 1011; no reduction in quantity. Diarrhœa at last quite incontrollable, with some blood in the discharges, which were passed in bed. *Path. Reports*, 29th February, 1879. No. 426.

52. Calcareous mass from Pleura in Empyema. (*Dr. Jas. Paton, Greenock.*)

The preparation is a calcareous mass of an elongated shape, $1\frac{3}{4}$ inch long, and like a sequestrum of bone. It was removed along with other similar pieces from the pleural cavity of a man.

G. M'G., aged 70, when first seen in June, 1884, the chest walls had the appearance of being shrunk, and there was a

fluctuating swelling on left side, in fifth intercostal space. This swelling was aspirated and afterwards opened antiseptically, but with little relief. Finally a portion of the rib was resected and the pleural cavity opened. In it were found a quantity of calcareous masses like that preserved, and they were readily removed by the fingers. The man died from exhaustion some days after the operation.

SERIES IV.

INTESTINAL TRACT AND PERITONEUM.

1. Impaction of a Metal Button in the Œsophagus. (*Dr. H. C. Cameron.*)

The œsophagus is laid open and a metal button is shown impacted in it with its upper edge about ¾ in. below the opening of the glottis. The button is a somewhat peculiar one; its flat surface measures ⅝ in. in diameter, and it has a rigid cylindrical neck about ⅜ in. in length. This neck is imbedded in an ulcerated cavity so that the surface of the button is nearly flush with that of the mucous membrane, this surface facing backwards. The lower and right edge of the button has also produced ulceration; and both of these ulcers has a punched out appearance, without apparent suppuration. The neck of the button, projecting against the posterior non-cartilaginous wall of the trachea, has caused a distinct internal swelling without ulceration. The trachea shows a partially healed tracheotomy wound. The patient was a girl 3 years of age. *Path. Reports,* 21st July, 1883. No. 1012.

2. Perforating Ulcer of the Œsophagus Penetrating into Bronchus. (*Dr. Jas. Finlayson.*)

The ulcer, which is oval in shape and measures ⅜ in. transversely, has the general characters of a perforating ulcer of the stomach, the edges being abrupt and the mucous membrane unaltered around. The ulcer opens directly into the left main bronchus and, as the preparation shows, the aperture is almost exactly of the size of the ulcer. The bronchus is considerably narrowed, there being thickening of its mucous membrane and a good deal of contraction, so that its diameter is only about ¼ in., as compared with ⅝ in. in the bronchus of other side; the mucous membrane of the trachea is also considerably thickened. There was gangrene of the left lung from introduction of foreign matter, resulting in numerous cavities of small size filled with grumous stinking material. See Series III, No. 30. The other lung was œdematous, with occasional patches of condensation.

The case was that of J. M., aged 22, labourer. Family and personal history did not indicate any tendency to phthisis. Three months before admission he vomited food without any apparent cause, and this was frequently repeated nearly every day. No blood at that time. For the last 2 or 2½ months cough was a prominent symptom, and cough, spitting, and vomiting were induced by taking food. Of late blood came up in the expectorated or vomited matter. It was noticed that he vomited up about half of what he swallowed, the vomited matters and expectoration from lung being intimately mixed together. He sat with a basin by his side while taking his food, coughing and spitting and vomiting much, especially after the first two or three mouthfuls. These matters were very fœtid and had a gangrenous smell. Physical examination revealed condensation and excavation in left lung, little wrong in right, temperature high. See *Glasgow Medical Journal*, vol. xix, p. 313. *Path. Reports*, 28th November, 1882. No. 882.

3. Cancer of the Œsophagus with Perforation, resulting in Gangrene of the Lung. (*Dr. W. T. Gairdner.*)

The lower part of the œsophagus for the distance of about 4½ ins. is occupied by a flat fungating tumour. Above, the margin is quite abrupt, considerably overhanging the normal mucous membrane. From this downwards the wall of the œsophagus is completely involved in tumour which, at the lower part on the left side, forms a bulky mass in which the outline of the œsophagus is lost, and which may be partly cancerous glands. This mass presses down against the wall of the stomach, but the latter is not at all involved; and the œsophageal tumour ends at the cardiac orifice, which is indicated in the preparation by a ring of whalebone. The tissue of the tumour is exceedingly soft, and the surface has a ragged somewhat warty appearance. At one part a small perforation exists, through which a piece of whalebone has been passed. At the base of the right lung there was a large gangrenous cavity which was probably connected with this perforation. Under the microscope the tissue was composed mainly of epithelial cells of very various shapes.

The case was that of a woman aged 40. There had been stricture of the œsophagus, regarded at first as possibly spasmodic, but amounting at times to absolute obstruction. Duration of severe symptoms about 4 months. Four years before there had been a copious hæmatemesis, supposed at the time to have been a vicarious menstruation. There had

been for many years gastric irritability, with neurotic peculiarities, and "fits" suggestive of hysteria. Pulmonary symptoms occurred in the later stages with abundant fœtid expectoration. *Path. Reports*, 23rd February, 1882. No. 783.

4. Epithelioma of Œsophagus and Stomach. Great Enlargement of Glands and Multiple Tumours in Liver. (*Prof. Geo. Buchanan.*)

The lower part of the œsophagus, to the extent of 2 inches, is occupied by a tumour which has infiltrated its walls and caused great contraction of its calibre. Externally the wall of the œsophagus presents a nodulated appearance, and the wall is unduly rigid. Internally the surface is irregular and ulcerated. From the end of the œsophagus the tumour extends, but only for a short distance, into the stomach, forming a flat elevation of its mucous membrane, with some ulceration. The farthest extent of the tumour into the stomach is about an inch from the orifice. Outside the stomach the lesser curvature is filled up with a matted mass, apparently of enlarged lymphatic glands, which is adherent on the one hand to the liver and pancreas, and on the other hand to the wall of the stomach along the lesser curvature, especially towards the pylorus. The pyloric portion of the stomach is considerably contracted, this contraction occurring suddenly, and contrasting with the dilated cardiac portion, but there is no obvious tumour in this region, although small circular ulcers are present along the lesser curvature. The tumour is a flat-celled epithelioma. *Path. Reports*, 17th October, 1881. No. 717.

5. Secondary Cancer (Epithelioma) of Liver, from same case as preceding.

The liver, a portion of which is shown, was the seat of numerous rounded tumours, having the usual characters of secondary cancers. They form rounded projections, many of which were towards the margin, and some of them umbilicated. Under the microscope these tumours in the liver have the structure of the epithelioma, showing very characteristic laminated capsules.

6. Fauces, Œsophagus, Larynx, and Trachea in Carbolic Acid Poisoning. (*Dr. A. Patterson.*)

This and the following two preparations are from a case of suicide, the person having swallowed a quantity of carbolic acid, and then thrown himself from a window. The mucous

membrane of the fauces is comparatively little altered, although somewhat grey, opaque, and rigid. The mucous membrane of the œsophagus, on the other hand, is rigid and opaque, its whole thickness being altered. The mucous membrane of the larynx and upper part of the trachea show merely a slight degree of opacity. The condition of stomach and intestine is shown in next two preparations.

The lungs presented considerable subpleural and parenchymatous hæmorrhage. The larynx and trachea contained a bloody frothy material.

The spleen was ruptured in two places, and there was a trivial rupture of the left kidney, these injuries being apparently due to the fall. *Path. Reports*, 16th May, 1882. No. 820.

7. Stomach in Carbolic Acid Poisoning, from same case as preceding.

The stomach, before being opened, felt stiff and hard in the hand. Its wall remaining convex instead of collapsing. A similar hardness was felt in the duodenum and upper part of jejunum, where it ended rather abruptly about the junction of upper and middle thirds. Around the stomach and upper intestine the tissue was also hard, as if partly coagulated, the upper part of the spleen, for instance, being of dense consistence, and having the pale and pinkish appearance of a clot of blood acted on by carbolic acid. The stomach was found to contain about a pint of nearly clear fluid, which smelt very strongly of carbolic acid, and affected the hands like a concentrated watery solution of that substance. In the preparation the stomach has been laid open along the lesser curvature, and turned outside in. The mucous membrane has an opaque coagulated appearance, all the various folds and irregularities of the surface being fixed by the hardening of the tissue. The hardening and coagulation affected the mucous coat in its entire thickness, the muscular coat to some extent, and the serous coat very little. At the fundus there is an erosion, and the surface is covered with blood.

8. Part of Duodenum and Jejunum in Carbolic Acid Poisoning—same case as preceding.

The valvulæ conniventes are rendered opaque, rigid, and prominent, and it was found that the tube of the intestine did not collapse even when cut into.

9. Stomach from Purpura Hæmorrhagica. (*Dr. Jas. Finlayson.*)

It shows numerous hæmorrhages into the mucous membrane, and also beneath the peritoneum. For Kidney in same case, see Series VI, No. 6.

10. Perforating Ulcer of the Stomach. (*Dr. G. H. B. Macleod.*)

The specimen is a portion of the stomach wall, near the lower edge of which an oval excavation is seen about $\frac{5}{8}$ inch in length, and rather more than an $\frac{1}{8}$ in. in breadth. It forms an absolute defect of the mucous coat, which is abrupt at its edges. In the floor of the ulcer there are exposed an artery and a vein, one of them, probably the vein, being filled with a dark clot. Besides this ulcer there are several smaller ones which do not involve the entire thickness of the mucous coat. The specimen was taken from a patient who was suffering from erysipelas, perinephric abscess, and probably pyæmia. *Path. Reports*, 19th April, 1879. No. 436.

11. Mucous Polypus of Stomach. (*Dr. Jas. Finlayson.*)

There was thickening of the mucous membrane of the stomach generally from chronic catarrh, and the catarrhal thickening had extended to the duodenum and the common bile and pancreatic ducts, causing obstruction with consequent dilatation of gall bladder, hepatic ducts, and pancreatic duct. A small portion of the wall of the stomach has been preserved, and at one part of it a somewhat pear-shaped polypus, about the size of a hazel nut, projects. It has the structure of hypertrophied mucous membrane.

The patient was a man 74 years of age. He had intense jaundice, and several shiverings occurred: he had diarrhœa occasionally, but no vomiting. *Path. Reports*, 29th Nov., 1880. No. 598.

12. Ulcerating Cancer of Stomach. (*Dr. G. P. Tennent.*)

The tumour is a somewhat bulky and extensive one, having its centre at the lesser curvature, but extending $3\frac{1}{2}$ inches on the anterior wall, and $2\frac{1}{2}$ on the posterior. Its entire length on the lesser curvature being 2 inches. It surrounds the pylorus, and pouts to some extent into the duodenum—the pyloric orifice being narrowed so as to admit only a small probe. It extends to about $\frac{1}{2}$ an inch from the cardiac orifice, which is free. The surface is greatly ulcerated, one

piece of the tissue being almost separated; the marginal parts of the tumour, however, are prominent. Under the microscope the structure is rather that of scirrhus than of epithelioma, there being an excess of connective tissue with large cells and spaces. *Path. Reports*, 8th July, 1881. No. 690.

13. Cancer of Stomach. (*Dr. M'Call Anderson.*)

The tumour is situated at and near the pylorus. At the pylorus it forms a ring, but within the pylorus it occupies the lesser curvature, and part of the anterior and posterior walls for a distance of about two inches. Its central part is ulcerated, and the margins prominent and somewhat abrupt. The condition is that of epithelial cancer. There was a single secondary growth in the liver. *Path. Reports*, 24th October, 1877. No. 257.

14. Soft Ulcerating Cancer of Stomach. (*Dr. Jas. Finlayson.*)

The part preserved is the lesser curvature of the stomach with the two orifices and neighbouring parts. Midway between the two orifices there is a flat tumour 2 inches in diameter occupying the lesser curvature and the posterior wall of the stomach. The surface is generally raised above the mucous membrane, and it presents a dark, irregular, almost sloughing, appearance. This sloughing appearance extends in some places quite to the edge of the tumour, where the mucous membrane is sharply demarcated. At other places there is an infiltrated edge somewhat raised above the general level, and having a pale colour. Behind the tumour there is a mass of tissue consisting of cancerous glands, with neighbouring structures matted together.

There were secondary tumours abundantly present in the liver, diaphragm, and pleura, besides those in the lymphatic glands; and the liver weighed 104 oz.

The patient was a man aged 40, who had been troubled for five months with uneasiness following food, but except at the very beginning there was no vomiting; a distinct tumour was felt during life. Latterly a great enlargement of the liver was detected, with jaundice and ascites. *Path. Reports*, 10th January, 1882. No. 755.

15. Cancer of the Stomach perforating Transverse Colon and Surface of Skin. (*Dr. G. H. B. Macleod.*)

The stomach is the seat of two tumours—a smaller isolated one in the posterior wall, near the cardiac orifice, and a much

larger one near the pylorus, and occupying chiefly the anterior wall of the stomach, though at some parts nearly surrounding it. The margins of both are markedly abrupt and prominent, and the surface very granular, in some parts appearing as if furnished with papillæ. The central parts of the larger tumour are deeply ulcerated, and a communication exists with a large irregular cavity, situated chiefly among adhesions formed between stomach, transverse colon, and anterior abdominal wall. This cavity has two pretty wide communications with the transverse colon, and at these apertures there pouts what is obviously a continuation of the tumour in the stomach, having the same abrupt margin and granular surface. The cavity also communicates with the surface of the body by two apertures which were situated, one in the immediate neighbourhood of the umbilicus, and the other about an inch above and to the left.

It appears that about 4 months before death the patient, a woman aged 45, received a severe blow on the abdomen from a fall. Abscesses subsequently formed in the abdominal wall, and these bursting gave rise to the apertures in the skin described above. *Path. Reports*, 22nd May, 1877. No. 224.

16. Colloid Cancer of Stomach in Pyloric Region: great Dilatation of Stomach. (*Dr. W. T. Gairdner.*)

The tumour forms a complete ring at the pylorus, and extends inwards from 2½ to 3½ inches; the surface is very irregular, but without marked ulceration. On section the tumour is seen to occupy mainly the mucous membrane, but extends also among the muscular trabeculæ. Its tissue has a remarkably glistening appearance. There was considerable matting and enlargement of the prevertebral glands, the lower aorta and common iliacs being buried in them. On section drops of pus appeared occasionally in these glands, and also little nodules of colloid tissue. The tumour nearly obstructed the pylorus, and the stomach was greatly dilated.

The patient, during life, complained of gastric symptoms, chiefly distension of the stomach and vomiting. The physical signs of pyloric tumour were very distinct, but although the sense of fermentation was present to a great degree, no sarcinæ were detected in the vomited matters. *Path. Reports*, 17th December, 1878. No. 403.

17. Small Cancer of Stomach with numerous large Secondary Tumours in Liver. (*Dr. Jas. Finlayson.*)

This preparation shows a portion of the tumour in the stomach, while the next is a part of the liver. The preparation is hung by a portion of the duodenum. Immediately below this there is pylorus, and then succeeds a portion of a rounded tumour about $1\frac{1}{2}$ inch in diameter. In its middle part it attains a thickness, as shown in preparation, of $\frac{1}{4}$ of an inch; and at its margins it shades off gradually into the surrounding mucous membrane. The surface is not ulcerated, but the tissue is soft, and in the central part with slight hæmorrhage.

The lymphatic glands around the pylorus and duodenum, and down in front of the vertebræ, were much enlarged and of a soft medullary character. There was also a mass of enlarged glands at the porta of the liver.

The case was that of a woman aged 30. Pain in abdomen began 2 months before death, with occasional sickness, latterly becoming very frequent. Great emaciation with pallor and very slight jaundice ensued. *Path. Reports,* 10th August, 1883. No. 1027.

18. Secondary Cancerous Tumours in Liver from same case as preceding.

The preparation shows a slice of the liver which was much enlarged, weighing 5 lbs. 10 oz. (90 oz.) Its tissue was, for the most part, replaced by a soft whitish structure which, to a large extent, was continuous, but in other places, as shown in the section, had the form of rounded tumours.

19. Bulky Cylinder-Celled Epithelioma from neighbourhood of Stomach. *(Dr. G. H. B. Macleod.)*

The tumour, with spleen adherent, was removed at a *post-mortem,* and sent as preserved. The tumour is about the size of both closed fists, and presents imperfect lobulation. It is adherent to the spleen at its hilus. In the fresh state the tissue was somewhat soft. On microscopic examination the structure is typically that of the cylinder-celled epithelioma; there is a well formed stroma separating spaces generally elongated, and sometimes very much so. These spaces contain characteristic cylinder cells. *Path. Reports,* 15th March, 1883. No. 954.

20. Valvula Conniventis in the form of an irregular Fringe.

21. Meckel's Diverticulum of Intestine.

The diverticulum had the usual situation, about 3 feet above

the ileo-cæcal valve. It is in the form of an elongated pouch, about $1\frac{3}{4}$ inch in length, and of about the same calibre as the intestine. It projects from the intestine just to the one side of the mesenteric attachment, and it also was attached to the mesentery. The result of this is that the extremity is somewhat drawn towards the mesenteric attachment of the intestine, and a slightly bulbous appearance is given to the extremity.

22. Rupture of Small Intestine (*Prof. Geo. Buchanan.*)

The preparation is the first part of the jejunum. About 6 inches from the commencement of the jejunum the calibre of the gut has been torn across completely, so that there is a wide gaping aperture. The peritoneal coat has retracted somewhat from the orifice, and the mucous membrane pouts out on either side. There was a quantity of turbid brownish fluid in the peritoneal cavity, and evidences of acute peritonitis in the form of flakes of fibrine here and there.

A. R., aged 46, a seaman, fell from a height of about six feet into the hold of a vessel, alighting on his abdomen across a bar of iron, which doubled him up. He was admitted about two hours afterwards, complaining of pain over the abdomen, which, however, was not very severe, and he was quite conscious and able to walk. The abdomen was not distended, and he permitted palpation. Collapse set in about 12 hours after the accident, the chief symptoms being sweating, clammy skin, and almost imperceptible pulse. He remained conscious up till the time of death, which took place in about 5 hours, or 17 hours after the accident. *Path. Reports*, 31st January, 1885. No. 1298.

23. Perforating Ulcer of Duodenum. (*Dr. Jas. Finlayson.*)

This ulcer is situated about an inch beyond the pylorus; it is round in shape, and $\frac{1}{3}$rd of an inch in diameter. It has eaten through the entire coats of the intestine, its base being now formed of connective tissue. No open-mouthed vessel is discovered in the floor, but immediately behind it there is a comparatively large artery.

The case was mainly one of aortic valvular disease from chronic endocarditis, with calcareous deposition. There was a small amount of blood in the stomach and small intestine, but no hæmatemesis or other indication of this lesion was noted during life. *Path. Reports*, 21st April, 1879. No. 437.

24. Enlargement of Peyer's Patches and Tubercular Ulcers from a case of Acute Phthisis. (*Dr. G. P. Tennent.*)

There is a general enlargement of Peyer's patches, and there are on each of them several small crater-shaped ulcers. There was extensive condensation, with numerous small cavities in one lung, and acute pleurisy on this side. The other lung was much less affected.

The patient was a man aged 25. The history showed cough for eight or nine months, but very rapid advance of disease for last fortnight. *Path. Reports,* 11th February, 1882. No. 773.

25. Tubercular Ulcers of Intestine.

26. Enlargement and Ulceration of Peyer's Patches in Typhoid Fever. (*Dr. W. T. Gairdner.*)

The preparation shows various stages. In one or two instances there is little more than enlargement of the patches which have well defined margins, but even in these there is slight ulceration. In one almost the entire patch is destroyed by ulceration, but the ulcer has prominent margins. There are no sloughs remaining on the ulcers.

The liver and spleen were enlarged, the latter especially, and it weighed 12½ ounces. The symptoms were the usual ones in enteric fever, except that there was no considerable diarrhœa, and rose spots were verified with some difficulty. Temperature, maximum 105·8° a fortnight before death, which was rather sudden, probably in the fourth or fifth week of the disease. See Journal of Ward IX, O, p. 294. *Path. Reports,* 9th July, 1881. No. 691.

27. Enlargement and Sloughing of Peyer's Patches in Typhoid Fever. (*Dr. G. P. Tennent.*)

The sloughs have a deep brown colour, and they occupy the greater part of the surface of much enlarged patches. On another piece of intestine there are enlarged patches without sloughing. *Path. Reports,* 20th March, 1884. No. 1160.

28. Ulceration and Sloughing of Peyer's Patches in Typhoid Fever, Perforation: Peritonitis. (*Dr. M'Call Anderson.*)

Two pieces of intestine have been preserved, on one of which there are two small ulcers, each with a slough on it. In the other piece there is a large ulcer also containing a slough; all

these sloughs had originally a brownish colour. The peritoneum opposite the large ulcer is also necrosed, forming a slough ¾ths of an inch in length, and at the lower edge of this slough there is a perforation (shown by a piece of whalebone). The peritoneum generally presented on its surface a fibrino-purulent exudation, which was nowhere very abundant, but largest in quantity towards the right iliac fossa. *Path. Reports*, 22nd November, 1880. No. 596.

29. Ulceration and Perforation of small Intestine in Typhoid Fever: Peritonitis. (*Dr. Jas. Finlayson*, at Children's Hospital.)

A portion of the ileum is preserved and two ulcers are shown. In the upper one a piece of slough remains adherent. The lower one is clear of slough, but in its floor there is a small aperture through which a piece of whalebone has been passed. On the peritoneal surface of the piece of intestine there is a somewhat irregular fibrinous deposit, the result of acute peritonitis, which was general over the entire peritoneum. In other parts of the intestine there were ulcers or enlargements of the Peyer's patches, but the latter were not very marked as the disease was in an advanced stage.

The patient was a girl aged 10, who died on the 25th to 27th day of the fever with symptoms of perforation and acute peritonitis. *Path. Reports of Children's Hospital*, November, 1883.

30. Pieces of Intestine from a case of Enteric Fever; Ulcers and Perforation. (*Dr. M'Call Anderson.*)

Three pieces of the intestine are shown, two of them with their serous surfaces against one another. On one of these a large irregularly shaped ulcer is seen, measuring about ¾ of an inch in its longitudinal diameter, and the same in its longest transverse diameter. The greater part of its surface is covered with a shreddy brownish coloured slough. On the other piece two ulcers are seen much smaller than the former in size and longer in their transverse than longitudinal diameter. The same brownish coloured slough is noted in connection with them.

The third piece of intestine, which is much the longest, hangs by itself. On the mucous surface a large ragged ulcer is seen, and on the serous coat there is sloughing and perforation. The condition of matters presented here was described at the time of the *post-mortem*, as follows:—On carefully examining the intestine a slough of the peritoneal coat is

discovered near the lower end of the ileum. This presents a dead white colour and a very irregular margin. The entire length of the slough is about ¾ of an inch. At the lower edge of the slough there is a very small aperture from which a minute quantity of fæces issued. A piece of whalebone is passed through the aperture. *Path. Reports,* 22nd November, 1880. No. 596.

31. Dysenteric Inflammation of Small Intestine. (*Dr. W. T. Gairdner.*)

Two pieces of the small intestine are preserved, and they show considerable thickening of the mucous membrane, with an irregular fibrinous deposit on the surface, especially where there are prominent folds. On removal of this layer a partial loss of substance was observed. This condition involved 2 feet of the intestine about the middle of the ileum. Otherwise, the body presented acute pericarditis, chronic pneumonia, and amyloid disease of spleen, kidneys, and liver. For clinical details, too complicated to be here reported, see Journals of Ward I, CC, p. 281, and DD, p. 114. *Path. Reports,* 27th February, 1884. No. 1146.

32. Two Pieces of Intestine, Cicatrices, and Contraction. (*Dr. Jas. Finlayson.*)

These cicatrices are flat, and they had their seat along with a third one in the upper part of the intestine.

The parts were removed from a man, aged 28, who had a syphilitic history, and died of Bright's disease. *Path. Reports,* 9th March, 1882. No. 788.

33. Concretion from Vermiform Appendage. (*Dr. Fraser, Paisley.*)

The concretion had passed into the abdomen by ulceration of the terminal portion of the appendage, which thus had an open communication with the peritoneal cavity. The appendage was generally dilated but not otherwise remarkable. There were evidences of a very acute peritonitis, pus and soft fibrinous exudation being present in every region of the abdomen, but more abundant towards the ascending colon. The concretion is a pyriform body nearly half-an-inch in length, of a light brown colour, and of tolerably firm consistence, although slightly prone to crack. It was found lying on the surface of the rectum close by the position of the tip of the appendage.

The case was that of a boy 9 years of age, who began to

complain of pain 10 days before death. Shortly before this a friend had been severely pounding his abdomen "in sport," to test the pluck of the boy. The most acute symptoms developed about 24 hours before death.

34. Dilated and Elongated Vermiform Appendage with Concretions. (*Dr. G. H. B. Macleod.*)

This condition had not set up any irritation in the present case; the patient had been affected with hernia. *Path. Reports,* 25th October, 1875. No. 35.

35. Ulceration of Vermiform Appendage; Perityphlitic Abscess; Perforation of Caput Cæcum. (*Dr. Moyes.*)

The vermiform appendage is adherent to the caput cæcum at its middle and extremity—the adhesion at its middle causing a sudden doubling of the appendage upon itself. Beyond this point an ulcer has laid open the calibre of the appendage, and its floor presents a fungating prominence. Elsewhere the wall of the appendage is very much thinned, and in the proximal part of it there is a concretion of the size and general appearance of the stone of an orange. At the *post-mortem* examination the vermiform appendage was in the midst of a large abscess, whose exact dimensions were not determined, but which extended as far as the spleen. In the caput cæcum there are three or four large apertures with the appearance of having been punched out as if they had been produced by a slough of the wall. This view is confirmed by the existence a little higher up of an impending slough, the mucous membrane being undermined and forming only a thin whitish layer. The large apertures communicated freely with the perityphlitic abscess referred to. *Path. Reports,* 27th January, 1879. No. 415.

36. Half of an Intestinal Concretion from a Horse.

37. Twisting of the Sigmoid Flexure.

The specimen shows a very definite twist of the sigmoid flexure—the flexure being turned half round twice over in the usual way. The neck shows some thickening of the peritoneum indicating a considerable duration, but the flexure is not greatly distended. *Path. Reports,* 16th November, 1881. No. 731.

38. Distention and Ulceration of Large Intestine from Impacted Fish-bones. (*Dr. A. Patterson.*)

A portion of the transverse colon is preserved, and it is seen to be greatly distended, while the mucous membrane is continuously altered, being infiltrated and ulcerated; the wall is also thin in some places, but not perforated. The seat of obstruction was at the sigmoid flexure, there being here adhesion, thickening, and ulceration occupying 2 inches of the intestine—viz., the lower part of sigmoid flexure; the ulcer was a circular one surrounding the intestine, and the adhesion to parts around was so great that it could not be separated without tearing. The affected part of sigmoid flexure was greatly displaced, being carried over to the right side, and adherent near right cornu of uterus. In connection with the condition of the intestine two small pieces of blackened fish bone were found—one of them certainly outside the intestine, and the other stated to be inside. The condition of the intestine shown in the preparation affected the whole large intestine above the sigmoid flexure and also the last part of ileum.

The patient was a woman aged 47, who had complained for some months of severe abdominal pains, followed by constipation. *Path. Reports*, 19th November, 1881. No. 730.

39. Cancer of Ileum. (*Dr. M'Call Anderson.*)

The situation of the tumour is about a foot and a-half above the ileo-cæcal valve; it is nearly circular in shape, and about 2 inches in diameter; its edges are abrupt, and it projects considerably above the general surface. The whole coats of the intestine are involved, but a section at the margin shows that the mucous membrane was the primary seat. The liver was the seat of innumerable large tumours, and weighed 10 pounds 9 ounces. There were also secondary tumours in both kidneys. *Path. Reports*, 3rd November, 1879. No. 482.

40. Epithelioma of Caput Cæcum, with Partial Obstruction. (*Dr. Jas. Finlayson.*)

The tumour involves the whole of the caput, causing great contraction and shortening of it, so that the entire caput is comprehended in a nearly solid mass of limited size. The gut being laid open, nothing is seen of the cavity of the cæcum, but in its place there is a prominent rounded tumour about 1½ inch in diameter, in the midst of which there is a small aperture leading into a little pouch. Around the tumour the mucous membrane of the colon is folded concentrically. The tumour only involves very slightly the margin of the valve,

but, by its prominence and the contraction, it nearly obliterates the cavity of the gut just within the valve. The mucous membrane of the ileum is greatly thickened.

The microscopic structure of the tumour is that of a glandular epithelioma with a marked tendency to colloid degeneration.

The patient was a man 22 years old. His case presented several attacks of acute obstruction, and latterly extreme wasting and diarrhœa came on. (See *Practitioner*, 1880, Vol. 2, paper by Dr. Finlayson on "Intestinal Obstruction." Case 3.) *Path. Reports*, 12th December, 1878. No. 402.

41. Cancer of Splenic Flexure of Colon. (*Dr. W. T. Gairdner.*)

The cancer is situated at the splenic flexure occupying the circumference of the gut for a distance of several inches. The central parts are deeply ulcerated, and at one place there is a considerably elongated passage which looks as if it would form a perforation, but does not. On tracing the various coats of the intestine, the mucous membrane is seen to be primarily affected, the serous coat being, especially towards the central parts, thickened. Adhesions have been contracted, with neighbouring loops of the jejunum, with the spleen and with the left kidney.

During life the condition closely resembled and was taken for cirrhosis of the liver—viz., ascites, gastric symptoms, diarrhœa, rapid emaciation. The history of drinking also suggested cirrhosis. *Path. Reports*, 8th May, 1877. No. 222.

42. Constriction of Colon by small Cancerous Ulcer. Great Distention. (*Dr. M'Call Anderson.*)

The greater part of the colon was enormously distended, as shown in preparation, its diameter, when flattened, measuring 7 inches. The wall, and especially the muscular coat, is considerably thickened. The vermiform appendage is also greatly elongated and dilated. The last part of the ileum, which is preserved, is also much dilated. The distention of the colon ends abruptly about the junction of the transverse and descending portions, here there is an extreme narrowing of the gut, as if by a cicatricial band. The narrowing is such that not more than a crow quill could be passed. On laying open the constricted portion, a ring-shaped ulcer was disclosed; it was of a greyish colour, and had hard base and edges. The ulcer is of very limited extent, hardly passing beyond the limits of the constricted ring.

Under the microscope it is somewhat difficult to distinguish the exact character, but, in some parts of the wall of the ulcer, distinct collections of epithelial cells are found, and these even beneath the mucous membrane and in the muscular coat, so that the cancerous nature of the ulcer is demonstrated.

The patient was a man aged 44. He had suffered from constipation and dyspepsia for a year or two, but latterly he had always to take some opening medicine before the bowels acted. There was complete obstruction for five or six days before death with excessive vomiting, but not stercoraceous. The abdomen was greatly distended. *Path. Reports.* No. 366.

43. Colloid Cancer of Caput Cæcum Coli. Communication with Rectum. Extension to Great Omentum. (*Dr. W. T. Gairdner.*)

The caput cæcum coli is converted into a ragged cavity whose walls are composed of a flickering gelatinous material forming a rather massive tumour. The tumour involves the first 6 or 7 inches of the ascending colon, ending somewhat abruptly, both above and at the ileo-cæcal valve. The rectum adheres to the surface of the tumour, and at many points the entire coats are involved in it, the flickering gelatinous appearance presenting itself in the internal surface with occasional ulceration. In two places the rectum communicates with the caput cæcum by openings into which whalebone has been inserted.

The case was that of a man, æt. 35, and presents numerous details of great clinical interest, for which reference must be made to Journal of Ward I, A, p. 104. It was regarded as one of peritoneal or omental thickening, with probably glandular enlargements, and attended by extremely chronic symptoms, perhaps of tubercular, perhaps of cancerous disease. There was no diarrhœa till three months after admission, and then its character was such as to suggest a dysenteric complication; but with the fact specially noted that the milk taken, which latterly was almost the exclusive diet, was passed in the diarrhœal discharges almost unchanged. The thoracic viscera were reported normal. Pain of a severe character was frequently experienced, but no fluid effusion was ever detected. Phlegmasia dolens of the right lower limb occurred about two months before death, which was the result of extreme and gradual exhaustion and emaciation. *Path. Reports,* 21st June, 1875. No. 13.

44. Colloid Cancer of Great Omentum, from same case as above.

The growths in the great omentum are composed of groups of transparent granules resembling boiled sago, the groups being sometimes pedunculated, but in the lower part of the omentum coalesced into a solid somewhat dense mass. In the midst of the groups the healthy veil-like omentum appears occasionally. The stomach is normal.

45. Colloid Cancer of Sigmoid Flexure, with Extension to Wall of Abdomen, Great Omentum, Diaphragm, &c. (*Dr. G. P. Tennent.*)

This is the primary tumour in the sigmoid flexure, and the next two preparations show extension to omentum and diaphragm. It is in the form of a ring-shaped infiltration of the wall of the intestine, involving about three inches of its length, while the circumference is greatly increased. The intestine is opened up, and it is seen that the coats are essentially replaced by the translucent tissue of the tumour, and at the same time greatly thickened. The upper and lower margins of the tumour are somewhat abrupt and prominent, so as to obstruct the calibre to a great extent, but, especially at the lower end it is seen that the tumour is involving mainly the mucous membrane in its growth. In its central parts there is considerable ulceration and excavation of the growth. At the attached surface of the flexure the tumour in its wall was continuous with tumour in the sub-peritoneal connective tissue, which was involved to a considerable distance.

In every part the tumour tissue had the hard translucent character of colloid cancer, and, under the microscope, presented typically its characters.

The large intestine was greatly distended with semi-solid fæces above the seat of the tumour; the distended colon is shown in the next preparation.

The patient was a man aged 30, who complained chiefly of pain in right hypochondre, followed by swelling of abdomen and œdema of right leg. The ascites was relieved by the removal of 160 oz. of fluid, but re-accumulation occurred. *Path. Reports*, 19th December, 1881. No. 745.

46. Colloid Cancer of Great Omentum, from same case as preceding.

This is a transverse section through the transverse colon and great omentum. The latter formed a bulky hard apron, which could be lifted like a solid board.

47. Colloid Cancer of Diaphragm from same case as preceding.

This is a section of diaphragm and liver. The diaphragm is greatly thickened by the formation in it of tumour tissue which almost entirely replaces its proper tissue, and converts it into a thick rigid structure. The tumour tissue appears even on the pleural surface of the diaphragm, where there are occasionally isolated nodules. The liver was largely surrounded by the rigid diaphragm, and its capsule presented numerous small translucent tumours almost like cysts. The suspensory ligament was greatly enlarged by tumour formation, and there was a bulky mass of tumour outside the porta of the liver (lymphatic glands).

48. Cylinder-celled Epithelioma of Rectum. (*Dr. G. H. B. Macleod.*)

An oval tumour about the size of an egg and with considerable lobulation. The surface is irregular, and in some places has a papillary or warty appearance. In the fresh state it was very soft and gelatinous in appearance. Under the microscope the structure consists of epithelial cells, which are largely cylindrical in shape, and have characteristic nuclei. *Path. Reports*, 8th November, 1882. No. 868.

49. Epithelioma of Rectum; Ulceration and Constriction. Enormous Distention of Intestine. (*Dr. M'Call Anderson.*)

The principal appearance here is an abrupt constriction 6 inches from the anus. Corresponding with the constriction there is ulceration and great contraction of the gut. The ulcer nearly surrounds the intestine, but there is a piece of normal mucous membrane left, the folds in which must have helped to close the intestine. The edges of the ulcer are abrupt and form a flat tumour which, under the microscope, had the characters of cancer. Above the stricture there was enormous distention of the intestines. *Path. Reports*, 4th November, 1879. No. 484.

50. Colloid Cancer of the Rectum. (*Dr. G. T. Beatson.*)

The structure preserved is about the half of that removed, which represented in two parts a portion of the rectum, from the anus for about 2½ or 3 inches upwards. At the lower part of the preparation the normal mucous membrane is visible. This is succeeded by a dense tissue, which formed a ring replacing the rectum for about 1½ inch of its length.

This tissue is found, under the microscope, to possess a well marked stroma, filled with colloid material and occasional epithelial cells. The internal surface is somewhat irregular, with considerable ulceration.

The case was that of a man aged 32, from whom the tumour with portion of rectum was removed by operation. *Path. Reports.* No. 1005.

51. Round-celled Sarcoma of the Wall of the Great Intestine. (*Dr. John Love.*)

The specimen was obtained from the body of a lady who had been long insane, and who had presented no very definite symptoms. Similar masses and nodules were found in the cerebellum and in the right lung. The specimen consists of an oval shaped, smooth, somewhat polypoid projection from the mucous membrane of the bowel, and occupying the transverse axis of the gut. On its surface is seen some black material which seems to be carbonaceous. The tumour has not altered in any way the serous coat of the bowel, and is situated just above the point where the small intestine passes into the great. A microscopic examination shows that it is composed of round cells, with strands of fibres running through the mass in different directions (round-celled sarcoma).

52. Sarcoma of Intestine, with large Tumours in both Ovaries. (*Dr. G. H. B. Macleod.*)

This preparation is the tumour in the intestine, and the following shows those of the ovaries. It is a portion of jejunum about a yard from its upper end, and it is seen that for a distance of 4 inches the wall of the intestine is entirely replaced by a somewhat massive pale tissue, which greatly increases the external circumference of the gut. The tumour ends somewhat abruptly on either side. Internally the valvulæ conniventes are partly preserved in a hypertrophied form on either side, but in the middle part there is an ulceration which at one point passes deeply. At this part there is externally a prominent rounded mass, to which another fold of intestine is adherent, but without its walls being involved. The piece of mesentery corresponding with the tumour is preserved, and is seen to be the seat of a mass of greatly enlarged glands. The tumour tissue and that of the glands is of a whitish colour and soft consistence.

Patient was a woman aged 43, who began to complain of ill health a year before her death. Tumour was noticed in left side of abdomen two months afterwards, and difficulty in

micturition and constipation ensued. Latterly general œdema with ascites developed. *Path. Reports*, 20th January, 1881. No. 616.

53. Sarcoma of Ovaries, secondary to that of Intestine, see preceding preparation.

This preparation shows the affected generative organs, the two bulky tumours being mainly the affected ovaries. The uterus is adherent to the left of these, which is much the larger of the two. This left ovary filled the greater part of the pelvis, and in extending upwards it carried the sigmoid flexure before it, stretching its mesentery in a remarkable way. In the preparation the sigmoid flexure occupies the summit and right margin of the tumour. The uterus is adherent to the anterior aspect of the mass, its left corner being drawn greatly upwards, and the ovarian ligament lost in the tumour. The Fallopian tube lies in front unaltered. The right ovary forms a lobulated pedunculated tumour, measuring 5½ in. × 4 in., and the Fallopian tube is twisted in a remarkable way round the pedicle, the fimbriated extremity presenting forwards. Under the miscroscope all the tumours present round-celled tissue.

54. Congenital Patency of Inguinal Canal without Hernia. (*Dr. A. Patterson.*)

The tunica vaginalis is continued upwards, and at the point where the parts have been divided the canal has a width of about ¾ in., and this was probably continued up into the abdomen, although, as the parts were removed by operation, this was not determined. There were no signs of hernia.

The structures were removed on account of tubercular disease of the testicle and epididymis: the former was converted into a solid mass consisting largely of caseous material with softening internally, and a dense grey tissue outside. There were also several caseous masses in the epididymis.

The patient, a man aged 28, had a stricture of the urethra, with a urinary fistula and a sinus of the testicle. *Path. Reports*, 15th February, 1883. No. 936.

55. Congenital Inguinal Hernia, with Double Neck. (*Dr. A. Patterson.*)

The sac is laid open, and is seen to be formed by the tunica vaginalis, the testicle lying behind as usual. Towards the upper part there is a constriction forming a kind of half diaphragm; above that the sac is again dilated for about an

inch, and then comes the aperture into the peritoneal cavity, which is very small, admitting only the tip of the finger.

The case was operated on, and the double constriction formed an element of confusion. *Path. Reports*, 22nd March, 1879. No. 433.

56. Double Inguinal Hernia in Child of 7 months. (*Dr. H. C. Cameron.*)

In this case there was a double hernia, both being of precisely the same characters, viz., the sac communicated with the peritoneal cavity, but not with the tunica vaginalis. This is shown in the preparation, which is from the left side, where the testicle is seen lying in tunica vaginalis, the latter being separated from the wide hernial sac by a septum. The right hernia was strangulated and operated on, the patient dying from peritonitis. *Path. Reports.* No. 1148.

57. Double Inguinal Hernia.

Two very large sacs are preserved, one measuring 8 inches from neck to fundus, and the other 7 inches. In both of them the testicle and tunica vaginalis occupy the posterior part of the fundus.

58. Inguinal Hernia.

The scrotum and contents are preserved. The sac forms a large pear-shaped tumour of the scrotum, and it was only with some difficulty that the contents were withdrawn through the comparatively narrow neck. Those contents are composed of a considerable number of folds of small intestine firmly united by fibrous bands, and with some thickening of the peritoneal coat, but without any adhesion to the sac. *Path. Reports.* No. 62.

59. Hæmorrhoids projecting at Anus.

Numerous rounded and irregular masses project from the mucous membrane of the rectum, many of them passing beyond the anus.

60. Large Aperture in Mesentery into which the Small Intestine was Twisted and Packed. (*Dr. W. T. Gairdner.*)

The aperture, which corresponds in situation with the mesentery of the middle part of the jejunum, is of a rounded outline, and measures $3\frac{1}{2}$ inches in diameter. Its edges are

smooth and rounded, presenting no appearance of a recent tear.

At the time of the *post-mortem* the small intestine, with the exception of 3 ft. at its upper end, was twisted and impacted into this aperture in such a manner as to render it very difficult of removal, which was only effected by partially emptying the intestines. The whole small intestine was greatly distended, and presented a deep red colour. There was also a red fluid in the peritoneum, but without any inflammatory appearance. The contents of the intestines were a bloody grumous material, and the mucous membrane was very red.

The patient was a sailor aged 36, who, previous to admission, had been greatly reduced by six months' diarrhœa, contracted while in the Chinese seas. Twelve hours before death he was suddenly seized with excruciating abdominal pain and stoppage of the bowels, and these symptoms continued till death. *Path. Reports*, 20th December, 1882. No. 899.

61. Peritoneal Surface of Diaphragm in Bovine Tuberculosis or Perlsucht.

The parts were removed from an ox. The surface presents bulky shaggy masses, which are often coalesced into considerable tumours, but in other cases are in the form of more isolated and frequently pedunculated nodules. Even the larger masses are resolvable into rounded nodules, not generally larger than half the size of a pea. These nodules have the regular tubercular structure, giant cells, &c., and Koch's bacillus is present in all of those examined, although not exceedingly abundant.

62. Tubercular Peritonitis. (*Dr. M'Call Anderson.*)

The intestines and a portion of the abdominal wall are preserved. The intestines are seen to be firmly adherent among themselves, whilst in the midst of the adhesions there are numerous rounded bodies from the size of a pea downwards. On the internal surface of the abdominal wall there are masses formed by the coalescence of similar tumours.

The patient was a lad aged 16, and there were tubercles in the kidneys, liver, and brain-substance as well as tubercular pleurisy and pericarditis. *Path. Reports*, 12th February, 1878. No. 296.

63. Peculiar Soft Masses in Peritoneum in Chronic Peritonitis. (*Dr. W. T. Gairdner.*)

In this case there was a considerable amount of fluid in the

peritoneal cavity, and in addition peculiar bodies, some of which have been preserved and which are described as follows:—"They are generally of an oval shape but some greatly elongated. They are smooth on the surface and on section somewhat firm, but of an opaque yellow colour. These bodies are partly free in the cavity and partly adherent, but, in the latter case they can be stripped off from the surface of the peritoneum. One of these masses is present on each side running up from the pelvis to the borders of the ribs and forming a peculiar prominent chain in these regions. In each case the mass is irregularly lobulated. Immediately above the pancreas there is a large oval mass of a pultaceous consistence. There is no enlargement of the mesenteric or prevertebral glands." These bodies present no definite structure under the microscope.

In addition there was in this case pyelitis with small abscesses in the kidneys, also an old pleurisy and tuberculosis of the lungs.

During life there were evidences of chronic swelling of the abdomen with suspicion of disease of the lungs. *Path. Reports*, 25th July, 1882. No. 845.

SERIES V.

LIVER, PANCREAS, and THYROID GLAND.

1. Liver with Cavities from Decomposition.

The slice of liver preserved is honeycombed by innumerable small cavities which contained gas, the result of decomposition. The spleen was similarly decomposed and the kidney partially. The cavities were uniformly distributed throughout liver and spleen, and thus seemed to indicate that the germs of decomposition had been sown throughout these organs during life. The case was one of a decomposing wound of the neck, after an operation for removal of cyst of the thyroid. There were no proper pyæmic abscesses, except in the heart, and doubtfully in lungs. The *post-mortem* examination was made 36 hours after death, on 24th November, 1883.

2. Deformity of Liver from Stays.

There is a deep transverse depression on the upper surface of the liver near its lower edge, with thickening of the capsule. With this, there is marked atrophy of the hepatic tissue, a portion of the anterior part of the right lobe being partially separated so as to form a distinct small lobe, and the fundus of the gall bladder projecting considerably beyond the anterior edge, not from enlargement of the bladder but atrophy of the tissue over it.

3. Liver showing Transverse Depression and Folding of Upper Surface, produced by Stays.

A wide transverse furrow passes from right to left across the upper surface of the right lobe, causing considerable flattening and thinning of the liver, and considerable elongation from behind forwards, so that the anterior edge was much depressed. The liver tissue above the gall bladder is greatly atrophied, so that the fundus of the bladder presents itself in a deep notch in the anterior edge, and even as far as the neck there is little more than the capsule between the gall bladder and the upper surface of the liver. In the fresh state, the capsule

was seen to be considerably thickened along the wide groove already described. Towards the posterior part of the upper surface of the lobe there are three short furrows, the one farthest to the left being the deepest, and measuring ½ inch in depth; between the furrows there are prominent ridges so that the liver tissue has the appearance of being folded by compression.

4. Cicatrices in Liver. Atrophy of Right Lobe. Hypertrophy of Left. (*Dr. G. P. Tennent.*)

The liver contains many cicatrices, but there is one of a special depth corresponding with the situation of the gall bladder, causing a considerable portion of the bladder to be visible from above and dividing the liver into two almost separate parts, which are freely movable on each other. To the right of this cicatrix the right lobe has an almost globular form, and measures only about 4 inches transversely, being greatly contracted. The left lobe, on the other hand, measures about 6 inches from the cicatrix, and a similar amount from before backwards, the relative size of the two lobes being to a great extent reversed. Besides this large cicatrix there are many small ones, especially in the left lobe, but none of those incised is found to contain a gumma. The aggregate weight of the liver is not appreciably reduced, being 50 oz., and there is no pronounced amyloid disease.

The kidneys were amyloid and contracted. The spleen presented diffuse amyloid disease (weighing 8 oz.) and there was hypertrophy of the left ventricle.

It is to be noted in connection with the malformation of the liver that the right kidney was very much smaller than the left, weighing 2½ oz. as compared with 5¾ oz., both of them being granular. This may indicate a congenital malformation of right lobe of liver and right kidney. *Path. Reports,* 20th February, 1883. No. 939.

5. Congenital Deformity and Cirrhosis of Liver.

The liver is considerably reduced in size, weighing 43½ oz., and its surface is irregular, suggesting cirrhosis; but its smallness is not chiefly due to the cirrhosis, the right lobe being evidently atrophied, as is evidenced by the position of the suspensory ligament and the gall bladder. The latter is close to the right border of the liver, and the former is apparently much farther to the right than usual. The case is the same as that of Series VI, No. 5, in which the right kidney was absent. *Path. Reports.* No. 486.

6. Peri-hepatitis from Ascites. (*Dr. G. P. Tennent.*)
The capsule of the liver is generally thickened, but especially over the upper surface of the right lobe, which is occupied by a continuous tendinous-looking membrane. Elsewhere the thickening is not usually continuous, but presents a certain honeycombed appearance. The shape of the liver is considerably altered, being distinctly more globular than usual. The antero-posterior diameter is diminished and the thickness increased, while the edges are much rounded. The tissue of the liver is highly amyloid, and the organ weighed about 70 oz.

The case was one of Bright's disease, lasting for over 3 years, with repeated anasarca, and latterly extreme ascites. Paracentesis abdominis was performed nine times. *Path. Reports*, 18th June, 1883. No. 956.

7. Cirrhosis of Liver. (*Dr. M'Call Anderson.*)
The surface presents a general granular appearance, the prominences being, however, of small size for the most part. On section there is also a typical lobulated appearance, the lobules being also of small size. The liver is diminished in size, but its weight has not been preserved. *Path. Reports.* No. 998.

8. Cirrhosis of Liver. (*Dr. Jas. Finlayson.*)
In the portion of liver preserved the surface is seen to present innumerable rounded prominences, generally about the size of hob-nails or smaller. On section the tissue was found to show considerable toughness, and the cut surface was much lobulated, being divided by tough connective tissue. The liver weighed 42½ oz., but without any striking contortion.

There was great enlargement of the spleen and a general biliary staining of all the tissues.

The patient was a woman aged 45. There was a history of jaundice for 2 years and of ascites for 2 months. Latterly there was great emaciation. There was a history of drinking. *Path. Reports*, 18th December, 1882. No. 895.

9. Syphilitic Liver, Gummata. (*Dr. Jas. Finlayson.*)
The liver is much contorted, there being frequent deep or shallow cicatrices, but no general granulation. There are numerous yellow tumours of various sizes—the largest about half an inch in diameter, and these are mostly in the midst of the cicatrices. Syphilis 15 years before death. Swelling in

epigastrium, and dropsy for first time 4 years before death. *Path. Reports*, 14th February, 1878. No. 298.

10. Syphilitic Liver, General Cirrhosis and Gummata. (*Dr. Jas. Finlayson.*)

In addition to a few deeper cicatrices, there is a general granulation on the surface, so that the liver might almost be designated hob-nailed. On section, the general appearance is that of cirrhosis, with a few small yellow tumours. On microscopic examination the cirrhosis is seen to be at a comparatively early stage, and there are numerous very small gummata. There is also occasional amyloid degeneration of hepatic capillaries, with marked amyloid degeneration of the hepatic artery.

There were also numerous cicatrices in the lungs—each cicatrix being occupied by a yellow nodule (gumma). In addition, kidneys, spleen, and intestine were highly amyloid, the kidneys weighing together 22 oz., and the spleen 14 oz.

The patient was a man of 30. He contracted syphilis 5 years before death. Dropsy came on two months before death. He had albuminuria: urine at first abundant and with blood colour; latterly scanty; severe diarrhœa. *Path. Reports*, 19th June, 1878. No. 343.

11. Syphilitic Liver. Gummata and Amyloid Disease. (*Dr. W. T. Gairdner.*)

Two small portions of the liver are preserved, and on section it is seen that the liver tissue is replaced at intervals by a grey tissue, which sometimes presents pultaceous material in its central parts. In some cases around these grey masses the liver tissue is completely replaced by amyloid material, and elsewhere there is considerable amyloid disease of it.

A portion of the spleen from this case is preserved (see Series II, No. 104.)

The patient was a man, æt. 36, admitted with ascites and anasarcous swelling of limbs and scrotum, but with a history pointing with great probability to interference with the portal circulation having preceded the general dropsy. See Journal of Ward I, S, p. 227, and T, p. 45. The urine was albuminous, sometimes scanty, sometimes in excess. Maximum, 74 oz., sp. gr. 1024-35, no remarkable sediments. Repeated tapping was required, both of abdomen, and of the scrotum and feet, nearly 1200 oz. of fluid being removed altogether, and the fluid in the abdomen being perfectly clear serum. *Path. Reports*, 12th November, 1880. No. 588.

12. Liver in Bovine Tuberculosis. (*Dr. G. T. Beatson.*)
The whole organ was beset by numerous tumours, many of which, as seen in the preparation, are visible through the capsule, and some of them project distinctly from the surface as flattened round prominences somewhat resembling duckweed. On section it is seen that, although more abundantly present in some parts than others, the tumours exist in every region. They present, on being cut into, an opaque yellow colour, and are each surrounded by a distinct fibrous looking capsule. They vary in size from a pin's head to a small hazel nut, but even the smallest of them has a surrounding capsule. Under the microscope the tumours have all the characters of bovine tuberculosis. *Path. Reports.* No. 736.

13. Amyloid Liver. (*Dr. M'Call Anderson.*)
From a case of psoas abscess. *Path. Reports,* 26th November, 1875. No. 44.

14. Pieces of Amyloid Liver.

15. Carcinoma of the Liver. [Primary Tumour in Rectum.] (*Dr. Jas. Finlayson.*)
Only the lower half of the organ is preserved. As is seen upon its cut surface, the liver tissue is almost entirely destroyed, being obliterated by the enlargement of the cancerous nodules, with which it is abundantly studded. The nodules vary in size from that of a bean to that of a cricket ball, being separated in some places by only the merest trace of liver tissue. Some of them show a tendency to break down in their central parts, and this is well seen in the great excavation which has taken place in the largest nodule. The masses are also well seen projecting through the peritoneal coat, some of them presenting the characteristic dimpling or umbilication of their surfaces. The liver was very greatly enlarged, "almost filling the abdomen," and weighing 250 ounces. The primary tumour was found to be a cylinder-celled epithelioma of the rectum, situated about six inches from the anus. The tissue around this tumour was much matted, and in the midst of it two large glands were found, which presented, under the microscope, cylinder-celled tissue of characteristic appearance.

The patient was a woman aged 40. During life there seemed to be no suspicion of the tumour in the rectum, but there was a large swelling in the hepatic region which was growing rapidly. She had only been complaining for about

six months, and definite symptoms only came on about four months before death. *Path. Reports*, 14th June, 1881. No. 676.

16. Cancer of Liver. Perforation of the Wall of the Transverse Colon. (*Dr. W. T. Gairdner.*)

The specimen was obtained from the body of a man admitted to the wards on 2nd July, 1883, suffering from pain at the pit of the stomach, occasional vomiting and sickness, and a tumour in the right side of the abdomen which was first noticed about three weeks before admission. The tumour appeared to be demarcated from the liver by clear percussion, but not so distinctly from the right kidney. The tumour was approximately globular, extending a little beyond the umbilicus, and upwards close to the hypochondrium, being separated from it by tympanitic percussion, which allowed of the edge of the liver being demarcated in its normal position. The tumour admitted of a little displacement. The temperature was normal till the 16th, when it rose with symptoms of acute peritonitis, and he died on the 17th.

At the *post-mortem* a large tumour was discovered in the right iliac and lumbar regions, and extending in the direction described above. It was found to be a large nodulated tumour springing from the anterior margin of the right lobe of the liver by a narrow neck, which was easily encircled by the forefinger and thumb. The tumour had extended downwards and become inseparably adherent to the right end of the transverse colon, upon opening which the appearances observed in the specimen were observed. The specimen consists of the affected portion of bowel, and through its mucous surface the projecting nodule is observed; the serous surface is seen to be completely replaced by tumour tissue. The tumour of the liver was primary. *Path. Reports*, 18th July, 1883. No. 1010.

17. Cancer of Gall Bladder, Ducts, and Liver. (*Dr. M'Call Anderson.*)

The gall bladder is laid open, and is occupied by a growth of small size, but pretty deeply ulcerated. There are also flat tumours in the ductus communis. The liver was the seat of numerous tumours, and was much enlarged, weighing 9 lbs. *Path. Reports*, 9th December, 1875. No. 48.

18. Adhesion of Gall Bladder to Pyloric Region of Stomach, with Partial Dislocation. (*Dr. W. T. Gairdner.*)

At the *post-mortem* the pyloric end of the stomach was

found to pass up towards the cystic region of the liver where it was slightly adherent. The gall bladder was absent from this part of the liver, but it was found greatly contracted and very firmly adherent to the stomach. In the preparation it is shown in this position, and the ducts are also shown dissected out.

The patient, a man, æt. 40, died of very acute pneumonia; and the clinical facts had no reference to the pathological conditions shown in the preparation.

In this case there was great deformity of the hands and feet, of which casts are preserved, see *Path. Reports*, 11th April, 1883. No. 968.

19. 200 Gall Stones removed from the Gall Bladder.

They are about the size of peas, and are facetted. In colour they are brown. They do not appear to have led to any prominent symptoms during life.

20. Facetted Gall-Stones with Pointed Projections.

21. Gall-Bladder with Gall-Stones.

The bladder was found collapsed on three gall-stones, which are shown in preparation by removing part of the wall of the bladder.

22. Gall-Bladder full of Facetted Gall-Stones.

23. Two Examples of Solitary Gall-Stones.

One is preserved entire, and the other has been broken so as to show the internal structure. The former is of an oval shape, transparent, and nearly colourless. It is very light in weight, and composed almost purely of cholestearine. The other is also oval in shape, but though composed mainly of cholestearine, it presents a certain amount of bile pigment. In section the radiating arrangement of the cholestearine is well shown. These calculi were found in the gall-bladders of two different persons after death, and had given rise to no symptoms so far as known.

24. Gall-Stone passed *per anum*, which had Obstructed the Intestine. (*Dr. Edwin Brownlow.*)

The preparation is a large oval calculus, $1\frac{1}{4}$ inch in long diameter. There is an external amorphous crust forming an irregular rind in some parts a quarter of an inch in thickness. The calculus shows on section the usual glistering appearance

and radiating arrangement of the solitary cholestearine gall-stone.

Dr. Brownlow, in sending the calculus, thus describes the case—"The patient is a Catholic priest, aged 74, who has always enjoyed good health except when the liver bothered him. About 18 months ago he was suffering from a good deal of pain and uncomfortableness over the hepatic region and right shoulder, and was jaundiced for three or four days. He was afterwards much better, and even at that time did not appear to suffer from biliary colic. In the present illness he suffered from constipation, with slight pain and a little flatulent distention of the abdomen. An enema brought away hardened fæces, but the abdomen remained hard and distended, and the pain unbearable. Afterwards he passed another little mass of fæces similar to the first, which gave great relief. Two hours later, after a full dose of ether and camphor, he passed a great deal of watery discharge with the calculus sent. A large amount of flatus followed, and there was immediate relief."

25. Gall-Stone Obstructing Orifice of Common Bile Duct: Absence of Gall Bladder. (*Dr. Lawrence Waddell.*)

The gall-stone is a facetted one, and one of its edges projects through the orifice, the body of the stone occluding the duct. The common bile duct is widely dilated, forming a tube of uniform diameter from the duodenum to the transverse fissure of the liver, where it entered the substance of the liver and divided into two branches. Lying loosely in the dilated duct were four small facetted stones. Another facetted stone was discovered, by inserting the finger into the dilated duct, deep in the liver tissue. No gall-bladder was discovered, and in its usual situation, only a small quantity of white fibrous tissue. The liver was deeply fissured in various parts, and its tissue friable.

The case was that of a woman aged 45, a patient in Abergavenny Asylum, Monmouthshire, suffering from chronic mania. Bodily condition rather flabby, but no history of jaundice. On night of 25th October, 1878, was suddenly seized with retching, and a frequent desire to go to stool. This continued up till her death next day at 8·30 P.M. During all this time there was no jaundice and no pain in the hepatic region, other than slight tenderness on pressure in epigastrium. She had been in her usual health up till seizure, only complaining occasionally of indigestion. No jaundice was observed during life, but at the *post-mortem* a slight degree was visible.

26. Dilatation of Gall Bladder from Obstruction of Duct by a Gall Stone. (*Dr. Jas. Finlayson.*)

The gall bladder is distended into a pear-shaped cyst, which, at the time of the *post-mortem*, extended as far as the umbilicus, projecting from the liver. The contents of the cyst were a thin clear mucus, without a trace of biliary colouring. The gall duct is completely occluded about an inch beyond the neck of the bladder by a rather large gall stone, whose surface is grey on its aspect next the bladder, and brown from biliary staining on the aspect distal to the bladder. There is great distention of the duct from the neck of the bladder to the gall stone, but beyond the gall stone the duct is of normal calibre.

The patient, a woman 30 years old, took ill two or three months before death with vomiting and purging, the contents of both stomach and bowel being bloody. There was a swelling in the region of the liver. No distinct jaundice; face being pale and only slightly yellow. *Path. Reports*, 2nd June, 1882. No. 825.

27. Cancer of Head of Pancreas: Obstruction of the Pancreatic and Common Bile Ducts, &c. (*Dr. W. T. Gairdner.*)

The head of the pancreas is the seat of a scirrhous cancer of an almost cartilaginous consistence, which involves the terminations of the pancreatic duct and the ductus communis. The preparation shows an enormous dilatation of the pancreatic duct in the substance of the gland, and this cyst-like dilatation contained a glairy colourless fluid. The ductus communis, cystic duct, gall-bladder, hepatic duct and its branches in the liver, are all enormously distended. In the liver there were, especially near the surface, frequent small cysts filled with dark bile. There were also a few secondary cancerous tumours, one as large as a small apple and deeply umbilicated. In the preparation a portion of the liver is preserved, showing the biliary cysts and one of the secondary tumours.

The patient, a woman, æt. 66, was admitted only three days before death, in a condition of extreme debility and emaciation, and with jaundice of five months' duration. *Path. Reports*, 20th November, 1877. No. 262.

28. Colloid Goitre.

The right lobe of thyroid is seen to be greatly enlarged—the left to a less extent. On cutting into right lobe a number of cysts were laid open containing turbid fluid. *Path. Reports*, 2nd July, 1879. No. 454.

SERIES VI.

URINARY ORGANS.

1. Kidney Partially Injected from a Branch of the Renal Artery.

The injection material is carmine in a solution of gelatine, injected hot. The preparation illustrates that each branch of the renal artery is distributed to a definite piece of the kidney without anastomosis—is an end artery. It is seen that the injected portion is abruptly demarcated. It also illustrates that the arterial distribution is primarily to the cortex which is here fully injected.

2. Displacement of the Right Kidney with Mobility. Short Renal Vein. (*Dr. W. T. Gairdner.*)

On opening the abdomen in this case the right kidney was at once seen to form a tumour near the middle line. Its lower margin was situated near the middle of the vertebræ, while the proper upper margin was much posterior, the organ lying nearly transversely, the hilus presenting upwards and inwards. In this position it formed a swelling just beneath the lower edge of the liver, immediately outside the level of the gall bladder. From this position the kidney could be readily displaced forwards till its middle was at the middle line, but it could not be displaced backwards into its normal position. On more particular examination, it appeared that the principal cause of its inability to pass backwards to its normal position was the position of the renal vein which seemed to hold the organ upwards and towards the middle line. The renal vein passed into the vena cava an inch before the latter entered the liver, the renal vein itself being an inch and a half in length.

The condition was not discovered during life, and the patient died with cardiac symptoms apparently related latterly to atheromatous obstruction of the coronary artery. *Path. Reports,* 22nd November, 1882. No. 875.

3. Movable Kidney. Conversion into Cysts filled with Pultaceous Material. (*Dr. Jas. Finlayson.*)

This preparation is from the case of cancer of stomach and liver shown in Series IV, Nos. 17 and 18, but there is no apparent connection, and in particular, there were signs of movable kidney detected nearly a year before death, and at that time there was no enlargement of the liver. The kidney, which is the right one, was found somewhat enlarged, nodulated, and displaced downwards, with its lower extremity presenting somewhat forwards. The organ could be readily moved downwards to the front of the vertebræ and restored to its normal place; but although the peritoneum and subperitoneal tissue were somewhat loose around it, there was no proper sac and no mesonephron. The kidney is converted into a congeries of cysts without any remains of kidney tissue. The cysts vary in size from that of a hazel-nut to that of a small apple, and were filled with a whitish pultaceous material. The pelvis is obliterated, and the ureter converted into a fibrous cord right down to the bladder where the aperture is obliterated.

The patient was an unmarried woman, 30 years of age, who had never had children. *Path. Reports*, 10th August, 1883. No. 1027.

4. Rupture of Kidney. (*Prof. Geo. Buchanan.*)

The left kidney is that preserved, and its external capsule is much infiltrated with blood, while the lower third of this kidney is lacerated, and reduced to a soft pulp. There was great ecchymosis in the retro-peritoneal tissue behind the kidney, extending into the sheaths of the psoas and iliacus muscles. There was also in this case fracture of the skull and laceration of the brain.

The patient fell from a window two stories high, and alighted on his face. There were no external signs of injury over the kidney. *Path. Reports*, 14th February, 1876. No. 72.

5. Compensatory Hypertrophy of Kidney. (*Dr. W. T. Gairdner.*)

The kidney preserved is the left, and it weighed in the fresh state 12 oz. To the naked eye on section and under the microscope the kidney presents nothing abnormal. The right kidney was wanting. Its ureter was present, however, and was traced up to the normal position of the kidney, where it divided into three thin branches, and terminated in a quan-

tity of matted tissue, from which a small vein passed to the vena cava.

The liver was greatly deformed, the right portion of right lobe being greatly atrophied. See Series V, No. 5. *Path. Reports*, 15th November, 1879. No. 486.

6. Hæmorrhage in the Pelvis of the Kidney in Purpura Hæmorrhagica. (*Dr. Jas. Finlayson.*)

The pelvis is seen to be full and even distended with blood clot, its mucous membrane being also infiltrated with blood. The stomach also presented hæmorrhages, see Series IV, No. 9. The ureter also contained blood clot, and during life there was hæmaturia. There was bleeding from the gums, tarry motions, abundant purpuric spots, and other evidences of purpura hæmorrhagica.

The patient was a man 28 years old. *Path. Reports*, 25th July, 1878. No. 351.

7. Large Simple Cyst of Kidney. (*Dr. Jas. Finlayson.*)

The cyst, which is as large as both closed fists, is situated chiefly in the kidney substance which it has opened up, but it also projects considerably from the convex and upper borders. Through the wall of the cyst looking from within, the various regions of the kidney substance are visible, cortex and pyramids, and even at various places calyces, separated from the cyst only by a thin wall. There was no distention of pelvis or calyces, and no communication of these with the cyst. The cyst contained 10 or 12 ounces of a slightly yellow transparent fluid.

The other kidney was normal. The man was 49 years old, and died of pachymeningitis hæmorrhagica. There had been albumen found in his urine. (See *Glasgow Medical Journal*, Vol. 17, p. 243.) *Path. Reports*, 12th January, 1877. No. 176.

8. Cystic Degeneration of the Kidneys. (*Dr. W. T. Gairdner.*)

Both kidneys are converted into a congeries of cysts of larger and smaller size, which project on the surface presenting variations of colour in their contents. The left is the larger, and measures 7½ inches in length, 4½ in breadth, and 3 inches in thickness. The right weighs 19 oz., measures 6 in. in length, 3 in breadth, and 2½ in thickness. In this kidney there is a good deal of solid tissue remaining in which, under the microscope, Malpighian tufts are detected. The pelves of both kidneys are normal, and so are the ureters. The calyces

are somewhat distorted by the encroachment of the cysts. The urinary bladder presented thickening of its mucous membrane with frequent hæmorrhage.

The patient was a man 43 years of age. There were repeated attacks of hæmaturia extending over 18 years. In later stages symptoms of vesical irritation were present. Tumour of kidneys was recognised. Death occurred with uræmic symptoms—*i. e.*, suppression of urine, delirium and coma, lasting in all for about 36 hours, and coming on suddenly two days after admission. Urine contained leucocytes and blood corpuscles; just before the fatal attack its quantity was 30 oz., sp. gr. 1012-15. The malformation of aortic valve, forming Series II, No. 7, is from the same case. *Path. Reports*, 26th January, 1880. No. 516.

9. **Hydronephrosis with Contraction of Kidney due to a Calculus in Ureter.** (*Dr. M'Call Anderson.*)

The right kidney, which is the one affected, is much contracted. There is no proper renal tissue remaining; the organ constitutes a cyst having the usual character of hydronephrosis. The ureter is distended down to an inch and a half from the bladder, where an oval calculus is impacted. Beyond the calculus the ureter is much contracted. The other kidney was enlarged, weighing 6½ oz. *Path. Reports*, 24th October, 1877. No. 257.

10. **Hydronephrosis.** (*Dr. Jas. Finlayson.*)

The kidney is converted into a cyst, which is of an oval shape; but the pelvis occupies more space than is usual. The cause of the hydronephrosis was not discovered, no obstruction of the ureter being found.

Patient was a woman, æt. 46. The case was a very complicated one with caries, thrombosis of pulmonary artery, &c. (See *British Medical Journal*, 28th April, 1877.) *Path. Reports*, No. 130.

11. **Double Hydronephrosis from Enlargement of Prostate and Dilatation of Bladder** (same case as No. 34.)

Both ureters are greatly distended, and so are the pelves of the kidneys, which bulge out very markedly from the general outline of the kidney. The calyces are also much dilated with considerable atrophy of the apices of the pyramids, but there is no increase of the general outline of the kidneys. *Path. Reports*, 2nd January, 1884. No. 1100.

12. Hydronephrosis due to Enlarged Prostate and Hypertrophy of Bladder. Great Thickening of Fatty Capsule.

In this case, both ureters were found greatly dilated, especially the left, which was as large as the finger. The outline of the kidney is not appreciably enlarged, but the pelvis and calyces are markedly dilated at the expense of the renal tissue. The external fatty capsule of the kidney is greatly thickened. The bladder is shown in No. 35. *Path. Reports*, 30th March, 1880. No. 542.

13. Extreme Hydronephrosis, Ureter entering Pelvis at an Acute Angle. (*Dr. Jas. Finlayson.*)

The external outline of the kidney is greatly enlarged, the organ measuring 6½ inches from above downwards. As shown in the preparation the pelvis is greatly dilated, measuring 3½ inches from above downwards, and 2½ inches transversely. It communicates with a series of large compartments which represent greatly dilated calyces, and which, in some places, extend close to the surface, the remaining kidney tissue forming simply a thin rind. The ureter is not dilated, and it enters the pelvis at an acute angle about ¾ inch above the lower extremity of the latter. The pelvis is not elongated towards the ureter; and the orifice, into which a piece of whale-bone has been passed, is even smaller than normal From the position of the ureter the orifice would be valved when the pelvis was full.

The other kidney was considerably enlarged, weighing 8½ oz.; but otherwise normal (*compensatory hypertrophy*). The patient, a man aged 53, was affected with symptoms of acute rheumatism and pneumonia with pleurisy. There is no note of renal symptoms during life. *Path. Reports*, 6th January, 1883. No. 909.

14. Hydronephrosis of peculiar form: Ureter entering Pelvis at an Acute Angle. (*Prof. Geo. Buchanan.*)

The preparation shows a very large cyst which contained 46 oz. of fluid, and represents greatly dilated pelvis of kidney. This cyst is attached to the lower and anterior aspects of the kidney, the vessels passing to the organ running along its upper border. Towards the kidney there are 6 large rounded apertures which represent calyces much less dilated than the pelvis, and these apertures communicate with cavities inside the kidney. The uppermost of these cavities is of considerable dimensions, but in the case of all of them there

is a considerable amount of kidney substance between them and the surface.

The ureter, into which a probe has been passed, is found to enter the dilated pelvis near its inferior part at an acute angle, traversing the wall of the cyst for some distance and opening by a slit-like aperture. The ureter is not dilated, and its aperture is not unduly narrow. The other kidney was normal in size, weighing 6 oz. This is noteworthy in connection with the fact that in the affected kidney there was still a considerable amount of kidney tissue remaining, as mentioned above. Nothing was known during life of the existence of this condition. *Path. Reports*, 2nd October, 1882. No. 855.

15. Pyo-nephrosis with Isolated Cysts: Obliteration of Pelvis. (*Dr. W. T. Gairdner.*)

The preparation is about the half of the kidney divided longitudinally. Scarcely a trace of kidney tissue remains, but the organ presents merely a congeries of cysts. These vary in size, the largest measuring about 2 inches in its longitudinal diameter. Most of the cysts contained a clear serous fluid, but some were filled with a putty-like material which is preserved in the preparation. These cysts do not communicate with one another or with the pelvis, and the latter seems obliterated by adhesions.

The other kidney was greatly enlarged (*compensatory hypertrophy*), weighing $8\frac{3}{4}$ oz. On section a special thickening of the cortex was visible, its thickness being on an average about $\frac{3}{8}$ of an inch.

The case was that of a woman aged 35, who suffered from symptoms chiefly of bronchitis with dyspnœa. There was slight albuminuria with amorphous urates. After death there was found hypertrophy of the heart, but this was almost confined to the right ventricle. *Path. Reports*, 12th December, 1882. No. 889.

16. Cystic Kidney, with occasional presence of Pus: Obliteration of Pelvis. (*Dr. W. T. Gairdner.*)

The kidney is converted into a series of cysts, mostly of large dimensions, some are filled with serum, others with a sero-purulent material. Those which contain pus present a distinct granulation-like internal lining. The pelvis is obliterated and the ureter stops short at its entrance to the pelvis. The other kidney was reduced in size, being in a state of cirrhosis.

The patient was a woman, æt. 43, admitted in a state of

profound coma, with contracted pupils, and evidences of incomplete right hemiplegia. The urine was albuminous, and there was a history of eight years' liability to attacks of sickness and bilious vomiting. The cerebral attack, however, occurred suddenly twenty-four hours before admission, and was shown after death to be due to a large recent hæmorrhage in the left hemisphere. The heart weighed 14½ oz.; the enlargement being due to hypertrophy of the left ventricle. *Path. Reports*, 14th January, 1879. No. 411.

17. Kidney containing numerous Large Cysts, filled with a Pultaceous Material, the result of Suppurative Inflammation. (*Dr. H. C. Cameron.*)

The kidney was much reduced in size, and in addition to the pultaceous matter contained in the cysts, several calculous masses were found near the pelvis. The organ has been laid open so as to show the interior. The cystic structure is well seen, many of the cysts being more or less completely filled with the pultaceous matter mentioned above. A piece of whale-bone inserted at the cut end of the ureter is seen to pass directly into one of the cysts. For rest of case see next preparation.

18. Suppurative Inflammation of the Kidney.

This is the other kidney from the same case as the preceding, and represents a stage through which the latter has probably passed. The organ is considerably enlarged, and weighed 12 ounces. Small abscesses were found in every part of its tissue, and they also involved the capsule as was seen by their being opened into when the capsule was removed. The stripped capsule is preserved in the specimen, and numerous yellow spots are seen on the surface of the kidney (the abscesses).

Patient suffered twenty years ago from tubercle of testis, and ten years ago was castrated. After the operation he began to suffer from bladder symptoms. When admitted he was in a very weakly condition, and died 48 hours after admission, so that no clinical history was obtained.

The urinary bladder, which is preserved as No. 37, was also greatly inflamed, and contained turbid urine with pus in it. It may be inferred that the disease began in the bladder, and extended first to the left kidney (preserved in preceding preparation), which it destroyed by suppuration. It had, shortly before death, extended to the right kidney as noted above. See Dr. Steven's paper, "The Pathology of Suppurative

Inflammation of the Kidney." *Glasgow Medical Journal*, September, 1884. *Path. Reports*, 11th July, 1881. No. 692.

19. Suppuration of Kidney with Foreign Body in Pelvis. (*Mr. E. Maylard.*)

The substance of the kidney, except at its extreme lower part, is occupied by large cavities, which in the recent state were filled with creamy pus. Lying in the pelvis of the organ there is a bristle like that of a coarse brush. It lies in the long axis of the cavity, and its lower end is inserted into a calculus which sends a branch into a neighbouring calyx. The right ureter was somewhat dilated. The bladder was normal in appearance, but contained a little purulent urine. The left kidney was normal.

The case was that of a man who died from injury to the head, with laceration of the brain, &c. Nothing was known as to renal symptoms during life. *Path. Reports*, 1st December, 1883. No. 1097.

20. Local Tuberculosis of Kidney and Ureter. (*Dr. W. T. Gairdner.*)

The outline of this kidney is considerably enlarged. As may be seen on section, there are a number of irregular cavities, both in the upper and lower parts of the kidney, these cavities having largely the shape of exaggerated calyces, and in some cases approaching within two or three lines of the surface. Internally these cavities are lined by a rough yellow layer, and outside this there is a grey layer, which separates the yellow surface from the kidney tissue. The pelvis of kidney is similarly altered, and the ureter is greatly thickened and continuously lined throughout with a consistent yellow opaque layer without any apparent ulceration. There was tuberculosis of the bladder, and a single tubercular mass in the right kidney; also tubercular ulcers of intestine, cavities in lungs, tubercles in the bronchial mucous membrane, miliary tubercles in the pulmonary tissue and the liver, &c.

The symptoms differed but little from those of ordinary chronic, pulmonary, and laryngeal phthisis, of two years' duration, in a man, æt. 38, much exposed to cold and wet. The urine, however, constantly contained a small sediment of pus while under observation, at first without any special symptoms referrible to the urinary organs, but afterwards with pain in left lumbar region, and some evidence of increase in volume of the left kidney. *Path. Reports*, 4th March, 1880. No. 532

21. Tubercular Disease of Kidneys, Ureters, and Bladder, Hydronephrosis. (*Dr. A. Patterson.*)

There is in this case a general and advanced tubercular disease of the kidney and ureter on the right side, and a somewhat advanced hydronephrosis, with limited tubercular disease of the kidney, along with dilatation and slight tuberculosis of the ureter on the left side. The course of events has probably been a chronic local tuberculosis of the left kidney, with extension down the ureter to the bladder, tuberculosis of the bladder extending to the orifice of the left ureter, and causing obstruction there with resulting dilatation of this ureter and hydronephrosis. An extension to this kidney has subsequently occurred. The right kidney is somewhat enlarged in outline, and is converted into a series of cavities with a ragged irregular internal surface and caseous wall. The ureter is greatly thickened and lined with irregular caseous material. The mucous membrane of the bladder presents almost continuous superficial ulceration. The terminal part of the left ureter is greatly thickened and hard, while the ureter above is much dilated, but generally thin walled, and with only here and there a localised thickening. The outline of the left kidney is considerably greater than that of the right, and it presents internally a dilatation of the pelvis and calyces, the internal surface of which, in the upper $\frac{2}{3}$, is smooth and of the usual appearance of hydronephrosis. In the lower third, however, there is an irregular surface, sometimes with shaggy projections and a hard caseous lining of some thickness. There is a considerable thickness of kidney tissue between the distended calyces and the surface, and in this tissue a number of small abscesses are visible.

The case was one of a boy aged 9, who had an abscess behind the bladder, which was opened. *Path. Reports*, 7th February, 1883. No. 926.

22. Miliary Tuberculosis of Kidney.

The tubercles are of small size, but are exceedingly numerous. They are present chiefly in the cortex, but a few also exist in the pyramids. The case was one of general tuberculosis. *Path. Reports*, 19th March, 1880. No. 538.

23. The Kidneys in Ulcerative Endocarditis. (*Dr. J. C. Renton.*)

Both kidneys were enlarged, weighing $6\frac{3}{4}$ oz. and $7\frac{1}{4}$ oz. In both there were two or three large infarctions, and in addition numerous red spots, each with a yellow centre, mostly in

the cortex. In these patches the microscope detected vessels filled with micrococci, as well as the usual inflammatory appearances of abscess. Similar organisms in great abundance were present on the affected valves of the heart. See Series II, No. 23. *Path. Reports*, 18th March, 1880. No. 537.

24. Pyæmic Abscesses in Kidney. (*Dr. Jas. Finlayson.*)

A number of small abscesses are seen to project from the surface of the kidney, having similar appearances, but rather fewer in number than in ordinary cases of pyæmia. The primary suppuration was in connection with the right sterno-clavicular articulation and neighbouring parts of thyroid and connective tissue of neck.

The case was otherwise one of cancer of the head of the pancreas, with obstruction of the bile and pancreatic ducts, in a man 39 years old. *Path. Reports*, October, 1882. No. 860.

25. Metastatic Abscesses in Kidney.

On the surface are seen numerous yellow projections, each with a dark surrounding zone. These are small abscesses surrounded by an intensely hyperæmic area. There were also metastatic abscesses in the lungs, and numerous white nodules in the intestinal mucous membrane, but no source of pyæmic infection was discovered.

The case was that of a boy of 10 years, admitted moribund, and supposed before admission to have had diphtheria. *Path. Reports*, 10th September, 1883. No. 1038.

26. Perinephric Abscess Perforating the Intestine and Ureter. (*Dr. W. T. Gairdner.*)

The kidney, which is the left, was completely surrounded by an abscess of complicated shape which communicated externally. The kidney itself is converted into a series of irregular cavities, which contained pus. The pelvis of the kidney is greatly shrunken, and hardly recognisable; but a cavity, in its position, communicates with an aperture in the ascending colon, through which a piece of whale-bone has been passed. The abscess was also in communication with the ureter of this side, and with the opposite ureter by an elongated branch of the abscess which crossed the middle line. The right kidney was enlarged, and the seat of numerous small abscesses. The liver and spleen were highly amyloid. The right testicle was the seat of strumous disease.

The patient was a man aged 30, who had been in the hospital

twice at an interval of two years. There had been a severe injury to the testicle, with urethral suppuration six years before; but it was on the opposite side from the renal abscess. At first there was a somewhat acute nephric or perinephric abscess, with a very large tumour in the region of the left kidney, and with pus in the urine; which subsided apparently by discharge into the intestinal canal; the renal tumour being no longer perceptible after two to three months, although pus was still present in the urine. He recovered sufficiently to leave, although there was presumptive evidence of amyloid disease. He was re-admitted fifteen months afterwards with large re-accumulation of the abscess, which was opened antiseptically. After a time albuminuria, anasarca, &c., supervened, but it was only about a fortnight before death that pus returned to the urine.

The case has been made the subject of a most important dissertation and commentary by Dr. J. Lindsay Steven. See *Glas. Med. Journ.*, January, 1882, "On a case of Pyelo-nephritis with Micrococci." See also on "The Pathology of Suppurative Inflammations of the Kidney." *Glas. Med. Journ.*, September, 1884. *Path. Reports*, 4th May, 1881. No. 656.

27. Parenchymatous Nephritis. Large Kidney. (*Dr. W. T. Gairdner.*)

This kidney weighed in the fresh state 10 oz.—the enlargement depending mainly on thickening of the cortex. The cortex was pale, but not remarkably so; and there were dark red spots indicating hæmorrhage. Under the microscope there was abundant cloudy swelling and degeneration of the renal epithelium, and frequent hæmorrhage into the convoluted tubules.

In addition, there was enlargement of the heart, but not specially of the left ventricle. In both ventricles there were thrombi. In the right lung there was a hæmorrhagic infarction, with pleurisy.

The case was that of a man, æt. 40, and the symptoms were quite as much those of the cardiac as of the renal disease. The urine was diminished in amount, with abundant albumen, and it contained epithelium, blood, and pus. *Path. Reports*, 26th March, 1880. No. 54.

28. Chronic Parenchymatous Nephritis. Small Kidney. (*Dr. W. T. Gairdner.*)

The kidney preserved is the left, weighing 2½ oz. (the right weighed 4½ oz.) The capsule was non-adherent, and the sur-

face, though presenting a wrinkled irregular appearance, has nothing of the granular condition. It shows, however, an exaggeration of the fœtal lobulation. In the fresh state it was seen to be dotted over with numerous yellow specks. On section the cortical substance was not much increased in thickness, if at all, and it also presented yellow streaks and patches. The heart was enlarged, weighing 19 oz., with some dilatation of the auriculo-ventricular orifices, but no proper valvular disease. At the apex of the left ventricle there was a pretty large thrombus undergoing softening.

The spleen preserved, as Series II, No. 80, was the seat of several large infarctions involving most of the tissue. The organ weighed 10 oz. One of the two principal branches was found distended with clot, and this vessel, with its clot, was traced some distance into the splenic tissue. There was extreme œdema of the entire surface, dropsy of pleuræ, of abdomen, and of the ventricles of brain.

The history shows that renal dropsy began in 1872—being connected with pregnancy and delivery of her first child. This attack was recovered from, and there was a second in 1874, a month after second confinement. She was admitted to the hospital in January, 1875, with cough and dyspnœa, with slight hypertrophy of heart, arteries remarkably twisted considering her age (31), urine albuminous, mean quantity 64 oz., sp. gr. 1012-18, and containing abundant tube casts. She was re-admitted in May, 1875, with greatly diminished urine, extensive œdema, and dropsy of the serous cavities. With occasional partial relief the dropsy continued to the end, producing great embarrassment of the respiration. *Path. Reports*, 26th September, 1875. No. 28.

29. Parenchymatous Nephritis. Contracted Kidney. (*Dr. Jas. Finlayson.*)

This kidney resembles the preceding one. It is not very granular on the surface, but presents exaggerated lobulation. Being preserved in Wickersheimer's fluid, it still shows the fatty markings on its surface. This kidney weighed $3\frac{1}{4}$ oz., and the other $2\frac{3}{4}$ oz.

The heart presented most typical hypertrophy of the left ventricle.

The case was one of acute Bright's disease, in a woman, æt 42, with extreme œdema, which recurred several times as the disease became chronic. *Path. Reports*, 16th October, 1884. No. 1246.

30. Large White and Amyloid Kidney. (*Dr. G. P. Tennant.*)

Both kidneys were much enlarged, weighing 10 oz. As shown on section in the preparation, the cortical substance is greatly thickened and pale, contrasting with the red pyramids. In the fresh state it was found that, in addition to the amyloid disease, there was fatty degeneration of the epithelium. Amyloid disease was present in the spleen (sago spleen) and liver.

The case was one of phthisis pulmonalis of at least three years' duration. Latterly the urine became scanty with high specific gravity and abundant albumen and tube casts. There was also œdema. *Path. Reports*, 27th March, 1883. No. 959.

31. Interstitial Nephritis Contracted Kidney. (*Dr. M'Call Anderson.*)

The kidney preserved weighed only 2¼ oz. The capsule is adherent and the surface granular. On microscopic examination interstitial inflammation and cysts are discovered. In this case the vessels of the brain were atheromatous, and there was softening with formation of cysts. The heart was enormously enlarged, weighing 23 oz., but without any valvular disease, and without any obvious predominance of one ventricle over another. *Path. Reports*, 31st September. No. 61.

32. Contracted and Amyloid Kidney, from a Case of Syphilis. (*Dr. G. P. Tennent*).

The capsule, which was adherent, has been removed, and the exposed surface shows a very striking granulation, alternating with an almost smooth appearance of the surface, these smooth parts being considerably depressed below the level of the granular parts. On section it was found that the granular portions were persisting pieces of cortex, and that the smoother surface is due to the complete disappearance of the cortex. The kidney as a whole was much contracted, weighing only 2½ oz.

The other kidney had also a granular surface, with shrinking of the cortex, but it was normal in size. The spleen had characters of diffuse amyloid disease. The liver presented many cicatrices, some of them very deep. *Path. Reports*, 20th February, 1883. No. 939.

33. Chronic Nephritis: Uric Acid Deposits in Pyramids (Gout). (*Dr Joseph Coats.*)

The kidneys were not appreciably reduced in size, and

weighed 6 oz. each. The cortical substance however, as shown in the preparation, was much destroyed, so that the bases of the pyramids approached the surface, and the surface was generally granular, with adherent capsule. The pyramids present abundant white chalky deposits, which were determined by chemical examination to be uric acid. Under the microscope the cortical substance showed abundant infiltration with round cells, with new formed connective tissue, and sclerosis of glomeruli. There was somewhat frequent fatty degeneration of the epithelium. There was great enlargement of left ventricle.

The case began about three years before death with a severe attack of gout (both great toes) and acute general œdema. From this he recovered, but had frequent and excessive micturition, till six weeks before death when a second attack of general œdema occurred. Uræmic convulsions with a maniacal condition developed about a fortnight before death. Hypertrophy of left ventricle and albuminuric retinitis were detected. *Path. Reports*, 12th February, 1885. No. 1302.

34. Dilatation and Hypertrophy of Bladder: Sub-mucous Hæmorrhage: great Enlargement of Prostate. (*Dr. Jas. Finlayson.*)

The bladder is much enlarged, measuring 5 inches in both diameters. Its wall is also greatly thickened, especially the muscular coat, which presents internally very prominent trabeculæ. In the fresh state a very extensive sub-mucous hæmorrhage was observed, but there were no signs of inflammation. The prostate is enormously enlarged, measuring $2\frac{1}{2}$ inches longitudinally, 2 inches transversely, and $1\frac{1}{2}$ inch from before backwards; it shows also a very marked rounded projection into the bladder. In the preparation the urethra has been laid open, and there is a false passage through which a piece of whale-bone has been passed. The ureter and pelvis of the kidneys were distended (see No. 11). There was recent hæmorrhage into the tubules of kidney.

The case was that of a man aged 64. For about 9 months there had been frequent micturition. On admission 6 days before death, the bladder was found much distended (the patient not being aware of it). He passed urine frequently, but only about 4 ounces at a time, it was slightly albuminous with hyaline casts, but no blood or pus. The catheter was passed and the urine became bloody, continuing so afterwards when passed by patient. (See *Glasgow Medical Journal*, Feb., 1884, p. 132.) *Path. Reports*, 2nd January, 1884. No. 1100.

35. Enlarged Prostate: Hypertrophy of Bladder. The enlargement of the prostate is very marked, and the prominence of the middle lobe is particularly so, as it projects at the neck of the bladder rounded like a marble. The bladder is enormously hypertrophied, and somewhat dilated; the internal surface shows prominent trabeculæ projecting and interlacing. These are so prominent as to remind one of the trabeculæ of the internal surface of the heart. There was a double hydronephrosis. (See No. 12.)

Patient was a gentleman aged 73, who had suffered from urinary symptoms for 12 years. *Path. Reports*, 30th March, 1880. No. 542.

36. Hypertrophy of Bladder and partial Double Hydronephrosis.

The muscular coat of the bladder is very greatly hypertrophied, its internal surface being almost like the auricular appendage of the heart from prominence of the muscular trabeculæ. This indicates obstruction to the passage of the urine, and there is a certain hypertrophy of the prostate, but as the *Pathological Report* has been lost, it is not known whether there was obstruction in the urethra or not.

Both ureters are much dilated, especially the left, and on both sides the pelves and calyces of the kidneys are enlarged at the expense of the kidney tissue. The outline of the left kidney is considerably enlarged, but that of the right is about normal.

37. Urinary Bladder from a Case of Cystitis. (*Dr. H. C. Cameron.*)

The specimen will be seen to be exceedingly irregular in its internal surface, presenting frequent rough dark-coloured projections. There is no normal mucous membrane left. This specimen is from the same patient who supplied the kidneys, Nos. 17 and 18, which see. *Path. Reports.* No. 692.

38. Ulceration of Bladder in Paraplegia. (*Dr. Jas. Finlayson.*)

Outside and behind the aperture of the right ureter there is a considerable excavated ulcer which, in the recent state, had a ragged appearance. In the neighbourhood of the left ureter, although no definite ulcer is present, the mucous membrane presents a softened appearance. The muscular coat of the bladder presents a general trabeculation.

The case was one of acute softening of the cord with

hæmorrhage, and the paraplegia had lasted three weeks. There were acute bedsores on the outer aspect of left thigh. Patient was a man 39 years old. *Path. Reports*, 13th August, 1883. No. 1028.

39. Inflammation of Bladder: Large Diverticulum. [Dilated Ureter and Calculous Hydronephrosis, with Large and Small Stones, see next two preparations]. (*Prof. Geo. Buchanan.*)

The wall of the bladder is greatly thickened by chronic inflammation, but, in addition, there are numerous shaggy masses projecting from the internal surface indicating a more acute inflammation. In its posterior wall there is a large irregular aperture which readily admits one finger, and through this aperture the shaggy masses project, forming a somewhat pyramidal protuberance into the cavity next to be described. This cavity is larger than the bladder itself and of very irregular outline. Its wall is formed of somewhat loose connective tissue, and it contained two or three pints of a turbid purulent fluid. There was also pus in the abdominal cavity, especially in the neighbourhood of this cavity.

The patient was a man aged 43. He was cut for stone when twelve years old and made a good recovery. Urinary symptoms re-appeared 10 years before death and became aggravated six years afterwards, when blood and gravel began to be passed. There were, subsequently, several exacerbations, pain in passing gravel being prominent features. *Path. Reports*, 3rd January, 1883. No. 906.

40. Dilated Ureter and Calculous Hydronephrosis—same case as preceding.

The left kidney and ureter are here preserved. The ureter is considerably dilated and thickened, and the pelvis of the kidney is thickened, but not greatly dilated. The kidney, however, is converted into a congeries of cysts, several of which contain calculi. The cysts are seen largely to be formed around the calculi, having similar shapes. All these cavities, whether containing calculi or not, communicate with the pelvis, but generally by a small aperture. The large calculi which are retained *in situ*, and exposed by partial removal of the cyst walls, present a pure white colour and considerable density, having none of the crumbling characters of the soft phosphatic calculus.

41. Small Calculi, from preceding case.

Small calculi, such as those shown on a piece of cardboard,

were present in hundreds, both in the cysts with larger calculi and in those with smaller. They are white like the larger, but many of them have a definite disc shape, their diameter varying from $\frac{1}{4}$ inch downwards; besides the disc shaped, there are irregular ones.

Both forms of calculi presented the reactions of the tribasic phosphate, being fusible in the blow pipe flame, soluble in nitric acid without effervescence, and precipitable from such solutions by oxalate of ammonia.

42. Large Cystic Diverticulum of Urinary Bladder. (*Dr. H. C. Cameron.*)

The preparation has been divided longitudinally, and the parts displayed are—above, urinary bladder and diverticulum laid open, and below, the rectum. The internal aspect of the urinary bladder is seen to be thickened and its surface thrown into folds, the summits of which are coated with phosphates. The cystic diverticulum is larger than the bladder, and is situated immediately behind it, being separated by a moderately thick septum. It communicates with the bladder by an aperture in this septum, large enough to admit the first joint of the index finger. The cyst, which is large enough to contain a closed fist, has a well defined wall, generally about $\frac{3}{16}$ths of an inch in thickness, and its internal surface is coated with phosphates which sometimes penetrate into its substance. The wall itself is formed of a grey fibrous tissue. There are several smaller diverticula with apertures between the thickened muscular bundles of the bladder. These are mostly of small size, but one has a depth of an inch. *Path. Reports,* 2nd October, 1882. No. 854.

43. Stricture of Urethra, with Abscess; Perforation of Bladder; Peritonitis. (*Dr. H. C. Cameron.*)

The urethra is considerably ulcerated and an abscess cavity (shown by a piece of whalebone) communicates with it just in front of the prostatic portion. There was another abscess at the root of the penis which communicated freely both with the cutaneous surface and the urethra. Besides this abscess there was one behind the posterior wall of the bladder which communicated with the peritoneum and with the bladder. These communications are in the form of small apertures through which pieces of whalebone have been passed. Both apertures are in the same line, and occupy a position directly continuous with the urethra. It is obvious from position and size of aperture that perforation has taken place from an instrument passed by the urethra. The mucous

membrane of the bladder is greatly thickened and shows a shaggy appearance.

The patient was a man aged 39. After relief of the stricture a catheter was tied in, and this had apparently been the cause of the perforation. *Path. Reports*, 4th June, 1884. No. 1215.

44. Stricture of Urethra. Hypertrophied Bladder. False Passages. Dilated Ureters and slight Hydronephrosis. (*Mr. E. Maylard.*)

The stricture was present just in front of the membranous portion of the urethra, and here, as shown by pieces of whalebone in the preparation, there are several false passages passing backwards in the direction of the prostate, which latter is the seat of a pretty large abscess. The bladder shows very marked trabeculæ from hypertrophy of the muscular coat. The ureters are considerably dilated, equally so, and the pelves of both kidneys show a moderate dilatation.

During life the stricture in this case was so great that after the frequent use of catheters without success, the bladder was aspirated above the pubes several times. Perineal section (Cock's operation) was performed, and the patient died next day in a comatose state. See account by Mr. Maylard, *Glasgow Medical Journal*, January, 1884, p. 55. *Path. Reports*, 14th September, 1883. No. 1040.

45. Tubercular Disease of Urinary Bladder, Prostate, &c. (*Dr. M'Call Anderson.*)

In the bladder there are numerous small circular ulcers and a few larger. They are all superficial, and the smaller ones distinctly raised. The prostate and vesiculæ seminales are greatly enlarged, and contain firm cheesy masses. There was also tubercular disease of the epididymis and testicle, and slightly of one kidney. Disseminated tubercles also existed in the lungs. *Path. Reports*, No. 485.

46. Tubercular Ulceration and Contraction of Urinary Bladder—Excavation of Prostate. (*Dr. Jas. Finlayson.*)

The preparation shows two pouches, a larger and a smaller, divided by a partial septum. The upper of these, which only measures $1\frac{3}{4}$ inch in diameter, is the greatly contracted bladder, whose internal surface is also greatly ulcerated; the lower pouch is taken to be the excavated prostate, some remains of the gland being visible at the upper part of the pouch on either side. In the middle line this pouch presents a cylin-

drical prominence, which has a calibre for a certain distance, and is taken to represent terminal portions of ducts. There was in addition, tubercular disease affecting the epididymis, vas deferens and right kidney, the latter in a state of hydronephrosis—the vesical extremity of this ureter was found obstructed.

The case was that of a man æt. 21. Five years before death he was treated for chronic cystitis, and a year before death the testicle burst. Latterly, the urine dribbled away without control, and contained blood, pus, and much albumen. He complained of burning pain in urinary passage. *Path. Reports*, 28th November, 1881. No. 738.

47. Papilloma of Bladder. (*Prof. Geo. Buchanan.*)

The portion of bladder preserved is the posterior wall. Here and slightly to the one side of the middle line there is a pedunculated flat tumour of a mushroom shape. When placed in water the individual papillæ appear and give to the growth a shaggy appearance. A large amount of blood was found in the bladder, whose wall was partly infiltrated with blood.

The preparation was from a man aged 65, who complained mainly of persistent hæmorrhage from the bladder. *Path. Reports*, No. 563.

48. Villous Cancer of Urinary Bladder. (*Prof. Geo. Buchanan.*)

The urinary bladder is occupied, chiefly on its posterior wall, by a bulky tumour, having a very irregular surface, at parts even shreddy. The tumour is mostly on the left side of the bladder, more behind than in front. The left ureter is covered, and the tumour just reaches the orifice of the right ureter, a small projection from it almost covering the orifice. There was no extension of the tumour to the rectum or any secondary formations in the glands. For condition of kidneys see next preparation. *Path. Reports*, No. 179.

49. Hydronephrosis, with Thickened Fatty Capsule from preceding case.

Both ureters were much distended, and thinned, and tortuous. The left kidney, which is preserved, was surrounded by a thick capsule of fat; and the kidney itself, although not enlarged in its outline, is in a state of hydronephrosis. As the tumour was mainly on the left side of the bladder, this ureter had probably been obstructed for a prolonged period.

SERIES VII.

GENERATIVE ORGANS.

1. Double Uterus (U. Bicornis Duplex). Both Organs Enlarged from Pregnancy in One. (*Dr. Wm. Leishman and Dr. A. Patterson.*)

The preparation shows vagina with the two uteruses laid open posteriorly. There are two distinct nearly cylindrical organs of considerable size. The right measures from os to fundus 4½ inches, and the left 4¼. The breadth of the right is 2½ inches, and that of the left 1¾. The cavity of the right is considerably larger than that of the left, and in the fresh state its walls were softer. The pregnancy was in this uterus, which presents internally a rough placental surface. The wall of the right uterus is thinner than that of the left, apparently because the cavity is larger. Each uterus has a smooth rounded margin towards the middle line, and each is furnished on its outer aspect with Fallopian tube and ovary. These structures on the left side are somewhat concealed by old adhesions, which united the left wall of this uterus to the pelvic wall; the great omentum was adherent to the anterior aspect of this uterus. There is an oval encysted hæmatocele 1¾ inch in length adherent to the posterior wall of this uterus, and there are a few smaller ones as well. The two organs are quite distinct down to their necks, which are adherent. They open by wide orifices into the somewhat dilated vagina. The vagina is greatly torn, an aperture in its anterior wall forming a wide communication with the urinary bladder, and one on the left side close to the os uteri communicating with the surrounding connective tissue. The vagina and tears are coated with earthy phosphates. In connection with the aperture on the left side of the vagina there was an abscess which formed extensive and irregular communications in the pelvic tissue, passing in part behind the rectum, and extending up on the left side as high as the diaphragm. In all this course the sub-peritoneal connective tissue was infiltrated with pus and with gas, the result of

decomposition. The substance of the diaphragm was also infiltrated with pus and gas, and the left pleural cavity contained stinking pus with gas. The left kidney was entirely absent, and no trace, even of a ureter, could be found. The right kidney was considerably enlarged, weighing 9 ounces, and there were four or five abscesses in it.

The case was that of a young woman who was seen by a medical practitioner, who, finding a uterus without a fœtus in it (the left), and finding the woman pregnant, concluded that it was a case of extra-uterine pregnancy. In his manipulations he seems to have made the tearing of vagina noted above. The case was sent into the Western Infirmary, where it was seen that the fœtus was in the uterus, but the existence of a second uterus was not suspected. The woman was delivered of a male child, and lived for a fortnight after. It appears that she had a child two years before, and this was probably in the left uterus. At any rate, the hæmatoceles and adhesions around this uterus indicate an inflammation around and in it some time before. *Path. Reports*, 3rd April, 1885, No. 1336. Also *Glasgow Medical Journal*, 1885.

2. The Uterus after Abortion in the 4th Month.

The cavity of the uterus measures, from fundus to internal os, $2\frac{3}{4}$ in., and the cervix $1\frac{1}{2}$; its wall is from $\frac{1}{2}$ to $\frac{3}{4}$ in. in thickness. The cavity has a roughened surface where the placenta has been attached. The left ovary shows the corpus luteum.

The patient died from an attack of acute rheumatism, with adherent pericardium and acute endocarditis. *Path. Reports*, 24th November, 1881. No. 734.

3. Uterus a Week after Delivery, Endometritis, and Septic Peritonitis. (*Dr. W. T. Gairdner.*)

The uterus is of considerable size, measuring 5 inches from external os to fundus, and $3\frac{1}{4}$ across the body. The cavity is dilated, and the internal surface is coated with a semi-purulent and semi-fibrinous layer. The right Fallopian tube near its distal extremity presented considerable redness and swelling, and the fimbriated extremity had a yellow œdematous appearance.

The peritoneal cavity had the usual appearances of acute peritonitis, it contained a considerable amount of turbid fluid, and the surface was coated with a soft yellow exudation, sometimes approaching to the purulent condition.

The acute illness began two days after delivery at the full

time with pain and swelling of the abdomen, &c. She died four days after the onset of the illness. *Path. Reports*, 28th November, 1882. No. 881.

4. Fœtus with Membranes. (*Dr. Brock.*)
The fœtus occupies a cavity at the extremity of a pyriform body, and in its coiled up position measures $\frac{5}{8}$th inch.

5. Fœtus in Sixth or Seventh Month with Plæcenta. *Path. Reports*, No. 137.

6. Uterus of same case as preceding.

7. Hydatid Mole.
The preparation consists of pieces of the mole, and presents innumerable berry-like cysts of larger and smaller size.

8. Hypertrophy and Prolapse of Cervix Uteri. (*Dr. Gemmell.*)
The cervix is enormously enlarged, and projects into the vagina as a solid cylinder, $2\frac{1}{2}$ in. in diameter. The exposed os is deeply lobulated, and with occasional ulceration. The body and fundus of the uterus are not obviously enlarged.
The case was that of a woman aged 51, who was affected with a tumour in the mesentery. Pneumonia developed in the case after admission, from which she died. She had no symptoms pointing in any way to the uterus. *Path. Reports*, 12th April, 1882. No. 801.

9. Anteflexion of Uterus.
The uterus forms an acute angle with its neck. The upper part of the vagina with the os uteri are shown, and it is seen that the body of the uterus comes close to the anterior wall of the vagina, the fundus projecting forwards. The point of flexure is about an inch from the os uteri. The body of the uterus is considerably enlarged. A small mucous polypus projects from the os uteri.

10. An Air Pessary which had been worn by a Woman for Twelve Months, and was removed by *Prof. Geo. Buchanan.*

11. Pendulous Mucous Polypus of Os Uteri. (*Dr. A. Patterson.*)
A somewhat flattened oval tumour, $1\frac{1}{2}$ inch in length,

which was attached to the os uteri by a narrow neck, cut through on removal. The surface has the appearance of mucous membrane with many folds and some projections. Under the microscope the appearance presented is simply that of hypertrophied mucous membrane, there being a basis of connective tissue with few mucous glands. *Path. Reports.* 21st June, 1883. No. 1003.

12. Mucous Polypus in Uterus.

It is situated in the body of the uterus and somewhat sessile. Its surface is somewhat irregular.

13. Polypoid Myoma of Uterus. Cyst of Urethra. (*Dr. W. T. Gairdner.*)

A somewhat pear-shaped tumour hangs from the fundus of the uterus and may be divided into a cylindrical neck and bulbous extremity. The neck, which is about ¾ inch in length and ¾ inch in diameter, corresponds with the cavity and cervix of the uterus, while the bulbous extremity, which is 1¾ inch in diameter, and somewhat flattened from below upwards, is placed in the vagina. The os and cervix are greatly dilated by the neck of the tumour; and, as shown in the preparation, the lips, and especially the posterior one, are greatly flattened. The attachment of the tumour is to the anterior part of the fundus, and the neck becomes somewhat narrower as it approaches its attachment.

In the posterior wall of the urethra, half an inch from its vesical extremity, there is a longitudinal aperture leading into a cavity placed between vagina and urethra, and of considerable internal dimensions, in certain of its diameters being at least ¾ of an inch. In this cavity there are several small brown calculi (uric acid). The cavity has been laid open and a piece of whalebone passed from the urethral aperture out at the cut opening. The left kidney was in a state of pyonephrosis, consisting of cysts filled with putty-like material. The other kidney was hypertrophied, weighing 8¾ oz.

The patient was a woman aged 35, who had been troubled with bronchitis and cardiac symptoms for years. *Path. Reports,* 12th December, 1882. No. 889.

14. Large Polypoid Myoma Attached to Anterior Wall of Cervix Uteri. (*Dr. Wm. Leishman.*)

The tumour is a bulky pear-shaped one, measuring 4½ inches in length and 4 in its greatest breadth. Its neck is 2½ inches in breadth, and is attached to the anterior wall

of the cervix and body of the uterus. The tumour is generally rather fleshy to the feeling, and at some parts distinctly soft. The surface has a dark brown colour, as if decomposing or suppurating. On section, the tissue presents in general the white fibrous appearance of the myoma, but in places, especially at the periphery, it is infiltrated with blood. There is also some infiltration with pus in the substance of the tumour. The bulky tumour greatly distends the vagina, which presents anteriorly a considerable number of erosions. The distended vagina is continuous with the uterus, where cervix is kept wide by the thick neck of the tumour, so that demarcation of vagina and uterus is hardly possible. Viewed from without, the fundus of the uterus looks double, the part of the cervix to which the tumour is attached being forced upwards so as to project in front of the fundus. This projection was felt above the pubes during life.

The case was sent into the Infirmary as one of prolapse of the uterus, the tumour in the vagina having been taken for the uterus. Attempts had been made to replace it. The patient died after admission. *Path. Reports*, 8th May, 1885. No. 1360.

15. Polypoid Myoma of Uterus, removed by Ecraseur. (*Dr. A. Patterson.*)

It is an elongated oval tumour about 6 inches in length. Near the upper extremity there is a circular raw surface about 1 inch in diameter, representing severed attachment; the tissue was much softer than that of the ordinary myoma, being highly œdematous, but the microscope showed the usual muscular structure.

The patient was a woman aged 32, and the tumour filled the greater part of the vagina, sometimes protruding beyond it. It was attached apparently inside the cervix in front. There was considerable menorrhagia for some months. The tumour having been removed she was dismissed well a fortnight after the operation. *Path. Reports*, 22nd February, 1882. No. 778.

16. Pedunculated Myoma of Uterus, removed by Ecraseur. (*Dr. Wm. Leishman.*)

The tumour is about the size of the fist, and irregularly lobulated, the cut surface being considerably narrower than the widest part of the tumour. The general surface of the tumour is rough and ulcerated in appearance, and the microscope shows that its proper tissue is greatly mixed with

inflammatory cells, so that sometimes the appearance is like that of granulation tissue.

The patient was 39 years of age, and she had complained of pain in the uterine region and menorrhagia for about 6 years. These symptoms became progressively worse, and for the last 3 months the bleeding and pain showed little relation to the menstrual periods. *Path. Reports*, 30th October, 1882. No. 865.

17. Polypoid Myoma of Uterus, removed by Ecraseur. (*Dr. Wm. Leishman.*)

The tumour is pear shaped, the long diameter being $1\frac{3}{4}$ inch in length; the surface is generally smooth. At the neck, where the tumour has been torn through, the diameter is barely $\frac{1}{2}$ an inch.

The patient was subject to floodings for a considerable time, and the tumour was found to occupy the cervix uteri. *Path. Reports*, 7th October, 1878. No. 374.

18. Polypoid Myoma of Uterus removed by Ecraseur.

The tumour is irregular in form, and rather larger than both closed fists. At one extremity it is ragged and irregular, as if partially torn. At another part there is a rough circular surface which is probably that of attachment to the uterus. The section is pearly white, and shows very typically the concentric fibrous arrangement.

19. Sloughing Polypus of Uterus, removed by Ecraseur. Uterus showing place of Attachment in Neck. (*Dr. J. G. Lyon.*)

The polypus is an ordinary myoma, the lower part of which is shreddy and discoloured. After removal by the ecraseur fatal peritonitis ensued. As seen in the preparation, the surface from which the tumour was taken is situated in the neck, and is nearly circular. There were the usual evidences of acute peritonitis. *Path. Reports*, 4th June, 1875. No. 9.

20. Multiple Myomas of Uterus.

There are many tumours connected with the uterus, some projecting from the external surface (subserous) and pendulous, others in the substance of the organ. Of the latter there are two shown in section, one at the summit of the organ $2\frac{1}{2}$ inches in diameter, the other $\frac{3}{4}$ inch, and situated beneath it. These tumours cause a great projection of the fundus upwards, but

they have caused no elongation of the cavity of the uterus, which is laid open and seen to be scarcely altered in size. The fact that a distinct layer of uterine tissue surrounds the large myoma at the fundus shows that it is in the uterine substance and not merely subserous. In this large tumour there is calcareous infiltration in the centre.

21. Uterus with subserous Myomata, two of them pedunculated.

Besides these prominent pedunculated tumours, there are several others which can be distinctly felt under the peritoneum; one particularly in the middle line anteriorly, which although not pedunculated can be moved freely between uterus and peritoneum. One of the pedunculated tumours is situated near the insertion of the right Fallopian tube, the other being near the middle line. Apparently in consequence of this, the uterus is inclined to the right; the axis of its cavity making an angle of 150° with the axis of the cervix. *Path. Reports*, 13th November, 1883. No. 1059.

22. Large Myoma of Uterus with central softening. Removed by Operation. (*Dr. Patterson.*)

The tumour is generally oval in shape, its long diameter being over 9 inches. There is a large central cavity 6 inches in long diameter. The tissue has the usual characters of the myoma. In addition to this large tumour an aggregation of smaller ones shown in next preparation was removed.

The patient was a woman aged 51, in whom a tumour was first noticed two years before operation. She died of shock six hours after operation. *Path. Reports*, 26th February, 1882. No. 781.

23. Numerous Myomas aggregated together. (*Dr. A. Patterson.*)

Along with the large tumour shown in preceding preparation there was removed this mass, consisting of an aggregate of about a dozen larger and smaller rounded tumours, weighing 31 oz.; the smallest tumour being about the size of a hazel-nut, and the largest as big as an orange. Some of these are distinctly pedunculated. The Fallopian tube and ovary are attached to this mass, the former passing right into it where it is lost. No fimbriated extremity is found, and no distinct part of the uterus, but a raw surface beneath the Fallopian tube may possibly be fundus cut across.

24. Gigantic Myoma of Uterus. (*Dr. A. Patterson.*)
The preparation is a slice from a tumour, of which the following is a full description:—This enormous tumour was removed during life. It is of a generally oval shape, its long axis measuring 13 inches, and the shorter axis in one direction 9 inches, and in the other considerably less, the tumour being flattened. The surface presents numerous irregularities in the form of large round prominences. The tumour is covered by a distinct capsule about a line in thickness, and numerous tags of connective tissue, representing adhesions torn through, are attached to it. The tumour is of fleshy consistence. Its section is of a pinkish-grey colour, and with the appearance of more or less concentric strands of fibres. The colour and consistence are strongly suggestive of the uterus immediately after delivery. On microscopic examination multitudinous rod-shaped nuclei of a comparatively large size are seen. On steeping a portion in dilute nitric acid, large spindles can be partly isolated, which resemble in size and shape muscle cells of the gravid uterus. The patient died, but no *post-mortem* was obtained. *Path. Reports*, 2nd August, 1877. No. 245.

25. Interstitial General Myoma of Uterus.—(*Dr. G. H. B. Macleod.*)
This bulky mass consists of uterus and appendages, with enormous new formation in the uterine walls. The cavity of the uterus is buried in the upper two-thirds of the tumour, the latter being situated partly in front of the cavity but mainly behind, its posterior portion extending below the uterus into the pelvis, which it filled up to a large extent. The mass, as a whole, is of a generally oval form, but flattened from side to side. It measures from above downwards 12 inches, from before backwards at most 9 inches, and from side to side about 4½ inches. It is variously lobulated, but anteriorly there is a deep fissure, in which a canal, sufficient to admit the finger, represents the vagina. This canal becomes narrower about an inch from its orifice, but a probe can be passed for a distance of 5 inches into a cavity situated in the midst of the tumour and extending towards its summit, this cavity having considerable capacity inside. At the sides of the tumour, and corresponding with this cavity, there are, on the left side Fallopian tube and ovary, the former having a length of 6 inches; and on the right side a Fallopian tube which has

been cut across, and an elongated body which may be condensed ovary.

With the exception of the neighbourhood of the fissure described above, and the anterior surface of the pelvic portion, the whole surface is covered with smooth peritoneum, whose cut edge is visible around the uncovered part.

The patient was a woman aged 38, who first noticed swelling of abdomen ten years before the operation. During that time she suffered from pain in back and loins, and had several attacks of severe flooding. Catamænia have been regular, but with great pain and general illness, causing life to be miserable; and during last two years the quantity of blood has been excessive. *Path. Reports*, 21st December, 1882. No. 900.

26. Uterus with Immense Myoma in its Wall. Distension of Cavity. Removal by Operation. (*Dr. H. C. Cameron.*)

The structure removed has an oval or nearly globular shape, its longest diameter being nine and a half, and its shorter eight and a half inches. It has a generally smooth surface, being covered with peritoneum, except around the uterine orifice. The mass is found, on examination, to consist of an immense uterus, the Fallopian tubes, &c., being attached, but cut short on the left side. On the anterior surface of the mass there is a crescentic orifice, measuring $1\frac{7}{8}$ inch transversely, into which five fingers can readily be passed as far as the first joints. From this orifice a probe can be passed into a large flat cavity, which measures from the aperture to the fundus $6\frac{1}{2}$ inches, and 6 inches transversely. The anterior wall of this cavity is fleshy, and about the thickness of the uterus at full time, the great bulk of the tumour being behind the cavity. A cut has been made into the tumour posteriorly, and it is seen to be surrounded by a fleshy layer, nearly $\frac{1}{2}$ inch in thickness, while inside it is composed of lobulated masses. The external layer is apparently uterus distended over the tumour. The tumour itself has the ordinary characters of a myoma, and one or two of the lobules have undergone calcareous infiltration. *Path. Reports*, 20th March, 1882. No. 794.

27. Very Large Myoma of Broad Ligament, removed with Uterus and Appendages. (*Dr. G. H. B. Macleod.*)

A portion of the tumour only is kept, the part beneath the level of the os uteri measuring from above downwards 4

inches, and the lateral portion measuring 3¾ inches in breadth having been removed. The whole tumour had a flattened pyriform shape, and measured 15½ inches from above downwards, and 9½ inches transversely, and weighed with uterus attached 17¼ lbs. The tumour is in the right broad ligament, the right border of the uterus being firmly adherent and incorporated with it, although the outline of the uterus can be partly made out. The cervix uteri has been cut through in removing the tumour, and in the preparation a piece of whalebone is inserted and passes freely upwards for 3¼ inches to the fundus. The right corner of the uterus is obviously carried considerably upwards, while the left, as indicated by attachment of the Fallopian tube, is only 2¼ inches above the cut surface of the cervix. The left Fallopian tube and ovary are little altered, except that the ovary is flattened and slightly enlarged. The right Fallopian tube, ovary, and round ligament are stretched over the tumour. The summit of the tumour is occupied by an elongated solid body about 6 inches in length, which is altered ovary. Beneath this and on the anterior surface of the tumour, and separated from it generally to a distance of 3½ inches is the greatly elongated Fallopian tube, which measures 9 inches from the left corner of the uterus to the fimbriated extremity. Beneath this again is the enlarged round ligament which proceeds from near the same place as the Fallopian tube, and diverges from it in a downward direction.

The entire posterior surface of tumour is covered with peritoneum, and the anterior surface is similarly covered down to an inch above the divided cervix uteri. From this point downwards the peritoneum is awanting, and the surface irregularly cut till near the lower border of the tumour. At the right border of the tumour the two folds of the broad ligament are distinctly visible, and the tumour is situated between them. A very large vein passes from the tumour here. The tumour tissue is somewhat soft, especially in the lower parts, and on section, while the characters are generally those of the myoma, there are tolerably wide spaces giving an almost cavernous appearance in some parts. In one or two places the tissue is infiltrated with blood.

The patient was a woman aged 32, who first noticed a swelling three years before admission. Six months before admission the tumour began to grow rapidly, the feet and legs began to swell, and there was difficulty in micturition. Menstruation was never interfered with, and there was no flooding. The patient died about ten days after operation.

There were evidences of acute peritonitis, and a large rupture in the posterior wall of the bladder. The truncated cervix uteri was found with a double ligature, but, apparently from shrinking, an aperture existed through which a probe could easily be passed. *Path. Reports*, 31st May, 1882, 10th June, 1882. Nos. 824, 828.

28. Large Myoma removed from the Abdomen. (*Dr. A. Patterson.*)

The preparation is part of a large oval mass which weighed over 7 lbs., and measured 11 × 7 inches. It has the usual characters of the myoma, microscopic and macroscopic. It was removed from the abdomen of a woman aged 38, who had felt a lump in left side for 7 years. It grew slowly till it almost filled the abdominal cavity. It was removed by operation, and was found adherent to peritoneum, bowels, and liver. The operation lasted 1 hour and 20 minutes. The woman was dismissed well in 22 days. *Path. Reports*, 16th December, 1881. No. 744.

29. Calcified Myoma of Uterus.

This structure which, in its external appearance, resembles nodulated bone, was found in the cavity of the uterus after death. It not only possesses a firm external calcareous shell, but is intersected, as appeared when it was sawn through, by calcareous trabeculæ. In the spaces between these trabeculæ there is a soft tissue which, under the microscope, presented the usual characters of the myoma. (The preparation was presented by Dr. Algernon Chapman, County and City Asylum, Hereford.)

30. Cauliflower Cancer of Os Uteri, removed by Ecraseur. (*Dr. Wm. Leishman.*)

31. Tuberculosis of the Fallopian Tubes and Uterus. (*Dr. W. T. Gairdner.*)

The parts shown are, the uterus, nearly normal in appearance; the Fallopian tubes, greatly dilated and convoluted, especially the left; and the right ovary, the left being obscured by the very unusual condition of the tube. The external surface of the uterus in the recent state was roughened by numerous small tubercular bodies. The right Fallopian tube is seen to be considerably dilated, greatly thickened and twisted upon itself near its fimbriated extremity. In the recent state a large round white swelling was found attached to the left side of

the uterus, which was at first taken to be the ovary. On further examination, as is seen in the specimen, this was found to be the left Fallopian tube, in which the same condition was present as in the right, but much exaggerated. The left ovary was found in part to have undergone caseous degeneration. The mesenteric glands of this case are also preserved as No. 97, series II. See Dr. Lindsay Steven's paper on "The Pathological Anatomy of Tuberculosis of the Fallopian Tubes," *Glasgow Medical Journal. Path. Reports,* 18th July, 1881. No. 696.

32. Tuberculosis of the Fallopian Tube and Uterus. (*Dr. Jas. Finlayson.*)

The case was one of phthisis, with tubercular ulceration of the intestine. The distention of the Fallopian tubes, which are seen to be elongated and twisted, is due to an accumulation of cheesy material. An ulcer exists at the fundus of the uterus, which may have involved the orifice of the tubes. *Path. Reports,* 17th December, 1876. No. 170.

33. Ovary with Corpus Luteum.

34. Sarcoma of the Ovary. (*Dr. A. Patterson.*)

The specimen shows one half of the tumour, it was a large oval one, measuring 6½ inches in its longest diameter, and 4½ inches in its longest transverse diameter, the other transverse diameter being nearly the same. The tumour has a distinct external capsule of fibrous structure, as will be seen on the cut surface, but the bulk of its tissue is of a whitish colour, although in some parts more irregular and of a mottled red colour. There are also some small cysts in it. The tissue of the tumour is somewhat tough.

On microscopic examination the tissue is seen to be abundantly cellular, the cells elongated and with very marked nuclei of an elongated and sometimes stellate shape. *Path. Reports,* 1st December, 1881. No 740.

35. Two Small Ovarian Cystic Tumours from same case.

The two tumours are of nearly the same size, being about 1 inch in diameter. They have a somewhat lobulated outline, and consist of cysts with solid parts. The tumours represent altered ovaries and were removed from an unmarried woman of 29. *Path. Reports,* 27th August, 1883. No. 1035.

36. Colloid Ovarian Cystoma Removed by Operation. (*Dr. G. H. B. Macleod.*)

The tumour consists of a single thick-walled cyst, about the size of a football, with smaller flattened ones in its wall. It is not possible to strip off a consistent peritoneal coat, and the surface is very rough with frequent tags. The cysts in the wall are very much flattened. The main cyst contained a turbid flocculent fluid, and its internal wall was coated with soft fibrine. The little cysts also contained a very thick fluid.

The tumour was found, during removal, to possess firm vascular adhesions to all parts around, and it was necessary to separate many of them with the actual cautery. The patient died of peritonitis. The tumour had only been noticed ten weeks before admission to the hospital. *Path. Reports*, 13th April, 1876. No. 88.

37. Colloid Ovarian Cystoma.

It is of the usual colloid kind, and consists of one principal cyst with various others in its wall.

38. Colloid Ovarian Cystoma removed by Operation.

There are two large principal cysts and a multitude of small ones. The cyst is turned outside in.

39. Colloid Ovarian Cystoma. (*Prof. Geo. Buchanan.*)

The tumour consists of one large cyst and numerous small ones, especially at base; but the small ones are so insignificant in size that it might be regarded as an unilocular cyst. The Fallopian tube is stretched over a part of the tumour, and has been cut through; it is not, however, thickened, nor is it firmly attached to the tumour. Between the tumour and the Fallopian tube lies the parovarium with quite its normal appearance. The fluid in the cyst was viscid and of a dark straw colour. Its specific gravity was 1020. *Path. Reports*, 29th September, 1879. No. 473.

40. Colloid Ovarian Cystoma with Uterus, &c. (*Dr. A. Patterson.*)

The cyst is about the size of a child's head, and consists of one large cyst of an oval shape, in the wall of which, especially towards the outer part, there is a bunch of smaller cysts and some solid tissue. The Fallopian tube is stretched over the cyst and measures 9 inches; it is not, however, embedded in or firmly adherent to the cyst at any part. The fluid in the cyst was brown in colour and of specific gravity 1022. The

patient died after an operation for femoral hernia. *Path. Reports*, 1st July, 1879. No. 453.

41. Two Colloid Ovarian Cysts removed by Operation. (*Dr. H. C. Cameron.*)

The tumours consist each of a congeries of cysts of the usual colloid characters, and they have a generally oval shape, one measuring about 9 inches, and the other about 7 inches, in long diameter. They both contain a considerable amount of tissue of a more solid character, and with smaller cysts developing in it; but in the case of the smaller one, this tissue is less in amount, and the fully formed cysts are larger.

The patient was a woman aged 47. She first noticed the swelling a year before the operation. *Path. Reports*, 29th March, 1883. No. 962.

42. Colloid Ovarian Cystoma—the second removed from the same person. (*Dr. R. Pollock and Prof. Geo. Buchanan.*)

The interest of this case is mainly that, although this is the second tumour of a similar kind removed, presumably from opposite sides, the patient, since her recovery from the second operation, has menstruated. The tumour, when distended with water, measures $8 \times 5\frac{1}{2}$ inches. It consists mainly of a single cyst with several partitions. At one part an oval pedunculated tumour, consisting of a congeries of cysts, is visible, projecting from the internal wall. *Path. Reports*, 12th January, 1883. No. 914.

43. Colloid Ovarian Cystoma, with Pedunculated Cysts and Elongated Fallopian Tube. (*Dr. G. H. B. Macleod.*)

There is one large cyst, measuring 10 inches in diameter, and a group of cysts and solid tissue, partially separated from the large cyst by a neck. These smaller cystic masses are highly lobulated and partially pedunculated, two of them especially so—one of them with a diameter of 3 inches and a neck of an inch and a half, another an inch and a half in diameter and a long neck of one quarter inch. The Fallopian tube is greatly elongated, measuring, from its fimbriated extremity to the place where it is cut across, 11 inches; and in a part of its course it occupies the groove between the large cyst and group of smaller ones. From the fimbriated extremity a roundish ligament passes for 6 inches, to terminate near the origin of the Fallopian tube, where it is

inserted into the solid tissue of the tumour; the Fallopian tube and this ligament thus form a girdle round the tumour.

The patient was a woman, æt. 27, who traced the growth of the tumour for four years. It began on left side, and did not cause pain for a year before its removal. Menstruation has always been regular. Patient made a good recovery.—*Path. Reports*, 9th January, 1883. No. 901.

44. Portion of Colloid Ovarian Cyst, showing Internal Structure.

A slice has been taken from the midst of the tumour, and it is seen that there is one tolerably large thin walled cyst, and a multitude of smaller ones of very varied dimensions, along with solid material. All the cysts were filled with colloid or grumous material.

45. Papilloma from Neighbourhood of Uterus. (*Dr. G. H. B. Macleod.*)

The preparation is only a part of the tumour removed. It is composed of two small cysts which are adherent, and to the surface of which are attached shaggy, dendritic masses of a papillary character. In the inside of one of the cysts there is a small dendritic ingrowth. Under the microscope the papillæ show a delicate, ramifying connective-tissue stroma, covered by a single layer of epithelium, which is sometimes columnar, like a pallisade, but varies considerably in different parts.

Two years and a half before the operation, the patient, a woman aged 46, first noticed a small lump in left iliac region. On admission there was a large tumour in the abdomen, and the uterus was fixed. At the operation Douglas's pouch was filled with a large mass, of which the preparation is a part, and which was firmly adherent to the uterus.

26th November—Operation.—On opening the abdominal cavity, a quantity of ascitic fluid was removed by sponges. Tumour found attached to upper and back part of uterus, surface of which was free in the cavity of abdomen, with a plaiting round its base, apparently the remains of an old cyst wall. The growth consisted of a warty, sessile mass, the size of one's fist, firmly adherent to the outer surface of uterus. On the right side, deep in the pelvis, and attached to the ovary, was a second cyst, as large as a good-sized orange, containing clear fluid, and another mass in all respects similar to first, adhesions being present in the cyst and the walls of the abdominal cavity, which prevented it being drawn out of

the abdomen, and rendering it necessary to evacuate its contents within the peritoneal cavity. First growth severed by the ecraseur, a long needle being first passed under its base; this was effected without difficulty and without bleeding. The second was twisted off with the hands, and any detached portions treated in similar manner. Hæmorrhage slight throughout. Pelvic cavity thoroughly cleansed with carbolic solution (1 to 40); wound sutured, and drainage tube inserted. Shock was present after operation; patient rallied in an hour or so. Patient had some vomiting at intervals for a short period after the operation; otherwise a good recovery. Dismissed 26th December.

19th February.—Patient quite well up to present date. Recovered perfectly, and remaining well, April 1885.—*Path. Reports*, 28th November, 1884. No. 1258.

46. Piece of Dermoid Cyst with Bone, Teeth, Skin, and Hair. (*Dr. G. H. B. Macleod.*)

The preparation is an irregular piece of tissue about 2 inches square, chiefly of fleshy consistence, but with a bony part and tooth in the middle. The bone is covered with a tissue like mucous membrane, and the tooth is planted like an ordinary incisor; beside it there is an empty alveolus from which another tooth, which lies in the bottom of the jar, has probably been extracted. There is another half tooth and piece of bone, which have been removed at the same time. The greater part of the piece of tissue is covered with skin, from which project somewhat numerous soft warty looking structures, which are frequently pendulous, and at one place there is a group of brown hairs about 1½ inch in length.

The parts were removed from a woman aged 48. Eight years before operation pain commenced in left lumbar region, and a hard lump was noticed in the middle line below umbilicus. This burst two years afterwards, having attained a large size, and fæces began to come by the sinus. Hair and several teeth and a fleshy mass were discharged. Several teeth were removed in Edinburgh Royal Infirmary, and the parts preserved were excised here by opening up the sinus. *Path. Reports*, 17th February, 1881. No. 628.

47. Colloid Ovarian Cyst, with Solid Part having Structure of Cylinder Celled Epithelioma. (*Dr. A. Patterson.*)

Only a portion of the cyst, which was of large dimensions, is preserved. It was a single cyst with colloid contents, and

presented in its wall occasional solid pieces, having the usual characters of developing ovarian cysts. At the base, however, and projecting outwards from the wall of the cyst, there is a bulky solid mass nearly as large as the two closed fists. In this, there are a few developing cysts, but the greater part of it consists of a soft tissue which, under the microscope, has the characters of cylinder celled epithelioma.

The patient was a woman aged 36, who stated that the tumour had been growing five months, beginning in the left lumbar region. She was dismissed well, six weeks after operation. *Path. Reports*, 6th October, 1879. No. 475.

48. Large Ovarian Cyst with Intracystic Cancerous Growth. (*Dr. A. Patterson.*)

The tumour consists of a very large single cyst 10 inches in diameter. There are no secondary cysts, and no solid structure representing developing cysts, as in the ordinary colloid form. On the other hand, there are abundant shaggy projections from the internal wall, at one place attaining considerable thickness. These are soft, and in the fresh state were somewhat gelatinous in appearance. Under the microscope they presented a typically cancerous structure—viz., masses of cells with large oval nuclei embedded in the stroma.

The patient was a woman aged 44, who dated her illness eleven months back, when she experienced pain in the right side of the abdomen with swelling. The tumour was removed by excision. *Path. Reports*, 15th February, 1880. No. 526.

49. Cyst of the Broad Ligament (Parovarian). Greatly Elongated Fallopian Tube. (*Dr. A. Patterson.*)

A large single cyst of a globular shape, and 10½ inches in diameter. The cyst is absolutely single, and internally there is no trace of partition or of intracystic new formation. The wall is composed of two distinct coats, an inner of a densely interwoven fibrous structure, somewhat like the dura mater, but thicker, and an outer, much thinner, and very elastic. This outer peritoneal coat passes beyond the cyst, forming a fold in which a portion of the Fallopian tube and ovary are contained. These two layers are very loosely connected, so that they are readily separated, and the cyst could easily be divided into two bags. The fluid which was removed from the cyst at the operation was clear and limpid, without any viscidity, and of a specific gravity of 1008. Its reaction was neutral, and there was no deposit on standing.

The Fallopian tube is enormously elongated, passing over the convexity of the cyst, and measuring from the fimbriated extremity, to the point at which it has been divided in removing the tumour, 15 inches. A piece of whalebone has been passed through the tube in preparation. The fimbriated extremity is flattened out on the surface of the cyst, and the ovary is represented by an elongated fibrous structure. *Path. Reports*, 16th December, 1879. No. 506.

50. Cyst of the Broad Ligament (Parovarian).

The cyst is single, and presents no signs of subdivision or of new formation in its wall. The Fallopian tube has been cut across, but it is stretched over the tumour, and its distal part firmly adherent and partially imbedded in its wall. From the cut end to the fimbriated extremity it measures 10 to 11 inches. The fimbriated extremity is flattened out on the surface of the cyst. At a distance of from 4 to 5 inches from the fimbriated extremity there is a flattened and solid body, obviously the ovary; the internal surface of the cyst is markedly wrinkled, and on examining the wall, it is obvious that there are two distinct coats—a thin external one corresponding with the peritoneum and a thicker internal one; between these there is a very loose connective tissue—so loose, that it would be quite easy to split the cyst into two separate cysts.

51. Cyst of the Broad Ligament (Parovarian). (*Dr. H. C. Cameron.*)

This cyst, which was removed by operation, is an absolutely unilocular one of very large size, measuring about 12 inches in diameter. Its wall consists very clearly of two separable layers—an internal dense fibrous one and an external thinner and more transparent. These two layers can be very readily separated from each other, being united apparently by a minimum of soft connective tissue. Near the cut surface, which is very small, there is a somewhat large ovary adherent to the tumour. Near this also there is the cut extremity of the Fallopian tube, which is greatly elongated, passing over the convexity of the cyst for a distance of 13 to 14 inches (a piece of tubing has been placed in it). The fimbriated extremity is spread out on the surface of the cyst and there is a wide open mouth. A ligament passes from fimbriated extremity to ovary, completing the girdle. *Path. Reports*, 16th October, 1883. No. 1046.

52. Collapsed Parovarian Cyst. (*Dr. W. T. Gairdner.*)
The cyst was found lying in the abdomen after death, its surface wrinkled and the cavity entirely empty. On opening it the internal wall was found corrugated in a remarkable manner. There was one part at which the cyst was thinner and the corrugations absent. In this region the internal wall is defective at one point so as to form an oval aperture $\frac{3}{16}$ths of an inch in length. Opposite this aperture the external layers are still present, but partially occupied by a cicatrix. The cyst was connected with the right ligaments of the uterus, and the right Fallopian tube is stretched over it and enormously elongated. At the base of the cyst is found the ovary considerably elongated and altered by pressure. The cyst is a single one, and the peritoneal coat could be peeled readily from its surface. The ovary of the other side presented several small true ovarian cysts. The right kidney presented a moderate degree of hydronephrosis, and both kidneys had the characters of parenchymatous nephritis.

The history pointed to a swelling of the abdomen of twelve years' growth, disappearing suddenly about seventeen months before death, the disappearance being accompanied by excessive discharge of urine for a week. This history was quite distinct from that of the fatal illness (Bright's disease), except in so far as the latter seemed to have supervened, with all the usual symptoms, not very long after the termination of the abdominal swelling. Nothing could be obtained during life to determine positively the nature of this, but a previous record in the Royal Infirmary Journals, under the late Dr. Steven, on 18th February, 1871, corroborated the fact of her being under treatment for a distinctly fluctuating tumour of the whole abdomen, dull to percussion in front, and clear at the sides. An examination *per vaginam*, revealed at this time no abnormality; but the catamenia were noticed to occur every fortnight instead of, as previously, every four weeks. There was evidently a suspicion of hydronephrosis, apparently founded on patient's statement as to a habitual retention of urine at a former period, requiring the catheter, and in her opinion the cause of the swelling; but it is expressly stated that the use of the catheter, when under observation, had no effect on the swelling. After leaving the Royal Infirmary in March 1871, in somewhat improved health, she married: but did not become pregnant. There was an impression conveyed to and left on Dr. Gairdner's mind in questioning the patient, that some kind of physical violence or ill usage by her husband, might have been more or less connected with the sudden

dispersion of the abdominal tumour; but she referred to this with great reluctance and reticence as to the details. For two months before the sudden rupture above mentioned, the catamenia had been absent; and a suspicion seems to have been entertained when the abdomen "gave way" that there might have been a miscarriage; but nothing came away except the large amount of urine, which she regarded as coming by the usual passage, and having on the whole a natural appearance. She was, however, by no means certain as to this. The excessive discharge ceased after about a week, the abdomen suddenly collapsing, and becoming quite flaccid; she was left in a very prostrate condition thereafter for many weeks, and it was during her slow convalescence from this state that the swelling of the feet, and other symptoms of Bright's disease, began to be apparent; caused, as she believed, by premature exposure and "taking cold." The progress of the case, when under treatment in the Western Infirmary, was altogether that of an ordinary case of severe acute, or sub-acute renal dropsy, in conformity with the *post-mortem* appearances.

[The preparation of the parovarian cyst in this case, when recent, was carefully examined by Dr. Thomas Keith, and Dr. Foulis of Edinburgh, and by Dr. Matthews Duncan, who at a later period referred to the case in his *Clinical Lectures*, 2nd edition, 1883, p. 341. The preparation was also submitted by Dr. Gairdner to the Medico-Chirurgical Society of Edinburgh and to the Pathological and Clinical Society of Glasgow.] *Path. Reports*, 22nd December, 1875. No. 54.

53. Cancer of Ovary. (Secondary tumour in omentum, next preparation.) (*Dr. Jas. Finlayson.*)

This, which is the left ovary, is converted into a tumour the size of a hen's egg, and of a fleshy consistence. On microscopic examination the tissue presents a cancerous stroma with large epithelial cells contained in it.

54. Cancer of great Omentum with large cyst. (Secondary to that of Ovary.) (*Dr. Jas. Finlayson.*)

The preparation shows great omentum with transverse colon attached, and at one side it is divided longitudinally so as to present a transverse section. A somewhat bulky tumour lies in front of and below the transverse colon, measuring $6\frac{3}{4}$ inches from above downwards. This tumour had, at first, very much the appearance of a great enlargement of the liver, but this organ was found behind and above the tumour, and readily

separable from it; it contained a few rounded white tumours. The transverse colon, although attached to the tumour, presents no marked alteration of its mucous membrane. The lower part of the tumour is composed of a nearly globular cyst, 4½ inches in diameter, whose wall is formed of dense connective tissue. The cyst is firmly attached by its upper margin to the tumour, the tissue of which is traceable over its surface, but the defined connective tissue wall of the cyst is everywhere traceable. The cyst contained a fluid in which were abundant cholestearine crystals. One or two small secondary cysts communicated with the large one. There were numerous nodules in the peritoneum.

The tissue of the tumour is whitish and moderately soft. Under the microscope it is found to be very cellular, the cells being often large and with large nuclei, like those of cancers, and there is frequently an alveolar arrangement.

The patient was a woman, aged 30, who had repeated miscarriages in her earlier married years. She miscarried again about three weeks before death, about the fourth month, after a tapping for ascites, which was extreme, and hard nodules were then detected in the abdomen, some of which were supposed to be connected with the liver. There were before death signs of obstruction of the bowels, with fæcal vomiting. *Path. Reports*, 21st January, 1884. No. 1111.

55. Cystic and Cancerous Tumour of Ovary. (*Dr. Fergus.*)

The preparation consists of the uterus and appendages. The left ovary is converted into a bulky tumour, measuring nine inches by six inches. It has the appearance of a congeries of rounded tumours of various sizes up to as large as both closed fists. Some of these are distinctly cystic, and some solid, and some contain a pultaceous material, and they are all mutually adherent. This tumour occupied pelvis and lower part of abdomen, and the intestine was united to it by frequent adhesions. The Fallopian tube is partly stretched over tumour, but not very elongated, and the left corner of uterus is dragged upwards. The right uterine appendages are normal, the ovary being shrivelled, as the patient was an old woman.

On microscopic examination of solid parts of tumour, which were of a greyish-white colour, there was found a distinctly cancerous structure in some parts, and in many places this was developing a cystic condition, apparently by colloid change of

the cancer cells. *Path. Reports,* 20th December, 1881. No. 747.

56. Large Cancerous Tumour of Ovaries. (*Dr. G. H. B. Macleod.*)

The tumour is of an elongated shape, and weighed seven pounds. It occupied the pelvis and lower part of abdomen, and in accordance with this it is somewhat pear-shaped, being narrow beneath. It is of very irregular outline, being obviously made up of a number of individual tumours, some of which project as globular appendages from the mass. The uterus is adherent to and partially imbedded in the tumour, and both Fallopian tubes are partially incorporated, their walls being infiltrated and their course elongated. The fimbriated extremities are recognisable, but exaggerated and thickened. There were also numerous smaller tumours on the peritoneal surface, these being particularly abundant on the surface of the diaphragm and in the right lateral region. (See next preparation).

Microscopic examination shows abundant cells of an epithelial character, with large oval nuclei. There is extensive fatty degeneration evidenced in the tumour itself by a condition resembling soft cheese. During life the symptoms were generally those of abdominal tumour, the first symptoms having occurred twelve months before admission.

This patient recovered well from the operation and remained well till March following. *Path. Reports,* 14th June, 1876. No. 107.

57. Cancerous Tumours on Peritoneal Surface of Diaphragm, Secondary to Cancer of Ovaries. (See preceding preparation.) (*Dr. G. H. B. Macleod.*)

58. Mamma with Drainage Tube, which had remained Enclosed in the Wound for Three Years. (*Dr. D. N. Knox.*)

Suppuration of the breast occurred after the birth of a child. It was opened and a drainage tube inserted. When admitted to the Infirmary there was a discharging sinus which had remained open since that time, and the patient was under the impression that a piece of drainage tube had remained in. The tissue of the breast was much condensed, with retraction of the nipple, and excision was performed. As shown in the preparation, a piece of grey drainage tube

2¼ inches in length was found imbedded in the tissues, which are hard and thickened around.

59. Small Adenoid Tumour of Mamma. (*Dr. H. C. Cameron.*)

The tumour is distinctly encapsuled, of an oval shape, and about half the size of a hen's egg. It was readily shelled out of the substance of the mamma with the finger. Under the microscope it presents typical adenoid tissue, with a somewhat cellular interstitial substance. *Path. Reports*, 30th May, 1881. No. 669.

60. Adenoid Tumour of Mamma. (*Dr. A. Patterson.*)

The tumour forms a flattened oval 3¼ inches long. It is completely surrounded by a smooth capsule, and on section the tissue is tough, and shows distinct lobulation. Under the microscope there are abundant glandular tubes and acini with a connective tissue basis, the latter not being unduly cellular.

The tumour was removed from a young lady of 21, and had been observed for 2 years, the growth latterly being more rapid. It was found to be situated behind the mamma, which was stretched over it and pushed out like an umbrella. The edge of the mamma being cut through, the tumour shelled out without difficulty, being completely separate from the gland. *Path. Reports*, 3rd July, 1878. No. 347.

61. Adenoid Sarcoma of Mamma. (*Dr. A. Patterson.*)

An oval tumour about 3½ ins. in long diameter. It is markedly lobulated and surrounded by a distinct capsule. On section the cut surface presents numerous apertures in the form of slits or roundish openings; but there are no considerable cysts. Under the microscope the tissue consists mainly of spindle cells, there are also numerous gland ducts, but hardly any acini. The ducts are often considerably dilated, and the spindle-celled tissue projects into them.

The patient was a girl aged 21. The tumour was first noticed 2 years before its removal, but it never caused any pain. It was freely movable, and was found at the operation quite encapsuled. She was dismissed well in less than 3 weeks. *Path. Reports*, 31st January, 1879. No. 419.

62. Adenoid Sarcoma of Mamma. (*Dr. A. Patterson.*)

The preparation is part of a bulky tumour which seemed to replace the mammary gland. The tumour is highly lobulated,

and the lobules are sometimes almost free inside of cavities, as if the cavities were cysts which had become filled up with intra-cystic growth. This kind of lobulation is so striking that the whole tumour hangs somewhat loosely together. Under the microscope the tissue consists mainly of spindle cells, with here and there the disturbed remains of gland tissue in the form of an aberrant duct or indication of acini. *Path. Reports*, 9th December, 1880. No. 601.

63. Adenoid Sarcoma of Mamma. (*Dr. G. H. B. Macleod.*)

The tumour is about the size of a hen's egg, and of a flattened oval shape, but with a remarkably lobulated outline. It is surrounded by a capsule, and has evidently been readily removed from its bed. Under the microscope there is glandular tissue, separated by large spindle cells, the latter elements predominating.

The patient was a woman, 18 years of age. She first noticed a swelling in the breast three years before admission. It grew slowly until the last three months, and was always painless. *Path. Reports*, 22nd October, 1878. No. 380.

64. Adenoid Sarcoma of the Mamma. (*Dr. A. Patterson.*)

The tumour is markedly lobulated and surrounded by a distinct capsule. It is about the size of a large turkey's egg. On section it was found to be somewhat tough, and while generally white, it had a considerably variegated surface.

Under the microscope spindle cells were found to be the main constituents, but in addition, there were numerous gland ducts, but no definite acini.

The tumour was removed from a woman aged 21, and had been growing for 2 years without pain. *Path. Reports*, 31st January, 1879. No. 419.

65. Cyst of Mamma with Intra-cystic Growth. (*Dr. G. H. B. Macleod.*)

The tumour consists of a pretty large cyst with somewhat wrinkled walls. At one part the wall is rather soft, and there projects a prominent polypoid growth, about the size of the terminal phalanx of the finger. Under the microscope this prominent growth as well as the neighbouring wall presents papillæ with cylinder cells, and a glandular structure also with cylindrical epithelium. *Path. Reports*, 18th December, 1877. No. 277.

66. Cystic Sarcoma of Mamma with Intra-Cystic Growth.

The tumour laid open is seen to consist of a moderately thick wall with a cavity, whose internal surface is exceedingly irregular. In the fresh state the wall was exceedingly soft and almost gelatinous. The wall is composed mainly of spindle-celled tissue, and the projections are more or less papilliform, being also composed of spindle-celled tissue.

67. Round-celled Sarcoma of Mamma of rapid growth. *(Dr. G. H. B. Macleod.)*

The tumour is considerably larger than the closed fist, and occupies the substance of the mamma. Its tissue is grey in colour, resembling both in general appearance and consistence lymphatic gland tissue. Under the microscope there are chiefly round cells contained in a very coarse reticulum.

The tumour is said to have been only of a few months' growth; it caused great enlargement of the mamma, but did not infiltrate the skin or nipple. *Path. Reports*, 5th April, 1879. No. 435.

68. Acute Scirrhus of the Mamma. *(Dr. G. H. B. Macleod.)*

The tumour forms a very bulky mass and involves the skin, presenting prominent nodules on the surface, with some ulceration. On section the tumour is seen to be tolerably well defined, occupying only a portion of the mamma, and not apparently involving the nipple, close to which, however, it extends.

Under the microscope the essential constituents are cells, smaller and more numerous than those of ordinary scirrhus, but otherwise essentially similar.

This large tumour had only been noticed for five months, and was not painful. *Path. Reports*, 9th October, 1875. No. 375.

69. Acute Scirrhus of Mamma. *(Dr. G. H. B. Macleod.)*

The preparation shows one half of a bulky tumour which occupied the greater part of the mamma. The tissue was somewhat soft and yielded an abundant juice, which presented under the microscope numerous small cells with large nuclei. On microscopic section abundant new-formed connective tissue is found forming a very distinct stroma in which masses of these small cells are embedded. The tumour was first noticed about six months before its removal. *Path. Reports*, 11th May, 1880. No. 552.

70. Acute Scirrhus of Mamma. (*Dr. A. Patterson.*)
The preparation is half of the mamma, including tumour, as removed by operation. There is a bulky tumour which seems to replace the entire mamma affecting the nipple and neighbouring tissue. In the fresh state it was very firm, but scarcely so dense as an ordinary scirrhus, and the cut surface did not become concave. The tissue is grey in colour, with islands of adipose tissue in the midst of it. There is abundant fat superficial to the tumour and a thin layer beneath it. Processes from the tumour, however, seem to penetrate into the latter. Under the microscope there were the usual large epithelial cells, with an abundant connective tissue stroma.

Patient was a woman, aged 31. She first noticed a tumour near the left nipple about ten weeks before admission, and soon after she began to have shooting pains in the breast. The breast was found on admission to be firm, especially in the nipple region. The skin was adherent, but the tumour, as a whole, movable over the subjacent parts. *Path. Reports*, 6th August, 1883. No. 1022.

71. Scirrhus of Mamma. (*Dr. A. Patterson.*)
Only half the tumour is shown. At the time of removal it was a hard somewhat bulky tumour.

72. Scirrhus of Mamma, not affecting Nipple.
The tumour, as seen in section, is lobulated and somewhat bulky. It does not involve either nipple or skin.

73. Scirrhus of Mamma involving Nipple and Skin. (*Prof. Geo. Buchanan.*)
The tumour which is here shown in section is a somewhat bulky one. The main mass of the tumour has a projection which involves the nipple and neighbouring skin. The nipple is considerably retracted so as to be beneath the general level of the skin, this being obviously related to the connection with the tumour.

74. Scirrhus of Mamma with Eczema of Nipple. (*Dr. G. H. B. Macleod.*)
The portion preserved is a small part of the tumour with a part of the skin around the nipple. The skin is somewhat occupied by dense cancerous tissue in the form of two nodules, one at the nipple and the other somewhat removed from it. There was also a hard cancerous mass in the substance of the gland. In a circular area around the nipple, about 1 inch in

diameter, the skin is excoriated irregularly, there being apparently parts where the epidermis is retained and parts where it is lost.

On microscopic examination the tumour presents the characteristics of duct cancer. The eczematous part shows inflammatory changes, chiefly round celled tissue, with occasional cancerous processes.

Patient aged 42. Symptoms of a year's existence. Originated from injury. Breast removed. Axilla cleared out. Recovery. *Path. Reports*, 17th March, 1882. No. 291.

75. Cancer of Mamma, with Paget's Disease and Destruction of Nipple: Cysts in the Tumour. (*Dr. G. H. B. Macleod.*)

The tumour is a somewhat bulky one. A considerable portion of the skin covering it is replaced by a reddish irregular tissue, which at one end forms a prominent nodulated projection. Outside this area there are little rounded tumours in the skin causing slight projections. Outside the area where the tumour-tissue replaces the skin, the epithelium is replaced by a thin irregular layer (eczema), in the midst of which the normal epithelium crops out occasionally. It looks as if the tumour were overflowing the surface and altering the epidermis. No trace of the nipple can be seen, but it seems to be involved in the tumour which replaces the skin. On cutting into the tumour from behind, two cysts are found whose walls present a grey scirrhous tissue. The glands from the axilla were enlarged, and presented the cancerous characters under the microscope.

The patient from whom the breast was removed was a married woman aged 63. She stated that about 16 years ago a little scurf appeared round about the nipple. This, in a week or two, would fall off and leave a raw surface from which watery fluid exuded. This continued coming and going for two or three years. The skin round about the nipple then became inflamed and painful to the touch, subsequently breaking and exuding a greenish matter upon a raw surface. The pain she had been suffering became relieved after this exudation. No improvement, however, took place; the ulcerating surface gradually increased, and the discharge became coloured with blood. On admission to the infirmary she is described as being a pale, thin looking woman, with a bleeding ulcerated *sore* involving the left mammary nipple and surrounding parts. The breast, when manipulated, was felt to contain a dense firm mass which was freely mov-

able over the pectoral muscle. The axillary glands were enlarged.

As regards her personal history, she had always been a very healthy woman; had been married 23 years; had three miscarriages, but gave no history of syphilis. She could give no cause for her complaint, nor was there history of tumour in her immediate relations.

This breast was amputated in order to free her from repeated and exhausting hæmorrhages. She made a good recovery. (*Hospital Reports*, Ward XXI, vol. 15, p. 247.) *Path. Reports*, 12th December, 1884. No. 1271.

76. Scirrhus of Left Male Mamma. (*Dr. G. H. B. Macleod.*)

The preparation shows the mamma divided so as to exhibit the internal structure. The nipple is represented by a hard dry body which projects at the bottom of a depression caused by retraction of the tissue. Beneath this, and in the midst of a large amount of lobulated fat, a small tumour is seen in section which measures $\frac{5}{8}$ inch in depth and $\frac{3}{4}$ inch in greatest thickness. It has the dense feeling of scirrhus, and under the microscope shows a dense stroma with numerous meshes in which large epithelial cells are present. A gland from the axilla presented similar characters.

The preparation was removed from a man æt. 77. Eight months' duration. No cause. Large, filling breast. No glands involved. Amputated. Recovery. Seen three years and three months afterwards with large scirrhous tumour in left axilla of six months' duration, which was not touched. *Path. Reports*, No. 1232.

77. Scirrhus of Male Mamma. (*Dr. G. H. B. Macleod.*)

The tumour, which is surrounded by a fatty capsule, is about an inch and a half in length, and an inch in thickness. On section the appearance is like that of an ordinary scirrhus, a grey somewhat tough tissue, interspersed with orange-coloured portions. The arrangement of the tissue is somewhat lobular. The nipple is considerably drawn in, and around it the skin is adherent and presents rounded prominences. Under the microscope the usual structure of scirrhus was found. *Path. Reports*, 10th February, 1880. No. 527.

78. Cancer of the Mamma.

The tumour is somewhat bulky and lobulated, forming a marked prominence with two or three rounded elevations,

over which the skin is stretched and thinned, but not firmly adherent. At the edge of one of the prominences is the nipple. *Path. Reports,* 25th February, 1879. No. 527.

79. Ulcerating Cancer of Mamma. (*Dr. J. G. Lyon.*)
The preparation shows the tumour and surrounding skin as removed. The tumour projects considerably, and obviously involves the skin at its margins, giving it a cicatricial appearance. Internally there is deep ulceration, the skin being gone and the tumour excavated in a crater-like fashion. The tumour seems altogether to have been of about 12 months' growth. *Path. Reports,* 6th September, 1876. No. 128.

80. Strumous Disease in the Neighbourhood of Mamma. (*Prof. Geo. Buchanan.*)
There were two well defined masses, one the size of a small apple, and the other that of a lymphatic gland, both of them distinctly encapsuled. The larger consists at one end of adipose tissue, in which are one or two solid nodules, while the rest of the structure consists of a caseous external part, with pultaceous matter internally, the whole presenting a striking resemblance to a strumous testicle. Under the microscope the structure is seen to be caseous, with a thin marginal part consisting of round cells with giant cells.
The parts were removed from a woman 30 years of age. She first noticed a tumour near the breast 4 years before admission when nursing her second child. The swelling showed a slow, steady, and painless growth. It was situated at the upper and outer margin of the breast, near the anterior fold of the axilla. There were no enlarged glands in the axilla. The tumours were easily enucleated, being completely encapsuled. *Path. Reports,* 20th November, 1883. No. 1066.

81. Scrotal Hydrocele.
The sac of the hydrocele is laid open and the testicle divided, the latter being incorporated in the wall of the sac. A portion of the skin of the scrotum is preserved.

82. Encysted Hydrocele (Spermatocele).
The cyst and the tunica vaginalis are laid open. The former, which is quite distinct from the latter, forms a single cavity large enough to contain a closed fist, but with partial septa internally. At the base of this cyst, and in the neighbourhood of the epididymis, there is a small cyst the size of a hazel nut. The main cyst is also intimately related to the epididymis.

The cyst contained a milky fluid, preserved in the next preparation, which was found to teem with spermatozoa. On standing these have precipitated, and have left a slightly opalescent supernatant fluid. Before laying open the tumour, and on simple inspection of the scrotum, the hydrocele was noticed to have a somewhat unusual shape, being more pointed at the lower part than usual. *Path. Reports*, 4th January, 1879. No. 409.

83. Fluid from the preceding case.

84. Hydrocele with Thickening of Wall and Alteration of Fluid (Hæmatocele).

The preparation shows half of the cavity of the tunica vaginalis, which is greatly enlarged; it shows in section the flattened testicle which forms a part of the wall of the cyst. The cyst wall is generally less than a line in thickness, and very irregular in its internal surface, which presents a pretty frequent brown deposit.

85. Fluid from preceding preparation.

A portion of the fluid has been preserved. It has a turbid brown appearance, with multitudes of crystals of cholestearine. *Path. Reports*, 14th February, 1882. No. 775.

86. Inflamed and Greatly Thickened Hydrocele Removed by Operation (Hæmatocele). (*Dr. J. C. Renton.*)

The preparation, which consists of the altered tunica vaginalis, forms a thick walled cyst, composed generally of dense fibrous tissue, but lined with a soft red structure, like granulation tissue. The cyst forms a bulky tumour as large as the two closed fists. At one part the testicle is shown in section, greatly flattened against the cyst wall. *Path. Reports*, 17th August, 1883. No. 1026.

87. Hydrocele with Greatly Thickened Wall and contained Blood-clot (Hæmatocele). (*Dr. H. C. Cameron.*)

A bulky tumour as large as the fist, which has been excised. It is in the form of a cyst, which has a typically pyriform shape, brought out characteristically by removal of the various outer tunics. The wall of the cyst is generally $\frac{1}{8}$ to $\frac{1}{2}$ inch in thickness, and composed of dense fibrous tissues, the internal layer of which forms a distinct thick membrane. The contents are a brown material, like broken down clot, in which the microscope revealed shrunken corpuscles and numerous cholestearine

crystals. The testicle was found lying behind and below; but it has been removed with the tunics.

The case was that of a man aged 32, who had a solid tumour—supposed to be of the testicle—for several years. The whole structure was removed by operation. *Path. Reports*, 28th February, 1882. No. 784.

88. Testicle Retained in Groin and Removed from Neck of Hernial Sac. (*Prof. Geo. Buchanan.*)

The testicle, with epididymis and part of spermatic cord, was removed in the course of an operation for strangulated hernia, being retained at the neck of the sac. The organ is obviously smaller than normal, measuring 1 inch in its long diameter. On section it has the appearance of testicular tissue, but unduly compacted.

89. Tubercular Disease of Testicle.

The right testicle is greatly enlarged, and its tissue very firm. Its epididymis is the seat of a caseous mass, and there is also caseous material at the hilus. There was tubercular disease in bladder and kidney, and disseminated tuberculosis of the lungs. *Path. Reports*, 13th November, 1879. No. 485.

90. Atheroma of the Testicle. (*Prof. Geo. Buchanan.*)

The central parts of the testicle show a cheesy material, which extends outwards in elongated masses to the periphery. Towards the periphery the cheesy masses are divided by a more transparent tissue, like granulation tissue both in its naked eye and microscopic characters. *Path. Reports*, 14th January, 1878. No. 286.

91. Syphilitic Disease of Testicle extending up Vas Deferens. (*Prof. Geo. Buchanan.*)

The parts preserved are testicle, tunica vaginalis, and a piece of spermatic cord, as removed by operation. All of these are greatly enlarged—the testicle measuring $2\frac{3}{4}$ inches in long diameter, the epididymis even larger in proportion, and the spermatic cord greatly thickened. The testicle presents on section the appearance of the normal tissue exaggerated, lobules and appearance of tubules being visible; but the whole of the gland, as well as epididymis and cord, have a general fleshy transparent appearance, except in one or two places where there is more opacity. Under the microscope the prevailing elements everywhere are well formed round cells. In the testicle the tubules are visible in the midst of these,

generally with fatty epithelium. The tunica vaginalis is considerably thickened.

About seven months before the operation the patient noticed his testicle getting enlarged, and it was first treated by strapping, the swelling being regarded as due to chronic orchitis. The question of syphilis could not be accurately determined. The tumour began to extend up through the external ring, and some time after admission a second little tumour made its appearance in the canal. The testicle was removed, and the cord was drawn as far out as possible and ligatured, when the secondary tumour was enucleated. See *Glasgow Medical Journal*, Dec., 1883, p. 470.

92. Cancer of Testicle. (*Dr. H. C. Cameron.*)

The testicle, which is converted into a bulky tumour, retains its pyriform shape, but measures $5\frac{1}{2}$ inches by $3\frac{1}{4}$. The spermatic cord and vessels pass into the tumour at its upper (narrower) end; but in the tumour itself it cannot be said that any unequivocal traces of proper testicular tissue are discoverable. The enlarged organ fills and distends the tunica vaginalis, whose visceral and parietal layers are quite distinct, except at the posterior part, where, as under normal conditions, there is no sac. Under the microscope, the tissue is typically that of a cancer, there being a very loose stroma with masses of epithelial cells in it. *Path. Reports*, 12th February, 1884. No. 1130.

SERIES VIII.

SKIN AND ORGANS OF SENSE.

1. Tatooing.
The piece of skin, measuring about 4 inches by 6, has a tatooed figure of a Highland chief, with kilt, claymore, and shield on which the Scotch thistle is represented.

2. Tatooing.
The preparation is a piece of skin about 4 inches by 8, with a representation of the crucifixion done in two colours—black and red. It has been mounted in turpentine, so that the tissue is transparent, and the picture comes out prominently.

3. Tatooing from Breast of a Man.
It represents something like a coat of arms with two serpents and a bird, done in two colours.

4. Abdominal Wound in case of Abdominal Section for Tumour. (*Dr. A. Patterson.*)
This is from same case as No. 8, Series X. There is a long wound which is glued together both on the cutaneous and peritoneal surfaces.

5. Lightning Mark on Skin, Photograph. For description of this case, see paper by Dr. Yule Mackay, in *Glasgow Medical Journal* for November, 1883.

6. Piece of Skin Undermined and Necrosed from Fracture of Ribs. (*Dr. A. Patterson.*)
The injury was inflicted by the revolving handle of a winch, which struck the patient in the right sub-clavicular region. The skin in this situation was carried inwards, and impelled against the ribs, a fracture being produced of the second rib, while a piece was broken off from the lower edge of the first. In the midst of the piece of skin preserved there

is a circular portion of a red colour, and dried. Behind this there is a cavity which formed part of a larger cavity communicating with the fractured ribs. The pleural cavity contained a large quantity of bloody fluid. There were two apertures in the lung with a communication through its substance. Surgical emphysema existed as far down as the hands and calves of the legs. *Path. Reports*, 7th March, 1883. No. 949.

7. Portion of Affected Lung from same case as preceding.

The piece of lung preserved is the extreme apex, which has been divided longitudinally. It is seen that on either side there is a ragged wound, and joining these through the midst of the lung tissue there is an irregular channel. Around this channel the lung is completely condensed with infiltrated blood, and this infiltration extends right up to the apex, and for a shorter distance below the level of the channel.

8. Brawny Œdema of Hand and Arm. (*Dr. G. T. Beatson.*)

The skin and subcutaneous tissue of the hand and lower part of the forearm are greatly thickened, and the thickening is obviously due largely to œdema, although there is some new formation of connective tissue and epidermis. The hand, as a whole, is puffed out and enlarged, both from before backwards, and transversely. The fingers project from the palm like broad-based pyramids, there being a deep transverse sulcus at the base of each finger. This condition extends about 4 inches up the arm, gradually merging into the sound skin. During life the member hung as a heavy mass, which the patient had great difficulty in supporting, and when the arm was raised the hand drooped like a flabby fin.

9. Senile Gangrene of Foot. (*Prof. Geo. Buchanan.*)

The gangrenous parts are mostly black, except where partial separation has taken place on the dorsum of the foot. The toes are conspicuously black, and the third and fourth have dropped off, their place of disattachment being marked by a rough surface. The gangrenous condition extends over almost the entire sole of the foot, but the black condition is not visible at the heel, where the thick epidermis conceals it. On the dorsum of the foot the line of demarcation is well marked, extending across the instep in an arched line, so that

the gangrenous condition is much less extensive on the internal than the external aspect of the foot. The marginal parts of the healthy skin are considerably infiltrated.

The leg was amputated at the lower third, and on examination it was found that the posterior tibial was filled at the place where it was cut across with an old clot which was very adherent. The artery was also considerably thickened. The anterior tibial was free at the point of division, but contained a tapering clot farther down. Amputation was performed at the lower third of the leg. *Path. Reports*, 2nd May, 1883. No. 974.

10. Scleroderma with Gangrene of the Fingers. (*Dr. A. Patterson.*)

There was marked hardness and thickening of the skin, particularly of the face, front and upper part of chest, forearms, and the legs up to the middle of the thighs. In both hands there was dry gangrene affecting the fingers to the extent of the last two phalanges, and the thumb to that of the last phalanx; the gangrenous portions had a black colour as shown in preparation. The toes in both feet were also gangrenous. The vessels have been injected with carmine and gelatine. *Path. Reports*, 8th May, 1882. No. 814.

11. Extreme Thickening of Pleura, and Condensation of Lung from same case of Scleroderma.

Both lungs were adherent by means of tissue of extreme density; the adhesion extending even to the periosteum of the ribs. In the portion of lung preserved there is a more localised thickening of the pleura, which extended over a quadrilateral surface. The pleura is about $\frac{1}{4}$ in. in thickness, and has an exceedingly dense structure of cartilaginous consistence; beneath this the lung tissue is occupied by a slaty grey condensation which gradually diminishes in passing inwards, being distinctly localised in the neighbourhood of the thickened pleura. The lung tissue generally, however, presented pretty frequent slaty indurations. *Path. Reports*, 8th May, 1882. No. 814.

12. Multiple Fibromata of Skin. (*Dr. G. H. B. Macleod.*)

The preparation is a transverse section through skin and tumour of one of a large number of similar growths. These were present in every region of the body and limbs, and were evidently seated in the skin or under it. Some of them made a very slight projection, others projected considerably, but

none was distinctly pedunculated. In the preparation, the tumour is intimately connected with the deep surface of the skin, which is partially thinned over its surface; and although it projects into the subcutaneous tissue, it is not incorporated with the latter. The tumour presented the structure of soft connective tissue. *Path. Reports*, 23rd November, 1881. No. 733.

13. Molluscum of Foot. Amputation. (*Prof. Geo. Buchanan.*)

There is great thickening of the skin of the foot, but not a general thickening, the disease being localised as follows:—The dorsum of the foot and great toe are most obviously affected. The great toe forms a massive bulbous lobulated protuberance, the surface being very irregular, often with a papillary appearance. The skin of the dorsum is not so prominent, and there is here an occasional cicatrix. The inner aspects of the foot and ankle are greatly affected, and a band of affected skin, about 2 inches wide, passes across the sole about its middle. Otherwise, the skin of the sole as well as that of the four lesser toes is perfectly normal. The disease also extends above the ankle, but here it is frequently in the form of larger and smaller projections, in groups or single. These rounded projections are most distinct on the inner aspect of the ankle, there being considerable cicatrisation on the outer aspect. This appearance of rounded projections is also visible to a certain extent in the parts already described, although there the prominences are continuous. The prominences are frequently dimpled at their summits, and there is in some even a deep depression approaching occasionally to actual ulceration.

Under the microscope the more recent projections are found to consist—(1) of true skin in a condition of inflammatory hyperplasia, there being multitudes of round cells and spindle cells with new formed connective tissue; (2) of hypertrophied epidermis which is sometimes of considerable thickness; and (3) of sebaceous glands which appear to play an important part here. The dimpling at the summits and the larger depressions are connected with these glands, being, in fact, altered sebaceous glands, sometimes containing fatty matter and epidermic debris.

The patient was a girl aged 16. The disease is stated to have been of eight years' duration, and appears to have existed partially in the leg, on which there were cicatrices. Amputation was performed on 20th December, 1879. Secondary

hæmorrhage occurred repeatedly, and patient died on 31st December.

14. Molluscum of Hand. (*Dr. A. Patterson.*)

The tumour forms an exceedingly bulky nodulated mass, whose chief prominence is over the distal parts of the metacarpal bones, but which involves the whole dorsum. The nodulated appearance is due to numerous rounded prominences of very various sizes. Over the tumour the skin is involved; but outside the main mass of it there are several isolated rounded projections, surrounded by normal skin. A few isolated tumours exist under the skin of the arm, the highest being in the internal aspect of the upper arm, just above the elbow. On dividing the tumour longitudinally, its tissue is found to be tough, and dense, and fibrous. The skin is thoroughly incorporated with the tumour.

On microscopic examination, stiff interlacing fibres are found alternating with masses of cells, the latter showing an intimate relation with the fibres, and having frequently an appearance as if the fibres were developing cells. The cells themselves are rounded or spindle-shaped and of small size.

The disease began 18 months before the date of amputation with a swelling over the knuckle of the middle finger. This slowly increased for months, but latterly severe pain occurred and a rapid increase. *Path. Reports*, 12th June, 1878. No. 340.

15. Atheromatous Cyst or Wen from the Hairy Scalp.

A small rounded tumour is exposed by cutting through the skin, of which it has formed a rounded elevation. The tumour has a thick, dense connective tissue wall, and soft yellowish atheromatous contents.

16. Syphilitic Gumma of Leg. (*Prof. Geo. Buchanan.*)

The preparation forms the half of the tumour, which had the shape of a flattened sphere. The tumour was partially pedunculated, and in the preparation the subcutaneous fat appears on the inner surface. On the lateral aspects of the tumour the skin appears normal; but towards the summit it gradually gives place to granulation tissue. The section shows that the tumour is composed of a variously coloured, nearly homogeneous, tissue; and on microscopic examination little was to be found besides round cells, which presented a marked tendency to degeneration. *Path. Reports*, 11th February, 1876. No. 70.

17. Sarcoma of Scalp. (*Prof. Geo. Buchanan.*)

The tumour is about the size of a small apple, and of an irregularly oval shape. It has partly overhung its base. The cut surface formed in its removal consists at its periphery of skin and fat, with a loose membrane (probably pericranium) in the central parts, the tumour being entirely superficial to this. The tumour is generally covered by thinned skin, but at its summit there is an irregular prominence devoid of skin and partly fungating. On section the tumour shows a general red or brown tissue, with whitish bands and areas. The red parts are blood from interstitial hæmorrhage. The white structure presents a network of thick fibres, with cells in its meshes. The loculi so formed are not like the alveoli of cancers, being less definite, and there are masses of cells also without alveoli.

The tumour was removed from the front of the scalp of a woman aged 55. It had been present for about 20 years, and then more rapid growth having set in it attained its present size in about 4 years. *Path. Reports*, 9th October, 1882. No. 857.

18. Spindle-Celled Sarcoma of the Skin.

The preparation consists of the half of the tumour, and exhibits both the cutaneous and the cut surface. The tumour forms an oval flat elevation an inch in diameter and half an inch in thickness. Its margin is abrupt and somewhat overhanging, and the epidermis, although continuous for some distance on its surface, does not completely cover it. On section the tumour tissue is seen to replace that of the skin, and it shows a markedly fasciculated appearance. The history of this case is unknown.

19. Epithelioma of Lip with Ulceration.

20. Ulcerating Epithelioma of Lip. (*Dr. D. N. Knox.*)

Two specimens. *Path. Reports*, 16th September, 1876. No. 134.

21. Epithelioma of Cheek. (*Prof. Geo. Buchanan.*)

The tumour is seen as a rounded mass, covered by the skin of the face, and it is slightly ulcerated at its lower part. A portion of the malar bone is also seen, to which the tumour was attached.

The tumour was removed by Dr. Buchanan from the cheek of R. B., æt. 59, on the 25th June, 1881. The clinical history

and characters were those of epithelioma. As it was found to implicate the malar bone beneath, a portion of it was also removed. *Path. Reports,* 28th March, 1881. No. 645.

22. Malignant Ulcer of Back of Hand.

The hand, as amputated, is preserved, and the greater part of the dorsum is occupied by a flat ulcer, whose greatest measurement transversely is 3 inches, and longitudinally 2½ inches. Its margins, especially the lower, are elevated, and present generally a sinuous outline.

23. Epithelioma of Back of Hand.

The tumour is in the form of an ulcer, with granular surface and markedly raised edges. It occupies a space about the size of a crown piece on the back of the hand, being specially elongated at the junction of index and middle fingers. On section it is not found to penetrate very deeply, although involving, to a certain extent, the subcutaneous tissue. The tissue of the central parts of the growth is soft, while the raised margin is of somewhat firmer consistence. The raised margin is covered with epidermis, and between this and the granular surface of the ulcer there are crusts.

Under the microscope the tissue of the tumour is found to be epithelial, but on examining the marginal parts it is seen that the surface epithelium, although slightly exaggerated, does not take part in the new formation, the latter extending from below, and evidently originating in sebaceous glands. In accordance with this the epithelium of the tumour has a marked tendency to fatty degeneration, and to the formation of cholestearine crystals.

24. Warty Epithelioma of Skin. (*Dr. G. H. B. Macleod.*)

The specimen shown is an oval piece of skin, in the midst of which is a flat prominence of a circular shape, nearly the size of a shilling. The growth overhangs its base considerably, is irregular on the surface (somewhat like a soft wart), and is tolerably soft in consistence.

On microscopic examination the structure is found to be essentially epithelial, even the deeper parts consisting of epithelial processes, in some of which laminated capsules appear. *Path. Reports,* 5th April, 1880. No. 544.

25. Epithelioma of Ankle. (*Prof. Geo. Buchanan.*)

The foot is seen to be much deformed, and the inner aspect of the ankle is occupied by a tumour of a generally circular

outline. Its general diameter is about 3¼ ins., but there is an extension backwards measuring 1¼ in. The surface of the tumour has a granular irregular appearance suggestive of the surface of an ordinary wart. In addition, there are irregular prominences which project from the general surface about half an inch. The tumour forms thus a flat elevation, whose edges are somewhat abrupt. The skin around has a partially cicatricial appearance.

The deformity consists mainly in a flexion of the foot, so that the dorsum is nearly in a line with the anterior surface of the leg. Extreme flexion produces an appearance as if the heel was almost absent. The muscles of the calf presented abundant fatty infiltration. The tumour consists mainly of flat-celled epithelium.

The patient, a middle aged man, was in Hospital in February, 1878, for an extensive ulceration of the inner ankle, dating from an injury 24 years back. A piece of os calcis was removed, and he left the Hospital with the operation wound healing. He was readmitted on 16th October, 1878, with a condition of matters very similar to that shown in preparation, and the leg was amputated above the knee. *Path. Reports*, 2nd November, 1878. No. 384.

26. Sloughing Cancer of Skin in Occipital region, following a blow. (*Prof. Geo. Buchanan.*)

The preparation shows a circular piece of skin with a central irregular cavity containing dark sloughing tissue. The skin is partly undermined and overhangs the sloughing cavity. On examining the under surface and a section through skin and tumour, it is seen that, chiefly beneath the skin there is a mass of soft grey tissue, which has been cut through in the operation, and which infiltrates the skin from below, and renders it prominent around the cavity. Under the microscope this tissue is seen to consist of nests of epithelial cells, separated by connective tissue, probably remains of skin.

The case was that of a woman aged 24. Three years before admission she received a blow from a stick in the occipital region. After this the part gradually swelled till 11 months ago it attained the size of a duck's egg. An incision was made and a good deal of matter escaped. About 9 months after this another swelling appeared a little below and inside this, and about 3 weeks ago this burst and discharged matter. On admission it discharged a very fœtid matter in small quantity. *Path. Reports*, 14th February, 1884. No. 1132.

27. Cancer of Skin. (*Dr. A. Patterson.*)

The tumour excised with a piece skin is formed by the coalescence of two almost globular growths of nearly equal size, each half the size of a cherry. There is a very thin skin over the tumour, which seems incorporated with it. The tumour is grey in colour, and under the microscope presents glandular nests and processes contained in alveoli formed by a beautiful fibrous network. This is the second tumour removed from the same situation—viz., the scalp near the vertex. The first was removed a year ago, and had been a year in growing. This one recurred four months after the first operation. Excised by Dr. Patterson, 23rd August, 1878.

28. Polypus of Ear. (Removed by *Dr. Thos. Barr.*)

29. Sarcoma of Choroid Extending Outside the Eyeball and to the Ciliary Body Inside. (*Dr. Thomas Reid.*)

The preparation shows the eyeball divided longitudinally, and placed so as to show the external configuration in one half, and the internal relations in the other. Viewed from the outside the lower part of the eyeball appears as if prolonged into a bulky tumour nearly as wide as the eyeball itself, the mucous membrane being continuous over the tumour. On section this tumour is seen to be directly continuous with the eyeball, whose coats are to a considerable extent lost in it. The sclerotic, however, can be traced, and from this it can be seen that the tumour, while most bulky outside the eyeball, also occupies the choroid inside, where it involves the ciliary body, forming a somewhat prominent mass at its lower part. Under the microscope the tissue of this tumour was found very cellular, the cells being mainly spindle shaped or stellate, with occasional fibro-cellular inter-substance. *Path. Reports*, 6th March, 1882. No. 786.

SERIES IX.

NERVOUS SYSTEM.

1. Extensive Laceration of Brain by *contre coup.* (*Dr. A. Patterson.*)

The inferior surfaces of the right frontal and tempero-sphenoidal lobes are extensively lacerated, and there is slight laceration of the left frontal lobe. There was no fracture at the base or elsewhere, and no external wound, but the lamdoidal suture was loosened and gaping, the violence having been applied at the posterior and upper aspect of the cranium, while the brain is lacerated in its anterior and inferior parts. There was a considerable amount of blood inside the dura mater, especially on the right side. *Path. Reports,* 10th January, 1884. No. 1107.

2. Gun-Shot Wound of Skull.

The aperture of entrance and of exit are shown; that of entrance being near the saw cut and through the squamous portion of the temporal bone, while that of exit is in the opposite parietal, slightly below its middle part. The aperture of entrance is, externally, a well defined aperture about $\frac{3}{8}$ of an inch in diameter; internally the edges are bevelled all round to the extent of about $\frac{1}{8}$ of an inch. In addition, a piece of the skull is loosened by a fracture which runs out from the upper limit of the aperture passing forwards and downwards. The aperture of exit is oval in shape, and measures $\frac{3}{4}$ of an inch in diameter. In addition to the piece of bone completely displaced, there is a piece partially thrown outwards, measuring half an inch in diameter. Besides that there are radiating fractures passing out from the aperture. It is to be noted that the aperture in the dura mater, even in the dry state, is less than that in the skull, being only half an inch in long diameter. The bullet is preserved in No. 4.

The case was that of a man who, after shooting his landlady (see next preparation), shot himself.

3. Abscess in Temporo-Sphenoidal Lobe from Bullet Wound. (*Dr. H. C. Cameron.*)

The cavity of the abscess is exposed from below, and is somewhat torn, as the parts were adherent to the membranes at the base. It is of irregularly oval shape, measuring 2½ ins. in long diameter. In the cavity, which contained pus and communicated externally through the bullet wound, two pieces of bone were found; the piece of bullet, shown in next preparation, was discovered in its posterior part. It is to be noted that the bullet was found in the extreme posterior part of the cavity, and partly embedded in brain substance, while the line of the bullet wound corresponded to the anterior part of the cavity. The bullet had evidently been at first in front, and had gravitated backwards as the patient lay, producing the cavity as it progressed. There was considerable exudation on the surface of the arachnoid generally.

The bullet wound was immediately in front of the left ear and at the level of the orbit. The aperture in the skin measured ¾ in., and that in the bone ½ in. in long diameter. The aperture in the bone was in the temporal fossa, its anterior extremity being 1⅛ in. behind the edge of the sphenoid, and its external border 2 ins. from the middle line.

The case was that of a woman aged 38, who was shot from a few feet distance (see previous case). When admitted she was able to walk and speak, but in 24 hours she became aphasic, and this continued till death three weeks after. About 36 hours after admission she had violent twitchings of the face, especially on the right side, followed by general convulsions. Twitchings and convulsions were repeated every few minutes for more than a day, then gradually became less frequent and disappeared in three days, leaving paralysis of the right arm and leg, and left side of face. Consciousness returned, and she did well till a few days before death when, suppuration having set in, the temperature rose, and she died comatose. *Path. Reports*, 21st March, 1883. No. 961.

4. Bullets from the two previous cases.

That from the first case is cylindrical and with only a slight gash in it. The other is much contorted and a piece of it partially displaced. At the time of the *post-mortem* the metal was bright as if recently cut open, as it had been by the bone.

5. Abscess of Brain. (*Dr. W. T. Gairdner.*)

The parts preserved show the irregular walls of an abscess

which had its seat in the white substance of the left hemisphere. The cavity had a generally oval shape, and measured 2½ ins. from before backwards. The fluid in the abscess was very thin, and only on standing did it deposit a distinct layer of pus.

The patient was a man, æt. 36, who, from his being a house painter, and suffering from drop-wrist (on the right side only), came under suspicion of lead-poisoning, but had never suffered from colic, though with constipated bowels. He was quite intelligent on admission, and had no decidedly cerebral symptoms; but there was weakness of the right lower limb, as well as of the upper, and in the latter slight rigidity of the flexors, with well marked paralysis of the extensors; movements of left side unimpaired. [In connection with the entire absence of aphasia throughout, it may be noted that the patient was originally left-handed]. There was a history of localised convulsive attacks in the right upper extremity, without any loss of consciousness, but followed by left frontal headache and transitory loss of memory. General sponginess of the gums obscured the evidence as to the presence or absence of the characteristic lead-line; the temperatures were normal or sub-normal; digestion and general nutrition unaffected; no further evidences of lead cachexia. The symptoms, on admission, had lasted for about seven weeks. Under these very perplexing diagnostic conditions, the administration of iodide of potassium was commenced as for lead-poisoning, but "was followed by very intense and prolonged sickness and giddiness, associated with such continuous pain in the left frontal region as to lead to a constantly renewed suspicion that the original diagnosis might have been an error, and the case be a purely cerebral one." This opinion gained ground all the more as it was found that the complete discontinuance of the iodide did not at all remove the symptoms which at first were naturally supposed to have been caused by it. It was then found that the left frontal headache, which had been both severe and persistent, extended from the superciliary ridge to the coronal suture, but not to the vertex; there was no ocular paralysis, nor any anæsthesia of the fifth; the pupils were equal and natural, as was the facial expression. There had never been any vomiting prior to the administration of the iodide. These symptoms (especially the pain) continued for nearly six weeks after admission, and were not at all relieved by remedies, except by morphia hypodermically injected on two or three occasions. At this date a sudden attack of unconsciousness, following a peculiarly severe exacerbation of

the pain (but without change in the symptoms otherwise) was followed by some apparently spasmodic movements in the non-paralysed limbs, and by dilated pupils, with deep coma, fatal in eight hours; up to the very moment of this sudden attack the intelligence had been apparently perfectly preserved. There were no rigors nor other feverish symptoms; and the temperatures, regularly noted in the earlier part of the case, were absolutely normal. *Path. Reports*, 27th December, 1876. No. 172.

6. Abscess in Cerebellum from Caries of Temporal Bone. (*Dr. W. T. Gairdner.*)

The right cerebellar hemisphere is largely replaced by a cavity which does not go appreciably beyond the middle line, and in its outer part has so undermined the nervous tissue as to leave a gap. The inside of the cavity in the fresh state was shreddy and discoloured, and it contained a grumous fluid with flakes of solid matter, and an intensely fœtid odour.

There was extensive caries of the temporal bone, with destruction of the membrana, and in three places an actual gap in the internal bony wall, so that the dura mater was in immediate contact with carious cavities. In these places the dura mater was much discoloured and adherent. These three places were—upper surface and posterior aspect of petrous bone, and the angle between the petrous bone and the wall of the calvarium. The tympanic cavity, with its various communications, contained fœtid matter, and a brown polypus projected from its mucous membrane.

The patient was a woman, aged 26, who had suffered from severe pain in the head and vomiting for about a fortnight, with supervention of coma only a few hours before death. There was no paralysis, but considerable dysphagia and cerebral respiration, approximating to the Cheyne-Stokes type. There had been a purulent discharge from both ears since childhood, following on scarlet fever. *Path. Reports*, 30th July, 1883. No. 1016.

7. Abscess of Cerebellum from Disease of Petrous Bone. (*Dr. G. P. Tennent.*)

The abscess, which is exposed in the preparation, is situated in the left cerebellar hemisphere, in its external and inferior part. Its cavity is about large enough to contain a walnut, and in the recent state was filled with very offensively smelling pus of a yellow colour. The corresponding portion of cerebellum was found adherent to the dura mater over the

petrous bone, and the dura mater had a greenish colouration. The lateral sinus on this side was filled with a greenish decomposing pus which extended beyond the torcular Herophili to the sinus of the opposite side.

There were pyæmic abscesses in the lungs and an infarction in the spleen.

The case was that of a girl, aged 20. There had been a discharge from left ear for eighteen months, but four weeks before admission the discharge ceased and pain in the head began, accompanied with various nervous symptoms. During residence temperature was high, and successive crops of rose spots were stated to have occurred. *Path. Reports*, 20th January, 1883. No. 917.

8. Cerebro-Spinal Meningitis (Epidemic ?). (*Dr. Jas. Finlayson.*)

This preparation consists of two water colours by Mr. Innes Dunlop, showing the appearances in the fresh state. No. 9 is the brain, and No. 10 the spinal cord. The following is the description of the parts, chiefly from the report made at the time of the *post-mortem*, and illustrated by the three preparations. An abundant yellow exudation exists on the convexity of the cerebrum, it occupies mainly the sulci, but to a certain extent covers even the summits of the convolutions. Although not limited to any region of the cerebrum, it is much more abundant anteriorly, where in some places it is almost continuous: it is much less abundant at the base, although it forms a tolerably thick layer over the optic commissure and neighbourhood, and causes a glueing of the fissure of Sylvius. Both on the convexity and at the base the exudation is symmetrical. There was no excess of fluid in the lateral ventricles or softening around.

A similar yellow exudation occupies the greater part of the posterior aspect of the spinal cord. It is continuous in the lower part of the cord as high as the middle of the dorsal region, where there is a slight interval, above which it is again continuous to the lower part of the cervical swelling, where it stops short. The exudation is entirely sub-arachnoid, and does not extend at all into the substance of the cord. The anterior aspect of the cord is entirely free of exudation.

The case was that of a lad aged 18, of irregular habits, who came from the West Indies to study engineering a year before his fatal illness. This illness seems to have lasted about 8 days, and was characterised chiefly by weakness of arms and legs, pain in back, limbs, and neck, with retraction

of the head, fever, and delirium. During his residence in hospital, which extended to 4 days, the temperature was usually about 104°; there was delirium and twitching of the muscles, and slight convulsion of left arm. See *Glasgow Medical Journal*, vol. xx, p. 220. Several cases of a similar nature occurred about a year later in Ayrshire, and another case in the Western Infirmary in March, 1885. (*Path. Reports*, No. 1328.) See also paper by Dr. Frew, of Galston, in *Glasgow Medical Journal* for July, 1884. *Path. Reports*, 22nd February, 1883. No. 941.

9. Cerebro-Spinal Meningitis, Brain.
For description, see No. 8.

10. Cerebro-Spinal Meningitis, Spinal Cord.
For description, see No. 8.

11. Pachymeningitis Chronica Hæmorrhagica. (*Dr. Jas. Finlayson.*)
The dura mater is lined with a soft membrane in several layers. Between the layers there is frequent hæmorrhage, but not any very bulky clot.
The patient, a man, 49 years old, died from a hæmorrhage in the substance of the brain, due to the rupture of an aneurism. See *Glasgow Medical Journal*, Vol. xvii, p. 423. *Path. Reports*, 12th January, 1877. No. 176.

12. Atheroma of Cerebral Arteries (Cerebral Hæmorrhage).
The circle of Willis is preserved, and the preparation is mounted in a fluid containing glycerine to render it more transparent. Numerous opaque patches are seen on all vessels, and this condition was present in even the finer arteries. A large blood clot occupied the left cerebral hemisphere.
There was great hypertrophy of the left ventricle, with an aneurism of this ventricle. The aorta was moderately atheromatous, but the smaller arteries of the abdomen were highly so. The kidneys were granular on the surface, but not much reduced in size. *Path. Reports*, No. 858.

13. Circle of Willis, showing Thrombosis of Cerebral Vessels. (*Dr. W. T. Gairdner.*)
The specimen shows the right internal carotid laid open, and exhibiting great thickening of its wall. A thrombus is seen at the origin of the right middle cerebral, and so com-

pletely was this vessel occluded, that a bristle could not be passed through it at the time of the *post-mortem*. In connection with this there was extensive softening of the nucleus caudatus and corona radiata, the softening in the nucleus caudatus having given rise to a cavity containing a milky fluid.

The specimen was obtained from a patient aged 44, of intemperate habits, who was admitted to hospital suffering from left hemiplegia, the attack having come on—probably suddenly—five days before. Eight years before he had a similar attack, from which there was complete recovery. The paralysis on admission was complete in the left arm, incomplete in leg, distinct in mouth and tongue, also in buccinator muscle on left side. There was no aphasia nor paralysis of articulation. Tactile anæsthesia existed in the paralysed limbs to a great extent, but common anæsthesia and analgesia were not in proportion. For three weeks after admission the temperatures were absolutely normal, and the condition of the lower limb appeared to improve slightly, but progressive rigidity occurred in the paralysed arm. Two months after admission a gradual deterioration of the mental faculties was observed, with occasional lethargic, but not comatose attacks; and three weeks later an apoplectiform attack took place, with a rapid rise of temperature from 99° to 104°. For nine hours the temperature scarcely abated. Two days afterwards the patient died comatose. It is worthy of note (from the clinical point of view) that no *new* lesion of the brain substance could be verified as corresponding in date with this last attack, which had in all respects so much the clinical characters of hæmorrhagic apoplexy as to have been treated as such, the pathology of the original paralytic attack being regarded as doubtful, and there being no cardiac lesion to indicate embolism. The patient had been of very intemperate habits, but so far as could be discovered, there were no venereal or syphilitic antecedents. *Path. Reports*, No. 919.

14. Embolism of Middle Cerebral Artery. Localized Softening of Brain, involving Corona Radiata on Left Side, but not Broca's Convolution. (*Dr. W. T. Gairdner.*)

On exposing the left middle cerebral artery in the fissure of Sylvius, it was found to be distended by a solid plug just before it divides into two large branches. Just before the plug a small branch is given off, and, as shown in the preparation, this has a somewhat long course. It was found first to give off a branch to the temporal lobe, passing on to be finally distributed to the operculum and its neighbourhood.

On laying open the cerebral hemispheres an extensive softening was found in the corona radiata on the left side. The softened part corresponded generally with the distribution of the middle cerebral artery. It is noted, however, that the corpus striatum is not involved, and that the lower part of the ascending frontal convolution with the operculum are not softened. [*N.B.*—The plug is distal to the origin of the lenticulo-striate arteries, and of the long branch going to the region of the operculum, as mentioned above.]

There was acute endocarditis chiefly of the mitral valve, with warty vegetations, one of which had a broken appearance, as if recently lacerated. (See next preparation.) There was embolism of spleen and kidneys, and large white kidneys.

The case was that of a girl, aged 15, who had in childhood an angular curvature of the spine, but without any evidence of other organic changes up to seventeen days before admission, when she became affected with acute dropsy, evidently of renal origin, which was the principal, if not the only disease of any importance recognised on admission as actively present. Eight days afterwards a sudden and complete attack of right hemiplegia occurred, without involving in any way the mental faculties, and without aphasia. Extension of the præcordial dull percussion was noted, but with an entire absence of cardiac uneasiness of any kind, and with murmurs so doubtful in quality as to have at first suggested an exocardial origin, though more probably mitral and endocardial. The pulse was very feeble as compared with the heart's action, but regular—108 in the minute (counted with difficulty at the wrist). Coma in the end occurred, but only for a few hours before death, which took place eleven days after the paralytic attack. *Path. Reports*, 15th June, 1883. No. 997.

15. Mitral Valve, from same case as preceding preparation.

It shows Thrombi, one of them somewhat projecting.

16. Left Middle Cerebral Artery with a large Embolus in one of its Branches, from same case as Series II, Nos. 22 and 81. (*Dr. M'Call Anderson.*)

The specimen shows a distinct swelling at the origin of the second terminal branch of the middle cerebral, the swelling being caused by the presence of an embolic mass. At first it was thought that the main stem of the artery was plugged, but as is seen in the preparation, a bristle can easily be passed

from the one end of the main trunk to the other. The area of brain substance, supplied by the occluded vessel, lying in the corona radiata external to the corpus striatum, was distinctly softened.

The preparation was obtained from a patient who had been treated during several months in Ward II, for very severe mitral regurgitation. Throughout the entire residence in Hospital he suffered from hæmaturia, and latterly from an extensive purpuric eruption, affecting chiefly the legs. The hemiplegia of the right side set in about 14 days before death, being preceded by profound coma for 24 hours, and followed by indistinct articulation, which however could not be pronounced as distinct aphasia. *Path. Reports*, 12th June, 1883. No. 996.

17. Aneurism of middle Cerebral Artery, Rupture. (*Dr. M'Call Anderson.*)

The aneurism, which is about the size of a small hazel nut, is situated about two inches from the origin of the middle cerebral, and just where the vessel is dividing into several large branches. It is tolerably thick-walled, and there is a patch of atheroma in its wall. There is a rent in the aneurism about a quarter of an inch in length, and from this a large quantity of blood had escaped. Blood was found mainly in the cerebral substance, where it had formed a cavity for itself in the frontal lobe and corpus striatum. There was also blood infiltrating the membranes in the fissure of Sylvius, and a thin layer covering the convexity and on the surface of the membranes. In addition to the cerebral condition, there was some enlargement of the left ventricle of the heart, and slight contraction of the kidneys.

The case was that of a woman, aged 45. She had fallen down suddenly, and was admitted in a state bordering on unconsciousness; but without paralysis. She survived a few days and then sank rapidly. *Path. Reports*, 6th March, 1877. No. 200.

18. Large Compound Aneurism of Sylvian Artery, Rupture, and Cerebral Hæmorrhage. (*Dr. D. Yellowlees, Gartnavel.*)

The following is the description sent with the specimen by Dr. Yellowlees. "A male, aged 52, epileptic and insane for many years, has been getting gradually feebler and more demented of late, helpless and unable to stand or walk, but not markedly helpless on one side more than the other. He

became suddenly much worse, and died in three or four hours. The *post-mortem* reveals a very large softening outside the left ventricle, destroying the outer half of left corpus striatum and optic thalamus—filled with a large *recent* blood clot, from which the blood had burst into the ventricle, and passed over into the other ventricle. At the bottom of this huge cavity is found this *bunch of hazel-nuts.*"

The structures preserved are well described as like a bunch of hazel nuts. There are three on the bunch, one larger than a hazel nut and more elongated; it is also paler than the others and feels hard and calcareous. One of the others is of a brown colour and nearly globular, just the size of a hazel-nut. The third one is like this in size and shape, but paler. On cutting into the brown one it is found to consist of a thin wall, and to contain red clot inside. The largest of the three is with difficulty cut into, as its wall is quite calcareous, and it contains brownish debris with calcareous matter.

This bunch of tumours is attached to the left Sylvian artery just at its commencement, and it lay mainly internal to the fissure of Sylvius, being partly covered by the optic commissure. On passing a probe into the artery, it emerges at a large gap at the base of the aneurism. From this gap the probe can be passed into the brown tumour as well as along the artery. *Path. Reports*, 17th April, 1882. No. 808.

19. Aneurism of the Right Middle Cerebral Artery. (*Dr. Jas. Finlayson.*)

The specimen was obtained from the body of a female patient, aged 18 years, who was admitted to hospital suffering from cough, dyspnœa, and œdema of the legs, the dyspnœa having been present since she was 5 years of age. There was a loud A.S. and V.S. murmur; and the urine was albuminous and bloody. At the *post-mortem*, the mitral curtains were found to be extensively fringed with large vegetations. There was effusion of blood beneath the pia mater over the right hemisphere, which extended downwards to the base. In the substance of the right hemisphere was a large excavation filled with clot, from which blood had passed into all the ventricles of the brain. Besides the recent hæmorrhage, several old apoplectic cysts were discovered. On tracing up the right middle cerebral, the cause of the hæmorrhage was the aneurism seen in the specimen. It was situated in one of the posterior branches of the vessel, and, as is seen in the specimen, just where the vessel was bifurcating. The cause of the aneurism has probably been embolism. A bristle has been passed

through the main stem and out at the rupture in the aneurismal sac.

The girl had an alarming convulsive seizure on 31st May, from which she recovered almost completely, till a fatal recurrence of convulsions and coma on 6th June. In view of the old lesions, it is remarkable that this girl had never before had any nervous symptoms whatever, so far as her friends had recognised. *Path. Reports*, 7th June, 1884. No. 1200.

20. Aneurism of Anterior Cerebral, and Anterior Communicating Arteries. Hæmorrhage. (*Dr. G. P. Tennent.*)

The aneurism, which is pyramidal in shape, and the size of a pea, occupies a position between the two anterior cerebral arteries, being connected chiefly with the communicating, but also to some extent with the right anterior cerebral. It projects more inferiorly than superiorly. From the apex of the aneurism a small clot projects, and this communicated with collections of blood having the following distribution. There was blood, not abundant but widely extended, in the subarachnoid space over the convexity, most abundant anteriorly. At the base the blood was much more abundant, but still only in a thin layer, extending from the front backwards over pons and medulla. A large quantity of blood was found in the lateral ventricles, but very little in the midst of the brain substance. The communication with the ventricle was anterior, and the channel from the aneurism to the right ventricle was by a comparatively narrow passage. There was no disease of the heart or other organ. *Path. Reports*, 28th February, 1881. No. 632.

21. Thrombosis of Cerebral Sinuses and Veins. Extensive Cerebral Hæmorrhage. (*Dr. M'Call Anderson.*)

The parts displayed are the longitudinal and lateral sinuses of the dura mater with the falx cerebri. The ends of the veins passing into the longitudinal sinus are also partly shown. The longitudinal sinus is distended throughout with clot, which, in the middle parts had a greyish colour, and presented some softening. The thrombus extends down to the torcular Herophili, and thence partially into the lateral sinuses, but chiefly into the left, stopping short, however, of the exit of the internal jugular from the skull. At the summit of the cerebral hemispheres, the veins coming off from the longitudinal sinus were found enormously distended with firm clot, which

was mostly dark in colour, but occasionally with a grey or white piece in it. Sometimes the vein was accompanied on either side by a yellow streak, and frequently there was punctuated hæmorrhage around the vein.

There was extensive cerebral hæmorrhage in three areas. The largest one occupied the left cerebral hemisphere, having its seat in the corona radiata, near the summit of the hemisphere. Immediately around the cavity occupied by blood clot, the brain substance presented innumerable spots of capillary hæmorrhage, and beyond that there was considerable staining. The other two hæmorrhages were in the right cerebral hemisphere, a somewhat large one in the posterior and upper part of the frontal lobe, and a small one about the upper end of the ascending convolutions. These hæmorrhages, while mainly in the corona radiata, also involved the deeper parts of the convolutions, whose substance generally showed punctuate hæmorrhages.

The remaining organs presented nothing remarkable except a slight hypertrophy of the heart, which weighed $13\frac{3}{4}$ ounces. *Path. Reports*, 18th September, 1882. No. 849.

22. Great Dilatation of the Cerebral Ventricles in general Paralysis. (*Dr. D. Yellowlees.*)

The case was a very chronic one, and the ventricles are dilated to a very unusual extent. *Path. Reports*, 8th May, 1882. No. 815.

23. Hæmorrhage into Medulla Oblongata, Rupturing Floor of Fourth Ventricle. (*Dr. M'Cracken.*)

The fourth ventricle is exposed and the clot is seen to occupy the substance of the medulla, presenting itself in the floor of the ventricle. In addition to this lesion, there was extensive softening of both corpora striata, involving also the optic thalami, and patches of softening in the white substance of both hemispheres. The vessels were in an extreme degree of calcareous degeneration. The left ventricle was much hypertrophied, and the heart weighed 17 oz.

The case was that of a woman aged 51, who was under treatment on several occasions in Abergavenny Asylum, with acute mania, the first attack dating back to 1862. Her last admission was in January, 1877. In June she had an apoplectic attack, and another in December. In January 1878, an apoplectic seizure completely prostrated her, and, after lying in a semi-comatose state for 10 hours, she died. The cause of

death was apparently the recent clot in medulla oblongata. [Presented to the Museum by Dr. M'Cracken.]

24. Large Apoplectic Cyst in Temporo-Sphenoidal Lobe. (*Dr. D. Yellowlees, Gartnavel.*)

The cyst is nearly globular in shape, and measures 1½ inch in diameter. It is lined with a distinct membrane and contained serous fluid. It had produced considerable bulging externally. Posteriorly to it the brain substance is somewhat soft, and there are several hæmorrhagic areas.

The patient was a man, aged 67, who had been 22 years in Gartnavel Asylum. He became partially paralysed a month before death, and continued restless and uneasy and only half conscious till death. *Path. Reports*, 8th May, 1882. No. 814.

25. Tubercular Meningitis. (*Dr. Fraser, Paisley.*)

The central parts of the base of the brain are preserved, and an exudation is seen to cover many of the structures there, the optic chiasma being completely concealed, and the exudation extending back over the pons, &c. *Path. Reports*, 26th March, 1877. No. 209.

26. Syphilitic Gumma of Brain: Formation of Cysts beneath it. (*Dr. G. P. Tennent.*)

The parts preserved are two horizontal sections of the posterior part of the left cerebral hemisphere. A tumour is present at the surface and in the substance of the brain, in a position corresponding with the anterior part of the occipital lobe, and slightly above the level of the roof of the lateral ventricle. The section of the tumour is somewhat irregular and lobulated, but with a generally quadrilateral shape and an area of about a square inch. It penetrates to the extent of an inch into the brain substance, replacing it. In the fresh state it had a generally grey colour, with a central caseous appearance. The dura mater was firmly adherent over the tumour and for some distance around, and the brain substance showed distinct softening beneath the adherent dura mater and around the tumour. In the white substance beneath the tumour two cysts are present, one of them elongated and the other roundish in shape; they contained a loose œdematous connective tissue. The left hemisphere was found distinctly larger than the right.

Under the microscope the fresh marginal parts of the tumour showed chiefly round-celled tissue; the structure of the central parts was very indefinite, with evidences of fatty degeneration. *Path. Reports*, 28th October, 1881. No. 721.

27. Scrofulous Tubercle of Cerebellum. (*Dr. W. T. Gairdner.*)

The right half of the cerebellum is almost entirely occupied by a bulky oval tumour, measuring about 2 inches from before backward, and about 1½ inch from side to side. The only parts of the right half of the cerebellum uninvolved by the tumour are the most internal and anterior portions. The middle lobe is free. The tumour consists of a dense cheesy material, surrounded by a film of grey tissue. There was well marked tubercular meningitis (cerebro-spinal), and an old cysticercus in the corpus striatum.

The patient was a girl, æt. 7. Paroxysms of headache began 18 months before admission, but no vomiting nor convulsions. Seven months before death paralysis began, first in right arm and leg, then in left leg, afterwards complete loss of sight and diminished hearing. Nystagmus, but no squinting. Intelligence, memory, and most of the higher cerebral functions appeared on admission quite unaffected, and it was only gradually that, over about four weeks, lethargic symptoms, deepening into coma but without convulsion, took the place of the condition above indicated. The case was observed with specially curious interest in respect of these details, in consequence of an apparent enlargement of the head which (with the mother's assent) seemed to have been either congenital or to be referred to the earliest infancy, and was regarded as probably hydrocephalic, as it was indeed found to be after death, eight ounces of fluid being taken from the ventricles. The clinical and pathological relation of the cysticercus to the other facts remains obscure; but, from its evidently obsolete character and calcareous surroundings, it has probably had nothing to do with the recent facts of the case.—*Path. Reports*, 27th March, 1877. No. 208.

28. Large Scrofulous Tubercle of Cerebellum. (*Dr. W. T. Gairdner.*)

There is a very striking enlargement of the left cerebellar hemisphere, so that taking the raphe of the medulla oblongata as the middle line, this hemisphere extends an inch to the right of the middle line, and half an inch farther outwards than the other lobe, the total transverse measurement being—right, one inch, left, two inches and a half. It also extends backwards three-quarters of an inch farther than the other. The medulla oblongata is pushed forwards and flattened from before backwards and on the left side, the restiform body especially being greatly shrunken; but there is no great

displacement from the middle line. The pons varolii is also flattened in its left half, and considerably shrunken or pushed over especially in its posterior portions. As shown on section the greater part of this lobe of the cerebellum is occupied by a dense caseous tubercle, with a grey circumferential zone which comes to the surface inferiorly, where the dura mater was adherent to it. In its posterior and upper aspects the tumour is still covered with cerebellar tissue, which, however, was very œdematous and soft.

The lateral ventricles were much distended, but there was no softening around them, and no meningitis.

The case was that of a boy aged 3. The principal symptoms were lethargy without coma, and partial or complete amaurosis, complete inability to stand or walk, but without definite paralysis or convulsions. There was loss of control over sphincters, slight nystagmus, but no strabismus. The condition of the retinæ was not considered characteristic of a cerebal tumour. The temperatures, with rare exceptions, were normal or sub-normal. Later on there were contractures, but no convulsions and no well defined paralysis. Death by almost pure asthenia, with progressive emaciation, and coma only during the last day or two. *Path. Reports*, 15th July, 1882. No. 841.

29. Sarcoma of Cerebellum. (*Dr. G. P. Tennent.*)

The left lobe of the cerebellum is occupied in its anterior part by a tumour, which measures from before backwards about an inch and a half. The tumour is bounded posteriorly by the glosso-pharyngeal and pneumogastric nerves, where they pass over the cerebellum, and these nerves are much stretched by the prominence of the tumour. Its anterior extremity corresponds with the anterior border of the pons. The tumour has pressed aside neighbouring parts, and the left side of the pons and medulla oblongata are considerably atrophied. The fifth nerve and the facial, passing up between pons and tumour are much pressed upon and flattened, so as to be reduced to thin tape-like bands. The anterior portion of the tumour is nearly in contact with the fourth nerve, where it curves round the peduncle, but there is no apparent pressure on it or on the third or optic.

Under the microscope the tumour is seen to consist essentially of spindle cells. *Path. Reports*, 17th June, 1882. No. 832.

30. Glio-Sarcoma of Thalamus Opticus, and Corpora Quadrigemina. (*Dr. Jas. Finlayson.*)

The left thalamus opticus is replaced by a tumour having

its general shape but twice as large as that of the opposite side. The tumour is situated chiefly in the posterior half of the thalamus, and it is specially observed that the nucleus caudatus and n. lenticularis, as well as the internal capsule of the corpus striatum, are entirely free, and not even exposed to special pressure. On the other hand the enlarged thalamus presses against the crus cerebri, but there is no apparent softening of the latter. The left corpora quadrigemina are also occupied by tumour and much enlarged. The tissue of the tumours in both situations is generally reddish-grey in colour, but in the thalamus there are occasional caseous appearances.

Under the microscope the tumour in the corpora quadrigemina presents more of the simple gliomatous structure—viz., a fine reticulated net work with cells of various shapes, mostly large and frequently elongated. In the thalamus opticus the cells are usually more abundant, and there is, in addition, the degeneration already mentioned.

During life there was headache on left side and vomiting at intervals, with progressive loss of sight in both eyes but more rapid in the right (optic neuritis.) There was no localized paralysis or anæsthesia, but great unsteadiness and a tendency to lurch to the right, and ultimately great generalised weakness and incontinence of fæces. Before death the temperature rose to 106·5° (41½° Cent.). The patient was a young woman, æt. 22. *Path. Reports*, 5th March, 1877. No. 198.

31. Glio-Sarcoma of Pons Varolii. (*Dr. W. T. Gairdner.*)

Viewed externally, the whole pons is seen to be enlarged, both transversely and longitudinally, and its surface has a peculiar wrinkled appearance as if thrown into tranverse folds. The raphe in the middle line is still distinguishable, and it is seen that the left side is rather more enlarged than the right. In order to discover the full relations, a longitudinal and a transverse section were made, and the former is shown in preparation. From this it is seen that a tumour occupies the pons and upper part of medulla oblongata in their entire thickness. It projects somewhat into the fourth ventricle, pushing the cerebellum to some extent backwards. In its central parts the tissue is brownish in colour and soft. In transverse section it was seen that the longitudinal bundles of nerve fibres in the anterior parts of the pons were less interfered with on the left side than the right, although not completely destroyed on either.

Under the microscope the tumour was found to be very cellular, the cells round and spindle shaped. At times there is a finely reticulated intercellular substance like that of the glioma.

The patient was a well nourished girl, æt. 8, who was about eight weeks under observation in the Western Infirmary during her fatal illness. She was partially hemiplegic (right) on admission, and had convergent squint on both sides (paralysis of external rectus), the motor oculi nerves not being distinctly affected, and the irides active and normal. These symptoms were of gradual invasion, and had not been noticed for more than a few weeks before admission; although, owing to circumstances too complicated to be here stated, there arose a suspicion that a change in disposition, attributed at the time to other causes, and headaches, which occurred three months before admission, but which afterwards ceased, might have been the real starting point of the cerebral disease. On admission intelligence was apparently perfect, vision quite distinct; nothing remarkable in the retinæ, except slight atrophy of the right optic nerve in its outer segment; slight nystagmus of both eyeballs. She appeared to have suffered from headache at times, but when examined had no pain whatever; and her quiet and pleasant ways when amusing herself with her doll throughout her illness, together with the certainty that existed of some very serious organic cerebral disease, made her a peculiarly interesting little patient. Temperatures were absolutely normal till iodide of potassium was administered some days after admission; then slight feverish symptoms, with vomiting, which entirely subsided after the drug was discontinued, the temperatures being rather subnormal than otherwise during the rest of the illness. All the above mentioned facts were frequently tested in detail, and it may be taken as clearly established that the apparent immunity of the oculo-motor and sympathetic, with almost complete paralysis of both nerves of the 6th pair, continued to be characteristic features of the case up to a late date; while complete and spastic paralysis of the fingers of the right hand, incomplete paralysis of the corresponding arm and leg, and slight but constant deviation of the tongue to the paralysed side, remained equally persistent, if not increasing, throughout the treatment. In the later stages there was a degree of incontinence of urine, and also difficulties in micturition, which had, however, a possible explanation in a local injury the child had suffered many months before. There was a possibly strumous, but not definitely

tubercular history. She took a most lively interest in a Christmas tree, the toys of which were distributed about three weeks after her admission; ordinarily she lay in bed quite placidly, without any expression of suffering, and when asked how she was, answered "Fine." It was only occasionally that she vaguely admitted of feeling any pain in the head. The incontinence of urine, however, became more marked, and it is difficult to be sure that there was not a gradual though almost imperceptible deterioration in the cerebral condition during the seven weeks to which the above description applies. At the end of this period there was an attack of vomiting, and also of something like gasping for breath, observed distinctly as a change from her previously tranquil condition. Even at this date it is noted that, while convergent strabismus was absolute in both eyes, the other movements of the eyeballs were apparently intact, and the pupils perhaps even abnormally mobile and equal. Pain in the tube of the right ear led to a strict investigation as to any history, as of disease of the temporal bones, with negative results. After this there was manifestly both impaired respiration and deglutition, leading to attacks of "choking," with imminent risk of suffocation in taking food. Coma supervened gradually on the fourth day of these symptoms; the respirations, which had been notably accelerated, became slower, and the pupils dilated. Immediately before death the respiration inclined to the Cheyne-Stokes type, and the pupils became strongly contracted. It is worthy of note that there was no facial paralysis throughout the disease; also no ptosis. The altered expression of countenance noted was partly due to the strabismus, and partly to a languid and somewhat lethargic condition, quite distinct from the coma of the last period. *Path. Reports*, 5th February, 1881. No. 624.

32. Glioma of the Floor of the Fourth Ventricle, seen from above. (*Dr. M'Call Anderson.*)

In the specimen the floor of the fourth ventricle is exposed by an incision carried through the cerebellum in the middle line, and a bulky tumour is observed projecting from it. It occupies the greater part of the floor of the ventricle, its greatest length and its greatest breadth being about an inch. Its middle is slightly below the middle of the cerebellum, and the tumour is much more bulky on the right than on the left side, the posterior median fissure being carried somewhat to the left. The surface of the tumour is nodulated, and in the fresh state it was of a bluish colour. It is somewhat firm, and

under the microscope it is seen to have the structure of a glioma. *Path. Reports*, 15th June, 1881. No. 679.

33. Psammoma of Dura Mater. (*Dr. Fraser, Paisley.*)
A small rounded tumour like the third part of a sphere placed sessile on the inner surface of the dura mater. It has a somewhat irregular surface, and measures about a quarter of an inch in diameter.

Under the microscope it shows connective tissue with calcareous masses in the form of rods and globes, but chiefly the former. It produced no symptoms during life.

34. Sarcoma of Base of Skull, extending to Base of Brain. (*Dr. Jas. Finlayson.*)
A very partial examination only was allowed in this case, but it appears that the base of the skull was the seat of a tumour which could be easily cut with the knife, but contained spiculæ of bone. The tumour was adherent to the base of the brain, and part of it was removed along with brain, as shown in preparation. The optic chiasma is completely occupied by tumour and converted into a somewhat massive growth, out of which the optic nerves emerge, the left being, however, much freer than the right. On examining this left optic nerve, its outer fibres seem to be continued directly into the optic tract, its middle or decussating fibres being completely destroyed. The tumour also involved both third nerves and the left fourth, but it is not known to what extent the nerves were impinged on at the foramina by the tumour of the bone.

Under the microscope, the tumour presents mainly large spindle-shaped and stellate cells, with pretty frequent hæmorrhage.

The case was that of a man aged 23, the first pronounced symptoms in whose case were in the form of impaired vision and diplopia, along with some headache and giddiness, beginning about 6 months before death. He was treated in the Eye Infirmary and afterwards in the Western, and the vision and motions of the eyes and upper eyelid showed considerable variations, loss of vision and paralysis of the muscles of the eyeball becoming latterly extreme, but less so on the left side. Severe headache occurred latterly and persistent vomiting, and death occurred by failure of respiration. *Path. Reports*, December 23rd, 1878. No. 405.

35. Peculiar new Formation (Syphilitic?) in Dura Mater, affecting Calvarium. Periosteal Sarcoma of

Vertebræ. Tumours in Kidneys, Spleen, Supra-Renal Capsules, &c. (*Dr. Jas. Finlayson*).

The parts preserved are the calvarium, No. 35, corresponding dura mater, No. 36, portion of vertebral column, No. 37, spleen, No. 39, and kidney with supra-renal capsule, No. 38. The description here given applies to all of these preparations. The pericranium was partly converted into a soft pulpy tissue, part of which, in the preparation, remains adherent to the skull. The internal surface of the calvarium and the external surface of the dura mater were irregularly covered by a pale soft tissue, in some places as much as $\frac{1}{4}$ inch in thickness. The internal surface of the bone is seen to be very irregular; this irregularity depending partly on erosion and partly on projection of new formed spiculæ of bone. It is not apparent whether the new formed tissue grows mainly from the dura mater, or from the bone, it being intimately connected with each of them in different places. The internal surface of the dura mater, No. 36, also presents considerable irregularity, and is generally covered by a layer of soft tissue which, however, is smoother on the surface than that external. Under the microscope this soft tissue presented masses of round cells which were well preserved. The surface of the brain presented indentation, corresponding with the thickenings of dura mater and calvarium.

The external aspects of the last two dorsal and first lumbar vertebræ, No. 37, were occupied on both sides by soft tumours, those on the right side being shown in the preparation. There is at two places a rounded swelling, not corresponding definitely with individual bodies of vertebræ, and found on section not to involve the bone, although, perhaps, slightly eroding it. These tumours were symmetrical, but did not extend across the middle line.

In addition there were numerous comparatively small tumours in the kidneys, No. 38, enlarging them to such an extent that one weighed 15 oz. The supra-renal capsules were also occupied by numerous tumours, No. 38, the spleen had a large one, No. 39, and the liver several small ones. All these tumours were composed of round-celled tissue.

The patient was a man aged 27, who had been in the Afghan and Egyptian campaigns. There was a history of some obscure bowel and kidney complaint before admission; and for some time before admission severe pain in the back, with a little tenderness in lower lumbar region. The urine was albuminous and deposited tube casts. On admission, a fortnight before death, paralysis of the left leg,

without loss of sensation, was observed. There was diplopia with internal squint on several occasions. Latterly there was tendency to delirium and coma, with general hyperæsthesia and occasional retraction of the neck. *Path. Reports*, 28th March, 1883. No. 960.

36. Dura Mater with Peculiar New Formation. See No. 35.

37. Vertebræ with Peculiar New Formation. See No. 35.

38. Kidney and Supra-renal Capsule. See No. 35.

39. Spleen with Large Tumour. See No. 35.

40. Spindle-Celled Sarcoma attached to Sciatic Nerve. (*Dr. A. Patterson.*)

The tumour is an oval-shaped one 3 inches in long diameter, and with a generally lobulated outline. It was enclosed in a capsule, (a portion of which lies at bottom of jar), which surrounded both tumour and sciatic nerve. On opening this capsule, the tumour was readily isolated and was found to have a very limited attachment to the nerve. The tumour is a soft one, its tissue being generally grey, but with a good deal of hæmorrhage. Under the microscope, it shows mainly large spindle cells.

The tumour was first noticed, by the patient, a year before its removal. On admission, it was found freely movable and painless on pressure, but the patient complained of occasional pain darting down the limb. *Path. Reports*, 15th February, 1883. No. 934.

SERIES X.

TUMOURS.

1. Soft Fibroma of Subcutaneous Tissue of Leg. (*Dr. A. Patterson.*)

There is visible externally a considerable swelling of the calf of the leg, the skin over it being somewhat rough and folded. On section, an elongated tumour is visible, measuring about 7 inches from above downwards, and lying between the skin and the underlying muscles. On the surface, the skin and a layer of fat can be seen, but the fat, although forming a distinct layer, is somewhat indefinitely demarcated deeply and is succeeded by the tumour tissue. This is of a whitish colour and somewhat soft consistence, considerably softer than tendon and almost like moderately firm fat. It shows also on section an indication of lobulation, like fat. It does not involve the muscle unless it be very slightly at the upper extremity, and it is removed from the bones by the whole thickness of the muscles of the calf.

Under the microscope the tumour is found to consist of soft fibrous tissue, with a considerable amount of adipose tissue. The fibrous tissue shows the usual wavy bundles, and it is more cellular than normal, there being a good many round cells as well as spindle cells. Here and there centres are met with in which the cells are specially abundant. The number of cells does not approach to that of a sarcoma. The adipose tissue is often in clusters of well formed fat cells, but sometimes these are isolated by the growth of fibrous tissue between them.

2. Fibroma of Lower Jaw (Epulis) Removed by Operation along with the half of the Jaw-Bone. (*Dr. H. C. Cameron.*)

The tumour occupies the external aspect of the jaw, outside the alveolar process. It has an irregularly lobulated outline, being convex externally and somewhat flattened on its internal

aspect next the jaw. It represents about half an oval, the long diameter, which is from before backwards, measuring 2½ inches. The tumour is covered with mucous membrane. It is attached by a somewhat narrow pedicle to the bone at or near the alveolus, and at a point corresponding with the first and second tricuspid teeth, which are somewhat pushed inwards by a localised projection of the tumour, but otherwise these teeth are apparently normal. The other teeth remaining in the jaw are a rudimentary loosened tooth, two bicuspids and a canine, the saw-cut having been made through the alveolus of the second incisor.

Under the microscope the tissue of the tumour is essentially wavy fibrous tissue, with pretty frequent inflammatory cells, especially near the surface. *Path. Reports*, 2nd June, 1883. No. 991.

3. Fibroma of Upper Jaw and Base of Skull. (*Prof. Geo. Buchanan.*)

The specimen shows the right superior maxilla with the tumour *in situ*, except a piece which is seen lying in the bottom of the jar, and which was removed after the main mass of the growth was extracted. The tumour is irregularly lobulated, and, although closely applied to the jaw, was at no point firmly adherent to it, its point of attachment being the base of the skull. The tumour was found (as will partly be seen in the specimen) lying on the anterior and lateral surfaces of the maxillary bone, passing under the zigoma and curving round the pterygoid processes into the posterior nares. The front portion of the tumour hangs down over the teeth. Under the microscope the tumour is found to consist mainly of connective tissue. In some parts an approach to spindle-celled tissue is observed, but even here there is a considerable amount of intercellular material, and it is probably the initial stage of connective tissue.

The symptoms were of three years' duration, and commenced with those of nasal polypi, several of which were removed by Dr. Foulis. About a year after, this swelling appeared in the right cheek, which gradually, without pain, increased, until the eyeball became so much protruded that the lids could not meet, and the right nostril was completely obstructed. Patient died on the evening of the operation. *Path. Reports*, 26th June, 1880. No. 568.

4. Lipoma or Fatty Tumour.

An oval tumour, about 3½ inches in long diameter. It is

finely lobulated, the lobules varying from a line or two to ¾ inch in diameter. It presents a distinct capsule on the surface. Under the microscope it is seen to be composed of adipose tissue. *Path. Reports,* 5th July, 1881. No. 688.

5. Lipoma or Fatty Tumour. (*Prof. Geo. Buchanan*).

6. Pendulous Fatty Tumour. (*Dr. A. Patterson.*)
A large pendulous pyriform tumour, 4½ inches in length by about 3 in breadth, attached by a narrow neck about 1¼ inch in diameter. The tumour is covered by delicate skin, and is composed of adipose tissue, with a considerable amount of connective tissue. *Path. Reports,* 25th February, 1880. No. 528.

7. Pendulous Fatty Tumour.
A tumour having very much the same characters as the preceding one, except that, although generally pyriform, it presents a number of smaller rounded prominences, surrounding which there are occasionally deep fissures. This tumour has been divided longitudinally, and it is seen that, while mainly composed of fat, there is, especially in the superficial parts, considerable induration caused by the new formation of dense connective tissue.

8. Portion of an immense Fatty Tumour from Neighbourhood of Kidney. (*Dr. A. Patterson.*)
This is a section of a piece of the tumour which was excised during life, the whole product of the operation weighing 26½ lbs. It consisted of great masses of fat, a good deal condensed by the formation of fibrous tissue. After death it was found that a considerable portion of tumour remained in the abdomen (about 10 lbs.), and that the part excised had left a cavity in which the left kidney was lying. So far as could be judged the tumour was entirely behind the peritoneum, and was intimately connected with, if it did not originate from, the fatty capsule of the left kidney. It occupied the position of spleen, stomach, kidney, and descending colon, these organs being pushed greatly forwards, downwards, and to the right, the edge of the kidney, for example, passing beyond the middle line. The diaphragm was pushed greatly upwards. *Path. Reports,* 14th and 20th February, 1884. Nos. 1133 and 1135.

9. Adenoid Tumour of Palate. (*Dr. A. Patterson.*)
The tumour is about the size of an orange, and more or less

globular in shape. The internal parts are broken and partly torn out; the material, which was soft, had a greyish, somewhat transparent appearance. The tumour itself had a distinct capsule, and consists mainly of transparent somewhat gelatinous looking tissue. In addition there are some harder parts apparently composed of condensed connective tissue. Under the microscope the main mass of the tumour is glandular, the gland tissue is irregular, but with well developed epithelium. In some parts the cells have undergone a mucous or colloid degeneration, so that the glandular spaces are filled with transparent gelatinous material. *Path. Reports*, 14th January, 1880. No. 511.

10. Myxoma of Parotid Gland. (*Dr. A. Patterson.*)

The tumour (which has shrivelled considerably) formed originally a mass as large as the two closed fists, and weighing 14½ oz. It is irregularly lobulated, and the lobules present smaller rounded projections. The tumour, viewed from the surface, presented a distinct grey transparency, which was still more marked on section, but more so towards the surface than deeper. In the central parts there were several cysts containing a gelatinous fluid.

Under the microscope the structure is that of a very cellular myxoma, the central parts being more cellular than the superficial.

The tumour was six years in growing, and was freely movable. *Path. Reports*, 31st January, 1879. No. 418.

11. Two Tumours from Neighbourhood of Parotid. (*Dr. A. Patterson.*)

The one tumour is about the size and shape of a turkey's egg, but its surface is highly nodulated. On section in the fresh state a clear transparent tissue was visible, with intersections of a more opaque appearance. Under the microscope the transparent tissue had the usual clear matrix and variously shaped cells of a myxoma. In the more opaque part there are masses of cells often suggesting glandular tissue in their arrangement. The tumour was of slow growth, and had its seat over the parotid gland, where it formed a very prominent growth.

The other tumour is of nearly the same size and shape, and is from the same situation. Its structure is more complex, consisting of cartilage, glandular tissue, and fibrous tissue. *Path. Reports*, 3rd August, 1878. No. 354.

12. Gigantic Tumour of Parotid. (*Dr. A. Patterson.*)

The tumour is of an irregularly globular shape, the surface presenting larger and smaller rounded prominences. A large piece of thin skin has been removed with and still covers a part of the tumour. The diameter of the tumour is generally about 6 inches, and its weight 6 lbs. 11 ozs. Being cut through, the tumour is seen to be mainly composed of a soft fleshy tissue, partly transparent and gelatinous in appearance and partly opaque; it has a central cavity filled with a gelatinous coagulum. The gelatinous portion, which is apparently the more recent part of the tumour, has the characters of the myxoma; the opaque parts forming the bulk of the tumour are abundantly cellular, the cells being generally elongated.

The tumour was removed from a woman 55 years of age; it had commenced 26 years before, had never caused any pain, and was quite freely movable; its circumference at the base was 21 inches. *Path. Reports*, 27th February, 1879. No. 429.

13. Lymphoid Tumour of Neck. (*Dr. G. H. B. Macleod.*)

A greyish tumour of irregular shape, the size of a small apple. On section there is a grey transparent appearance, and under the microscope it was seen to be mainly composed of round cells, the size of white blood corpuscles. *Path. Reports*, 19th November, 1879. No. 488.

14. Congenital Cystic Tumour of Scalp. (*Dr. G. H. B. Macleod.*)

The tumour, which is now collapsed, was the size of a pigeon's egg, and consists of loose-walled cysts, which contained a clear fluid. It was removed from a child six months old, its situation being above and to the outside of the right eye, part of it occupying the eyelid. *Path. Reports*, 18th November, 1875. No. 43.

15. Atheromatous Cyst from below the Tongue. (*Dr. J. G. Lyon.*)

The cyst was torn out after an incision had been made. It is about the size of a small apple, and contained a thick atheromatous material. *Dispensary*, 2nd August, 1880.

16. Simple Cyst of Thyroid. (*Dr. A. Patterson.*)

The cyst was in connection with the left lobe of the gland. It commenced to grow about 12 years back, and had increased so as to obstruct respiration. It was tapped several times and

a red fluid withdrawn, but again filling and causing laryngeal difficulty, it was finally removed. The wound became septic and the patient died of pyæmia. The cyst has a thin wall composed of connective tissue.

17. Spindle Cell Sarcoma of the Skin of the Leg, originating in a soft Wart. (*Dr. Borland*, Kilmarnock.)

The tumour is very prominent, having the form of a truncated cylinder about 1½ inch in diameter, and projecting nearly 1 inch from the general surface. On its lateral aspects it is covered with skin, but its summit is occupied by a dark brown material.

On section, the superficial parts are found to be occupied by blood clot variously altered. Deeply, there is a grey, softish tissue, which occupies about half the bulk of the projection. Under the microscope this grey tissue is found to consist of spindle cells.

Mrs. C., aged 52, had a soft wart for 30 years on the left leg, inside and below the knee. Six years ago, when her menses ceased, it began to increase in size, and became rounded, red, and like a cherry, but larger. It was covered by a thin skin. About six weeks ago, when about ⅔rds of its present size, it broke, and a watery fluid exuded. A clot gradually formed on the surface, bringing it up to its present size, but she never lost any blood by it. (Obtained from Dr. Borland, Kilmarnock, per Mr. M'Allister.) *Path. Reports*, 10th February, 1879. No. 424.

18. Round-celled Sarcoma of Skin of Forearm, with Ulceration. (*Dr. A. Patterson.*)

A somewhat prominent tumour, consisting of a raised marginal part and depressed central ulcer, giving the whole structure somewhat of a crater shape. The entire diameter of the tumour is about 3 inches. The prominent marginal part shades gradually into the skin, which in the preparation is preserved around it. In the fresh state the tumour was found, on section, to present a homogeneous grey medullary appearance. Under the microscope the tissue was seen to be composed essentially of round cells about the size of leucocytes.

The tumour was removed from a man aged 32. It began 4 months before as a small boil, which was burst by a fall on the part. Ulceration then began, and spread till a more or less circular ulcer was formed, with prominent margins. The skin for a considerable distance around was red, and there

was considerable pain in the tumour. *Path. Reports*, 6th February, 1882. No. 769.

19. Spindle-celled Sarcoma of Forehead. (*Prof. Geo. Buchanan.*)

The tumour is of elongated oval form and distinctly defined outline. On section it has a whitish colour, and close tough structure. It consists essentially of spindle-cells. *Path. Reports*, 10th February, 1876. No. 68.

20. Spindle-celled Sarcoma from the Back of an Infant. (*Dr. A. Patterson.*)

The tumour is of a flattened oval form, measuring 4 inches by 3 and $1\frac{1}{4}$ inch in thickness. It has a somewhat lobulated form, and is surrounded by a rather indefinite capsule. The tissue is of a grey colour, and, under the microscope, presents spindle-shaped cells of moderate size, the oval nuclei of which are large in proportion to the size of the cells.

The case was that of T. J., aged 7 months, from whom the tumour was removed by Dr. Patterson. Three months before, the mother of the child first noticed a small tumour the size of a bean, situated in the upper dorsal region, in the middle line. Growth was at first slow, but latterly very rapid. Before removal it was freely movable and painless. *Path. Reports*, 17th December, 1879. No. 404.

21. Spindle-celled Sarcomas of Shoulder with recurrence. (*Prof. Geo. Buchanan.*)

There are here three tumours, a large one and two smaller. The larger one is of a flattened circular shape and measures $3\frac{1}{2}$ inches in diameter. It was removed from the shoulder of a lady, from whom a tumour in the same situation had been removed 18 years before. On microscopic examination the tissue was found to consist of large spindle-cells with oval nuclei, the cells being somewhat loosely connected.

The other two tumours were removed from the same person two years subsequently, one of them being from the anterior fold of the axilla, and the other from the front of the shoulder. Both were very soft and presented occasional hæmorrhage. The tissue here also is composed of spindle-cells. *Path. Reports*, 12th Sept., 1876; 22nd Oct., 1878. Nos. 132 and 381.

22. Spindle-celled Sarcoma. (*Prof. Geo. Buchanan.*)

The specimen is a somewhat oval tumour weighing about two ounces, it was removed from the neck below the angle of

the jaw. On being removed the tumour was fleshy looking and soft, without any defined capsule ,and was coarsely fibrous in structure. On microscopic examination it was found to be a spindle-celled sarcoma. *Path. Reports*, 20th July, 1881. No. 698.

23. Sarcoma of Muscles of the Leg. (*Dr. G. H. B. Macleod.*)

From a man aged 45, admitted 28th May, 1881. The tumour, irregularly lobulated and as large as the clenched fist, occupies the outer aspect of the leg a little below the knee, and is situated in and among the bundles of peronei and other muscles taking origin there; some of the muscular bundles are lost in the substance of the tumour, others are pressed aside and flattened by it. The tumour has no connection with bone, but the surface of the fibula is slightly eroded by its pressure. Before dissection the tumour appeared to be very firm in consistency, but it was found that this was due to the deep fascia being tightly stretched over it, and at one or two points involved in the growth, and that the tumour itself was soft and pulpy. At one point the growth appeared like a small fungous mass outside the fascia. Microscopically the growth is almost wholly cellular, the cells being nucleated, of small size, some round and others oval.

Eight months after operation patient died with tumours about the head, one of which fungated much and bled profusely, and others existed in the lumbar glands. See *Journal*, No. 11 of Ward X, p. 85.

24. Soft Sarcoma of Forearm. (*Dr. Jas. Finlayson.*)

The forearm is occupied by a bulky tumour situated chiefly on its anterior aspect, and extending from the elbow downwards for about 5 inches. On section, it is seen to be irregularly lobulated, and composed of an exceedingly soft tissue, with occasional hæmorrhage. The tumour lies among the muscles of the forearm, having generally a layer of muscle between it and the skin. It is not connected with the bones of the forearm. Under the microscope little can be seen but small cells, most of them oval in shape, and some round, but none properly spindle-shaped. It had only been noticed about four or five months before death. Death occurred with pulmonary symptoms, and there were numerous tumours in the lungs, as shown in next preparation. *Path. Reports*, 26th March, 1880. No 539.

25. **Multiple Sarcoma of Lung, Secondary to Tumour of Arm.** (See preceding case).

The lung tissue is seen to be occupied by numerous smaller and larger white rounded tumours, which are more numerous towards the surface than deeply. The tumours are of a very soft consistence, and were much more numerous and softer in the other lung.

During life there were evident signs of pulmonary disease, which had lasted for two months, and were accompanied by physical signs, chiefly on the right side, of consolidation of the lung. *Path. Reports*, 26th March, 1880. No. 539.

26. **Pigmented Sarcoma of Leg penetrating into Knee Joint.** (*Dr. A. Patterson.*)

The tumour is of large dimensions, having its headquarters in the popliteal space, but to a great extent surrounding the lower end of femur, and more partially the upper end of the tibia. The tumour is in several masses—one larger than the closed fist in the popliteal space, one even larger in front of the femur, and several subordinate ones elsewhere. All the masses are of a brown colour, speckled with white, and are often somewhat tough. The tumour has extended among the intermuscular connective tissue, and has penetrated into the knee joint, whose ligaments and synovial membrane are largely converted into tumour tissue, which is here of a deep brown colour, and much softer than elsewhere. The patella presents a peculiar appearance, lying in the midst of the soft nearly black tissue. The cartilage of the joint is mostly preserved, but at one place the cartilage of the patella is slightly invaded. In its posterior aspect the cancellated tissue of the femur is partially invaded by the tumour.

Under the microscope the tissue of tumour is seen to be very cellular, large oval and spindle-shaped cells predominating. In the synovial membrane the cells are particularly abundant. *Path. Reports*, 17th January, 1880. No. 513.

27. **Myelogenous Sarcoma of Femur: Spontaneous Fracture.** (*Prof. Geo. Buchanan.*)

The tumour occupies the lower part of the thigh, and on a section of tumour and bone it is seen to have been extending in the medulla, where it reaches both upwards and downwards farther than elsewhere. The entire extent of the tumour from above downwards is about 7½ inches, and although the bony tissue of the shaft is not entirely replaced, yet in several places it is greatly destroyed, and at two places a fracture

exists—one of them in the midst of the tumour, and the other near its upper end. The tumour extends beyond the bone, forming a bulky mass among the muscles. It is tough in consistence, and under the microscope presents numerous spindle cells. *Path. Reports*, 4th March, 1878. No. 306.

28. Sarcoma of Humerus: Spontaneous Fracture. (*Dr. G. H. B. Macleod.*)

The upper end of the humerus is replaced by a tumour, which lies largely posteriorly, and, while involving the head of the triceps muscle impinges on the humerus so as to destroy it and replace it from behind. At its upper and lower extremities the tumour is separated from the bone by ragged fractures. In this way the head of the bone was loose, and the other fracture was about one third down the arm, the tumour itself being 3 or 4 inches in length.

The tissue is somewhat dense, and under the microscope presents spindle-celled tissue and a stroma, in which are large epithelioid cells.

The patient was a woman, aged 44, of a florid healthy appearance. The tumour was first noticed twelve months before admission, and shortly afterwards, when being rubbed with a lotion, the humerus broke after a slight twist. It was placed in a splint for three months without effect, and the arm was afterwards amputated successfully at the shoulder. *Path. Reports*, 2nd June, 1880. No. 559.

29. Sarcoma of the Humerus: almost Complete Destruction of the Bone. (*Dr. G. H. B. Macleod.*)

The preparation shows the half of this arm, and it is seen that the humerus is replaced by a large pyriform tumour, thickest above, the only part of the bone left being the condyles. The tissue of the tumour is soft, and here and there spiculæ of bone occur, but there is no indication of the outline of the humerus, which has completely disappeared. In the midst of the tumour and at the upper part there is an irregular cavity, probably due to softening of the oldest part of the tumour. Under the microscope abundant round and spindle-shaped cells are found, with pretty frequent fatty degeneration.

During life the first indication of disease was a fracture occurring on a trivial injury while dancing, the patient being a healthy looking young lady. This occurred about 18 months before death, and it was many weeks before the swelling of the arm became manifest, the only abnormal circumstance

being that the bone would not unite. Subsequently the other arm underwent a spontaneous fracture, and became affected in a similar way. The arm shown in this preparation was amputated at the shoulder, and a good recovery took place. The other arm was removed some months afterwards at her own urgent request (see next preparation) and she sank rapidly after that operation.

30. Sarcoma of Humerus. (*Dr. G. H. B. Macleod.*)
This is the other arm in section from the same case as No. 28, and it presents almost identical characters. Shortly after the amputation of this arm the patient sank.

31. Sarcoma of Humerus, displacing greater part of Shaft. (*Dr. G. H. B. Macleod.*)
The preparation is the upper arm divided longitudinally, including the elbow joint. At the lower part the ulna and its articulation at the humerus are visible, but above that, the humerus, for a distance of about 5 inches, is almost completely replaced by an exceedingly soft tumour tissue, which is expanded in every direction, so as to form a bulky oval mass about 3½ inches in diameter, the shaft of the bone being to this extent virtually awanting. At its lower extremity, as shown in a separate section in next preparation, the tumour seems to end somewhat abruptly in the bone, there being a place where tumour tissue and cancellated bone are directly in contact, and no appearance as if the tumour were specially invading the medulla. Under the microscope the tumour tissue is found to consist mainly of very large irregularly shaped cells with oval nuclei. Very often these are close together and resemble the nests of cancer cells, at other times a stiff fibrous intercellular substance is visible. The cells frequently contain pretty large drops of oil.

32. Sarcoma of Humerus: Displacing the Bone. (See preceding preparation.)
This is a portion of the same preparation as the preceding one. It shows more specially the merging of the tumour tissue in the bone.

33. Giant-Celled Sarcoma of Upper Jaw. Epulis. (*Prof. Geo. Buchanan.*)
The tumour is about the size of a flattened nut, and is covered with a smooth layer of mucous membrane. On section

its tissue was seen to be of a transparent grey colour, and under the microscope showed innumerable giant cells imbedded in a cellular tissue composed mostly of spindle cells.

The tumour was removed from the upper jaw of a child, aged twelve. It was seated over the position of the canine and tricuspid teeth. It is said to have been growing for six months. *Path. Reports*, 29th November, 1879. No. 494.

34. Myeloid Sarcoma of Lower End of Femur. (*Dr. G. H. B. Macleod.*)

The end of the femur is entirely occupied by the tumour, which has, for the most part, destroyed the bone and extended outwards among the muscles, which it has partially incorporated. At the joint the tumour is immediately beneath the cartilage, which, however, is intact. At what appears to be the upper end of the tumour, the shaft of the femur is broken across, and on sawing the upper fragment longitudinally it is seen that in the medulla the tumour has extended in a conical form for an inch and a half above the fracture, and that the internal layers of bone have been in process of erosion, the erosion being so far advanced at the lower part as nearly to destroy the dense bony tissue. The tissue of the tumour is mostly soft, in some parts pale, and in others brownish. There are occasional bony plates forming alveoli in which are soft masses of tumour, but this is by no means universal.

The leg was amputated by Dr. Macleod, 16th January, 1878. The limb was amputated at the middle of the thigh. Patient made a good recovery.

35. Sarcoma of the Scapula. (*Dr. J. G. Lyon.*)

The specimen consists of the whole of the right scapula except a small portion of the tip of the coracoid, which was not removed, and of a large tumour occupying chiefly the infra-spinous region of the dorsum, but extending also underneath the acromion into the supra-spinous fossa. The portion of the tumour in the infra-spinous fossa is much the largest, measuring about 4 inches in the vertical (which is its longest), and 3 inches in the transverse diameter. Its thickness from the surface to the dorsum scapulæ is about $1\frac{1}{4}$ inch. This portion is connected with that in the supra-spinous fossa (which is much smaller, but presenting the same microscopic characters) by a narrow neck. The ventral surface of the bone is filled up by tissue of the same kind as that composing the tumour on the dorsum. Notwithstanding the great amount of the bone invaded by the tumour, the general form

of the scapula is preserved, and its prominent points well seen. Although the same morbid tissue exists on both sides of the bone, the osseous tissue is found to be quite preserved, and gives out a ringing sound on being struck with the blade of a knife. On microscopic examination the tumour is found to consist of the same essential ingredients in all its parts—viz., large round cells, with here and there spindle cells arranged in longitudinal lines and intersected occasionally by connective tissue. In the portion of the tumour over the infra-spinous process small, hard, gritty spiculæ are felt, and on examining them with the microscope they present all the characters of bony tissue in the form of trabeculæ. In some of the sections distinct muscular fibres were seen mixed up with the cellular elements.

36. Sarcoma of Rib extending to Arches of Vertebræ and Theca of Cord, and causing Softening of Cord. (*Dr. W. T. Gairdner.*)

The 9th rib (right) is replaced by a bulky tumour whose structure, as shown in transverse section, is somewhat cribriform, and which contains spiculæ of bone. The tumour extends to the anterior aspect of the vertebræ, but does not apparently involve the bodies to any considerable extent. It also extends to the arches, which are softened. The tumour tissue was found occupying the dura mater of the cord, where it formed a somewhat bulky mass of soft grey tissue, the cord itself being narrowed and softened for about the distance of an inch.

The patient was a man æt. 45, who had been ill for about five months before his death. The earliest symptom was a dull aching pain in the right lumbar region, which did not at first disable him, but ultimately obliged him to give up work, without being conscious of any loss of power in the limbs, till five weeks before death. At this time both motor and sensory paralysis appeared simultaneously and made rapid progress, with retention and subsequently incontinence of urine. Entire want of control over the alvine evacuations followed within a few days, with complete loss of sensation, except that the pain and a certain amount of the "girdle sensation" had passed over to the left side, the limit of impaired sensibility being about the level of the umbilicus, on both sides. There was no "hyperæsthetic zone," and the progress of the disease was not marked by any unusual sensations in the affected limbs, the reflexes being almost wholly lost. Temperatures, while under observation, more or less febrile, the maximum 102·2.°

A large bed-sore had formed over the sacrum before death. There was unconsciousness, with stertorous breathing shortly before death, but no abnormal appearances in the brain. *Path. Reports*, 12th July, 1883. No. 1008.

37. Sarcoma of Vertebræ, Penetrating into Spinal Canal. (*Dr. G. H. B. Macleod.*)

The tumour is an exceedingly soft one, and it occupied the left side of the lumbar vertebræ, infiltrating on the one hand the psoas muscle, and on the other hand partially destroying The tumour has extended into the canal, but remains outside the fourth, and to a less extent the third lumbar vertebra. the theca, which it pushes before it, compressing the spinal cord. In the psoas muscle the tumour formed a bulky mass immediately beneath the level of the kidney.

The patient, a man æt. 23, was healthy till about four or five months before death, when he fell a height of 6 or 7 feet. After that pain occurred in the back and legs, and after a time he lost power in both legs, and control of his bladder and rectum. The power in the right leg returned. After admission a tumour was detected in the left lumbar region. *Path. Reports*, 28th May, 1878. No. 330.

38. Round-Celled Sarcoma of Thyroid; Penetration of Trachea; Formation of Cysts. (*Dr. W. T. Gairdner.*)

There is a bulky tumour occupying the position of the thyroid, and intimately connected with the trachea. It has replaced the middle, and most of the lateral, portions of the gland, but has grown more to the left than the right. On either side the extreme upper part of the gland has escaped; but more of the gland remains on the right side than the left, as shown in a piece hung separately. The lower part of the growth is greatly prolonged downwards by the formation of two cysts which lie one above the other, being separated by a septum. The lower cyst reached down into the chest as far as upper extremity of pericardium. The upper one measures 2 inches and the lower $1\frac{3}{4}$ inch in diameter. They contained a brownish fluid, with abundant crystals of cholestearine suspended in it. These cysts are generally thin-walled, but in the septum between them, and to some extent elsewhere, there is tumour tissue present, and this tissue pouts into the upper one from the tumour above it. It is observed, also, under the microscope that, in the septum between the two cysts, there is not only tumour tissue, but some altered gland structure in the form of contorted spaces.

The trachea is considerably incorporated in the tumour, which pouts into its left side (as shown in preparation), obstructing the calibre to a great extent, and presenting an ulcerated surface. The wall of the œsophagus is also considerably bulged by a rounded swelling, but is not apparently incorporated in the tumour. The arteries are not involved in the tumour, but the neighbouring veins show tumour tissue in their walls.

The tumour shows microscopically round-celled tissue, the cells being about the size of leucocytes. In many places there are spaces like those already mentioned as having the characters of remains of thyroid tissue, and sometimes a piece of colloid substance appears. On examining the part where the tumour and gland tissue are continuous, it is seen that the round cells are penetrating between the glandular follicles, and the latter are undergoing atrophy. In the part of the gland which is not incorporated, the follicles are often much enlarged and filled with colloid material, and, in fact, cysts are visible to the naked eye.

The case was that of a man aged 21, who was admitted with dyspnœa of an extreme character, permanent, but with paroxysmal exaggeration even on slight exertion. The illness was stated to have been of three or four months' duration. A tumour occupying the lower neck and mediastinum, and displacing the trachea backwards, was easily detected, but in a position only admitting of palliative treatment. Death occurred from exhaustion. *Path. Reports*, 29th May, 1884. No. 1193.

39. Small-celled Sarcoma of Great Toe. (*Dr. John Young.*)

The preparation shows the great toe divided longitudinally. There is a bulky tumour distending the toe and presenting on its upper surface, where the skin is awanting, a prominent brown fungating crust. Around this the skin is intact, except where it has been dissected off in amputation. On section it is seen that while the last phalanx with skin and nail are apparently intact, the second is buried in the midst of the bulky tumour, only its two extremities being distinctly visible. The bone in the middle of the shaft is somewhat impinged on by the tumour, but its continuity is preserved, and the appearance is not as if the tumour had originated inside the bone, but rather from the periosteum. On microscopic examination the tumour tissue, which is very soft, is found to consist mainly of small cells, round and oval.

The case was that of a girl aged 17, whose toe had been swelling for about a year. About ten weeks before its removal, a country doctor cut into the toe, and this relieved pain, but a fungating mass protruded from the incision. *Path. Reports*, 20th July, 1884. No. 1222.

40. Pigmented Sarcoma of Great Toe. (*Dr. H. C. Cameron.*)

A bulky tumour occupies the distal end of the great toe, completely replacing skin and nail on the dorsal surface of the distal phalanx nearly to its entire length, and extending on the plantar aspect about half the length of this phalanx. On section the tumour is seen to replace the soft parts in the regions involved, but it stops short at the bone, from which its tissue has somewhat the appearance as if it radiated. The tumour presents in some parts a deep brown or black colour, but in others parts is considerably paler or even white. Under the microscope the tissue is found to be mainly spindle-cells, with other variously shaped cells. In the pigmented parts the shapes and sizes of the cells vary much, there being round, spindle-shaped, and even giant cells. The pigment is contained in the cells. *Path. Reports*, 19th April, 1882. No. 806.

41. Multiple Melanotic Sarcoma: Primary Tumour. (*Dr. G. P. Tennent.*) (See also next four preparations.)

An oval piece of skin is hung highest in preparation, and this is believed to contain the primary tumour. It consists of a circular pigmented spot, three-quarters of an inch in diameter, and was situated on the posterior aspect of the right forearm. It is scarcely at all raised above the surface, and the central parts have a cicatricial appearance, being nearly free from pigment. According to the statement of patient during life, this spot had existed for years, and was present long before any of the secondary tumours.

42. Multiple Melanotic Sarcomas: Tumours in Subcutaneous Tissue and Brain.

Here are shown three black tumours in section, their seat being the subcutaneous tissue. The lowest of the three was excised during life. Besides these subcutaneous tumours there were very many others in different parts of the face, neck, body, and limbs. Some of these were very large, one particularly on the right side of the neck projecting very prominently.

Beneath the subcutaneous tumours are hung four small pieces of the brain, in each of which is shown a small black

tumour. These were all in the superficial parts of the convolutions, except one which occupied the surface of the caudate nucleus of the corpus striatum.

43. Multiple Melanotic Sarcoma: Tumours in Pharynx, Larynx, and under Skin.

The posterior wall of the pharynx shows a massive brown tumour, which projects towards the base of the tongue, covering up the upper aperture of the œsophagus. The laryngeal mucous membrane, including the vocal cords, is involved in a pigmented tumour which is partly ulcerated. This tumour was seen during life to be much more prominent than in the preparation. Beneath the skin in front is shown in section a small part of the large prominent tumour already mentioned.

44. Multiple Melanotic Sarcoma: Tumours in Intestine.

Two pieces of intestine are preserved. One shows a bulky tumour which, having its centre at the mesenteric attachment, bulges to each side, involving the coats of the intestine. It surrounds the gut, except for a space of half an inch. The other tumour is much smaller, but it also nearly forms a girdle. There were a few black tumours of small size in the mesentery.

45. Multiple Melanotic Sarcoma: Tumours in Heart and Muscles.

The preparation hung uppermost represents half of the auricles of the heart divided from above downwards. A bulky black tumour occupies and distends the inter-auricular septum. There were other tumours in the heart's substance, one in the wall of the auricle, and one in that of each of the ventricles.

Beneath this are hung two pieces from the muscles. The left arm was greatly swollen, and on cutting into it the muscles generally were found infiltrated with and partly replaced by black tumour tissue, which was often very soft. The right arm also presented tumours in the muscles, and as they were here swollen it could be seen that they often followed the muscles and tendons, one elongated mass in particular curving round the radius in the position of the tendon of the extensor policis.

There were no tumours in the lungs, and none in the substance of the kidneys, although a large one existed in front

of the hilus of the right kidney. There were no tumours in stomach, spleen, liver, uterus, or ovaries, although the left ovary contained a considerable cyst.

Under the microscope the tumour tissue is seen to consist of masses of cells, mostly of large size and of various shapes, many being spindle-shaped. These are not arranged in alveoli, nor is there any definite stroma. The cells have oval nuclei. (This case is fully described in the *Glasgow Medical Journal*, August, 1885, and photo-prints showing the appearances during life are hung in the Museum.) *Path. Reports*, 12th June, 1884. No. 1203.

46. Epithelioma Developing from a Chronic Irritation. (*Dr. G. H. B. Macleod.*)

The tumour is a flat oval one covered with skin. The skin is furrowed by cicatrices and penetrated by sinuses. The tumour itself is rather irregular, being interrupted by sinuses, &c. Its structure is cellular, and the cells have epithelial connections and a tendency to the epithelial form.

There had been sinuses in the buttock for six or seven years, and latterly a distinct and prominent tumour developed. *Path. Reports*, 24th June, 1876. No. 110.

47. Epithelioma of Leg in an old Cicatrix. (*Dr. H. C. Cameron.*)

The specimen shows the whole of the left leg from the upper to the lower end of the tibia. Healthy skin, as indicated by the presence of hairs, is seen above and below, and between these parts the leg is surrounded by a tense white, hairless, unwrinkled cicatrix, more extensive in front than behind. In the centre of the cicatrix, and situated over the middle of the anterior edge of the shaft of the tibia, is seen a circular ulcer about the size of a two-shilling piece. Its edges are much thickened and coated with dense epithelial elements. The floor of the ulcer is formed by bone, so soft as to be easily removed by the point of a knife. Microscopical examination of this soft bone shows it to consist of masses of epithelial cells, with small spicules of bone interspersed.

The leg was amputated from a man, aged 36, who, when 10 years old, was severely burnt on both limbs. It was ten years before the sores healed. Six years ago, he injured his left leg about the centre of the shin; this cicatrised in about three months. Six months back, a warty growth appeared at the seat of the present ulcer, into which it gradually developed. The ulcer was extremely painful, both on its surface and in its

neighbourhood for some distance round. *Hosp. Reports*, Ward XX. Vol. vi, p. 48.

48. Epithelioma of Tongue (Rodent Ulcer). (*Dr. G. H. B. Macleod.*)

The preparation shows half the tongue removed by operation. The affected part is on the right lateral aspect, and for the most part on the under surface. It consists of a superficial ulcer of an oval shape, and about the size of a shilling. It is slightly excavated, and has a somewhat warty or villous surface. The margins are not distinctly elevated, but they presented, in the fresh state, a feeling of induration. Under the microscope epithelial masses were found, penetrating deeply and sometimes with a somewhat glandular appearance.

49. Epithelioma of the Tongue, two cases. (*Dr. G. H. B. Macleod.*

In the one case the tongue has been divided longitudinally, and in the other transversely, in order to show the penetration of the epithelioma. In the one divided longitudinally, the external surface shows an ulcer about the size of a shilling piece, with its anterior margin about half an inch from the tip of the tongue. The ulcer is slightly excavated and has a somewhat warty surface. On the cut surface it is seen that a white tissue interrupts the muscular substance to an extent corresponding with that of the ulcer, there being muscular tissue in front as well as behind. A small recent hæmorrhage is visible in front of the infiltrated part. The case was that of a man aged 58, a gardener. The lesion was stated to be of 8 weeks' duration, and began as a small lump on the side of the tongue. There was sharp stinging pain experienced, which extended to the ear on the affected side. The surface bled on pressure. He has always smoked a short pipe. Patient made a good recovery from the operation. *Path. Reports*, 27th December, 1882. No. 887.

In the other case there is a much larger ulcer, latterly extending from the inferior surface to the dorsum, where there is a considerable prominence. The anterior margin of the tumour is about 1½ inch from the tip of the tongue. On section it is seen that the white epithelial tissue penetrates deeply into the substance of the tongue, almost reaching the middle line where the organ has been divided at the operation. The patient was a man aged 50. He noticed a blister on the side of his tongue eight months before admission; this broke and allowed a raw surface to be fretted by a short pipe

which he smoked. It was burned with caustic in England, but it only grew worse. He complained of severe pain in the tongue, extending to the ear and back of head. This case also recovered well after amputation. *Path. Reports*, 7th December, 1882. Nos. 886 and 887.

50. Cancer of Lower Jaw. (*Prof. G. Buchanan.*)
The tumour is a bulky one (Mrs. ——, with Dr. Taylor, Paisley), as large as an apple, attached to the body of the right side of the jaw, projecting on either side of and below the jaw. By a section made through it, it is seen to be attached to the periosteum, but not to involve the bone. The principal part of the tumour is to the inside of the jaw, and here it must have occupied the floor of the mouth, its outline at this part being less definite than elsewhere. On microscopic examination the structure is that of epithelial cancer, there are processes of flat epithelium, as well as more glandular looking structures, and these exist both in the deep and superficial parts.

51. Cancer of Lower Jaw.
The tumour and portion of jaw were excised by Prof. George Buchanan in the Royal Infirmary on 26th November, 1873.

52. Soft Cancer of Sacral Region. (*Dr. G. H. B. Macleod.*)
The tumour is about the size of an orange, and protrudes through the skin in the form of an oval fungating projection. On section the tissue is found to be very soft and superficially infiltrated with blood. Under the microscope there are abundant flattened cells of large size and with oval nuclei. The tumour was removed from the sacral region of a woman over 40 years of age. A tumour like a wen was originally removed, and the present growth returned in the cicatrix. It grew rapidly and latterly formed a bleeding fungating mass. *Path. Reports*, 25th December, 1878. No. 407.

53. Epithelioma of Lymphatic Gland, secondary to that of Vulva. (*Prof. Geo. Buchanan.*)
This preparation and the next one are from the same case, of which the following is a brief account. There was primarily an epithelioma of left side of vulva which was excised, the wound healing perfectly. At the *post-mortem* it was seen that the vulva was awanting on the left side, the parts presenting a smooth scarcely perceptible cicatrix. There was a distinct swelling in the groin, on cutting into which the conditions

shown in this preparation were found. There is a large flattened oval tumour 3 inches in diameter. Externally, it is formed of a grey tissue having all the characters, microscopic and other, of an epithelioma. This tissue forms a wall about $\frac{1}{4}$ to $\frac{1}{2}$ an inch in thickness, and encloses a very irregular cavity filled with crumbling debris. In this preparation we have a lymphatic gland completely replaced by epitheliomatous tissue which has broken down in the central parts.

54. Multiple Tumours in the Heart, from preceding case.

We have here pieces of the heart showing in section a few of the tumours which existed in its muscular substance. These are pale and somewhat granular on section, and of various sizes, the largest being half an inch in diameter. These were found in every region, including the auricles, but more abundantly at the basal parts of the ventricles.

There were also tumours subcutaneously in various parts of the body, some of considerable size, at least an inch in diameter, and the larger ones with cavities in their central parts. The lungs, spleen, and kidneys also contained tumours. *Path. Reports*, 22nd February, 1884. No. 1137.

55. Scirrhous Tumour of the Mamma (Secondary Tumours in Liver, Lungs, Spleen, and Heart). (*Dr. G. T. Beatson.*)

The tumour is a large one, measuring about 3 inches by $1\frac{1}{2}$. It has the usual characters of scirrhus, replacing the gland and connecting itself with the nipple. Under the microscope it presented a coarse stroma with the usual large epithelial cells.

In this case, after removal of the primary tumour here shown, the disease recurred in the wound, spreading to the skin around. It also became generalised, tumours appearing in the other mamma, skin, heart, liver, lungs, kidneys, spleen, uterus, mesentery, &c. (See the following four preparations.) *Path. Reports*, 30th June, 1881. No. 686.

56. Liver containing very numerous Secondary Cancerous Tumours (from preceding case of Cancer of Mamma.)

Only the upper surface and half of the organ is shown. The whole surface is seen to be studded over with light-coloured round nodules, varying in size from a millet seed to a hazel nut. Some of them tend to be umbilicated, and others have run together so as to form much larger areas, leaving traces of the point of union of the individual nodules.

57. Secondary Cancer of Lung (from preceding case of Cancer of Mamma).

On the surface of the lung there are innumerable pale, flat elevations, mostly of small size and rather indefinite outline. These new formations are situated under the pleura, while in the lung itself there are few tumours, and these associated with the large vessels and bronchial tubes, forming to the naked eye thickenings around these as if the vessels were enclosed in a solid sheath.

58. Secondary Cancer of Heart (from Cancer of Mamma, No. 53).

The heart presents an excess of external fat, but occasionally, in the midst of the fat or on a surface free from fat, a pale rounded disc-shaped growth is visible.

59. Secondary Cancer of Spleen (from Cancer of Mamma, No. 53).

The spleen, which is considerably enlarged, contains numerous pale tumours, generally about $\frac{3}{8}$ths inch in diameter. There were also small tumours in the wall of the uterus, broad ligaments, and ovaries.

The appearances in these four preparations indicate that the secondary extension here has been by the systemic arterial system, the new formations in the lungs being related to the bronchial artery, which supplies the pleura and supporting connective tissue. Under the microscope the tumours in all regions present typically cancerous structure. *Path. Reports*, 30th June, 1881. No. 686.

60. Portion of a Bulky Cancerous Tumour of the Neck and Face. (*Dr. G. H. B. Macleod.*)

The tumour was a very prominent one, with abrupt overhanging edges, the surface of the tumour being in many places $\frac{3}{4}$ of an inch or 1 inch above the general level, and the margins frequently overhanging the skin for half an inch or more, as shown in the preparation. The surface of the tumour has a rough warty appearance, and on section it is seen to penetrate somewhat deeply among the soft parts. The cut surface shows a somewhat glandular appearance, and under the microscope a typically cancerous structure is shown, masses of large epithelial cells, in variously shaped spaces, forming the structure of the tumour.

The tumour was an exceedingly bulky one, replacing the

skin over a large extent of surface, and producing a very ghastly appearance. It occupied almost the entire right side of the neck, from the middle line in front to a considerable distance behind the ear. It passed somewhat on to the face over the edge of the lower jaw.

The tumour was first noticed by patient a year before death, as a hard nodule below the jaw. On admission to the hospital about 4 months afterwards, a hard irregular growth, to which the skin was adherent, and red, and tense, was found, and there was already some interference with mastication. It increased greatly in size and became extremely painful. Latterly it interfered somewhat with respiration and deglutition, and before death patient was excessively emaciated. *Path. Reports,* 25th January, 1882. No. 762.

61. Melanotic Cancer of Axilla, secondary to Tumour of Thumb. (*Dr. G. H. B. Macleod.*)

The tumour is a mass of a flattened oval-shape, about 4½ inches long and 2½ inches broad. It is almost coal black in colour, both on the surface and on section. The tissue is exceedingly soft and friable, and the cut surface gives off a dirty brown smear and is very slippery. On microscopic examination there are abundant cells of various shapes, but mostly large and with large oval nuclei. Most of them are colourless, while many are full of deep brown pigment. The stroma consists of beautiful trabeculæ, the thicker of which bear blood-vessels.

About a year before removal of the tumour, the patient, a man of 52, saw Dr. Macleod with a fungous ulcer on the extremity of the last phalanx of the thumb, caused by a chip of wood being driven below the nail. This healed after removal of the nail, with improvement of the general health, but in a few months he returned with the thumb still worse, and the last phalanx was amputated. A tumour the size of a walnut was first noticed in the axilla two months before operation, and it rapidly grew to its present size when it was excised. Within six weeks the growth recurred. Nothing further was done. He fell in getting over a wall, the tumour burst, and he died, as a result of the profuse bleeding. *Path. Reports,* 10th February, 1879. No. 422.

SERIES XI.

PARASITES.

1. **Mouse with a Favus Crust on its Head.**
The crust occupies the forehead and vertex, and has completely closed the right eye. Microscopic examination showed this to be true favus.

2. **Madura Foot.** (*Dr. Blaney.*)
This is the foot of a Hindoo, sent from Bombay by Dr. Roland Blaney, the leg having been amputated by him. The foot has been divided across the middle of the heel, and the anterior and posterior parts placed in different jars. (See next preparation.) The skin surface shows a number of rounded apertures which are pale as compared with the general dark skin. The subjacent tissue pouts at some of the apertures, which have some resemblance to the openings of sinuses in strumous disease of bones. On the cut surface it is seen that somewhat wide canals traverse the tissues, not excluding the bones, and that the canals contain a granular black material.

3. **Madura Foot—portion of preceding preparation.**

4. **Pieces of the Liver of an Ox affected with Distoma Hepaticum.** (*Dr. G. T. Beatson.*)
The hepatic ducts throughout are the seat of very striking changes, namely, great distension with debris, which in many cases has a cretaceous character, and in which are the remains of flukes, many of them also cretaceous, also, great thickening of the wall by connective tissue. These two conditions together produce the effect that the ducts are frequently almost impassable. In addition, throughout the hepatic tissue, the smaller ducts are surrounded and in many cases narrowed by new formed connective tissue so as to produce an approach to cirrhosis.

5. Liver of Ox affected with Distoma Hepaticum. (See preceding preparation.)

6. Liver of Sheep affected with Distoma Hepaticum. (*Dr. G. T. Beatson.*)

Throughout the liver the hepatic ducts are greatly dilated, the dilatations frequently assuming a partially sacculated character. Many flukes were found in the ducts, sometimes isolated, sometimes in groups, and there was also occasionally a considerable mass of brown debris. Beyond the dilatation the ducts are not appreciably altered, their walls not being considerable thickened, while there is none of the cretaceous deposition met with in the preceding specimens from the ox.

7. Ascaris Lumbricoides passed by a Child.

8. Trichina Spiralis in Diaphragm.

The muscular substance of the diaphragm is exposed on one surface, and numerous minute white ticks are shown, each of them being a capsule with coiled up embryo. There were similar parasites in all the voluntary muscles down to the palmar and plantar interossei. The condition was accidentally discovered, *post-mortem*, in the Royal Infirmary, in a middle aged man who had been a soldier. Nothing is known as to the history in relation to trichiniasis; but the fact that the capsules are generally much calcified, and the embryos frequently dead, indicates that the case was probably an old one.

9. Tænia Solium.

The worm is of the usual size and shape, the head being absent.

10. Tænia Mediocanellata.

The whole worm is not preserved, but bits of it at different stages of development. The head was not found.

11. Tænia Mediocanellata. (*Dr. Joseph Coats.*)

Fifteen feet of the worm as passed by a patient are present, but the head was not found. The narrowest part is $\frac{1}{4}$ inch broad, gradually increasing to the middle of the worm where the proglottides are $\frac{5}{8}$ths of an inch broad and about the same in length. From this downwards they get longer and narrower till the terminal ones, which are an inch long and only $\frac{1}{4}$ inch broad, and separate very readily. These last contain a uterus,

having somewhat ramifying branches. *Path. Reports,* 10th June, 1878. No. 335.

12. Bothriocephalus Latus. (*Dr. A. Patterson.*)

The worm here is in several pieces and the head is absent. The narrowest part is $\frac{5}{16}$ths of an inch in breadth, and here the proglottides are only indicated by transverse markings, of which there are 13 to the inch. It gradually gets broader and thicker, but even when it has attained its greatest breadth of half an inch the proglottides are still eight to the inch. They remain of the same breadth, increasing after a time in length till the last 12 to 18 are over a quarter of an inch in length and less than half an inch in breadth. These terminal proglottides have also changed their shapes, being now nail-shaped and somewhat loosely attached.

13. Cysticerci in Omentum of Rabbit.

The omentum is seen to be furnished with large numbers of variously sized cysts. On examination these are found each to contain a cysticercus head with a short neck terminating in an oval vesicle. The head is mostly retracted within the neck.

14. Hydatid Cyst of Kidney. (*Dr. G. P. Tennent.*)

The kidney was replaced by a large tumour consisting of a nearly globular cyst. At the lower end of the tumour there is the remains of the kidney seen in section in the preparation, and it is as if the cyst had opened up and pushed aside the kidney tissue without producing any other considerable alteration. The cyst was filled with pultaceous material like very soft putty, which was found to consist mainly of oil and cholestearine with some lime salts. The wall of the cyst is partly infiltrated with lime, and the internal surface has a very irregular appearance not unlike that of the aorta in advanced atheroma.

On dividing the cyst the kidney and suprarenal capsule are found to be spread out to a considerable extent on its anterior and inner surfaces. The pelvis of the kidney being greatly elongated. The cyst itself has no connection with the pelvis, and its wall is quite distinct from the kidney tissue, although firmly adherent to it.

In the cyst were many irregular pieces of soft membrane, portions of which are preserved in the next preparation. *Path. Reports,* 1st April, 1881. No. 647.

15. Pieces of Membrane from the foregoing.

They are of various sizes and thicknesses, and under the

microscope present a structureless appearance, and are often in layers. They have been separated from the pultaceous material by boiling in alcohol.

16. Hydatid Cyst of Right Kidney. (*Drs. J. Lindsay Steven, and John Fotheringham.*)

The specimen shows that the kidney has been converted into a large loculated cyst, measuring in greatest length 7½, in breadth 4½, and in depth about 3 inches. Practically no renal tissue remains; the upper portion of the tumour has adhering to it a portion of the diaphragm. The ureter is seen with a piece of whalebone passed through it into the interior of the cyst; it is very greatly dilated, and its walls are much thickened. The cavity was filled with daughter cysts, which readily escaped when the thin anterior wall of the tumour was ruptured at the *post-mortem*. Some of them are seen lying at the bottom of the jar, and a few have been replaced within the parent cyst. An examination of the contents of these cysts showed that they were filled with a clear non-albuminous fluid, in which small white granules were floating, which, on microscopic examination, proved to be the echinococcus heads. Half of the opposite kidney is also seen, and its surface presents a coarsely nodulated appearance. On microscopic examination the organ, in addition to presenting considerable interstitial new growth, is seen to be the seat of extensive amyloid disease.

The case occurred in the practice of Dr. Fotheringham of Motherwell, and was seen on two occasions by Dr. J. Lindsay Steven in consultation with that gentleman. The patient was a married woman, æt. 30, and came under observation on account of symptoms of acute Bright's disease of about two months' duration. About a fortnight afterwards a tumour was discovered filling the right lumbar region. Suddenly, after pain complained of in the line of the right ureter, a number of cysts were discharged along with a quantity of pus. These discharges occurred at longer or shorter intervals until the patient's death a month or two afterwards. (For fuller account see Transactions of the Glasgow Pathological and Clinical Society, and also *Glasgow Medical Journal*, December 1884, Vol. xxii, p. 427; and June, 1885, Vol. xxiii, p. 429.)

17. Daughter Cysts discharged during life by the Ureter and Urethra, from preceding case.

The specimen shows daughter cysts of precisely the same nature as those exhibited in preceding preparation. They

are mounted in glycerine. The large one was ruptured before discharge, but the smaller ones came away entire. The discharge was preceded by symptoms closely resembling those of renal colic.

18. Scolex of Tænia Cœnurus from Brain of Sheep. (*Mr. Jas. Watson, Student.*)

This preparation consists of a very thin walled cyst, which has been turned outside in and tied over a glass ball. At certain places on the surface are small projections in groups. These under the microscope present all the characters of tape-worm heads, there being four sucking discs and a circle of hooklets in each. This cyst was contained inside the cyst in the brain, shown in next preparation.

19. Part of Brain of Sheep with Cyst from which previous preparation was taken.

There is an oval cyst on basal surface of temperal lobe, which separates the structures considerably. The cyst is composed of connective tissue. The sheep was affected with "staggers."

SERIES XII.

CALCULI and CONCRETIONS.

(For the convenience of the Surgeons the Calculi removed by each operator have been placed in a separate compartment and numbered accordingly.)

Prof. Geo. Buchanan's Series.

[The calculi have been bisected and one half retained by Prof. Buchanan in his private collection. The numbers within brackets refer to the latter.]

1. Uric Acid Calculus.

An oval stone three-quarters of an inch in length, composed of uric acid in variously coloured layers. The stone is one of two removed by Prof. Syme, Sept., 1861. There were several others subsequently removed by lithotrity, and the patient ultimately made a good recovery.

Mr. B., aged 64, resided in Glasgow and Irvine. Symptoms of several months' duration. Operation lateral. Tube used, but removed in 24 hours in consequence of pain. Result—cure. (See paper in *Edinburgh Medical Journal* for July, 1868. Case 2.)

2. (7.) Phosphatic Calculus.

Composition, phosphates 60 per cent, lithates 30 per cent. Removed 16th Nov., 1861. Broken pieces of a calculus are preserved. There were two removed together by lithotomy.

S. E., aged 11, Bridgeton, Glasgow. Symptoms of 9 years' duration. Operation by rectangular staff. Result—cure.

3. (8.) Uric Acid and Phosphatic Calculus.

Weight 150 grs. An oval stone, $1\frac{1}{4}$ inch in diameter, with central nucleus of uric acid in layers, and larger superficial

portion of white phosphates. Removed 20th Feb., 1862, in Royal Infirmary, Glasgow.

Jessie W., aged 6. Symptoms, 1 year. Operation by rectangular staff, through nymphæ. Result—cure. (For particulars see *Medical Times and Gazette*, 3rd May, 1862.)

4. (9.) Uric Acid and Mixed Phosphate Calculus.

Weight, 272 grs. An irregularly oval stone, 1½ inch in diameter, with nucleus of uric acid, and principal part of mixed phosphates. Removed 19th March, 1862, by rectangular staff, at Royal Infirmary.

R. K., aged 16. Symptoms for 6 years. Result—cure. After operation there was some hæmorrhage, necessitating use of tube and plugging.

5. (10.) Phosphatic and Uric Acid Calculus.

A nearly round stone, weighing 236 grs. and measuring 1⅜ inch, with a minute nucleus of uric acid, the rest being phosphates.

C. F., aged 74. Operation at G. R. I., July, 1862, by rectangular staff. Patient much exhausted before operation; hæmorrhage after each sounding; enlarged prostate. After operation, bleeding from vascular urethra. Death in one hour from shock and hæmorrhage.

6. (13.) Calculus of Uric Acid Coated with Phosphates.

An oval stone, weighing 237 grs. and measuring 1¼ inch, the central part composed of uric acid, with coating of mixed phosphates. The outer part fuses readily with blow-pipe.

W. M., aged 7. Operation at G. R. I., 7th Nov., 1863, by rectangular staff. Symptoms for one year. Result—12th November, urine by urethra—5th December, cure.

7. (14.) Phosphatic, Fusible Calculus.

An irregularly oval stone weighing 236 grs. and measuring 1¼ inch, composed chiefly of phosphates, which fuse readily in blow-pipe flame.

J. G., aged 6½. Operation at G. R. I., 7th November, 1863, by rectangular staff. Symptoms for one year, aggravated during last month. Prolapsus ani. Result—12th November, urine by urethra—4th December, cure.

8. (15.) **Calculus of Uric Acid and Phosphates.**

An oval calculus, weighing 103 grains and measuring 1 inch, with a nucleus of uric acid $\frac{3}{8}$ inch in diameter, then a layer of mixed urates, and finally a coating of fusible phosphates.

J. S., aged 3 years. Operation at G. R. I., 6th January, 1864, by rectangular staff. Symptoms for one year. Result—17th January—cure.

9. (18.) **Uric Acid Calculus.**

A small oval stone, weighing 26 grs. and measuring $\frac{9}{16}$ inch. There was also a smaller one weighing 16 grs.

A boy, aged $2\frac{1}{2}$ years. Operation at G. R. I., on 17th August, 1865, by rectangular staff and scoop. Result—cure.

10. (19.) **Uric Acid Calculus.**

An oval reddish-brown stone, with softer nucleus, weighing 170 grs. and measuring $1\frac{5}{16}$ inch. It burns away gently in blow-pipe flame.

J. L., aged 6 years. Operation in G. R. I., 25th November, 1865, by rectangular staff. Symptoms uncertain; said to be for years. Discharged well, 6th December.

11. (21.) **Calculus of Uric Acid Coated with Phosphates.**

An oval calculus, one of five, the whole of which weighed 289 grs. A reddish central part with coating of phosphates.

Mr. W., aged 65. Operation at Cambuslang, by lateral incision; tube left in for forty-eight hours. Symptoms for several years, with great vesical irritation. "There were five calculi, each about the size of a Spanish nut, which I removed without difficulty. The patient rapidly regained health and strength." (*Glasgow Medical Journal*, April, 1867.)

12. (26.) **Calculus of Uric Acid and Phosphates.**

An irregular stone, weighing 233 grains, and measuring $1\frac{1}{2}$ inch in longest diameter. It seems to be composed mainly of uric acid, with coating of phosphates of magnesia and ammonia.

Wm. A., aged 70 years. Operation in Glasgow, on 7th January, 1868, by curved staff. Symptoms of several years' duration—patient worn out by pain and incontinence of urine; urine muco-purulent. Catheter used regularly for many weeks and at intervals for months back. Case seen by Dr. Wm. Lyon one year before, but no stone detected, and by Mr. Lister six months before, but none detected. Result—death from exhaustion without complication on fourth day.

13. (28.) Uric Acid, Oxalate of Lime, and Phosphates.

Nearly round, 1 inch in diameter, weighing 150 grs. Nucleus of uric acid, surrounded by thick layer of oxalate, and with external white layer of phosphates, which fuses with difficulty.

R. C., aged 9. Operation, 11th July, 1868, in G. R. I., by rectangular staff, no tube. Symptoms of one year's duration. Result—13th July, water by urethra—31st July, cure.

14. (29.) Uric Acid Calculus.

A large oval stone of reddish-brown colour, weighing at first 469 grs., and measuring $1\frac{3}{4}$ inch in long diameter. Composed throughout of uric acid, which burns away gently with blow-pipe.

A man, aged 60. Operation, February, 1870, in G. R. I., by rectangular staff. Result—cure.

15. (30.) Uric Acid Calculus.

An oval stone, $1\frac{7}{16}$ inch in long diameter, weighing at first 240 grs., and four years afterwards 177. Composed entirely of uric acid, which burns away gently with blow-pipe.

T. B., aged 65. Operation, 20th February, 1871, in G. R. I., by rectangular staff; tube used. Symptoms of six months' duration; no crystals in urine. Result—profuse bleeding, slight erysipelas. 25th Feb.—Urine by urethra; 8th March, dismissed cured.

16. (31.) Calculus of Uric Acid Coated with Phosphates.

An irregular stone weighing 124 grs., and measuring $1\frac{1}{8}$ inch. Composed of layers of uric acid, which burns away in blow-pipe flame.

Mrs. M., aged 51. Operation, 25th June, 1871, in G. R. I., by rectangular staff through labium. Result—cure.

17. (34.) Calculus of Uric Acid and Phosphates.

An oval stone weighing 360 grs., and measuring $1\frac{7}{8}$ inch in long diameter. There is a central part in layers composed mainly of uric acid, and an external part of triple phosphates, which fuse readily.

Wm. P., aged 24. Operation 21st August, 1872, in G. R. I., by rectangular staff. Symptoms of six years' duration. Result—cure. Wound quite closed three weeks after operation.

18. (37.) **Oxalate (Mulberry) Calculus Coated with Uric Acid.**

An oval calculus weighing 240 grs., and measuring 1¼ inch. In the centre there is a partly disintegrated irregular nucleus of uric acid. This is succeeded by a dark brown part, which has the regular warty outline of the oxalate of lime calculus. This is succeeded by a thin layer of uric acid which to some extent fills up the spaces between the projections, and so renders the surface less warty. The centre and outer parts burn away in the blow-pipe flame; the intermediate part expands into a white mass which effervesces with nitric acid.

John C., aged 10. Operation, 4th June, 1872, in G. R. I., by rectangular staff. Symptoms for one year. Result—cure.

19. (38.) **Uric Acid Calculus Coated with Mixed Phosphates.**

An oval stone weighing 525 grs., and measuring 1¾ inch. Composed mainly of uric acid, with coating of mixed phosphates, which fuse readily.

Jas. C., aged 70. Operation, 3rd December, 1873, in G. R. I., by rectangular staff. Symptoms of three years' duration. Result—cure in 14 days.

20. (39.) **Calculus of Mixed Phosphates** (same case as last).

Nearly circular in outline, weighing 133 grs., and measuring 1 inch in diameter. The surface on section has a spongy appearance, and the substance fuses readily.

James C., aged 71. Operation, 13th December, 1874, in Western Infirmary, by rectangular staff. There was a recurrence three months after former operation, with ropy urine, and occasional drops of blood. The urine was alkaline, pale red, and cloudy, with white sediment. Albumen in moderate quantity, with blood cells, pus cells, and triple phosphates, under the microscope. General health good. Dismissed well 9th February, 1875. There was slight bleeding after operation; checked by plugging. Urine came by urethra on 24th December. Grit of uric acid and phosphates was passed by wound.

21. (44.) **Uric Acid Calculus with Blood-Clot as Nucleus.**

An irregular stone weighing 2 oz. In central part there is an irregular partly disintegrated mass, a part of which when moistened showed shrivelled blood-corpuscles under the microscope. The main body of calculus is uric acid, which burns

away in blow-pipe flame, and there is a thin rind of phosphates.

John G., aged 55. Operation, 13th February, 1875, in Western Infirmary, by rectangular staff. Two and a half years before he accidentally noticed blood in his urine; but there was no pain at that time. Since then, occasionally noticed drops of blood at commencement of micturition. At Christmas, 1874, all the symptoms of stone developed. The urine, on admission, contained pus and triple phosphates.

22. (45.) Phosphate of Lime Calculus.

A bulky oval stone, weighing 670 grs., and measuring $1\frac{3}{4}$ inch. There are layers of a white colour, sometimes spongy. The centre has disintegrated, leaving a dry residue in a cavity.

Wm. G., aged 43. Operation 3rd March, 1877, in Hospital Street, Glasgow, by rectangular staff. Stone fractured in extraction; tube and plug used owing to tendency to bleeding. Symptoms of three years' duration, there being symptoms of renal abscess in September, 1874, which latterly were much reduced. Urine on admission excessive and pale, and of specific gravity of 1005, with pus, stringy mucus and triple phosphates. There was slight hæmorrhage after operation; then on 6th day arterial bleeding, checked by ligature passed by a needle. He died 10th March.

23. (46.) Oxalate of Lime Calculus Coated with Mixed Phosphates.

A nearly globular stone, about $1\frac{1}{4}$ inch in diameter. The central part, to the extent of about $\frac{7}{8}$th inch is composed of oxalates, and has the irregular surface of the mulberry calculus. The external parts are composed of white phosphates, which fill up the irregularities.

Robert P., aged 31. Operation 16th June, 1875, in Western Infirmary, by a rectangular staff with a groove on left side, so that right lithotomy might be performed, taking advantage of a cut for fistula, which had been made on right side two weeks before. Symptoms were of 7 years' duration. He passed a small red stone a year before admission. There was frequency of micturition with pain and frequent stoppage of stream, and the urine contained pus, blood, uric acid, crystals and vibrios.

24. (47.) Oxalate of Lime, Mulberry Calculus.

A very irregular calculus, the greatest diameter $1\frac{1}{8}$th inch. Externally it has the regular mulberry characters, and on the cut surface a brown colour.

Wm. P., aged 54. Operation 6th November, 1875, in Western Infirmary, by rectangular staff. Typical symptoms for 3 years. Result—death.

25. (48.) **Uric Acid and Phosphatic Calculus.**

An oval stone $\frac{7}{8}$th inch in diameter, with a light brown internal part $\frac{5}{8}$th inch in diameter, and a still lighter somewhat spongy external layer. The internal part is uric acid; it burns away gently under the blow-pipe with an odour of burnt feathers. There is a very slight ash, which is alkaline, (probably) from trace of urate of sodium. The external part is readily fusible, consisting of fusible phosphates.

Robert J., aged 9 years. Operation by rectangular staff on 13th May, 1876, in Western Infirmary. Symptoms were typical, with albuminous alkaline urine. Death occurred from peritonitis.

26. (49.) **Uric Acid and Phosphatic Calculus.**

The calculus is oval, with a diameter of $1\frac{1}{2}$ inch. There is a central nucleus $\frac{5}{8}$th inch in diameter, composed of uric acid (chars in blow-pipe and burns away, and gives murexid reaction). The bulk of the stone is composed of white phosphates.

M. D. L., aged 12. Operation by rectangular staff, in Western Infirmary. There had been pain in bladder since 2 years of age. Death occurred in 2 days, apparently from peritonitis.

27. (51.) **Mixed Oxalate and Urate Calculus.**

A nearly globular stone an inch in diameter, and with hedgehog projections on surface. Both on surface and on section it has a remarkable brownish-red colour. It gives the murexid reaction of uric acid readily, and chars in the blow-pipe, leaving a non-fusible glowing ash of highly alkaline reaction, showing oxalates.

Mr. R., aged 76. Operation on 28th May, 1872, in private, by rectangular staff, was easy and free from bleeding. Tube was used. Previous symptoms long continued, latterly dribbling. He did well for two days, when tube was removed rigor and fever occurred and he died.

28. (53.) **Phosphate of Lime Calculus, Oxalate of Lime Nucleus.**

The calculus is broken into many pieces of a white flakey character. There is, however, a solid oval nucleus $\frac{3}{4}$ of an inch in diameter, which presents several layers of a brownish colour, and somewhat wavy outline. The white part is quite

fusible and soluble in acetic acid. It chars slightly with the blow-pipe, but the ash is not alkaline. The nucleus is mainly oxalates.

Colin B., aged 32. Operation 22nd February, 1879, in Western Infirmary, by rectangular staff. The calculus broke in the forceps during extraction. There had been long continued cystitis. After the operation the wound healed slowly, but ultimately did so, and the patient was dismissed with cystitis remaining. He lingered on after going home, and ultimately died from exhaustion due to the cystitis.

29. (55.) Fusible Phosphatic Calculus.

A blunt oval stone $1\frac{3}{4}$ inch in length and $1\frac{1}{4}$ in breadth. It presents externally a few projections. Internally it is nearly white and in layers. With blow-pipe it fuses readily into a grey bead.

R., aged 65. Operation in July, 1880, at Paisley, by rectangular staff. Previous symptoms were long continued and the patient was bed-ridden. Result—cure.

30. (56.) Uric Acid and Oxalate Calculus with Coating of Phosphates.

A regular hedgehog calculus, with the hollows between the projections partly filled by a coating of white fusible phosphates. There is a lighter central nucleus which gives the murexid reaction of uric acid, while the greater external brown portion gives that of oxalates. The calculus is nearly globular, and measures in its greatest diameter $1\frac{1}{4}$ inch.

J. B., aged 19. Operation by rectangular staff on 19th February, 1881, in the Western Infirmary. There had been long continued agony, so that he could not lie in recumbent position. Result—cure.

31. (57.) Uric Acid Calculus with Urates Outside.

A small oval stone $\frac{5}{8}$ inch in diameter. The central part is reddish-brown and close in texture, and composed of uric acid. The rind is looser and paler and composed of urates.

J. B., aged 6. Operation by rectangular staff on 13th June, 1881, in Western Infimary. Symptoms, crying and incontinence. Result—cure.

32. (60.) Oxalate of Lime Calculus with Nucleus of Clot, and External Coating of Phosphate of Lime.

A roundish calculus about an inch in diameter. It is white

externally and not nodulated. On section the bulk of the stone is brown and gives reaction of oxalates. In the centre is a small cavity in which a clot was found. Externally there is a rind less than $\frac{1}{8}$ inch in thickness, composed of phosphate of lime.

John R., aged 20. Operation by rectangular staff on 11th July, 1882, in Western Infirmary. Result—cure.

33. (61.) Phosphatic Calculus formed round Fragments of Oxalate of Lime Calculus.

A rather soft porous stone, which shows on section two irregular pieces of a brown colour. There was a third piece which has broken away. The brown part is oxalate, the porous portion fusible phosphate. The calculus, which was nearly globular, measures $1\frac{5}{8}$ inch in diameter, and weighed 288 grs.

Jas. L., aged 27. Operation by rectangular staff on 10th November, 1883, in Western Infirmary. Symptoms in all of $4\frac{1}{2}$ years' duration, pain at point of penis, stoppage of urine, &c. A large calculus was crushed in Liverpool in 1882, and the fragments shown in this stone were left in the bladder. Present symptoms had lasted two months.

34. (62.) Dark Mulberry Calculus, with Uric Acid Nucleus.

A very characteristic stone with rounded projections externally, and a deep brown colour on section. It measures $1\frac{1}{4}$ inch in diameter, and weighed 506 grs. In the centre there is a small pale nucleus $\frac{5}{16}$ inch in long diameter, composed of uric acid.

David J., aged 32. Operation by rectangular staff on 1st November, 1884, in Western Infirmary. Case came from Johnstone. Symptoms of 3 or 4 years' duration, pus occasionally. Blood twice at interval of two years. Result—cure.

Prof. G. H. B. Macleod's Series.

1. Fragments of Phosphatic Calculus.

These fragments were the debris after lithotrity, the nucleus of the stone, which was afterwards removed, being shown in next specimen.

D. I., æt. 24, clerk, admitted into Royal Infirmary, July, 1874, and afterwards into Western in November, 1874. Symptoms of 6 months' duration. Urine highly alkaline, with triple phosphates, sp. gr. 1022.

Lithotrity in October, two sittings. A portion could not be

broken with lithotrite. Dismissed by desire; and re-admitted into Western Infirmary.

2. Uric Acid Calculus.

An elongated oval stone 1½ inch in length by ¾ inch in breadth. It has a general reddish-brown colour, but at one place is coated with phosphates.

From the same case as No. 1. This stone was removed by lithotomy, and the patient recovered.

3. Mulberry Calculus.

A small, generally oval stone, measuring ⅞ of an inch in its long diameter. It has the characteristic knobbed projections on the surface.

H. H., æt. 13, admitted 11th December, 1874. Symptoms 4 years' duration. Urine slightly ammoniacal. Sp. gr. 1010; much mucus, some phosphates; phimosis. Operated on 6th February, 1875, by rectangular staff. Good recovery. Dismissed 5th March, 1875.

4. Fragments of Phosphatic Calculus.

The fragments were removed by lithotrity. The next specimen was afterwards removed by lithotomy.

D. M., æt 26, engineer. Admitted, 4th February, 1875. Symptoms of 5 months' duration. Three sittings; lithotrity; dismissed improved, but some fragments were known to remain. His general health was so feeble that he was dismissed for a time.

5. Fragments of Calculus.

These pieces, composed partly of phosphates and partly of uric acid, the latter forming the central part of the larger calculus were removed from the same patient as No. 4.

D. M., admitted 13th July, 1875. Symptoms returned. Operated on with Dr. Macleod's jointed rectangular staff. Dismissed 18th August, 1875, well.

6. Six Phosphatic Calculi, Facetted.

The largest of these stones measures ¾ inch in diameter, and some of them have been considerably broken. They form together a bulky mass. The stones show flat facets like gall-stones.

J. S., æt. 67, admitted 11th June, 1875. Symptoms of 5 or 6 years' standing; had heart affection. Urine alkaline. Sp. gr. 1017, with thick deposit of muco-pus and triple phosphates.

Operation on 22nd June, with jointed rectangular staff. Good recovery. Dismissed 27th July, 1875.

7. Phosphatic Calculus and Debris.

The specimen is composed of an oval stone 1½ inch in diameter, and a large quantity of debris. The stone is very rough from adhesion of debris.

J. T., æt. 30, admitted 9th September, 1875. Symptoms of 15 months' duration. Had been treated in Edinburgh Infirmary; general health bad. Urine sp. gr. 1014; blood, albumen, triple phosphates. Operation by jointed rectangular staff. Large quantity of debris spooned out of bladder. Grit continued to come by the wound for some time. Dismissed well 29th October, 1875.

8. Phosphatic Calculus.

An irregularly shaped stone, with a diameter of 1⅛ inch, along with some debris. The stone is externally composed of phosphates, but has probably a heavier central part.

J. C., æt. 78, admitted 24th January, 1876. Suffered for ten years—prostate much enlarged. Urine neutral, with much pus and blood. Cut on 1st February on jointed rectangular staff. Dismissed 26th February well.

9. Small Calculus removed by Lithotrite.

An irregularly oval stone, $\frac{9}{16}$ inch in long diameter. The surface is tuberculated and slightly red in colour.

W. M., æt. 39, policeman, admitted 25th February, 1876. Symptoms of stone of two months' duration. Came to hospital with retention of urine, caused by impacted urethral calculus. It was pushed back into bladder and afterwards grasped and removed by lithotrite. Good recovery.

10. Mulberry Calculus slightly coated with Phosphates.

A very large stone of an irregularly oval shape. It measures in long diameter 2¼ inches, and weighs 1626 grs. The proper surface of the stone is dark brown, with rounded projections, but colour and outline are somewhat obscured by a thin crust of white phosphates.

Patient 84 years of age. A distinguished London surgeon, having failed to discover this stone after its presence had been detected both in Edinburgh and Glasgow, the patient refused all assistance, and died unrelieved. It was removed from his bladder after death.

11. Two Facetted Calculi.

Two reddish coloured stones, with facets. The largest stone measures an inch in largest diameter, and the smaller $\frac{5}{8}$ inch. The red material forms a thin layer on the surface, and where it has broken off there is a polished whitish surface visible.

T. H., æt. 21, admitted 4th December 1876. Symptoms of stone since he was a boy. Urine, sp. gr. 1020, faintly alkaline, muco-pus. Crystals of triple phosphate. Blood. Cut on rectangular jointed staff. Dismissed 12th January, 1877, well.

12. Debris of Phosphatic Calculus.

There are many small pieces and a quantity of grit.

H. M., æt. 63, admitted 16th February, 1877. Bright's disease. Symptoms of a year's duration. Blood and albumen abundant in urine. Lateral lithotomy—jointed rectangular staff. Large quantity of soft, gritty phosphatic debris removed by scoop; fragment with uric acid nucleus. The dropsy from the Bright's disease was entirely removed by the drainage from the wound. Dismissed 4th May, 1877, well.

13. Fragments of Phosphatic and Uric Acid Calculus removed by Lithotrity.

There are many fragments, chiefly white, but some of a brown colour.

W. A., æt. 25, admitted 12th January, 1878. Symptoms of six years' standing. Bad general health for fifteen years. Large quantity of phosphatic debris with uric acid nucleus removed in two sittings by lithotrity.

14. Small Uric Acid Calculus passed by Urethra.

An oval stone, measuring $\frac{3}{8}$ inch by $\frac{1}{4}$ inch. It is reddish in colour and tuberculated on the surface.

It was passed spontaneously by D. G., aged 36, who was admitted 12th January, 1878, into Western Infirmary.

15. Phosphatic Calculus in several pieces.

There is one long piece like a cylinder, and several smaller ones.

A. C., æt. 40, admitted 27th April, 1878. Symptoms of two years' standing. Lateral lithotomy. Rectangular jointed staff. Phosphatic calculi, with much sand in bladder, removed by scoop. Recovery.

16. Cystine Calculus in Fragments.

These pieces were removed by lithotrity.

A. C., æt. 63, admitted 28th January, 1881. Thin, pale,

nervous man. Symptoms of sixteen years' standing. Had been operated on by Dr. Macleod in 1866, when a calculus was removed by lithotomy. Symptoms recurred in June, 1880. Urine, sp. gr. 1029; pus, phosphates, tube casts—lithotrity twice—crystals of cystine. Dismissed 11th February, 1881, well. Returned 23rd February with slight return of symptoms. Lithotrite again introduced, and some small fragments removed. Remained well when last heard of.

17. Fragments of Phosphates removed by Lithotrity.

These fragments are composed of fawn-coloured phosphates.

T. B., æt. 26, admitted 14th February, 1881, pale and weakly lad—bad constitution. Urine, sp. gr. 1020—acid; little sediment, slight albumen, some pus. Lithotrity—stone breaking down easily. The passing of fragments caused so much pain, and his condition was so unsatisfactory that Dr. Macleod determined to cut him. See No. 18.

18. Uric Acid Nucleus of above Calculus with Fragments, removed by Lithotomy.

The principal piece here is oval, and measures an inch in diameter. There are still phosphates adhering, but through them the tuberculated surface of a uric acid calculus is visible. These parts were removed by lithotomy, and the patient made a good recovery.

19. Large Phosphatic Calculus from a Female.

A flattened oval stone, measuring 2 inches in long diameter. It was removed from the bladder after death.

Isabella D., aged 16, admitted 1st July, 1875, in a dying state. There had been symptoms of urinary irritation for six months, also disease of knee and hip joints. The urinary bladder was firmly contracted on the stone, and was much diseased. There was a large abscess in front of, and connected with, the bladder, which was quite lined with phosphatic deposit.

20. Small Uric Acid Calculus.

An irregularly shaped calculus, measuring $\frac{3}{8}$ inch in longest diameter.

J. M., aged 7. Ward XII. November, 1876. Symptoms of three and a half years' duration, but not severe. Urine neutral, 1012, with pus and blood. Lithotomy—rectangular staff. Stone quite concealed between the blades of the forceps as it was withdrawn (so that for a time it was not found). Recovery.

21. Two Phosphatic Calculi.

They are nearly cylindrical in shape, and measure ⅞ inch and ½ inch respectively.

J. D., 2½. 26th July, 1879. Ward 12, Vol. 7, p. 144. Lithotomy. Recovery.

22. Large Calculus from a Female.

A large nearly globular stone, measuring an inch and a half in diameter. The surface is porous, and coloured with blood.

Mrs. R., aged 60. November, 1879. Ward 12. Symptoms of a year's duration. Stone encysted. Removed by incision in roof of vagina. Recovery.

23. Uric Acid Calculus.

A flattened oval stone ⅞ inch in long diameter. It is reddish in colour, and slightly irregular on the surface.

J. W., æt. 6. Admitted 18th December, 1882. Phimosis. Symptoms since he was a baby. Brought into hospital with retention, calculus being impacted in neck of bladder. Lithotomy—rectangular staff. Dismissed well.

24. Oxalate of Lime Calculus.

An irregularly shaped stone, an inch and a half in longest diameter. On one surface it presents rounded nodules, some of them pointed, while the other surface is smooth. The stone is a very dense and heavy one, weighing in the dry state 610 grs.

A lad, aged 16. Symptoms of 4½ years' standing. 1877. Lithotomy—rectangular staff. Recovery.

25. Uric Acid Calculus Coated with Phosphates.

An oval stone an inch in diameter. Where the external crust of phosphates has been removed the reddish uric acid stone is visible.

Boy, aged 7. Not known how long symptoms existed. Lithotomy—rectangular staff. Recovery.

26. Three Small Calculi.

Removed by lithotrite from a boy of 18.

27. Phosphatic Calculus from a Female.

The stone forms a flattened sphere ¾ inch in diameter. It is white and tuberculated on the surface.

Mrs. M'F., æt. 54. Admitted 7th November, 1884. Symptoms

of two or three years' standing. Uric acid with phosphatic coat removed by dilatation of urethra. Dismissed well.

28. Large Uric Acid Calculus Partially Coated with Phosphates.

The stone is of a flattened oval shape, measuring 2 inches in long diameter. The surface is rather irregular, in some places tuberculated. It has mostly a yellowish colour, but the yellow substance obviously forms a thin crust; the reddish colour of the stone beneath appearing in two or three places. The stone weighs 930 grs.

Patient aged 28. Symptoms of three years' duration. General health much impaired. Lithotomy — rectangular staff. Recovery.

29. Mulberry Calculus.

A large stone in the form of a flattened sphere, measuring $1\frac{3}{4}$ inch in diameter, and weighing 800 grs. It is dark in colour, and presents the highly characteristic protuberances of the mulberry calculus.

A boy, aged 13. Ill with urinary symptoms for many years. Lithotomy—ordinary staff. Rapid recovery.

30. Small Calculus coated with Phosphates.

The stone is in shape like a nail, weighing 21 grains, and measuring in length $\frac{7}{8}$th of an inch. Its surface is rough and covered with phosphates.

J. L., æt. 33. Ward xviii. *Journal* 2, p. 218; and 3, p. 13. Symptoms of 2 years' duration. Urine contained crystals of oxalate of lime, with traces of blood and albumen. With the sound the bladder was found to be fasciculated, and contained some grit, and a rough spot below on the left side where a "lump" could be detected from the rectum. Cut on 30th June, 1885, on rectangular staff. A stone was found encysted in the floor of the bladder. It was covered with the mucous membrane all but a small portion of the surface of the larger end on which the sound grated. It was removed with the scoop after the mucous membrane over it had been divided.

Dr. A. Patterson's Series.

1. Uric Acid and Phosphatic Calculus.

A small oval stone consisting of a central brown part and a broken external coating. The central part is mainly uric

acid, and the external parts fusible phosphates. The weight was 40 grs.

The patient was a boy 2 years of age, who was operated on 7th August, 1876.

2. Uric Acid Calculus.

A very small irregularly oval stone, barely ½ inch in length, and weighing 9 grs. It is smooth on the surface, and tolerably hard. The calculus is almost pure uric acid; a fragment of it disappears almost entirely under the blow-pipe, and it gives the murexid test.

It was removed from a boy, æt. 5, on 7th August, 1876.

3. Oxalate of Lime Calculus.

An irregularly oval stone with a projecting neck or peduncle. It measures in its longest diameter, including the projecting portion, one inch and a quarter, and weighs 158 grs. Its surface is nobbed, but without the hedge-hog projections of the ordinary oxalate stone. The calculus is mainly composed of oxalate of lime, but the neck referred to above is different from the stone itself in structure, being composed of porous phosphates, and evidently superadded.

The stone was removed in 1877, from a boy æt. 2 years. He was dismissed well.

4. Uric Acid and Phosphatic Calculus.

The stone is in two pieces, but when placed together it forms a bulky stone of an elongated shape, and bent so as to form a segment of a ring. Its entire length is 2⅛ inches, and at its thickest part it measures an inch in diameter. It weighs 240 grains. Its surface is rough, and its texture exceedingly porous and crumbly. It consists of a central oval nucleus, ⅝ of an inch in diameter, composed of uric acid, and an irregular bulky external part probably of ammonio-magnesian phosphates.

It was removed from a boy, æt. 5 years, in 1877.

5. Mixed Phosphatic Calculus.

The stone is an irregular, flattened oval. It measures in its long diameter 1⅝ inch, and on broadest part of short diameter, 1¼. It weighs 305 grains. The greater part of the stone consists of a white substance in layers, but there is a thin darker rind. The outer layer fuses readily with the blow-pipe, and the central part less readily. The calculus is

entirely phosphatic, but the internal layers are probably more of the ammonio-magnesian phosphates.

The stone was removed from a man, 69 years of age, who was the subject of chronic phthisis. The rectangular staff was used.

6. Oxalate and Phosphatic Calculus. (*Dr. J. G. Lyon.*)

The stone has the form of an elongated oval, measuring $2\frac{1}{8}$ by $1\frac{1}{4}$ inches, but flattened, so that the 3rd diameter is only $\frac{7}{8}$ inch. On one of the flattened surfaces the stone is generally smooth and yellowish in colour, but occasionally roughened by phosphatic deposit. On the other flat surface it is nearly completely coated with a thick layer of porous phosphates. It weighs 433 grains in the dry state, but is noted as having weighed 536 grains at time of removal.

The stone shows on section a central brownish part, $\frac{7}{8}$ inch in diameter, the rest being white with a yellowish rind. The central part, after exposure in the blow-pipe, leaves an alkaline ash which dissolves in HCl. It does not give the murexid test, and is therefore oxalate. The white part is readily fusible, and the external part less so.

It was removed on 6th September, 1878, by the lateral operation on Cheselden's staff. Patient aged 17.

7. Oxalate and Phosphatic Calculus.

An elongated stone, nearly cylindrical in shape. It measures $1\frac{5}{8}$ by $\frac{5}{8}$ inch. It is broken into several pieces, and is seen to be composed of a somewhat nodulated nucleus, with a capsule of porous phosphates. It weighs 160 grs. The central part gives, with blow-pipe, reactions of oxalate of lime; it glows and leaves a bulky white ash of alkaline reaction and insoluble in acetic acid. The outer crust is not fusible, consisting of phosphate of calcium.

It was removed from a boy, æt. 11, from Rothesay. The symptoms had been of twelve months' duration. Date of removal, 10th October, 1878.

8. Uric Acid and Oxalate of Lime Calculus.

A small regularly oval stone, measuring $5\frac{1}{8}$ inches by $\frac{1}{2}$ inch. It has a markedly nodulated surface. It weighed 38 grains. On section it is seen to be composed of a central light brown part, and a peripheral deeper brown layer, less than $\frac{1}{8}$ of an inch in thickness. The former gives uric acid reaction, charring and disappearing; the latter gives the reaction of oxalate of lime, it chars readily, gives a burnt wool smell, and leaves a powdery white ash, which is highly alkaline.

It was removed from J. N., a boy 6 years of age, on 16th Nov., 1878. The symptoms had been of two years' duration.

9. Uric Acid Calculus.

A small stone of irregular quadrilateral shape, and with several facets. It resembles considerably a gall stone, and presents a somewhat similar dull grey colour. It weighs 14 grains. With the blow-pipe, a fragment of this stone chars and disappears, except a very small powdery ash. It gives the murexid test well.

Removed from a boy 6 years of age, on 22nd Oct., 1879.

10. Oxalate and Phosphatic Calculus.

A very large oval stone measuring $3\frac{7}{8}$ inches by $1\frac{3}{4}$. The surface is somewhat nodulated, and occasionally roughened by phosphates. It weighs in the dry state 1313 grains, but in the recent condition, it is noted as having weighed 1620 grains.

On section it shows a central brown nodulated part, about $\frac{5}{8}$ of an inch in diameter, which gives the reactions of oxalate of lime. The greater part of the stone is white, and consists of phosphates, which are with difficulty fusible.

It was removed from a man æt. 26, by the supra-pubic operation, on 27th Nov., 1879.

11. Oxalate of Lime Calculus.

An irregularly globular stone, measuring on an average about half an inch in diameter. Its surface is minutely nobbed. It weighs 30 grains. It presents the reactions of oxalate of lime, giving a strongly alkaline ash with the blow-pipe, insoluble in acetic acid.

Removed from a boy æt. 4, on 28th August, 1879.

12. Oxalate of Lime Calculus from the Female Bladder.

A characteristic mulberry calculus. It forms an irregular quadrilateral, having a general diameter of about an inch. The surface is provided with large prominent nobs. It weighs 200 grains. On section there is seen to be a small pale nucleus, but the greater part of the stone is deeply brown in colour, but with a thin white rind. The centre is uric acid, the brown part oxalate of lime, and the outer layer also oxalate; it chars into grey ash, which gives an alkaline reaction.

It was extracted from a woman æt. 20, on 29th Dec., 1879. The urethra was dilated, and the stone extracted by a medium sized lithotomy forceps.

Miscellaneous Calculi.

1. Phosphatic Calculus from the Female Bladder. (*Dr. J. G. Lyon.*)

The stone, which has been divided longitudinally, is oval in shape, and composed of irregular layers of a white salt (phosphatic) with occasional gaps, as if there had been organic matter which decayed. It measures 1½ inch in long diameter, 1 inch transversely, and rather less than ¾ of an inch in thickness.

The patient, a woman aged 32, had suffered from urinary symptoms for three years, (supposed cystitis.) Very urgent symptoms developed a few weeks before operation. The urethra was dilated and the calculus removed by Dr. Lyon on 19th August, 1879. The diameter of stone and forceps, as they were withdrawn from the bladder, was 1¼ inch. Three days afterwards the woman had complete control of urine. See Journal 2, Ward II, p. 284, and Journal D, Ward V, p. 199.

2. Oxalate of Lime Calculus. (*Dr. H. C. Cameron.*)

The specimen is that of a typical "mulberry stone" with accretion of phosphates between the brown spinous projections of oxalate of lime. It is almost uniformly round, an inch in diameter, and weighs 179 grs.

The stone was removed from a boy, aged 15. The symptoms appeared to date back only a fortnight; his attention being first called to his trouble by inability to hold his urine. Since that time frequency of micturition had increased to the extent of making water every hour or two, and the urine when examined was found to be alkaline. Sp. gr. 1023, pale yellow, turbid, with muco-purulent deposit. The stone was removed by lithotomy, and the boy made a rapid recovery. (*Hosp. Reports.* Ward XX. Vol. 2, p. 102.)

3. Uric Acid and Phosphatic Calculus. (*Dr. H. C. Cameron.*)

The specimen presents on one surface a round smooth projection of uric acid which appears to represent the original stone, and forms the nucleus of an incrustation of phosphates which almost completely imbeds it. It is oval in shape, measuring in its longest diameter about 1½ inch, and in its shortest, 1 inch. Weight, 390 grs.

The stone was removed from a boy, aged 13. His symptoms

commenced six months back, at which time he was troubled with pain in the hypogastric region. Four months later his trouble became much accelerated, and on admission to the hospital he was suffering from frequent painful micturition, and much supra-pubic pain. The stone was extracted by lithotomy, and the patient recovered. (*Hosp. Reports.* Ward XX. Vol. 4, p. 113.)

4. Salivary Calculus. (*Dr. J. G. Lyon.*)

Removed from a cyst beneath the tongue of a man, aged 39. The cyst and calculus were first noticed three years before. (Ward X, 20th September, 1880.)

CASTS SHOWING CONGENITAL MALFORMATION OF HANDS AND FEET.

THESE casts were taken after death from a man. The right hand contains only four digits, the middle finger being absent. The thumb and forefinger are completely webbed together and united, and so are the fourth and fifth fingers, so that there are virtually only two separable members in the hand. These two members are opposed to each other, giving somewhat the appearance of a bird's claw. The cleft between the members passes farther into the palm than normal, its farthest point being at least half an inch beyond the heads of the metacarpal bones. Between this cleft and the metacarpal bone of the ring finger, the head of the metacarpal bone of the middle finger can be made out, but it is considerably atrophied.

The left hand contains only three digits—namely, thumb and fourth and fifth fingers. The fourth and fifth fingers are completely webbed and united, and they are opposed to the thumb, as the corresponding fingers of the right hand are to the united thumb and forefinger. In the space between the thumb and ring finger, the heads of the second and third metacarpal bones are seen projecting, and in the actual hand a digital bone could be felt passing from the third metacarpal bone towards the fourth finger, but it did not project as a finger.

In the right foot only three toes are present—namely, the great toe and the fourth and fifth toes, these latter being webbed and united. Between the great toe and the conjoined fourth and fifth there is a deep triangular space, which penetrates at least half an inch beyond the head of the first metatarsal bone. The head of the third metatarsal bone is visible outside this cleft, but that of the second cannot be made out.

The left foot has also only three toes, but the cleft is not so deep nor so triangular in shape, being more like the condition after amputation of the second and third toes. The heads of the second and third metatarsal bones are visible, with a groove between them.

The casts were taken after death from a man aged 40, who died of pneumonia. He had been a porter in a large drapery establishment, and was able for his work both with hands and feet.

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