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CATALOGUE

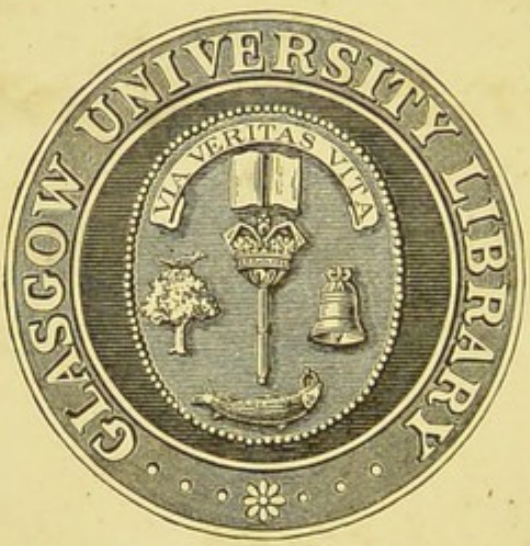
OF THE

PATHOLOGICAL MUSEUM

OF

GLASGOW ROYAL INFIRMARY.

J. B. Gardner



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CATALOGUE

OF THE

PATHOLOGICAL MUSEUM

OF THE

GLASGOW ROYAL INFIRMARY:

EDITED BY

DAVID FOULIS, M.D.,
PATHOLOGIST, AND CURATOR OF THE MUSEUM.

SECOND EDITION.

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NOTE.

THE present edition of the Catalogue has been called for in consequence of some alterations in the arrangement of the specimens in the Museum. These are especially marked in Series V., VIII., and XIV. In the last named Series the calculi have been entirely re-arranged, and those which were intact have been cut in half with a fine saw to show the internal structure. It is hoped that these changes will prove to be conducive to more easy reference and study of the specimens.

The alphabetical index at the end of the Catalogue has been omitted in this edition, as it was of very limited application. The division into Series is sufficient in a Catalogue of this size to guide the student readily to any class of specimens.

The number of specimens added since the publication of the last edition of the Catalogue in 1872, is 500, making up the total to 1,555.

Many of these are of great rarity and interest; some of them are unique.

CONTENTS.

CATALOGUE

OF

PATHOLOGICAL MUSEUM.

SERIES I.

Osseous System. Dry Preparations.

[In Cases A. and B.]

1. Fissure through the right parietal. The trephine has been used immediately above the fissure.
2. Comminuted and depressed fracture of the occipital bone caused by a fall backwards.
3. Fracture of the right side of the frontal bone extending through the temporal into sphenoid (more apparent on inner table). The injury resulted from a fall on the head. The patient survived three months after. *Path. Reports*, No. 74, 1858.
4. Fracture of calvarium by a blow with a piece of an iron bar. The fractured portions were removed during life, and the patient rallied, but meningitis supervened, and he sank on the fourth day from the receipt of the injury.
5. Fracture of calvarium caused by a fall down a stair. The fracture extended partially across the base and wounded the middle meningeal artery from which a large quantity of blood escaped.
6. Calvarium showing separation of the saggital suture posteriorly and fracture of left parietal bone. A small part of occipital is also fractured.
7. Depressed fracture of calvarium in right posterior parietal region.
8. Fracture of the skull caused by a fall from a height. The fracture extended across the occipital bone into the foramen magnum.
9. Fissure of the external table of calvarium without injury to the internal table.

10. Depressed fracture of the frontal bone, with portions of skin and hair impacted between the fractured edges. The fracture was caused by a weight falling on the front of the head.
11. Fracture and loss of substance of the calvarium.
12. Fracture through the occipital, parietal, and frontal bones. The trephine was applied five times to remove clots of blood and depressed parts of bone.
13. Longitudinal fracture of calvarium caused by a fall from a house-top.
14. Fracture of the posterior portion of the parietal extending into the lambdoidal suture.
15. Fracture of the base of the skull.
16. Fracture of the skull.
17. Fracture of the frontal bone, extensive displacement of the bones of the face, and injury to the brain. J. N., a collier, struck his head on an iron bar while being drawn up a pit. The soft parts for about five inches were torn away, the surrounding bone smashed and part driven into the brain; about a teaspoonful of cerebral matter escaped and the optic nerves at their bifurcation were exposed. He was stunned at the time, but ultimately recovered without bad symptoms. The wound did not heal completely, as a slight discharge continued to flow. He continued in good health for ten years and begat children. After the accident smell was lost, and hearing impaired, sight was at first bad, but afterwards restored. See *Glas. Med. Jour.*, Oct., 1855.
18. Oblique fracture of the shaft of the femur. The fracture is united, but there is great deposit of new bone.
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20. Comminuted fracture of neck of femur.
21. Fracture of trochanter major of right femur.
22. Fracture of femur at the junction of middle and upper thirds. The fragments have united at a considerable angle and with some shortening.
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27. Fracture of tibia, united at a slight angle.
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29. Fracture of humerus close to the neck. The upper fragment has been displaced downwards about three inches and united to the external aspect of the lower fragment, the upper end of which is on a level with the middle of the head.

30. Fracture of the tibia and fibula at lower end. A portion of the external wall of the tibia has been forced into the cancellated tissue of the bone. The ankle was run over by a heavy waggon.
31. Fracture of the ulna.
32. Fracture of the radius, united.
33. Erosion of inner plate of calvarium from suppuration. The patient was a female, aged 19, admitted on account of epileptic convulsions, which had commenced six months before; there was no history of injury. No. 10, Series VI., shows the dura matter from the same case.
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35. Calvarium showing deep grooves for the middle meningeal artery, and deep fossæ for the Pacchionian bodies.
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37. Fracture of calvarium and trephining.
38. Exostosis on inner table of frontal bone. It is about the size of a pea, and was only discovered on post mortem examination, no symptoms of its existence having been present during life.
39. Caries of the temporal bone, which had given origin to abscesses of the brain. See VI., 9.
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43. Caries of ilium.
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46. Internal necrosis of femur. The necrosis extends through the whole length of the shaft, and the sequestrum is completely enclosed. Externally there is considerable production of new bone, through which several openings lead into the cavity in which the sequestrum lies.
47. Portion of femur removed after amputation.
48. Necrosis of femur. The preparation shows the lower two-thirds of the femur greatly thickened, and with rough projections of new bone on the external surface, the result of

the irritation of a sequestrum in the interior. Immediately beneath the articular surface two large cavities of abscesses are seen. About five inches from the end of the bone a large cloaca exists, and a smaller one an inch higher up on the opposite side. This condition depended on the existenee of a sequestrum, which has itself been lost.

49. Complete anchylosis of the left knee-joint. The tibia has become rotated outwards, so that its internal surface presents forwards. The end of the femur has become displaced forward, and the tibia backwards. The position of the patella cannot be accurately determined.
50. Limited necrosis near lower end of tibia.
51. Anchylosis of the ankle-joint. The tibia, fibula, os calcis, cuboid, scaphoid, and astragalus, are all anchylosed together. Internal necrosis of the tibia has existed, and he bone is seen to be much thickened and to present several cloacæ.
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55. Caries of the knee-joint with growth of new bone on the surface of the femur and tibia.
56. Ditto.
57. Caries of the knee-joint with remarkable growth of new bone on the surface of the patella. The disease was of four years' standing at the period when the amputation was performed. The patient died from the shock of the operation.
58. Caries of the knee-joint.
59. Head of the femur with the neck in a nearly horizontal position. Case of chronic rheumatic arthritis—the arthritis deformans of some authors.
60. Production of new bone at the lower end of the femur.
61. Caries of the tarsus. The astragalus, scaphoid, internal and middle cuneiform and os calcis are anchylosed together and with the metatarsal bone of the great toe. The cuboid and external cuneiform, and the proximal ends of two of the metatarsal bones are carious; and the metatarsal bone of the little toe is anchylosed to its first phalanx which is turned upwards and inwards over the dorsum of the fourth metatarsal bone. The end of the tibia is considerably

thickened on its posterior aspect, and the inner side of the fibula presents numerous projections of new bone. The case was one in which twenty years previously the os calcis had been removed for caries, and two years afterwards the great toe for the same disease. The patient continued apparently well until eight months before admission, when an abscess formed on the dorsum of the foot. Amputation was performed, and the patient was dismissed well in about two months.

62. Bony tumour of upper end of tibia.
63. Irregular production of new bone in the bones of the tarsus.
64. Caries of the head of the humerus. The portion of bone preserved was excised, and the patient made a good recovery, and was dismissed with a useful arm.
65. United fracture of humerus.
66. Disease of the elbow joint.
67. Caries of the clavicle.
68. Skull from graveyard of Cathedral.
69. Necrosed shaft of tibia.
70. Abnormal Calvarium.
71. Bones of hip, ossifying sections separated.
72. Erosion of external table of skull.
73. Skull, nasal bones driven to one side.
74. Caries of tibia, production of new bone.
75. } Caries of knee-joint.
76. }
77. }
78. Syphilitic ulceration of the tibia. In addition to the ulceration which is in the form of a deep excavation on the inner surface of the tibia there is marked hypertrophy of the rest of the bone. The tibia is further anchylosed to the fibula and to the astragalus. The preparation is a good illustration of the hypertrophy of healthy bone in the neighbourhood of diseased parts; the leg was amputated and the patient was dismissed well.
79. A skeleton with symmetrical exostoses. They affect chiefly the long bones of the extremities, and in these bones have the following general distribution; the upper end of the humerus, and the lower end of the radius and ulna; the lower end of the femur; both lower and upper ends of the tibia and fibula, but much more developed at the upper. In addition, there are on both scapulæ two exostoses, but these are much larger on the left scapula than the right. They arise at corresponding points on the ventral and dorsal aspects of the scapula, about an inch and a-half from the inferior angle. *Presented by Dr. Robert Hunter.*

79½. Skull and first vertebra from a case of encephalocele. The body (which was in an advanced state of decomposition when received) was that of a female child about the full time and was sent by Dr. Tannahill of the Maternity Hospital, in November, 1872. Behind the skull, as examined in the fresh state, there was a large somewhat soft mass, covered by the hairy scalp. This mass considerably exceeded the size of the cranium, which however was very abnormally small. On cutting through the skin over the tumour it was found to be composed of almost the entire encephalon with its membranes. The cerebral hemispheres were normally developed, and the brain thus displaced communicated with the interior of the skull by an aperture to be afterwards described. In the advanced state of decomposition, the exact structures involved in this communication could not be accurately made out. On examination of the skull after dissection, the following condition of parts is found: The cavity of the cranium is extremely small, especially anteriorly, where the frontal bones are placed horizontally and lie directly over and in some parts in contact with the supraorbital plates. The parietal bones are also remarkably depressed as well as flattened, and only rise slightly towards the middle line so as to form a very obtuse angle at the sagittal suture. Immediately behind the parietals the occipital bone passes down perpendicularly, the parietals forming, with the exception of a thin layer to be presently mentioned, the most posterior portion of the skull. In the occipital bone there are two large circular apertures, the one presenting downwards, the foramen magnum, and the other presenting directly backwards, the abnormal aperture with which the displaced encephalon communicated with the interior of the skull. The latter aperture, although it is entirely within the occipital bone, is only separated from the parietal by a very narrow ring, not more than a line in breadth, this narrow ring forming with the parietals the lambdoidal suture. The aperture is perfectly circular, and its margins are round and smooth, it measures $\frac{3}{4}$ of an inch in diameter. This aperture is separated at its lower margin from the foramen magnum, partly by a bony plate $\frac{3}{16}''$ in breadth, and partly by a membrane $\frac{5}{16}''$ in breadth, which later bounds the foramen magnum posteriorly the bony arch being here awanting although complete anteriorly and laterally. The arch of the occipital foramen ends to the right and left of this membrane in a bony prominence. The posterior inferior angles of

the parietal bones are pushed very markedly outwards to either side, and end in prominent processes which project laterally considerably further than any other portion of the skull. The squamous portion of the temporal bone is considerably curtailed, and the anterior margin of the bony canal of the external auditory meatus is in great part wanting. The tympanic membrane is very large, and is nearly on a level with the surface of the bone. At the point of junction of the parietal temporal and occipital bones there is a small space closed in by a membrane. The bones of the face, like those of the skull, are very much flattened from above downwards and the face consequently elongated from before backwards, the nose being nearly horizontal. In respect to the size of the cranial cavity, the following measurements may be taken: From the abnormal aperture to the posterior clinoid processes, 1 inch; from the deepest portion of the skull, *i.e.*, the margin of the foramen magnum, to the sagittal suture, $1\frac{1}{4}$ inch. The arch of the atlas is deficient posteriorly for a quarter of an inch. The vertebrae are otherwise normal.

80. Dried sternum and costal cartilages, showing a bilateral projection or process from the fourth costal cartilage on either side. Also shows the mode in which true bone coats the costal cartilage, by plates spreading from the ribs and bony sternum, while the centre of the costal cartilage merely calcifies.
81. Exostosis from orbit. Case under care of Dr. M'Donald of North Uist. *Bequeathed by Dr. Dewar.*
82. Fracture of neck of femur.
83. Anchylosis of tibia and fibula at lower end, probably after fracture. *Bequeathed by Dr. D. Dewar without any history.*
84. Central necrosis of humerus, case of new bone. *Dr. Dewar.*
85. Necrosed shaft of long bone. *Dr. Dewar.*
86. Necrosed head of humerus. *Dr. Dewar.*
87. Injected calvarium.
88. Fragment of skull cap, removed by Dr. H. C. Cameron from head of a "Cumberland" boy who had been struck by a falling plank. The fragment was removed several weeks after the injury.
89. Skull showing perforation by pacchionian bodies.
90. Skull showing depressions by pacchionian bodies.
91 Ditto.
92. Ditto.
93. Bone from old amputation thigh stump in a boy, showing how the end of the bone is occluded by new bone. Part of the end plate has been broken off.

94. Comminuted fracture of neck of humerus; the fragments are gummed together.
95. Caries of spinous process of axis.
96. Fracture of femur in two places, one through the neck, and one above the middle. The lowest fragment is lost.
97. Bifurcation of sternal end of rib.
98. Fracture of scapula in four pieces, by blow of a crane; direct violence.
99. United fracture of clavicle in a child.
100. Anchylosed bones of elbow; excised.
101. Os calcis, etc. (diseased) excised from heel by Dr. Cameron.
102. Old fracture of back of skull.
103. Head of femur (diseased) excised by Dr. Morton.
104. Depressed comminuted fracture of temporal bone.
105. Oblique splintered fracture of lower end of tibia, the fibula broken in several pieces (attached by string to tibia).
106. United fracture of both bones of leg, showing osseous bond of union between the tibia and fibula.
107. United fracture of tibia.
108. Necrosis of tibia.
109. Bones from case of elephantiasis. The leg was 3 inches longer than its fellow. The bones are twisted.
110. Comminuted fracture of neck and trochanters of femur. One piece lost.
111. Comminuted fracture of neck and trochanters of femur. Two pieces lost.
112. Fracture of olecranon, shows mummification of arm. The arm was wrapped in cloth soaked in carbolic acid solution and was allowed to dry in a cold cellar, and in course of some months it arrived at this stage.
113. Bones from case of ununited fracture of the femur, the non-union was caused by the intervention of a layer of muscle between the ends of the bones. Some bits of dead bone came away from time to time during the treatment of the case. The centre of one fractured end is partly necrosed. The spongy tissue of lower fragment is very thin and feathery. The knee joint was not diseased. *Dr. M'Ewen's case.*
114. Necrosis of surface of lower end of shaft of femur. *Dr. Morton's case.*
115. Necrosis of centre of lower end of tibia, anchylosis of ankle joint, osteophytic deposit on the surface of spongy involucrum, rarefaction of bone all round the seat of necrosis. *Dr. Cameron's case.*
116. Contracted pelvis (autero-post diameter diminished).
117. Contracted pelvis (rostrated). Said to be from a case of mollities ossium under the care of Dr. Tannahill in the Maternity Hospital.
118. Skull with deeply indented groove for middle meningeal arteries. At one part the artery runs in a canal in the bone. To illustrate the following case.

119. Fracture of temporal bone, wounding branch of middle meningeal artery and causing death by hemorrhage. Patient was a boy who was struck by a stone on the temple. There was no external wound but considerable pain, which continued, and in 36 hours was followed by coma and death. At the post mortem examination a small triangular depressed fracture was discovered, and a layer of coagulated blood of the size and shape of an oyster shell was found lying between dura mater and skull. There was no injury to the brain nor any blood below the dura mater. *Presented by Dr. Henderson.*
120. Fracture of bones of leg near ankle, showing displacement of the lower fragment (dried and varnished preparation).
121. Bones from case of chronic rheumatic arthritis of left hip joint, and showing periostitic deposit on left femur lower down.
122. Sections of upper part of femur of a man aged 60, showing atrophy.
123. Sections of upper end of femur of a girl aged 25 (to contrast with 122).
124. Exostosis of sternal end of clavicle. The other half is in Series II., No. 94.
125. Sequestrum of necrosed bone and the cavity in which it lay. The case was one in which amputation in the thigh was performed on 4th April, 1862, on account of a railway injury. The patient was dismissed on 12th June, but returned on 12th September in a weakly state. The stump had inflamed and suppurated, and, on admission, the end of the bone was exposed and in a necrosed state. The necrosed bone was pulled out by forceps so far as possible, but a long sequestrum was detected which required another operation for its removal. A portion of the end of the femur was therefore sawn off, and the long sequestrum removed. The necrosed end of the stump and long sequestrum are shown in the preparation along with the part sawn off in order to remove the latter. The patient subsequently sank and died —the wound never having taken on a healing action. After death the other part of the preparation was obtained— namely, a portion of the bone from the stump, whose extremity had already become rounded. This preparation also shows the cavity in which the long sequestrum lay before its removal. In it also the production of new bone is well seen.
126. Fracture of tibia of ox (united).
127. Fragments from ulna in a boy with compound fracture of arm, showing greenstick fracture.
128. Skull with exostosis over right half of frontal bone. The interior at this place is eroded. Patient suffered acutely from frontal headache.

SERIES II.

BONES, JOINTS, AND MUSCLES.

[*Preparations in Jars.*]

1. Right lateral half of skull cap with a depressed fracture of the bone, and portion of dura mater, showing a laceration corresponding to the ragged edge of the depressed part.
2. Depressed fracture through the frontal sinuses, ethmoidal cells, and orbital plates of the ethmoid.
3. Fracture of the skull of a child, received by the falling of a slate from the top of a house; internal plate depressed. Two bristles mark the depressed portions.
4. Base of skull, right side. Fracture extending through lateral sinus and petrous part of temporal bone. Lymph fills the fissures of the fracture, and a considerable amount of bone-tissue has been removed by absorption or ulceration after fracture.
5. Fracture of the cranium immediately above left orbit.
6. Fracture of the fifth cervical vertebra; the body is fractured transversely. The laminæ at the junction with the articulating processes are also fractured perpendicularly.
7. Section of vertebræ, showing fracture of last dorsal vertebra. The spinal canal is almost obliterated opposite the fracture. The bones are partially re-united. The preparation has been dried and varnished.
8. Section of vertebral column, with a fracture of the first lumbar vertebra. A portion of the body is pushed back, pressing the spinal cord to half the natural size; patient had paralysis of the lower extremities.
9. Opposite section of above fracture, a coating of callus is thrown out at the anterior portions of the body, binding the vertebræ above and below.
10. Fracture of the body of a dorsal vertebra. A portion of the body is seen pressing backwards against the spinal cord, which is compressed and flattened laterally to half its thickness; pieces of whalebone are inserted to show the position of the bone more clearly.
11. Opposite section of vertebral column in the above case, showing more distinctly the body thrown backwards; also, the angular curvature of the parts. (Dried and varnished).

12. Oblique fracture of neck of femur below the trochanter major. The capsular ligament is entire, but where it is attached anteriorly the bone is fractured and bulging forward; some osseous deposit is developed on the periosteum at the lower portion of the fracture.
13. Fracture of the femur close to capsule of the knee joint; about two months after the injury. The preparation shows efforts at repair.
14. Fracture of the neck of the femur. A great amount of callus has been thrown out, but union did not take place.
15. Impacted fracture through the neck of the femur external to the capsule of the hip-joint.
16. Intracapsular fracture of neck of femur, occurring in an aged female; and caused by making a false step on to the causeway. No union took place, though there is some roughness by deposit of new bone. *Presented by Dr. M'Kenzie.*
17. Fracture of cervix femoris seven years previous to death. No mechanical attempts were made at re-union.
18. Dislocation of hip-joint, and formation of a false joint.
19. Dislocation of the head of femur upwards and backwards, in a case of morbus coxæ with caries of the vertebræ. The head of the femur is seen denuded of cartilage on the external surface; the ligamentum teres is ruptured, the head of bone pressing against the obturators and gemelli muscles—the gluteus medius and minimus are stretched—a portion of these has been cut out to show the head of the femur. The cotyloid cavity is denuded of cartilage and softened.
20. Hip-joint, seven years after the excision of the joint by Dr. James Morton. The patient was again admitted with a large abscess in the thigh of the same limb. She died, after a residence of three weeks in the house, of phthisis, &c. Strong fibrous union of the parts has taken place, the head of the femur being placed above the acetabulum. There was considerable mobility of the parts during life.
21. Intracapsular and impacted fracture of neck of femur.
22. Fracture of shaft of tibia, apparently compound, and with necrosis of several portions of dense bone. The specimen shows well the production of callus.
23. Fracture of tibia and fibula.
24. Fracture of the tibia.
25. Compound fracture of the tibia three weeks after fracture; amputated by Dr. Lyon.
26. Compound fracture of tibia.
27. Compound comminuted fracture of the leg. Patient was run over by some railway waggons. He lived eight or nine weeks, and died latterly of diarrhœa.
28. Fracture of the humerus at its upper third. Callus has been thrown out, but union has only partially taken place.

29. Comminuted fracture of tibia, fibula, and astragalus, dried and varnished.
30. Fracture of radius and ulna at the lower third.
31. Fracture of radius and ulna—the bones having assumed a curved form. The accident happened by the arm passing between two rollers of a doughing machine.
32. Diseased bones from the end of a stump, showing formation of new bone.
33. Cicatrised stump.
34. Portion of bone removed from the stump of a boy by Dr. E. Watson.
35. Portion of necrosed bone removed from a stump.
36. Portion of bone from a stump some time after amputation. Dead bone is seen in the centre, surrounded and clasped by a new growth of bone.
37. Portion of bone removed from the stump of a boy by Mr. Watt.
38. Glenoid cavity of scapula with acromion process from a boy whose arm was dragged off by machinery.
39. Head of femur in morbus coxarius after excision. The cartilage is worn away, exposing the cancellated structure of the bone. The patient was a boy aged 7 years. A fortnight after operation the great trochanter came away, it was in a cartilaginous condition, and is shown in the lower part of the jar.
40. Growth of bone which took place after the above excision, it protruded through the integuments in spite of position, &c., and latterly was excised. Another growth of bone took place, and the same thing happened. Amputation was then performed at the hip-joint, and the boy recovered admirably. Case of Dr. Lyon, May, 1856.
41. Spina bifida.
42. Oblique fracture of lower third of femur, the bone being in a necrosed condition. The surface is roughened by a growth of new bone, but union has not taken place.
43. Necrosis of femur, production of new bone.
44. Necrosis of the shaft of the femur.
45. Necrosis at the lower portion of the shaft of the left tibia.
45. Necrosis of femur in a youth.
47. Syphilitic necrosis of the frontal bone. An example of tertiary syphilis, probably complicated with mercury. The bone was removed during life by Dr. Lyon. The dura mater had become thickened and semi-cartilaginous. The patient ultimately recovered with, however, loss of the right eye.
48. Portions of bone in a necrosed condition. Removed from the frontal bone.
49. Exfoliation from the frontal bone.
50. Portion of bone exfoliated from the surface of the tibia, the effects of hospital gangrene, from a girl under the care of Dr. Fleming.

51. A small portion of necrosed bone.
52. Sequestrum of bone removed from tibia by Dr. A. Buchanan.
53. Necrosis of tibia.
54. Head of tibia in a necrosed condition; the articulating surfaces are much worn away, and in one a sequestrum about the size of a shilling exists.
55. Necrosis of tibia.
56. Necrosed shaft of tibia—separation of the sequestrum.
57. Caries of head of tibia.
58. Cancer of humerus.
59. Necrosed shaft of ulna—separation of the sequestrum.
60. Ulceration of tibia, fibula and os calcis on their anterior aspect. This has chiefly gone on in the tibia. The bones are all more or less hypertrophied, with spicula of new bone projecting from them. The interosseous membrane is ossified.
61. Hypertrophy of the tibia and fibula.
62. Lower half of tibia with thickening and degeneration.
63. Portion of base of skull with cervical and two upper dorsal vertebræ attached. A large irregular opening is seen in the situation of the left foramen lacerum posterius and condyloid foramina, the effect of caries. At various parts of the occipital and other bones, is a silky and somewhat worm-eaten like deposit. The three upper vertebræ have been more or less affected, the upper especially is much roughened by deposit. During life the boy, aged 15 years, complained only of stiffness in his neck. He had, however, an abscess behind his left ear, as also a post pharyngeal abscess. He died through debility.
64. Section of ribs and vertebræ of the right side of chest, from the preceding case of caries. The head of the sixth rib is completely eaten away. There existed an abscess about the size of a shilling piece in its situation, to which the lung was adherent.
65. Portion of base of skull and cervical vertebræ, showing disease of occipito-atlantal articulation. The man, aged 35, was put under the influence of chloroform in order to have the actual cautery applied. The chloroform having caused relaxation of the muscles of the neck, the atlas was allowed to press on the medulla oblongata, which produced instant death. The left condyle of occipital bone is almost entirely ulcerated away, as seen in preparation.
66. Diseased bones of a finger amputated by Dr. A. Buchanan, from a blacksmith who received a stroke with a hammer.
66A. Caries of the lower end of femur in an adult. The cartilages are denuded, showing the cancellated structure of the epiphysis.
67. Caries of femur at its lower fourth.
68. Caries of the lower portion of femur.

69. Caries of the condyles of the femur.
70. Lower third of femur in a necrosed condition; the articulating surface is nearly altogether worn away.
71. Gunshot wound of the thorax caused by a discharge of blank cartridge. A circular lacerated wound existed on the anterior wall of the chest at the junction of the third rib with its costal cartilage. On opening the thoracic cavity the third rib was found to be fractured about a quarter of an inch outside its junction with the cartilage, and the fractured portion was carried inwards upon the lung. The anterior margin of the left lung was lacerated to the extent of about an inch square, and in the wound was found the material which composed the cartridge used in a soldier's musket. The whole pleural cavity was much blackened as if by gunpowder, and emitted a peculiar fetid odour. It contained from six to eight ounces of fluid. The pericardium was entire, but on opening it the internal surface in a position corresponding to the injured part of the lung was somewhat red. A lacerated wound existed in the heart (as shown in prep. No. 42, Series III.), extending for about half an inch upon the anterior and lateral surface of the left ventricle, near to and parallel to the septum (see also Series IX., prep. No. 14). The present preparation shows the circular wound in the thorax, with the fractured third rib projecting inwards. The tissues are also seen to be somewhat blackened.
72. Caries of the condyles of femur in an adult.
73. Caries of internal table of occipital bone.
74. Upper portion of tibia in a state of necrosis.
75. Caries of tibia and fibula at ankle-joint.
76. Caries of tibia. Section shows absorption of the cancellated tissue.
77. Disease of knee-joint, amputated by Dr. E. Watson. The cartilages are eroded, the osseous tissue atrophied, the tibia and fibula in a carious state. An abscess has existed in the tibia, and a portion of bone about the size of a walnut is detached in centre of bone near the articulation.
78. Caries of the knee-joint.
79. Caries of the fibula in its lower third partially involving the tibia. The neighbouring bone is thickened and irregular from the irritation in its neighbourhood.
80. Caries of right humerus. Enucleation at the shoulder joint was resorted to after excision of elbow-joint and amputation of lower third of arm had been successively performed. The cause was traumatic. The patient was dismissed well.
81. Extremities of humerus and olecranon process in a state of caries. Excision of the elbow-joint was successfully performed.
82. Bones from excision of elbow-joint. The ends of the humerus and ulna are in a state of caries, and there is irregular formation of new bone in the neighbourhood.

83. Head of radius and olecranon process of ulna in a state of caries.
84. Caries of metatarsal bones for which amputation was performed at ankle.
85. Finger in a state of caries. It has been injected and halved longitudinally; in the upper section the bone is seen enlarged and filled with soft cheesy matter. The lower section shows the external surface of the finger, swollen and inflamed. About the middle is the abscess which had opened externally, filled with hard purulent matter.
86. Abscess of tibia at lower fourth, vessels injected.
87. Upper part of right femur. The head is flattened and enlarged by deposition of new bone. Arthritis deformans.
88. Portion of ilium, with a hole the size of a sixpenny piece half an inch from the crest.
89. Caries of the lower portion of tibia and fibula and ankle-joint.
90. Periostitis of lower end of femur.
91. Periostitis of humerus. Immediately below the neck the bone is seen bared for fully two inches; lower down anteriorly and posteriorly are two other portions denuded of periosteum; the margins of the periosteum being thickened and indurated.
92. Spongy exostosis of the sternal end of the clavicle.
93. Left ramus of lower jaw, with a fibrous tumour attached or growing from its inner side at angle of jaw.
94. Exostosis of sternal end of clavicle, following an injury received twenty years before death. The opposite section in Series I., No. 124.
95. Disease of first phalanx of finger.
96. Portion of calvarium with a tumour growing from its inner surface. There is a smaller tumour on the outer surface laid open, which was filled with bloody fluid and some clot. The bone at this part is destroyed, and a small communication exists between the outer tumour and the inner. A large portion of inner tumour is blood. History,—J. A., æt. 42, slater, admitted May 20, 1862. For eight days previous to admission had constant severe headache with debility, for which he was sent to the fever wards. While there the pain was found to be persistent in a swelling over the left parietal bone. Four years previously a slate had fallen from a height upon this spot, and lately the swelling, which seems to have existed since the blow, had been growing rapidly. The swelling was soft and fluctuant, painful when pressed upon. Five days after admission the pain became aggravated, and seemed to originate from the sub-occipital nerves. Was blistered with relief. Four days after became suddenly insensible—pupils contracted—extremities cold—moved himself in bed as if sensible, but never spoke, and died next day.
97. Fibrous tumour, with portion of lower jaw, removed by Dr. Lyon, 18th June, 1862. The centre of the tumour is composed of

bone: a bristle marks the margin of the bony portion; another bristle is stuck in a tooth which has been turned inwards by the tumour. History,—J. G., æt. 11, admitted to ward 23 on 12th June. Twelve months before admission the patient observed a slight swelling on the gum in the neighbourhood of the second molar tooth on the right side of the lower jaw. On admission, the tumour felt slightly elastic, involved the teeth in its neighbourhood, and presented a slightly suppurative surface. The wound healed favourably.

98. Tumour removed along with the lower jaw to which it is attached, by Mr. Watt. About four years before admission patient had the second molar tooth of lower jaw on the right side extracted. She felt a little pain in the vacant place for upwards of a month, when the jaw around the old site of the tooth began to enlarge. This gradually increased, with occasional twinges of pain like toothache. The tumour extends from angle to symphysis; it presents a hard bony case externally, the internal portions being in great part composed of soft tissue, but with intermixture of dense bone. The soft tissue which is most abundant anteriorly, presents numerous cysts. On microscopic section it is found to be made up principally of small spindle-shaped cells, with calcareous spicula here and there; also at some parts true bony lamellæ. The case may be set down as one of spindle-cell sarcoma (or recurrent fibroid), originating within the jaw, and distending the bony walls of the body of the maxilla. The alveolus is enlarged, the two bicuspid teeth are diverted from their proper position, the grinding surfaces looking nearly inwards—the gum was somewhat ulcerated.

99. Osteo sarcoma of upper end of tibia.

100. Section of the upper third of a femur. The medulla is seen to be one mass of cancerous deposit; at its middle the bone has been fractured completely across, but it now is surrounded with callus and infiltrated cancerous matter. At various parts the outer wall of bone has been very much absorbed and reduced to extreme tenuity; its place being filled with this soft deposition of cancer tissue. The patient, a female, had previously cancer of the breast which was extirpated. *Presented by Dr. Drummond.*

101. Opposite section of the previous preparation.

102. Osteoid cancer of the upper third of the tibia, for which the leg was amputated by Dr. Lyon. Patient, a cachectic man of 35 years of age, stated that pain commenced in the part about six months prior to his admission. He attributed its origin to a blow from a stick. The stump healed kindly, and he was dismissed apparently well. On careful examination it will be seen that the malignant deposit has taken place both between the periosteum and the bone and in the medullary canal. The colouring matter is the hæmatin of the blood preserved by toasting, &c.

103. Section of previous preparation macerated.
104. Malignant disease of the lower third of the femur. The cancer has infiltrated into the medullary canal, and between the periosteum and the bone. The leg was amputated at the hip-joint by Dr. Watson, and the patient ultimately died of malignant disease of the lungs.
105. Section of the preceding preparation.
106. Fibrous warty growths on dura mater eroding skull in frontal region, one of them has ossified and formed a flat button on the vitreous plate. (*Path. Rep.* February 12, 1877).
107. Small portion of humerus from a case of very large cancerous tumour of the shoulder. The cancer is seen to spring from the medullary canal. A wax model of the tumour is seen in Series XIII., No. 52. There was also secondary affection of the lung in this case, as may be seen in Series IV., Nos. 46, 47, and 51.
108. Cancerous tumour and surrounding tissues of lower jaw. Excised by Dr. Lawrie.
109. Medullary cancer in middle third of the femur producing spontaneous fracture. History,—Mrs. Campbell, aged 45, admitted October 14th, 1862, with a tumour of left thigh which began six months prior to admission, with a severe pain which nothing could relieve. The swelling soon began to appear, and the lancinating pain became so severe that she was bed-ridden two months before admission. Patient stated that the bone "gave way" two weeks before her admission; crepitus could be felt in the neighbourhood of the tumour, and a thin bony shell was felt crackling below the finger on pressure. Amputation in the thigh was performed by Dr. Lyon, on 5th November. The patient left on 27th December nearly well.
110. Malignant disease of the upper third of the tibia. The leg was amputated by Dr. Watson. The stump healed kindly.
111. Section of the preceding preparation macerated.
112. Fibro-sarcoma springing from the periosteum of the tibia and fibula, and partly infiltrating the tibia. Microscopic section of the external parts shows the tissue to be completely cellular, the cells being generally of a spindle shape. In the internal parts there is a tendency towards ordinary connective tissue, in some parts even the wavy fibrous appearance.
113. Osteoid sarcoma of the tibia occurring immediately beneath the knee-joint. Removed by Dr. Lyon.
114. Myeloid tumour of the lower end of the femur. This preparation shows a section of the tumour and a portion of the tibia, while the next in order presents its relations to the femur. By the study of these two preparations, it is seen that the end of the femur has become very much expanded, the external shell of the tumour being continuous with the bony tissue of the femur, a portion of the articulating surface of

the knee-joint forming a part of the shell. The tumour is thus enclosed in a bony case, and in addition septa run in and divide the tumour into distinct departments. These definite spaces are filled with a softish tissue, which, on microscopic examination, is found to present extremely abundant myeloid or giant cells, with small oval or round cells between. The latter average about $\frac{1}{2000}$ of an inch in diameter, and the myeloid cells vary from a little above this up to $\frac{1}{300}$ of an inch. History,—Isabella Potts, aged 32, admitted Jan, 28th, 1863. Patient stated that two years previous to admission she fell while at work and injured her left knee, since which time a tumour has been gradually growing there. The tumour was as large as an adult's head, and stony hard to feeling, extending over the joint and evidently growing from the femur. The joint was preternaturally movable, and patient unable to stand on the limb or move it herself. The thigh was amputated by Dr. Dewar, who was officiating for Dr. Lyon, on 4th February. Patient made a good recovery.

115. Section of preceding preparation macerated.

116. Scrofulous exudation in the ear and base of skull.

117. Congenital malformation of the arches of the dorsal vertebræ. Spina bifida. The arches are incomplete for about $\frac{3}{4}$ inch in this region, and from this point downwards the cord seems atrophied. There has probably been a cyst filled with cerebro-spinal fluid projecting externally, a portion of the skin covering it having been preserved in the preparation. No history is given, and the above description is written by simple inspection of the preparation.

118. Diseased bones of knee joint.

119. Knee joint with incipient disease of condyles and patella. Two erosions of cartilage, each about the size of a fourpenny piece are seen on the condyles of the femur. The inner surface of the patella is eroded and roughened, it is likewise coated with a villous structure, which is distributed in limited patches in various parts of the joint. *Presented by Dr. Hodgson, and obtained by him in the Dissecting Room.*

120. Knee joint showing ulceration of cartilage. The bones were fixed at right angles during six months previous to the removal of the leg, as seen in the preparation, the patient being unable to move the joint.

121. Knee joint of a boy laid open to show the gelatinous degeneration of the synovial membrane.

122. Knee joint injected, and showing ulceration of the cartilage and synovial degeneration. At some parts the cartilage is seen thinned, the vascular structure of the bone shining through.

123. Ulceration of cartilage of knee joint. Bones were fixed in the abnormal position which they at present occupy for a considerable time prior to the leg being removed. Patient (a male) was 23 years of age and made a good recovery.

124. Diseased knee joint amputated by Dr. Lyon.
125. Knee joint and leg of a boy laid open to show ulceration of the cartilages and caries of the ends of the articular surfaces of the bone.
126. Knee joint with diseased articulations, amputated by Dr. Lyon.
127. Knee joint from a young person, showing a small spot of ulceration of cartilage about the size of a wafer.
128. Disease of knee joint of three years' standing, for which amputation in thigh was performed. The patient died.
129. Ligaments of knee joint, dried.
130. Ulcerated patella from limb amputated by Dr. G. Buchanan.
131. Patella having a patch of ulcerated cartilage. A portion of whalebone is passed through a sinus which existed immediately above the joint. From the same case as No. 122.
132. Section of cervical vertebræ, the ligaments stretched and partially ruptured, portions of the inter-vertebral cartilage torn. The theca of the spinal cord is entire, but there was clotted blood pressing on it when opened. The man had paraplegia of both extremities, but lived some hours. He received the injury by falling backwards out of a cart.
133. One half of preceding preparation dried and varnished.
134. Ligaments of wrist joint dried—separation of epiphysis of the radius.
135. Cancer of bone.
136. Lower extremity of femur with softening of the cancellated structure of the bone.
137. Supernumerary fingers removed from a child. The lower one is cut open to show the internal structure; there is no bone.
138. Toes removed from malformed feet.
139. Fatty degeneration of muscle.
140. Piece of muscle containing trichina spiralis. *Presented by Prof. A. Thomson, University.*
141. Portion of diaphragm with tuberculous deposit.
142. Erosion of sternum from pressure of aneurism of the thoracic aorta. The inner table is seen to be in part destroyed, and the cancellated structure exposed.
143. Restoration of os calcis after subperiosteal removal. The removal was effected three years ago, and the bone has been in considerable part restored. The operation was resorted to for disease of the bone, which disease recurred and led to the removal of the foot, May 17, 1871.
144. Caries of the temporal bone, causing death by meningitis. The bone has been sawn through in two places in order to expose the disease, namely—nearly parallel to, and through the centre of, the external meatus; and, in the second place, posterior to this, through the mastoid process. On examination of these sections, it is seen that just above the external meatus, but pretty deeply in the substance of the bone, an irregularly-shaped cavity exists (indicated by a green rod),

whose diameter is about half-an-inch. In the other section it is seen that, from this cavity downward to the mastoid cells, the bone is irregularly eaten out, and so soft as in most parts readily to break down before the finger nail. Between the cavity and the mastoid cells there is no well-defined passage, but a bristle is passed down by a tortuous communication among the carious bone. It is to be noted that there was no perceptible lesion on the cerebral surface of the temporal bone. On the surface of the brain were several patches of recent lymph, one existing on the middle lobe posteriorly, but several others presenting no relation to the temporal bone. The history of the case shows that pain had been present in the left ear for three weeks before death. At the outset of this pain there was a discharge from the ear, which lasted six days and then dried up, recurring, however, on two occasions after. Five days before death symptoms of cerebral mischief set in, and the patient finally died comatose. See *Path. Rep.*, August 12, 1871.

145. Spina bifida about the middle of the dorsal region. In the preparation the lateral aspect of the column is removed on the left side so as to show the relation of the spinal cord to the contents of the sac. By this means it appears that a portion of the cord is continued into the left side of the wall of the sac, where the latter is held open by a piece of whalebone. Beneath this point the diameter of the cord is very distinctly diminished. The sac is of considerable dimensions, and when first examined, was filled with clear fluid. A communication exists between the cavity of the sac and the interior of the dura mater spinalis, the aperture, which is small, being shown in the preparation by a bristle. At the upper part of the preparation the section of the cord shows that the central canal is dilated to an extremely marked extent, the canal reaching about the diameter of a line. This, along with the intimate relation of the cord to the wall of the sac, suggests that the case has originated in hydrorachis interna.

146. Permanent dislocation of the knee-joint, the result of chronic arthritis. The femur and tibia are displaced in an antero-posterior direction, the latter being behind and the former in front. They are firmly united by fibrous connections, as is also the patella to the anterior surface of the femur. The preparation exhibits a section of the deformed joint.

147. Caries of vertebræ; dorsal abscess. In this case there was a small wound externally in the dorsal region communicating with the empty cavity of an abscess to the right of the dorsal spines. There was also a large collection of

pus inside the chest behind the large vessels and œsophagus, and immediately in front of the bodies of the vertebræ. The bodies of the vertebræ were very much eroded, as is shown in the preparation. The vertebræ affected were the second to the ninth dorsal. The abscess contained fluid pus mixed with a semi-solid yellow material. The liver, spleen, and kidneys presented a rather advanced amyloid degeneration.—The patient was a girl 16 years of age, who was admitted with a large fluctuating tumour in right dorsal region. The urine suggested the existence of amyloid degeneration of the kidneys; it contained albumen, but no tube casts were observed. The abscess was opened and kept antiseptic. *Path. Rep.*, June 6, 1871.

148. Cysto-sarcoma of thigh. The left thigh in this case was occupied by a tumour which extended from the pubis to the knee, and lay to the inside of the femur (see a sketch in Report-book). The tumour was found to lie behind the large femoral vessels and the superficial muscles, but the deeper muscles were closely related to it, and some of them lost in its substance. The tumour did not appear to be attached to the pelvis or femur, but its limits were rather ill-defined. In removing it a number of cysts were opened into, and a bloody fluid to the extent of 2 or 3 pints flowed out. After removal the tumour weighed 13 lbs. The surface presented numerous rounded projections, most of which were fluctuant, and on section the tumour was seen to be composed of three constituents—a soft solid white material, innumerable cysts, and a considerable mass of bone which occupied the surface. The cysts contained either a clear yellow fluid or a grumous bloody material. They are of very various sizes, and the general section presents a very irregular mixture of larger and smaller cysts, and solid material, with the bone externally. A soft tumour containing cysts was found in the posterior mediastinum adhering to the pericardium behind. On the surface of the lump were a number of growths, some of them pedunculated. There were also many in the substance of the lump. The abdominal organs were normal, with the exception of slight enlargement of the spleen. The patient was a woman aged 57, a hawker. She stated that the tumour began eight years before as a small lump the size of a halfpenny on the under surface of the thigh. She was able to go about her duties till a fortnight before admission. On admission, which was about three weeks before death, the following measurements were made:—

Circumference close above knee, - - - 15½″
„ middle of thigh, - - - 28½″
From ant. sup. spine to knee over greatest prominence, 36½″
Path. Rep., Oct. 19, 1874.

149. Ununited fracture of tibia and fibula. (See *Path. Rep.*, Sept. 11, 1873). Patient admitted August 9, 1873; died September 10th. No attempt at union. The case was complicated by fractured ribs and enteritis. The fractured ribs had quite united.

150. Old united fracture of the skull, passing upwards and backwards from middle of temporal bone towards the occiput. At one place the edges of the fracture are thinned away and a gap is left between them; the junction of the fracture is marked by a slight furrow. Under the skullcap at and near fracture a layer of firm tough fibrous tissue occupied an area of 2½ inches diameter. This can be peeled off the dura mater, to which it closely adheres, and displays a laminated character. Its colour is mottled fawn. Under the microscope it is seen to consist of irregularly arranged bundles and plates of rudely outlined fibrous tissue, with a very few nuclear bodies and here and there masses of residual pigment. See *Path. Rep.*, May 6, 1875.

151. Hipjoint disease of 5 years standing: the floor of acetabulum is eaten away: and partial anchylosis of head of femur has taken place with os innominatum. Cancellated structure of upper part of femur transformed into a clear red jelly with a few spicula of bone here and there. Amyloid liver: tubercle of lungs. (Heart preserved III. 129). *Path. Rep.*, June 4, 1875.

152. United fracture of the costal cartilages. In this case the 7th, 8th, and 9th ribs had been fractured half-an-inch from the union with the costal cartilages: and the 7th, and 8th costal cartilages had also been broken at an inch from the same point. The two broken ends of the cartilage ride on each other, and their union has been effected by means of bone. *Path. Rep.*, June 18, 1875.

153. Dislocation of neck. The intervertebral cartilage between 3rd and 4th cervical vertebræ is torn across. The injury was due to a fall down a stair: patient lived six weeks. The cord, which is in a separate jar, was bruised at the spot of dislocation, and disorganised over a limited area. Bones not injured otherwise. *Path. Rep.*, July 28, 1875.

154. Recent fracture of 8th left costal cartilage, the result of a fall from a third storey. Patient died two days after the injury. No extravasation of blood near the fractured cartilage: the ends tended to ride slightly. *Path. Rep.*, August 9, 1875.

155. Dislocation of neck: between 5th and 6th cervical vertebræ. Cord bruised at the place, as in II. 153. Patient lived 3 days. Complained of severe pain in neck shooting down to shoulder: localised tenderness over 5th cervical spine. Complete motor and sensory paralysis below clavicles. Conscious up till death. Injury caused by a fall of 12 feet, patient striking with the back of the neck. Seemingly no fracture of the bones. *Path. Rep.*, August 5, 1875.

156. Starred and vertical fracture of tibia. The result of a fall from a fourth storey. Patient landed on her feet: the femur of opposite leg was fractured in two places. *Path. Rep.*, August 9th, 1875.

157. Compound fracture of tibia just below tuberosity; result of a kick from a horse. The patient died of septicemia 21 days after admission: the bone was bared of periosteum at seat of wound: there was no attempt at union: the fracture extends transversely, but sends a process upwards through the external condyloid surface into knee-joint: the whole interior of knee-joint grey and sloughy. In this case the fracture was not diagnosed during life: patient walked into the ward, and there seems to have been no suspicion in the mind of any of the attendants that his leg was broken. The fracture extends quite across the tibia, but its surfaces are so constructed as to dovetail into each other to some extent. *Path. Rep.*, Sept. 15, 1875.

158. Caries of ankle—amputation. The ankle-joint in this case was crossed by numerous short soft lymph bands, uniting the surfaces of the tibia and astragalus, which bands being torn across these surfaces were seen altered, soft, reddish. There are numerous sinuses on the outer side of the ankle, leading to bare bone.

159. Bones from compound fracture of tibia and fibula (right), showing position of broken ends: the upper fragments projecting downwards and inwards. *Path. Rep.*, Nov. 18, 1875.

160. Specimen showing ossification of costal cartilage going on externally, and at the same time calcification in the centre.

161. Bunion of right great toe, dissection down to the ligaments, and shewing (1) lateral enlargement of the head of metatarsal bone; (2) twisting of phalanges outwards so as to lie on the second toe; (3) consequent position of the sesamoid bones on the outer side of the joint. A bursa was found over the tuberosity on the inner side of joint, and over the bursa thick horny skin.

162. Pedunculated exostosis from scapula: the pedicle was cut through in removing it: the mass was then bisected, and the radiating arrangement of the cancellated bone may be seen: the nodular surface of the growth is

covered with cartilage, from which the neck is free. *(From Dr. Cameron).*

163. Necrosed cancellated bone from lower end of tibia. *(Dr. H. Cameron.)*
164. Necrosed cancellated bone from lower end of ulna. *(Dr. Foulis.)*
165. Lipoma arborescens: fatty enlarged synovial fringes in knee-joint, in a case of elephantiasis of leg. *Path. Rep.*, Dec. 31, 1875.
166. Intracapsular fracture of neck of left femur in a woman, aged 71, who died six days after the fracture. The capsule at the anterior part has been cut in removing the bone and the fracture can be seen with reddish-grey bands of lymph (or clot) passing between the surfaces. These bands shew under microscope fibrin reticulated in places, with blood cells, fat drops and diffused hematin. The fracture was caused by a fall on the trochanter, when the patient was opening a gate. *Path. Rep.*, April 29, 1878.
167. Division of the third right rib into two at its sternal end. The cartilage is also divided and thus an oval foramen is formed, two inches long by one broad, and in which the internal intercostal muscle is seen perfectly healthy although it could have no possible duty to perform, from the perfect fixture of the two parts.
168. Fracture of costal cartilage (8th right). The fractured ends united by bony deposit (cancellated).
169. Ulceration of cartilages of knee-joint.
170. Exostosis from metacarpal bone of little finger. *(From Dr. Hector Cameron.)*
171. Same as 170—dry and macerated.
172. Fracture of lower end of radius, and styloid process of ulna, with displacement backwards of carpus along with the fragments. The outer half only of the articular surface of the radius is as it were bruised off, the ulnar half of this surface is intact. A peculiar impaction of the fragments has taken place, which would effectually prevent replacement of the carpus. *(Dr. H. Cameron's wards.)*
173. Thumb and extensor tendon bitten off a man's hand by a donkey. At the upper end of the tendon some muscular fibres are adhering. Case, 30th August, 1878: (see *Glasg. Med. Jour.*): 10 inches of tendon of which $5\frac{1}{2}$ inches are coated with torn muscular fibres. Compare S. IX., No. 10. *(Dr. Macewen.)*
174. Caries of lower end of humerus; joint intact. *(Dr. Cameron.)*

175. Bone fragments from a case of compound comminuted fracture at ankle. Patient made a good recovery, retaining a useful foot. *Dr. Cameron*, 1877.
176. Chronic rheumatic arthritis of elbow, in a sailor: there were loose bodies in the joint.
177. Scaphoid bone which was jerked out of its place (in a case of fall on the palm of the hand and fracture of radius, and ulna at wrist, under Dr. Cameron) and which lay under the flexor tendons in front of wrist joint. Dr. Cameron cut down on it and removed it. Patient made a good recovery. March 1877.
178. Foetus with extensive spina bifida, presented by Dr. Hugh Miller. There is also harelip and cleft hard palate: the neck is absent: and the feet are in the condition of talipes varus.
179. Talipes varus, dissected to show the state of the plantar fascia and abductor pollicis, and their relation to the deformity. From the body of a young man æt 17, in p.m. room.
180. Double rotary lateral curvature in dorsal region: no deviation of spinous processes. In a carter. (*Case*, Nov. 16, 1877.)
181. Part of skull cap and dura mater showing old effused blood between them at the left half of the occipital bone, probably due to injury. There is no fracture, but the interior of the skull is eroded.
182. Colles' Fracture of radius. The radius is broken about $\frac{3}{4}$ inch from the lower end. The fracture runs in a sinuous line across the front of the radius, upwards and outwards: and here the periosteum was not torn at the time of fracture, the fragments lying in good apposition: but behind, the upper fragment is impacted below the edge of the lower fragment which thus rides upon the upper one. This lower fragment behind is somewhat splintered. The tip of the styloid process of the ulna is broken off and separated from the shaft for about $\frac{1}{4}$ of an inch. On trying to reduce the fragments of the radius, reduction was found to be impossible without the exercise of great force. The fragments of the radius move on each other as if hinged at the anterior part of the fracture, while on the posterior aspect the fragments overlap.
183. Necrosed spongy bone from tarsus of foot, removed by Dr. Lothian (July, 1877). The specimen has a black colour and is exactly like a cinder.
184. Sequestrum of cancellated bone. *Dr. H. Cameron.*

185. Metacarpal bone coated with soft porous new bone. *Dr. H. Cameron.*

186. Case of compound fracture of the humerus in a boy from injury, causing separation of the upper epiphysis, under the care of Mr. Clarke, who amputated at the shoulder on finding several days after the injury that the arm had become gangrenous.

187. Section of foot, shewing necrosis of the spongy bone.

188. Spina bifida in lumbo-sacral region of a child 4 months of age. The mass was injected with sol. iodi by Dr. Morton, and this had set up an acute inflammation and suppuration in the sac, which was lined by pale yellow lymph and full of pus. The sac is shown cleared out, and the nerves in the cauda equina can be seen to cross it. They too were thickly coated with lymph. The aperture to the spinal canal, shown by a bristle passed into it, was quite occluded with lymph, the whole of which has been cleared out. The inflammation seems to have been limited to the sac. The bodies of the vertebræ have been divided with the knife, to show their relations to the cleft; and it would seem that the last two lumbar and the upper sacral vertebræ are involved. (June, 1878.)

SERIES III.

HEART AND BLOOD VESSELS.

1. Portion of left ventricle with vegetations on the auriculo-ventricular valve.
2. Contraction and induration of the mitral valve.
3. Hypertrophied heart.
4. Mitral disease. From the body of a woman 38 years of age. A calcareous deposit with an elevated rough surface is seen on the auricular surface of the valves and in the auricle. The patient died suddenly. Death was supposed to have been caused by embolism, but none was detected at the autopsy. There was considerable effusion into the pleural cavities and general dropsy.
5. Calcareous degeneration of the mitral valves of heart.
6. Disease of the mitral valve. The patient, whose age was 48, had frequently suffered from acute rheumatism.
7. Contraction of left auriculo-ventricular orifice associated with anasarca.
8. Disease of mitral and aortic valves. The preparation was removed from a man aged 68, who died of general dropsy. No history obtained. The preparation is a good example of mitral and aortic insufficiency.
9. Section of heart with contraction of left auriculo-ventricular orifice.
10. Atheromatous deposit on the aortic valves.
11. Portion of heart with fibrinous deposit on the middle semilunar valve of aorta, also atheromatous deposit on aorta.
12. Atheromatous deposit on the aortic valves.
13. Valves of aorta with ossific deposit.
14. Thickening and perforation of one of the semilunar folds of the aortic valve.
15. Disease of aortic and mitral valves. The patient from whom the preparation was removed, a man aged about 70, was almost moribund when admitted.
16. Hypertrophy and degeneration of the semilunar folds of the aortic valve.
17. Calcareous degeneration of aortic valves. The valves adherent, and almost completely closing the aperture with a rigid partition. Much deposit of a calcareous nature is

also seen on the endocardium. The left ventricle was much dilated, and its walls hypertrophied. Patient suffered from angina pectoris for two years prior to death. General dropsy for some time before death.

18. Perforation of mitral valve. The mitral orifice is considerably contracted, only admitting one finger. On the anterior curtain of this valve there is a thickened and softened patch which has been partly torn away in such a manner as to form a valved opening towards the ventricle. The opening is triangular in shape and large enough to admit a horse bean, while the loose portion of tissue is so arranged as to close the aperture as by a valve against regurgitation from the ventricle.
The patient during life complained of ascites, œdema of legs, breathlessness, &c. There was also considerable albumen and tube-casts in urine.—*Path. Reports*, Sept. 22, 1870.
19. Hypertrophy with great dilatation of left side of heart. Insufficiency of aortic valves and perforation of one of the folds. Aorta much diseased. History,—A man, aged 65, admitted, suffering from general dropsy, he died on the third day after his admission.
20. Heart with polypous concretions in left ventricle. The patient died from the effects of an embolism, situated just at the bifurcation of the abdominal aorta, and obstructing the right common iliac completely, and the left partially. The case is published by Dr. Steven in *Glasg. Med. Journal*, February 1st, 1870.—See *Med. Path. Reports*, 150, Nov. 26, 1869.
21. Large clot adherent to one of the mitral valves. Patient died of embolism. The middle cerebral artery, immediately before its division, was obstructed by a firm clot. The cerebral softening was not extensive.
22. Heart with decolorised clots of fibrine in the cavities.
23. Hypertrophy of the heart.
24. Hypertrophy of the heart.
25. Hypertrophy of the heart, opened, and showing thickening and contraction of the mitral valves. On the ventricular side is seen an excrescence of the size of a sixpenny piece, the semilunar valves of the aorta have their free edges as thick as cords and very much contracted.
26. Hypertrophy with dilatation of left ventricle, with aneurismal dilatation of the sinuses of Valsalva.
27. Hypertrophy of heart, and thickening of pericardium.
28. Heart and pericardium greatly hypertrophied and covered with deposition of lymph from pericarditis. The heart

and its containing sac weigh 32½ ounces. When removed from the body the sac contained 17 ounces of curdled lymphy fluid.

History.—D. M'D., aged 36, admitted on 29th April, 1862. About seven weeks before admission had a shivering and other symptoms of pyrexia. A short time after was seized with acute pain in left side, accompanied with cough and rusty expectoration. He gradually became weak, and a fortnight before admission he lost the power of his left arm. On admission he passed urine and fœces involuntarily. On examination of chest extensive dulness was detected over both lungs with mucous crepitation. Journal contains no entry of pericarditis being diagnosed. He became anasarcous in June, and died in a dropsical state of the whole body.

29. Pericarditis.
30. Pericarditis. The pericardium is thickened and rough internally, with loose deposit of lymph, and it is adherent to the left lung.
31. Pericarditis and endocarditis.
32. Heart with a thick deposition of lymph from pericarditis. The muscular tissue is much hypertrophied. The pericardium was thickened and lined with lymph similar to that which covers the heart. In the fresh state two honeycomb surfaces were presented to each other. The pericardium contained a large quantity of fluid with flakes of lymph.
33. Hypertrophy of heart with pericarditis. The pericardium is closely adherent to the heart, and very rough. The bronchial glands are much enlarged.
34. Heart with a thick layer of lymph, from a case of pericarditis occurring in 'a fever patient. Bronchitis was so severe that pericarditis was not detected during life.
35. Pericarditis and hypertrophy of heart.
36. Pericarditis, deposition of lymph on heart. Thickening of pericardium with extensive exudation of false membrane, forming attachments to aorta, lungs, &c.
37. Pericarditis of old standing, the pericardium much thickened and adherent. The patient was a man, aged about 39, admitted in a moribund condition.
38. Heart and pericardium, with deposition of lymph from pericarditis.
39. Patent foramen ovale, in a case of cyanosis.
40. Aneurism of coronary artery of heart behind semilunar valves of aorta.
41. Heart. Aneurism of sinus of Valsalva.

42. Gunshot wound of heart, from the same case as No. 71, Series II., which see.
43. Aneurism of thoracic aorta rupturing into thorax. The aneurism arises from the posterior wall of the aorta by an aperture large enough to admit three fingers, and situated about the level of the diaphragm. From this opening the aneurism bulged into the thorax and abdomen, occupying the middle line, but extending more to the left side than the right. In size it exceeds the bulk of the closed fist. While the anterior and lateral walls are formed of the condensed neighbouring tissues, it was found that there was no proper posterior wall, this being formed by the bodies of the two last dorsal and first lumbar vertebræ which were considerably eroded. Death occurred in this case from rupture of the aneurism into the left pleural cavity. The rupture was situated just above the level of the diaphragm on the left side and was large enough to admit three fingers. The left pleural cavity contained 3 lbs. 12 oz. of solid clot and a pint-and-half of blood-tinged serum.
The patient had sustained a fracture of the left ribs 33 years before death. He had great pain in the splenic region 5 years ago, which returned 18 months before death, and then became almost unbearable. He died suddenly.—*Path. Report*, Nov. 17, 1870.
44. Aneurism of aorto.
45. Aneurism of aorta at ascending arch.
46. Aneurism of first part of the aorta. It commences apparently on its inner curvature and grows most prominently outwards and forwards so as to project between aorta and pulmonary artery. The ductus arteriosus is stretched across the left lateral part of the tumour and measures $1\frac{1}{4}$ inch. The pulmonary artery at its origin is much compressed, and an opening exists in it communicating with the cavity of the aneurism.
The posterior lobe of the aneurism passes backwards so as to compress the right division of the pulmonary artery and laterally the superior vena cava. Considerable increase or hypertrophy of muscular texture encircles the root of the vena cava as it enters the right auricle, extending upwards upon its surface for more than an inch. There is dilatation of the right auricle and ventricle. Between the vena cava and the anterior lobe of the aneurism the tube of the ascending aorta is seen giving off regularly the innominate, c. carotid and subclavian. The surface of the heart is covered with old adhesions due to pericarditis.

47. Sacculated aneurism of arch of aorta.
48. Aneurism of arch of aorta.
49. Diffuse aneurism of transverse portion of arch of aorta burrowing beneath the tissues on front of neck. A portion of the clavicles and top of sternum form the base of the tumour. The cavity compared with the size of the tumour is small from the great deposition of fibrine and coagulum. The opening in the arch is slightly to the right of the giving off of the arteria innominata. The arch itself is opened and pinned up against the œsophagus and large vessels of the neck showing its atheromatous condition.
50. Aneurism of arch of aorta.
51. Aneurism of decending aorta.
52. Aneurism of aorta. Rupture into trachea immediately above its bifurcation. The history of this case is at first that of simple double pneumonia affecting first the left lung, and then the right. It was also noted that the voice was hoarse, and dulness existed at the right apex. In the midst of the attack of pneumonia the patient died suddenly after vomiting a large quantity of dark blood.
The body was found very blanched. The left lung was involved in pneumonia almost throughout, having passed to the stage of grey hepatisation. The right lung presented splenisation in the upper lobe, and red hepatisation in the lower. The trachea was occupied by a clot, which formed a mould of the tube. The ulcer seen in the preparation was found in the trachea. The aorta was found dilated, and dots of atheromatous deposit were seen. A clot is seen to occupy a communication between the aorta and trachea.—*Medl. Reports*, No. 206, Feb. 1869.
53. Aneurism bursting into the right bronchus.
54. Aneurism of aorta bursting into œsophagus.
55. Aneurism of arch of aorta bursting into left lung.
56. Aneurism of arch of aorta.
57. Aneurism of popliteal artery. The artery is injected.
58. Section of the knee joint, with an aneurism of the popliteal artery as large as a child's head.
59. Aneurism of arch of aorta.
60. Aneurism of arch of aorta.
61. Calcareous deposit in the arch of the aorta.
62. Portion of aorta with ossific deposit, dried and put up in turpentine.
63. Portion of artery with ossified deposit, also a portion of anterior tibial artery completely ossified, from a patient who died from senile gangrene.—*Path. Report*, No. 19, 1858.

64. Portion of aorta with calcareous plates, dried and put up in turpentine. From the same case as No. 77.
65. Portion of artery with ossific deposit occurring immediately behind the valves, from a female who died from an injury.
66. Portion of aorta with ossific and atheromatous deposit, dried and afterwards put up in turpentine.
67. Calcareous degeneration in the arch of aorta.
68. Globular aneurism of abdominal aorta.
69. Atheromatous ulcers on aorta.
70. Semilunar valves and arch of aorta, with atheromatous deposit.
71. Portion of aorta with ossific and atheromatous deposit. *Path. Report*, 81, 1858.
72. Splenic and superior mesenteric veins and a part of the portal. The preparation shows calcareous degeneration of the splenic and portal veins. One very large plate of calcareous deposit is seen on the one side of the portal vein which is kept in a distended condition. History,—A man, aged 45, admitted suffering from ascites, ultimately died of exhaustion caused by hematemesis and discharge of blood from the bowels. There was no lesion of the stomach or bowels. The hemorrhage was caused by obstruction of the portal circulation. Spleen in Series V., 62.
73. Portion of liver from above case. The portal vein is seen to be much obstructed by clot and calcareous deposit.
74. Calcareous degeneration of thoracic aorta.
75. Portion of aorta with calcareous and fatty degeneration.
76. Femoral artery and vein, from a case of senile gangrene of right foot and leg.
History.—J. M'D., aged 79, admitted March 18th, 1862. About a fortnight before admission patient was suddenly seized with severe pain in foot and leg, extending to upper third, accompanied with loss of sensation; in a few days the part became sensibly colder. On admission those symptoms still existed, and the pain seemed to be very intense. There was no pulsation in the femoral artery below the origin of profunda, above this point pulsations were vigorous. Foot and lower part of leg soon became colder and of a bluish colour. The patient said his foot felt like a piece of cork or sponge. Heart sounds regular and unaccompanied with any bruit. Leg gradually became black, patient's mind began to wander, and he sank and died 13th April, no exact line of demarcation being formed.
Autopsy.—Leave was obtained to examine the leg, but not to open the cavities. Femoral artery was found patent above the origin of profunda, below which point it was,

filled with clot. The vessel was much diseased and spicula of calcareous matter projected into its interior.

77. Aneurism of both femoral arteries (same case as 144). Dr. Macewen's case.
78. Small aneurism of circle of Willis near the giving off of the communicating artery of the left side. Microscopic examination showed the coats of the vessels to have undergone fatty degeneration to their most minute ramifications.
79. Aneurism of descending aorta eroding vertebræ.
80. Aneurism on the femoral artery.
81. Portion of dura mater with organised clot, the result of a fracture of temporal bone. The history of this case shows that the patient fell on his head from a height of 10 feet, and was taken up insensible. He remained insensible for some time, but gradually recovered, till, in about six days he could answer questions, and appeared quite intelligent. The left leg and arm remained paralysed but he was beginning to recover the use of them before death. Death was caused by extensive bed-sores and diarrhœa. On examination of the body, a fracture of the right side of the frontal bone extending through the temporal into the sphenoid, was discovered, and the parts are preserved in Series II., No. 33. The present preparation shows a fibrinous deposit which was originally of an orange colour, and had begun to ossify. It was situated between the dura mater and the bone, being attached to the surface of the former. There was a considerable quantity of fluid beneath the arachnoid and in the lateral ventricles—See *Path. Report*, No. 74, 1858.
82. Portion of femoral artery with clot at ligature three days after amputation.
83. An aneurism of the umbilical cord. The vessels are tortuous as if anastomosing, and form a sac-like projection.—*From Dr. J. G. Wilson.*
84. Artery and veins of lower limb from the external iliac downwards to the lower part of popliteal space, to show condition of femoral artery and veins after deligation in a case of popliteal aneurism and also ligature of external iliac. Death from phlebitis.
85. Femoral artery completely occluded, causing gangrene and death.
86. Vessels removed from the body of a man. The preparation shows the abdominal aorta just at its bifurcation, the right common iliac and external and internal iliacs cut short, and the whole of the large vessels of the left lower extremity as they were found after death. Ligature of the arteries

of the limb had been performed three times in their continuity, and once at the end of the stump after amputation above the knee. The affection for which these operations were performed was a popliteal aneurism, and the first operation was ligature of the femoral three years ago. Seven weeks before death the femoral was ligatured a second time in Hunter's canal; four weeks after that the external iliac was ligatured, and a week later the amputation was performed. The patient survived the latter a fortnight, and died from extensive hemorrhage into the abdomen from the external iliac. See *Surgical Reports*, No. 27, Oct. 1869.

87. Case of rupture of the external carotid artery by a piece of a penholder forcibly driven into the mouth. The penholder was broken, and the portion seen in the preparation remained in the parts for a fortnight and was only detected at post mortem examination. The broken holder had ultimately wrought itself into the tongue till the wound in the artery was laid open and severe hemorrhage ensued. Dr. Dewar ligatured the common carotid, but the patient died from exhaustion, the position of the penholder having seriously interfered with swallowing.
88. Artery from end of stump.
89. Portion of femoral artery from a case of arteritis.
90. Varicose vessels.
91. Aneurism of the heart. The patient died from acute pleurisy and pericarditis, and the specimen still shows shreds of lymph on the pericardial surface of the heart. To the right of the specimen is the mitral valve, above which an aneurismal cavity is seen to exist. The anterior wall of this cavity was removed in opening the heart, and is seen to be attached to the external coat of the pulmonary artery at the left side of specimen. The cavity is lined with a firm corrugated membrane, and is about the size of a chestnut. Its relations are as follows:—posteriorly it is bounded by the left auricle and auricular appendage; to the left by the auricular appendage; anteriorly by the base of pulmonary artery and aorta; to the right by the septum between the auricles; and superiorly by the pulmonary artery and its branches. Inferiorly the cavity opens into the left ventricle by an aperture large enough to admit the tip of the middle finger, and situated to the left of the anterior curtain of mitral, between this and the aortic valves. This aperture is surrounded by soft polypi, of which one on the left is particularly well marked. On examination of this polypus it is seen to be attached as well to a semilunar

fold of the aortic valve as to the ring of the aneurismal aperture. The polypus is hollowed out in the centre, and its cavity forms a communication with the aorta through the fold of the valve, which is perforated. This communication is large enough to admit the tip of the little finger. The heart as a whole was hypertrophied, weighing after removal of the clots, 15¾ ounces. The spleen was also very much hypertrophied, weighing 1½ lbs. See *Path. Report*, No. 78, 1871.

92. This and the following preparation are from the same case. History.—Cough and "breathlessness" extending over a month, and ascribed to a cold. *Angina sine dolore.* Well marked signs of aortic regurgitation with possible pericardial effusion and hypertrophy of left ventricle. Death rather sudden.

Aneurism of the sinus of Valsalva projecting towards the right side. From this preparation the entire left ventricle, the septum, and portions of the right ventricle have been removed. The parts left are these, to the right is the right auricle at whose lower part is the tricuspid valve; the entire lower part of the preparation is occupied by a portion of the right ventricle, which passes upwards at the left to the pulmonary artery, two of whose semilunar folds are visible. To the right of this is aorta, whose coats are considerably thickened; at its lower part are seen two of the semilunar folds. Behind that one of these which lies to the right, there are two apertures, one pretty large and irregular, one smaller and round, and these apertures lead into a cavity which can be seen at the right of the preparation forming a somewhat irregular bulging. The cavity is about the size of a small hen's egg, and is situated so as to project just at the right auriculo-ventricular opening, partly into the right auricle and partly into the right ventricle, the curtain of the tricuspid valve being in part inserted on its surface. The coronary arteries were found to arise from behind the two other semilunar folds, and the remaining valves of the heart were normal. The pericardium contained 7½ ounces of fluid, and the heart weighed 1 lb. 7 ounces. The remaining organs were healthy. For this and following—*Path. Reports*, ~~No. 20~~, 1870.

93. Aneurism of the heart. The parts shown in the preparation are—a portion of the aorta with one of the semilunar folds; the mitral valve partly hanging loose; a portion of the left auricle and auricular appendage; and a part of the wall of the left ventricle. In the section of the wall of the

left ventricle close to the base of the ventricle is shown an aneurismal cavity containing stratified clots. The aperture of this aneurism is situated on the posterior wall of the ventricle about half an inch beneath the aortic valve, and is about the size of a small pea. The aneurism passes from this aperture round the posterior aspect of the heart, from which it passes slightly forward. It involves chiefly the external layers of the wall.

94. Globular vegetations in right auricle—emboli in cerebrum and cerebellum.

History—Symptoms on admission (19 days before death), mainly those of emphysema and bronchitis, with orthopnœa at night, and rather considerable lividity, with œdema of feet; also, dilatation of heart detected, with murmur of regurgitation (V.S.) over auriculo-ventricular valves, but indeterminate as regards right or left. Accidental albuminuria (slight), with rather scanty urine. Sudden hemiplegia (left) without coma, followed after several days by very gradual coma and death.

The preparation shows the right auricular appendage to be filled with vegetations, which are firmly adherent to its walls, and in some parts almost buried beneath its trabeculæ. There is one particularly large, about the size of a pretty large walnut, and of a globular shape. This one had been opened into in cutting up the appendage, and from its interior escaped a quantity of brownish fluid. The heart was soft, valves normal. The lungs were blackened and in many parts condensed—the coal miner's lung. On dissecting the vessels of the brain, an embolus was discovered at the point of bifurcation of a branch of the middle cerebral artery. The region supplied by the vessel obstructed was softened and infiltrated with blood, the part involved being an irregularly wedge-shaped portion of the cerebral convolutions just outside the junction of the corpus striatum and optic thalamus on right side. The clot in the artery showed a certain amount of degeneration, and it was decolorised. In the middle of the right lobe of the cerebellum was a distinct clot about the size of a horse-bean, with softening in centre. *Path. Rep.*, Jan. 20, 1871.

95. Aneurism of cerebral artery. The specimen was taken from a case in which there was great disease of the aortic valves, the semilunar folds being in great part destroyed, and their place taken up by warty excrescences, attached to which were shreds of fibrine. In addition, there were several large clots on the surface of the brain, and

one very large one in the right lateral ventricle. With one of these clots situated behind the right lateral ventricle, and probably communicating with the clot in the ventricle, was connected the aneurism of the artery preserved in the preparation. It is about the size of a horse-bean, and was traced into communication with the vessel on the one hand and the collection of blood referred to on the other, this collection of blood having obviously originated from rupture of the aneurism.

The history is that of two attacks of acute rheumatism, with resulting heart disease. The patient was admitted about a week before death, with severe head symptoms, in the form of pain in the head, neck, back, and knees, succeeded by convulsions. He was again seized with convulsions after admission, and died seven hours after. *Rep.*, Nov. 14, 1870.

96. Aneurism of aortic arch, projecting externally. During life a very large pulsating tumour was situated on the front of chest, and fear existed lest external rupture should occur, the skin in some parts being extremely thin. The patient however died, chiefly from extreme dyspnœa, with general œdema, these symptoms having existed for months.

The specimen shows in section a double aneurism, the one portion being formed by a dilatation of the arch, and the other a true sacculated aneurism opening into the former. The latter of these pouches is seen to have projected between the cartilages of the second and third ribs of the right side, pushing the sternum markedly to the left. This pouch is five inches in longest diameter from above downwards, and about three inches from before backwards. It still contains stratified clots. Viewing the specimen from the left side the displacement of the sternum described is extremely marked. The specimen also shows that the trachea has been pushed considerably backward by the dilated arch.

97. Thrombus in pulmonary artery and fibrinous concretions in left auricle, contraction and funnel-shaped prolongation of mitral orifice. The preparation is a portion of a heart which weighed 22 ounces. The mitral orifice was contracted so as barely to admit of the tip of the index finger, and the curtains of the valve were thickened and coalesced so as to produce a funnel-shaped opening. The preparation shows the left auricle laid open, and it is seen to be distended with fibrinous masses which present all the appearance of having existed during life; in the fresh condition they were grey and granular, and in some parts had begun

to soften in the centre. To the right of the auricle the preparation shows the pulmonary artery and a portion of the right ventricle. In the right branch of the pulmonary artery is seen a conical clot about 2 inches in length, and firmly adherent to the posterior wall of the vessel. The apex of the cone is directed towards the ventricle, and the base is formed by the section of the vessel and clot. In this section it is seen that softening has been going on in the centre of the clot, a distinct cavity being left by the escape of the contents. In both lungs the larger arteries were found to be filled with similar clots, and in some cases they were traced to even smaller stems. In the left lung there were several patches of hemorrhagic condensation. The history of the case shows that there was during life severe dyspnœa, dropsy, and hemoptysis. The chief symptoms had been of four months duration. See *Path. Rep.*, June, 28, 1871.

98. Clot obstructing the middle meningeal artery before dividing in the fissure of Sylvius. A well marked case of aphasia from cerebral softening.

99. Calcification of muscular fibres of left ventricle of heart. The degeneration affects chiefly the external layers of the muscular tissue of the ventricle, but extends more deeply at the apex, where it involves two-thirds of the thickness of the wall, thence towards the base it tapers off, and ceases before reaching the mitral rings. Microscopic examination shows an infiltration of the muscular fibres with strongly refracting granules, which, as a rule, are considerably larger than fat granules. The addition of dilute hydrochloric acid causes this appearance to disappear with great readiness, the infiltration being readily seen under the microscope to clear up before an advancing stream of dilute acid, but without evolution of gas. The tissue so cleared up presents transverse striæ, and cannot be distinguished from the normal portions which have been acted on by the acid.

The case was one of bronchitis, and no cardiac affection was detected during life. See *Pathological Reports*, Nov. 10, 1870.

100. Calcareous degeneration of the muscular fibre of the heart. The degeneration in this case is in the form of patches and streaks as follows:—On the anterior surface two patches just to the left of the septum, one about the size of a sixpence and the other about half that size. Viewed from the surface, they are somewhat streaked in the direction from right to left and from above downwards. On

cutting into the muscular tissue, they are found to extend with an irregular margin to the depth of about a line. Above these, and still on the surface of the left ventricle, there are two elongated streaks, passing also from right to left and from above downwards; on transverse section these present the appearance of aggregations of cylinders. The posterior surface of the left ventricle is more irregularly streaked, but the streaks all lie in the same general direction, namely, from left to right and from above downwards. On this surface they are much more freely distributed, but occupy the external layers almost entirely. There is no such appearance in the walls of the right ventricle. Microscopic examination showed infiltration of the muscular fibre with pretty large strongly refracting granules, which disappeared with the evolution of gas on the addition of dilute hydrochloric acid.

The case was one originally of relapsing fever, with parotid abscess, and death from pyæmia; multiple abscesses existed in the lungs and kidneys. See *Path. Rep.*, March 21, 1871.

101. Acute endocarditis. The disease is seen to affect chiefly the aortic valves, and here shows itself in the form of soft polypoid outgrowths, which have to a considerable extent broken down. These excrescences are entirely confined to the free borders of the semilunar folds, while the folds themselves are little interfered with. Just beneath the valves the endocardium presents similar outgrowths, especially in the direction towards the mitral valve, whose anterior curtain is roughened by abundant growth, while a considerable number of chordæ tendineæ are similarly affected. In all these localities, fibrinous shreds adhere to the surface of the excrescences. In respect to the other organs the report bears that the spleen was large and contained numerous embolic infarcts. The kidneys also presented numerous embolic infarcts, some of which were old. The pia mater was found to be extremely congested, and there were numerous hemorrhagic effusions, which were found to exist in the substance of the membrane, as they could be removed along with it from the convolutions. They were distributed over the hemispheres, but did not exist at the base. An old apoplectic cyst, the size of a hazel nut, was found just outside the posterior part of the right thalamus opticus. In the left optic thalamus a small recent clot existed. In the cerebellum there was also found a clot which had its seat in a process of the pia mater.

102. Aneurism of ascending aorta, eroding sternum. History.—A man aged 55, admitted under care of Dr. Scott Orr. Tumour did not burst. Patient died of exhaustion.
103. Aneurism of descending aorta immediately before passing through the diaphragm. It burst into the right lung, and around the opening is seen adherent a small portion of lung tissue and pleura. The posterior wall of the aneurismal dilatation is formed by the vertebræ, which are very much worn and roughened by absorption. At the arch of the aorta the inner coat is puckered and altered in structure.
104. Aneurism of thoracic aorta eroding the bodies of vertebræ.
105. Aneurism of arteria innominata. The opening above the aneurism in the trachea was made in performing tracheotomy. The recurrent laryngeal nerve on the right side is seen to be much implicated by the tumour. History.—Patient admitted suffering from bronchitis and symptoms of laryngeal obstruction. The aneurism was neither suspected nor detected till the operation of tracheotomy was being performed. Patient, a man aged 43, survived the operation only a few hours.
106. Aneurism of ascending aorta.
107. Organised (?) clot from femoral aneurism.
108. Aneurism of arch of aorta bursting into trachea above bifurcation. Death in a few minutes from hemorrhage.
109. Aneurism of thoracic aorta, bursting into the spinal canal and producing paraplegia. The primary lesion as exhibited in the preparation, is a large aneurism arising from about the middle of the thoracic aorta. It measures about six inches from above downwards, and about the same length across, and the aperture which is on the posterior wall of the aorta, measures $3\frac{1}{2}$ inches in length and $1\frac{1}{2}$ in breadth. As seen in the section, considerable erosion of the bodies of three of the dorsal vertebræ has taken place, one being destroyed to about half of its thickness. In addition it was found that the aneurism had extended round under the pleura, to the left side of the bodies of the vertebræ, and at one point erosion of a rib had taken place with a partial communication between the cavity of the aneurism and the spinal canal. In the canal itself a clot undergoing softening was found on the posterior aspect of the theca, and the end below that situation was distinctly softer than usual.
During life the patient, who was under Dr. Perry, Ward 3, gave the following account of his illness. He was quite well seven weeks ago, but about that time he sud-

denly felt a sharp pain in his left side while at work. The pain which was accompanied by a feeling of constriction in the chest, was so severe that he required to leave off work, and he has been unable to resume his occupation since that date. The day after this attack his legs became paralysed, and he has not been able to walk since. For a week after he was able to pass his urine voluntarily, but since then this power has been lost, and catheterisation is now necessary. At present he is unable to move the legs, but there is no paralysis of the arms. While motion is completely paralysed in the lower limbs, sensation is impaired on every part beneath the fourth dorsal vertebra, though it is nowhere completely lost. (See *Glas. Med. Journ.*, Feb. 1872, and *Path. Rep.* Dec. 8, 1871.)

110. Aortic valvular disease, and hypertrophy of left ventricle. This preparation shows extremely well the deformity of the heart, which results from almost uncomplicated aortic valvular disease. The whole of the semilunar folds are thickened and rigid, and there is more or less calcareous infiltration in all of them, while the proximate margins of two of them are united by a firm partly calcareous mass. On testing with water, before opening the aorta, the valve was found to be completely incompetent, a triangular aperture being visible during the flow of the stream of water, the mitral valve is practically normal. The heart itself is extremely hypertrophied, weighing 40 ounces, but this hypertrophy involves almost entirely the left ventricle. The heart presents the well marked elongation characteristic of this condition. The history of the case, which was under Dr. Gairdner, in Ward 7, shows that the disease began 8 years before death, with an attack of rheumatic fever. As observed in hospital, the apex beat was found to be $\frac{1}{2}$ inch outside the left nipple. There was a strong heaving action, chiefly of the left ventricle, and a distinct throb at apex and also in jugular fossa. Dulness extended $1\frac{1}{2}$ inches to the left of the nipple, and 2 inches to the right of the middle line. V.S. and V.D. murmurs over aortic cartilage and in line of vessels, also along sternum and at spine. Questionable apex murmur, (Query. V.S. mitral?) Pulse of unfilled arteries very distinct. (*Path. Reports*, Aug. 29, 1872.)

111. Aneurism of aorta, rupturing into the left main bronchus. Examination of the preparation shows that there is an aneurism arising from the inferior aspect of the descending arch by a somewhat quadrilateral aperture measuring

about two inches in the direction of the vessel and about an inch transversely, through this aperture a somewhat bulky smooth clot is visible. The aneurism, which is about the size of a large orange, passes downwards from this aperture so as to be situated between the base of the heart and the left bronchus. The aneurism was also firmly adherent to the left lung; and the pulmonary artery was found to pass along the inferior surface of the aneurism, being firmly adherent to the wall of the aneurism, and much reduced in calibre. *The left bronchus* was in very intimate relation with the aneurism. In the preparation this bronchus is laid open and kept apart by a piece of whalebone. It is seen that from a point about an inch beneath the bifurcation of the trachea, the anterior wall of this bronchus is entirely awanting down to the point where the bronchus divides into the secondary branches. The aperture so produced is seen to be filled with pale clots, by which the calibre of the tube is filled, the opposite wall of the bronchus forming in this part the wall of the aneurism. The branches of the left bronchus down to their finest ramifications were found to be filled with soft brownish clots, and the lung tissue was completely collapsed. The left pneumogastric nerve passes down in front of the aneurism becoming firmly adherent to its wall, and the recurrent is also discovered passing up from behind the aneurism; but both are so firmly incorporated with the wall that dissection is precluded. The other organs presented nothing remarkable.

The symptoms during life began about 15 months before death. During observation in hospital, they were chiefly hoarseness of voice, occasional difficulty of swallowing, pain in upper region of sternum, and between clavicle and vertebræ behind on left side, severe hemoptysis at intervals, dulness over whole, but more especially over upper part of left lung; V.S. murmur carried along the great vessels, inequality of radial pulses, absence of râles in left lung and deficiency of respiratory murmur, with strongly marked tubular respiration over upper lobe. The case was under Dr. Gairdner in Ward VII. (For full report, see *Glas. Med. Jour.* Nov. 1872, also *Path. Reports*, Sept. 25, 1872.)

112. Aneurism of the abdominal aorta—channeling of the clots at the origins of two large vessels. The preparation shows a large spindle-shaped aneurism of the abdominal aorta, which was situated just beneath the diaphragm. The posterior wall of the aneurism was in part formed by the

bodies of the last dorsal and first lumbar vertebræ, while elsewhere the somewhat altered wall of the vessel formed the aneurismal sac. The aneurism is in great part lined with clots, which are throughout stratified in a direction nearly perpendicular to the internal surface of the aneurism, but with a slight tendency from above downwards. This peculiar stratification produces on the surface an imbricated appearance, and at the upper and lower ends of the aneurism the internal coat of the vessel seemed to blend imperceptibly into the surface of the clots. From the anterior wall of the aneurism, arise two large vessels, and the cavity of the aneurism communicates with the calibre of the vessels by means of channels formed through the stratified clots. These channels are funnel-shaped, the mouth of the funnel being towards the aneurism, while beyond the apex of the funnel the vessels dilate. The case was under Dr. Gairdner in Ward VII. (*Path. Rep.* Nov. 13, 1871.)

113. Aneurism of the aortic arch, stretching of the recurrent laryngeal nerve. In the preparation, the heart, aortic arch, large vessels, larynx, trachea, and main bronchi, &c. are preserved. The aneurism is seen to project from the upper border of the transverse arch and is of large dimensions, reaching almost to the level of the lower border of the thyroid gland. Over the anterior surface of the aneurism passes transversely the left innominate vein which is almost imbedded in the wall of the aneurism, and markedly narrowed. The left pneumogastric nerve is seen to pass down in front of the aneurism and of the aorta, and its recurrent branch which is indicated by pieces of coloured glass rod is seen to be firmly adherent to and partly imbedded in the posterior wall of the aneurism from which it passes up on to the larynx.

During life this patient was subject to violent paroxysms of dyspnœa, and laryngoscopic examination detected paralysis of the vocal cord, so that during coughing, vocalisation, &c., while the right cord came, as usual, into the middle line, the left remained widely apart. This case was under Dr. Gairdner in Ward VII.

114. Chronic endocarditis involving chiefly the septum ventriculorum. This preparation shows the very peculiar localization of the endocarditic process. The entire valvular structures are practically uninvolved, whereas the endocardium on both surfaces of the septum is thickened and in some parts calcareous. In the left ventricle there is a large irregular patch occupying the middle of the

septum and passing backward to the posterior, and forward to the anterior wall of the ventricle. At its posterior part, there is a calcareous plate of considerable dimensions only covered by thin membrane, and in this region there is a well marked depression forming, as it were, a bay out from the ventricle. In the right ventricle, there is a smaller patch, occupying the surface of the septum in a situation corresponding to the middle of the patch in the left ventricle. The septum is thinned in the parts occupied by these patches; this thinning depending upon atrophy of the muscular tissue, which, however, is not, at any part, completely wanting. In addition, there was general enlargement of the heart (23½ oz.) and dilatation of both the tricuspid and mitral orifices. There was also a large patch of thickened pericardium on the surface of the right ventricle.

The history of the case, which was under Dr. Perry, Ward III., showed principally chronic bronchitis with œdema, tending to chronic inflamation of the lungs. [*Path. Rep.*, Mar. 24, 1873.]

115. Atheroma of the aortic arch, with a large fibrinous polypus adherent. The entire thoracic and the upper half of the abdominal aorta were in this case very extremely atheromatous, with very advanced calcareous degeneration. There were several fibrinous coagula adherent, the largest being preserved in the preparation. It is situated about 2 inches above the aortic valve, and is about the size of a hazelnut. There was in this case also considerable enlargement of the heart, both ventricles being about equally involved. This case was admitted into Ward VIII. under the care of Dr Gairdner, on Dec. 9, and died on Dec. 10, 1872. There had been chronic bronchitis attacks every winter for some years. Œdema of feet and legs of about 4 weeks' standing; there was irregularity of hearts' contractions and altered quality of the first sound. [*Pathol. Reports*, Dec. 11, 1872.]

116. Congenital malformation of the aortic valve with two semilunar curtains. As the preparation shows, the aortic valve in this case presented only two curtains—a large one on the left, and one of normal size (in the preparation cut through the middle) on the right side. These curtains are generally of normal thickness, there being only here and there, and especially near their insertions, a slight thickening and even a partial adhesion of their proximal borders; for the most part the curtains are of normal shape, and there is no trace of a third curtain or of a

former division of the existing ones. The malformation does not appear to have led to any inconvenience during life, the patient having presented the symptoms and signs of bronchitis and emphysema. There was considerable hypertrophy of the right ventricle of the heart, but not at all of the left. [*Path. Rep.*, Jan. 14, 1874.]

117. Aortic valvular disease: congenital malformation of the valve: patent foramen ovale. Preparation was removed from a boy nine years of age. The aortic valve and its neighbourhood presents numerous irregular prominences, almost sufficient to obstruct the orifice. These formations are chiefly attached to the semilunar curtains, but they are also present in considerable mass on the wall of the ventricle beneath the valve, and on the proximate curtain of the mitral. In fact, the vegetations in these latter positions form a kind of second aperture half an inch beneath the level of the aortic valve, and into this aperture project the more bulky vegetations of the curtains, in such a manner as almost to obstruct it. The aortic valve presents only two semilunar curtains of nearly equal size. These may be distinguished as a left posterior and right anterior; the former being nearly normal in shape, but large; the latter showing an indication of division into two, as follows:—from a point about half an inch above the middle of the valve a narrow band passes down the aortic wall, to which it is firmly adherent: at the base of the curtain this band divides into three smaller ones, which spread out on the semilunar fold. The appearance reminds one to a certain extent of a columna carnea, giving off its chordæ tendineæ. In the semilunar curtains there is no appearance suggestive of chronic endocarditis, the curtains being comparatively thin, except where the vegetations are attached. Just above the valve there is a pouch in the aorta, projecting to the right. Viewed externally this pouch is about the size of a half walnut. Internally it presents numerous irregular vegetations. The foramen ovale is found to be pervious, admitting a tube of a quarter inch diameter; the aperture is widest on the right side and passes obliquely forwards to the left, so that on the left side it is almost valved. The heart was very much enlarged, weighing 11½ oz. (in a boy of nine years). It extended from the right border of the sternum as far as two inches to the left of the nipple. The spleen was enlarged (8½ oz.), and it as well as the kidneys presented old and recent evidences of embolic phenomena. Patient presented during life symptoms of cardiac disease with

albuminuria. There was a loud murmur and fremitus V.S. near second right costal cartilage. Spleen was much enlarged. [*Path. Rep.*, Dec. 26, 1873.]

118. Aneurisms situated just above the aortic valves. There are here two aneurisms—a larger one situated in front and a smaller one to the right; the former is about the size of an apple, and lies between the aorta and pulmonary artery. It is bounded to the left by the left auricle, and is free towards the right. It communicates with the aorta by an aperture with rounded edges which is large enough to admit two fingers, and is situated just above the valve; its lower border, in fact, corresponding with the level of the valves, and having two of the curtains ending on it. The other aneurism is much smaller, and lies immediately to the right of this one, being situated between it and the right auricular appendage. It forms a small hemispherical bulging. Both the arch and the thoracic aorta presented well-marked atheroma. The heart was very much enlarged, weighing 17 oz., and there were patches of thickened endocardium, without any definite valvular disease. There was general œdema, with pleuritic and pericardial effusion, and œdema of the lungs, with hemorrhagic condensation. According to the history, the illness was of six months' duration, and was accompanied by pain, cough, and dyspnœa, and latterly orthopnœa. The patient was a blacksmith aged forty. [*Path. Rep.*, Jan. 13, 1874.]

119. Acute endocarditis affecting aortic valves, and causing almost complete disorganization of the curtains. The valvular structures are in great part replaced by prominent, soft, irregular masses, one of which sends a tongue-shaped projection for about an inch into the aorta. In the neighbourhood there is some ulceration of the endocardium of the ventricle. Both ventricles were found very considerably enlarged, and the auriculo-ventricular orifices dilated. [*Path. Rep.*, Sept. 15, 1873.]

120. Contraction of mitral orifice, vegetations on borders. As seen in the preparation the mitral orifice is very much contracted, and this both by old and recent lesions. There is the common funnel-shaped contraction, due to adhesion of the proximate borders of the valves, from chronic endocarditis, the orifice at the apex of the funnel being hardly large enough to admit the tip of the finger. But in addition to this the orfice is fringed with warty projections, which are soft and somewhat loose, and are evidently the results of acute endocarditis. By these the orifice is still further reduced to very small dimensions.

On the borders of the tricuspid valves there was just a trace of soft recent vegetations; but no evidence of old lesion, All the cavities of the heart were enlarged, but chiefly the right ventricle, whose muscular tissue presented throughout the yellow mottling characteristic of fatty degeneration. The left auricle was much distended and contained several globular vegetations. The lungs presented several masses of hemorrhagic condensation (pulmonary apoplexy) and the entire lower lobe of the left lung was as if carnified. The kidney showed on microscopic examination evidences of parenchymatous nephritis, the epithelium of the renal tubules being altered and in some parts fatty. The case was that of a woman 23 years of age. She gave the history of an injury about the pericardial region, 4 years before admission, followed by spitting of blood. Since then there has been palpitation and breathlessness when walking quickly. When admitted she complained of orthopnœa, cough, hemoptysis, swelling of legs, and dribbling of urine; there was irregularity of heart's action, loud blowing murmur at apex (V.S.) over right ventricle, lower part of sternum, and lower angle of scapula. A slight short murmur preceding first sound (A.D.) was heard in vessels of neck. The urine contained cellular tube-casts. The patient was in the 8th month of pregnancy. On death cæsarian section was performed, but the child was dead. Under Dr. Gairdner, Ward VIII. [See *Path., Rep.*, Sept. 12, 1873.]

121. Aneurism of mitral valve, and aortic valvular disease. In this preparation the curtains of the aortic valve are seen to present along their free margins numerous soft and prominent vegetations. These are very ragged, and in several places the curtain itself is torn, so that there is a distinct gap, and in one place an aperture about a quarter of an inch in diameter. There are also pretty numerous soft vegetations on the mitral curtains, and both on the ventricular and auricular surfaces. On the auricular surface of the anterior mitral curtain, and about half an inch from its inferior border, there is a pedunculated growth of about the size of a small hazel nut, and of a rounded form. This is found to be an aneurism, and it communicates with the ventricle by an aperture which passes right through the curtain. The aperture, which opens on the ventricular surface of the curtain, is partially concealed by vegetations, but in the preparation a piece of whalebone has been stuck into it. The heart was considerably enlarged, weighing 19½ oz. The lungs

were very œdematous, with an approach to hepatisation. The liver and spleen were enlarged. The patient was a man aged forty, admitted with symptoms of heart disease and bronchitis. There was œdema of the legs, &c. [*Path. Rep.*, Oct. 23, 1874.]

122. Aneurism of the aorta—galvano puncture. This very large aneurism was treated about a year before death with galvano puncture, and apparently with success, as coagulation occured in such measure as to prevent the bursting of the sac, which at that time seemed imminent. The patient returned to hospital on Nov. 20, 1873, and died on 7th January, 1874. The immediate cause of death was rupture of the aneurism into the left pleura. In this case the enormous bulk of the coagula is very remarkable. The aneurism is a large, bulky, nearly globular one, and it communicates with the aorta by a very large aperture. In fact, the transverse and descending portions of the arch are involved in the aneurism, the circulation being carried on as it were through the midst of the coagula. The blood has undermined the bulky clots, and the hemorrhage has taken place from the channel thus formed between the clot and the wall. [*Path. Rep.*, Jan. 9, 1874.]

123. Aneurism of aorta. Galvano puncture. In this case galvano puncture was performed 5 or 6 times, but apparently without permanent good result. The aneurism finally burst externally and the patient died. The preparation shows a bulky clot on the surface of the skin, which communicates with the sac of the aneurism by an aperture about 2 inches in diameter from above downwards, and one inch from side to side. The cavity of the aneurism contained old and recent clots, and there was a very distinctly stratified clot apparently in the track of one of the needles. The aneurism itself has an elongated oval sac measuring 5 to 6 inches from above downwards, and communicates with the upper surface of the arch by an aperture large enough to admit two fingers. [*Path. Rep.* Dec. 19, 1873.

124. Aneurism of aorta opening into spinal canal. Wm. Wilson, admitted to Ward 9, on Sept. 26, 1874: died Oct. 21, 1874.

Patient began to suffer from pain in Dec. 1872, after severe exertion: the pain has been præcordial, burning, and remittent. Latterly the pain has extended to the epigastrium and back. Three weeks before admission the first symptoms of weakness in the legs appeared and

this has proceeded to complete paralysis which has involved the intestines and bladder. On admission patient was able to be tranquil in bed: he desired to be put into a half sitting posture, propped up with pillows. Cardiac dulness extended to left: apex beat 1 inch to left of nipple in 5th interspace: transverse measurement 5 inches; a V.S. murmur (slight) at apex. The 5th and 6th dorsal spines tender, and a tender zone from this spot round the left side to the apex of heart. Bed sores and scrotal excoriation—Complete loss of sense and motion below lower edge of thorax. On Oct. 2d the urine became bloody, the latter part of the urine passed being quite clear, however. Bowels only moved once during stay in the hospital, under a strong galvanic (interrupted current) stimulus, which however never answered again. Patient got gradually worse, and died at 7.40 a.m. on October 21. At the autopsy the intestines contained clayey fæces; liver, large and congested; lungs at bases behind congested and œdematous; the spleen normal. Heart weighed 12 oz., natural as to tissue and valves; the lining coat of the aorta, atheromatous; spleen, normal. The kidneys weighed together 13 oz.; equal in size; capsule, not adherent; surface of kidney, bluish red; cortical substance, congested. Mucous membrane of pelves of kidneys and of ureters, hyperæmic and coated with muco-purulent slime; bladder contracted, containing about an ounce of pale, cloudy ammoniacal fluid; inner surface of bladder sloughing off in whitish flakes. In dissecting the aorta the knife entered a small flat hollow tumour of bluish red colour, seated at the right side of the aorta opposite the fifth dorsal vertebra. The finger introduced into this cavity felt it partly filled with laminated coagulum and projecting spicula of bone. The aorta communicating with the cavity of a smooth round opening ¾ inch in diameter. The aneurism has destroyed the body of the 5th and part of the 4th and 6th vertebræ, extending into the spinal canal by a large ragged opening at the head of the left fifth rib. Spinal cord and sheath pressed aside but not opened into by the aneurism, which had begun to point into the left spinal groove by a small opening which was exposed in removing the muscles. The left 5th rib quite loose; the spinal cord below the aneurism softened, above this the nerve centres normal.

125. Contraction and thickening of mitral valve: atheroma of aorta. Heart weighs 18 oz.; cavities dilated; walls hypertrophied. A white fibrous patch on front of right ventricle. Tricuspid orifice enlarged: at junctions of

aortic valves three small raised patches of thickened atheromatous tissue. Mitral orifice contracted to an oval shape; edges very thick, round, and firm; at one place several calcareous spiculæ palpable. Ascites: congested liver and kidneys. See *Path. Rep.*, May 5, 1875.

126. Aneurism bursting into left pleura (case of Wm. Guthrie). A large aneurism of transverse arch of aorta, of a conical shape and extending 1½ inches above notch of sternum. The aneurism adherent to back of manubrium sterni at the left part, and at one spot size of a shilling the bone is thinned away to mere parchment thickness, crackling on pressure. A small aperture in the pleura, over the aneurism, opposite anterior end of 2nd rib: and 3½ pints of partly coagulated blood in left pleural sac. The whole of the parts being removed the trachea and œsophagus are found pressed away to the right but not compressed as to lumen: left recurrent nerve is stretched over aneurism, the right recurrent is free: innominate and right subclavian arteries given off from right side of aneurism about 2 inches apart from each other. The upper part of aneurism contains solid and laminated clot, the lower part fluid blood enclosed by thin flaccid walls. Heart flabby, no particular valve disease, interior of aorta coated with soft degenerating patches.

127. Clot from pulmonary artery. (Same case as preparation III. 130.) *Path. Rep.*, June 8, 1875.

128. Rupture of left ventricle: calcareous dilated aortic arch. Pericardium contained 10 oz. of partially coagulated dark blood: a small rent in wall of ventricle, near septum: cirrhosis of liver; embolistic phenomena in brain and kidneys. Patient was admitted insensible: the history pointed to probable carbonic acid poisoning. *Path. Rep.*, June 8, 1875.

129. Atrophy of heart. Weight, 5½ oz. in a patient (male) aged twenty. Patient was a labourer, and had suffered from hipjoint disease for five years. Liver, very highly amyloid: great ascites: lungs tubercular. (Hipjoint of this case is preserved, II. 151.) *Path. Rep.*, June 4, 1875.

130. Aneurism of ascending aorta: bursting into trachea: instant death from hemorrhage. There were no signs of aneurism during life, except a barking cough. The aneurism passes backwards, and is about the size of the closed fist. It opens into trachea by a small opening one inch above bifurcation. Aorta highly atheromatous. At the post mortem examination the aneurismal sac was found collapsed. The heart valves normal except mitral, which was thickened and fringed with vegetations: weight of heart, 8 oz. It lies in the bottom of the jar. *Path. Rep.*, June 30, 1875.

131. Heart weighing 27½ oz., with the adherent pericardium.

Pinhole opening with matter in
process of formation.

Aortic valve the seat of large vegetations: mitral valve ditto and contracted so as hardly to admit one finger. *Path. Rep.*, July 10, 1875.

132. Embolus and thrombus at bifurcation of right common iliac artery; same case as last. *Path. Rep.*, July 10, 1875.

133. Partially patent foramen ovale without any symptoms during life. Patient aged 19; died of inflammation of membranes at base of brain. *Path. Rep.*, July 12, 1875.

134. Small aneurism of heart, seated below the anterior segment of aortic valve, and overlapped by a small pendulous flat vegetation which is attached to the valve segment. Perforation of two segments has also taken place: size of aneurism, rather less than a walnut: size of orifice, that of a pea. *Path. Rep.*, Nov. 4, 1875.

135. Aneurism of aorta, compressing and pushing aside the bifurcation of the trachea, and eroding 4th and 5th dorsal vertebræ. Symptoms during life, those of obstruction to the breathing; cough; bronchitis; no dysphagia. *Path. Rep.*, Dec. 8, 1875.

136. Aneurism of aorta, just above and at the arches of diaphragm, mostly to left side, eroding the vertebræ: projecting into left pleural cavity: full of dark soft clot, and with a long string of clot continued from its orifice, down along the aorta nearly to the bifurcation. No pressure on cord: no symptoms of aneurism during life. *Path. Rep.*, Dec. 11, 1875.

137. Thrombus adherent to wall of left ventricle of a dilated and hypertrophied heart: aortitis deformans. Weight of heart 24 oz.: lining of l.v. thick like kid leather. On the septum ventriculorum in l.v. is a flat sessile mass of pale reticulated clot, firmly attached, the free surface smooth and glistening: it looks exactly like a bit of placenta when cut open. *Path. Rep.*, Jan. 27, 1876.

138. Heart weighing $4\frac{3}{4}$ oz., in a patient aged 26: case of tuberculosis abdominalis. *Path. Rep.*, Feb. 7, 1876.

139. Aneurism of popliteal artery: adherent to femur but not eroding it: full of soft laminated clot, 36 hours after ligature of the femoral artery. (Dr. Dewar's Case.) *Path. Rep.*, Jan. 19, 1876.

140. Clot in pulmonary artery, not adherent. *Path. Rep.*, March 6, 1876.

141. Preparation showing aneurism of innominate discovered only after death. The aneurism extended up the side of the neck for six inches. All the veins were found turgid with blood; the left subclavian is seen stretched across the anterior aspect of aneurism like a ribbon: the superior vena cava is elongated to 3 inches owing to the dragging: the trachea is compressed, and bulges to the left: and the

right pulmonary artery is also compressed. On cutting into the aneurism, it is found to be filled completely by hard, yellow, laminated clot: a passage about the diameter of an ordinary pencil corresponds to the original innominate artery. Patient died of pleuro-pneumonia. There was half a pint of turbid flaky fluid in pleural cavity. *Path. Rep.*, No. 62, April 14, 1876.

142. Hard calcareous plates in walls of heart and pericardium. Private case—Dr. Dunlop.
143. Aneurism of arch of aorta. No history.
144. Aneurism of aorta laid open, showing stratification of clot and prolongation towards the heart. (Same as III. 77.)
145. Disease of the lining of the aorta partially occluding the origins of the cervical vessels. The brain was found to weigh only 36½ oz. Case, August 23, 1877.
146. Aneurism of the aorta bursting into the left bronchus just below the bifurcation. Case, September 7th, 1877.
147. Part of brachial artery, just above its division, together with parts of the radial ulnar and interosseous arteries, from a patient under the care of Dr. Cameron. The arm was torn off by accident, and when admitted to the Infirmary the parts of the vessels in the preparation were hanging free from the stump: there was no bleeding, as the tearing had caused the ragged ends of the vessels to curl up and so become occluded. The ligature was put on above the limit of pulsation in order to make the vessel secure until amputation could be performed. The vessel was everywhere filled with thrombus when examined after the amputation, which took place 10 hours after admission.
148. Rupture of aorta in a horse: followed by immediate death: the pericardium was full of blood when the body was opened. The rupture is just above the valve. (Dr. Henderson.)
149. Aneurism of aorta bursting into gullet. The stomach was full of a blood clot in which were air bubbles. *Path. Rep.*, March 13, 1878.
150. Dissecting aneurism of aorta bursting into pericardium. The internal coat of the arch of the aorta is separated off from the middle coat and curled up in the lumen of the vessel: the middle coat is cracked transversely into several long and wide fissures, thus exposing the external coat which is quite thin. The separation of the internal coat extends as far as into the right carotid, in which is a firm thrombus between the internal and middle coats. Sixteen ounces of blood lay in the pericardium, but a careful search failed to discover the aperture through which the blood may have escaped. *Path. Rep.*, April 3, 1878.

SERIES IV.

LUNGS AND AIR PASSAGES.

1. Follicular ulceration of larynx and trachea.
2. Syphilitic disease of larynx. A model in wax of the same case exists in Series XIII., No. 70.
3. Larynx with syphilitic (?) ulcer perforating the tube. History. Bridget W———, aged 37, admitted 17th Nov., 1862. She was greatly emaciated with great dyspnœa and loud wheezing from the larynx which was tender on pressure. There was a history of phthisis pulmonalis for two years, and of phthisis laryngea for one year; also a syphilitic history.
4. Larynx and portion of trachea from a little girl who died of croup in the house under the care of Dr. Orr, June 22nd, 1862. Ward 8.
5. Larynx and trachea, showing exudation of false membrane, from a case of croup.
6. Larynx and trachea, showing exudation of false membrane, from a case of croup.
7. Larynx and portion of trachea after death from diphtheritis, from a private patient of Dr. Fraser's, aged 7 years. Three children of the same family died of the disease within three weeks after the first one was attacked in Sept., 1862.
8. Larynx and portion of trachea in which the operation of laryngotomy was performed in a case of œdema of the glottis. The incision is seen to be somewhat to the right side, and from the lateral direction the knife has taken it did not penetrate directly through, but ran between the cricoid cartilage and mucous membrane. A piece of glass shows the direction the blade of the instrument has taken.
9. Larnyx after laryngotomy, in a case of phthisis pulmonalis. *Path. Report*, No. 23, 1858.
10. Larynx after the operation of laryngotomy, in a case of phthisis pulmonalis.
11. From a case of chronic phthisis with supervension of acute tuberculosis, and with laryngeal complication and difficulty of swallowing. The preparation shows tuberculous ulcera-

tion of the larynx; also about the middle of trachea, an ulcer which has allowed bulging to the right side posteriorly and perforation into the œsophagus. *Medl. Reports*, No. 174, 1878.

12. Cavity in lung.
13. Cavities in the lung.
14. Cavities in lung in process of cure.
15. Large cavity in apex of lung. In it are seen vessels crossing; round the opening of the cavity the pleura is thickened. Numerous smaller cavities exist in other parts of lung, with deposits from size of pin head to that of a pea.
16. Apex of a lung, cut open and folded back, to show numerous small cavities, some of them filled with deposit. The tissue of the lung itself is pale in colour.
17. Cavities in lung, with perforation into pleural cavity.
18. Pulmonary cavities.
19. Lobe of lung cut open, showing innumerable cavities filled with cheesy deposit.
20. Cavity in apex of lung, with the vessels on its wall dissected out by the ulcerative process.
21. Portion of lung with a cavity filled with yellow deposit.
22. Cavities in lung with very irregular walls and thickening of pleura.
23. Upper lobe of left lung with vomicæ and infiltration of bronchial glands. The glands are very large and press upon the œsophagus, trachea, and aorta.
24. Pleurisy and empyema resulting from phthisis. Patient died of empyema. The rod marks the opening from a vomica in the lung into the pleural cavity. The larger opening into the cavity in the lung was made by separating the adhesions in removing the lung.
25. Aneurism of a blood-vessel which courses on the wall of a cavity in a case of phthisis pulmonalis.
26. Cicatrix in lung.
27. Cretaceous deposit in apex of lung.
28. Cicatrices of lung. On the pleural surface they appear puckered and contracted, and the internal portion of the lung opposite the cicatrices shows large cavities, the uppermost of which has a yellow deposit in it.
29. Portion of sheep's lung injected showing miliary tubercle.
30. Portion of lung containing miliary tubercles. Near the lower margin is the half of a large cavity lined with adventitious membrane. Into the cavity two medium-sized bronchial tubes open, in each of which is placed a glass rod. To the right of the cavity is seen a cicatrix of a cheesy consistence with the remains of a cavity in the centre of the

band. The abscess seems to have formed between the lobes and the fold of the pleura.

31. Portion of lung infiltrated with yellow tubercle.
32. Cavities in lungs.
33. Portion of sheep's lung showing tubercle.
34. Miliary tuberculosis of the lung.
35. Anthracosis of lung (coal miner's lung). J. H., aged 57, collier, admitted March, 1862, labouring under great dyspnœa. Died two weeks after admission. The heart was hypertrophied, but normal in texture.
36. Anthracosis of lung (coal miner's lung).
37. Condensation and collapse of upper lobe of lung. The lower part of specimen shows the lung tissue deeply pigmented, but otherwise nearly normal. The collapsed portion is separated from this by a very marked line. On microscopic examination the former is found to be composed of firm connective tissue, with here and there an infiltration of young cells, especially near border. The alveoli of the lung are completely invisible, but the smaller bronchi are in some parts retained with thickened walls.
38. Portion of lung near the root, showing the amount of compression caused by effusion of fluid.
39. Compressed left lung from accumulation of purulent fluid in cavity of the pleura.
40. Portion of condensed lung with false membrane, from a case of pneumothorax. *Path. Rep.*, No. 44, 1858.
41. Pleuritic adhesion of the lung to the ribs.
42. Portion of right lung with thickened pleura, and firmly adhering to ribs.
43. Adhesion of left lung to diaphragm. The adhesion is of a dense cartilage-like consistence. (Same case as 32.)
44. Portion of emphysematous lung (injected), showing great distension of the air cavities.
45. Abscess of lung, with adhesion to the sternum and ribs, and sinuses forming communications with the external surface; through these sinuses rods are passed in the preparation.
46. Injected lung of turtle.
47. Portion of lung with a large cancerous deposit. Same case as S. XIII., No. 52.
48. Portion of lung with a cancerous deposit.
49. Cancerous infiltration of the lung.
50. Malignant disease of lung. The other lung was in a similar condition. There was a history of pulmonary disease of 18 months' duration. The patient was a female, aged 41, admitted in a very emaciated condition; died on fourth day after being admitted.

51. Portion of lung with cancerous deposit, part confined to the lung and part to the pleura.
52. Malignant infiltration of lung. The other lung was in a healthy condition.
53. Lung with pyæmic abscesses, the result of an injury received in the leg.
54. Lung with nipple-like processes.
55. Grey hepatisation of the lung, involving both lobes. A small cavity exists in the upper lobe. The pleura is much thickened by the deposition of lymph. The glands at the root of the lung are greatly enlarged.
56. Emphysema of lung. The history is that of a man aged 74, who had suffered from bronchitis for many years. The heart was much hypertrophied. The preparation is part of lower lobe of right lung.
57. Emphysema of lung. Section of left lung from same case as the preceding.

} in one jar.

58. Cavity in lung communicating with a middle-sized bronchus. The entire portion of lung preserved is condensed. A cavity about the size of a walnut has been laid open, and this is seen to be lined with a membrane which is directly continuous with the mucous membrane of a bronchial tube larger than a goose quill. The remaining portion of both lungs presented pretty numerous cavities, several of which were traced into bronchial tubes.
The case was one of very chronic phthisis of between three and four years' duration. *Path. Reports*, Sept. 2, 1870.
59. Miliary tubercles on the pulmonary pleura. The preparation shows the inferior lobe of the right lung, whose pleural surface is very thickly set with miliary tubercles, varying in size from that of a millet seed. The tubercles existed only on the right side of the chest, occupying the costal and diaphragmatic pleuræ to a similar extent to the pulmonary, the upper half of the pleura being in both cases free. There was no adhesion in any part, and the lung tissue presented no tubercles. The case was one of tubercular peritonitis, the entire peritoneum having been found thickly set with large flat tubercles. The intestines were to some extent glued together, but the adhesions were produced by fibrous bands, and not by soft lymph.
The patient was admitted into a surgical ward with a simple fracture of the femur, and, while undergoing treatment there, an acute attack supervened, which carried him off in a short time, without the disease which caused the mischief being discovered. See *Path. Rep.*, June 24, 1871.

60. Ulceration and constriction of trachea and bronchi, presumably syphilitic. In this case a small isolated crater-shaped ulcer will be observed situated about an inch and a half above the bifurcation, while in the neighbourhood of the bifurcation there is very extensive ulceration, which extends into both bronchi. Just beyond the bifurcation there is well-marked constriction of both bronchi. This is most manifest in the left, because beyond the constriction there is considerable dilatation of the bronchus. The constriction on the right side is also very distinct, but without dilatation. In front of the left bronchus was a mass of firm calcareous gland, but the pneumogastric and recurrent veins though passing near were not intimately related to these.

The patient who was a woman aged 40, had been ill for some weeks, but there was an old syphilitic history traced to her first husband. There were traces of old periostitis. She complained of cough, spit, and shortness of breath, with soreness in the course of the trachea. The cough and inspiration had a laryngeal character. There were at intervals attacks of dyspnœa, during which she was livid and cold. The R.M. in left lung was perhaps a little less full than in right. The case was under Dr. Gairdner, in Ward VIII. See *Glasg. Med. Journ.*, Nov. 1872; also, *Path. Rep.*, Oct. 15, 1872.

61. Epithelioma of pharynx extending into larynx. As the preparation shows, the lower portion of the pharynx and commencement of the œsophagus are occupied by a flat slight, prominent tumour which extends from the base of the epiglottis to the level of the first ring of the trachea. It occupies chiefly the anterior wall, but, at its lower portion, involves the entire calibre of the tube, which is considerably narrowed. Along with the anterior wall of the pharynx the posterior wall of the larynx, involved as well as the right border of the epiglottis. In these regions the growth forms prominent masses, which almost entirely conceal the cavity of the larynx and vocal cords. The growth further passes downwards on the posterior wall of the larynx to about $\frac{3}{8}$ of an inch below the cords, occupying chiefly the fissure between the cords, but also involving the posterior extremity of the right cord. The growth presents to the naked eye, and also under the microscope, the character of the flat celled epithelioma. The surface presents superficial ulceration. Several glands in the neighbourhood were found enlarged. Lungs were perfectly normal.

The history of the case is rather imperfect. The patient a woman of 30 years of age, stated that she had had a slight cough for many years, accompanied occasionally by hoarseness and dyspnœa. The symptoms became aggravated six months ago upon catching a severe cold, and then dysphagia for the first time set in. Expectoration was profuse, muco purulent and tinged with blood. The case was under the care of Dr. M'Call Anderson, in Ward II. *Path. Rep.*, Aug. 7, 1873.

62. Phthisis laryngea. The larynx presents very marked ulceration. In the first place, just at the tip of the epiglottis upon the left side, there is an ulcer exposing the cartilage. In the cavity of the larynx there is very extensive ulceration, chiefly of the anterior wall, in the neighbourhood of the cords, but involving more of the left side than the right, the left vocal cord being almost completely destroyed Along with the loss of substance in some parts, there is prominence of the granulations in others; the latter producing an appearance which might be mistaken for small prominent tumours. The ulceration extends for a certain distance beneath the cords.

In the trachea about three inches beneath the larynx there is a small aperture which perforates the anterior wall of the trachea, between two rings and passes out into a small cavity. In addition to these lesions in the larynx, there were the usual appearances in the lungs of phthisis pulmonalis with abundant cavities, and there were also scrofulous enlargement and ulceration of the closed follicles of the intestine.

The case was under the care of Dr. Perry, in Ward IX. and during life there were the usual symptoms of phthisis, with hoarseness and other laryngeal symptoms. The laryngeal symptoms were of 8 months, the pulmonary of 6 weeks duration. In addition, a cutaneous emphysema had developed in connection with the perforation of the trachea described above. *Path. Rep.*, March 25, 1873.

63. Cavities in the lung—the result of acute pneumonia. The lung preserved is the left, and as shown in the preparation it is the seat of numerous cavities, which exist in every region, but are largest in its upper lobe, one cavity occupying almost the entire extent of this lobe. The tissue between the cavities, is everywhere in a state of grey hepatisation, no crepitant tissue being found. The pleural surfaces were adherent and the membrane is seen to be thickened. The right lung was non-adherent, and crepitant in every part. There was some soft lymph in its pleura.

The history showed that the patient had an attack of acute inflammation in the chest, 3 months before admission, the disease being confined to the left side. On admission signs of cavity had already developed. Patient's habits were bad. He is said to have caught cold during a drinking bout. He was a man 36 years of age, a bottle-blower, and in the hospital was under the care of Dr. Perry. *Path. Rep.*, March 3, 1871.

64. Empyema—perforation of lung. Pneumothorax. The preparation shows a portion of the lung and pleura in a case, in which the left pleural cavity contained pus, and was distended with air. The lung was completely collapsed, but at its posterior aspect there was, as shown in preparation, a circular loss of substance involving the entire thickness of the pleura, and a superficial layer of lung substance, and with abrupt edges. This ulcer opens directly into a bronchial tube of a diameter not less than a crow-quill. Both costal parietal pleuræ, on the side, were pretty thickly coated with soft lymph. There were a few localised condensations in both lungs, but no extensive disease, and no vomica.

The duration of the disease was 8 months, expectoration, cough, night sweats. History as of phthisis. Pain in left side. Roughened respiration at bases behind. Liver depressed, heart normal. *Path. Rep.*, Sept. 5, 1873.

65. Part of false membrane lining pleural cavity in a case of pyopneumothorax. There was 50 oz. turbid fluid in left pleura. The interior of its cavity was lined by a laminated thick skin the outer surface of which was shining and smooth and connected to the costal pleura by bloodvessels. On stripping it away the vessels were found to radiate in star shaped fashion on the outermost leaf of the false membrane. The innermost leaf was shaggy, reticulated, or in places smooth but soft. *Path. Rep.*, July 5, 1875.

66. Preparation from case of cut throat put up to show how the glottis becomes covered over by the stump of the epiglottis and the adjacent membrane when the cut as in the present case passes across the epiglottis just above the thyroid cartilage. The wound in this case was very large, but the vessels were not cut; and the stump of the epiglottis is seen lying over the anterior half of the glottis just as it lay during life, thus serving to impede respiration. *Path. Rep.*, July 20, 1875.

67. Specimens of emphysema vesicularis and emphysema interstitialis (dry).

68. False membrane coughed up in diphtheria (Dr. Eben. Watson).

69. Ulceration of true cords: abscess by suppuration of tracheal gland. *Path. Rep.*, Oct. 20, 1875.
70. Atelectasis of right lung: when removed the lung sank at once in water: weight of this lung, 11 oz.: the compression is due to exudation of clear yellow fluid into right pleura, with one or two small flakes in it. *Path. Rep.*, Nov. 20, 1875.
71. Sclerosis pulmonum. The lung tissue is full of round fibrous nodules of varying size. Only fragments of the lungs have been kept.
72. Ulceration of vocal cords and of one of the false cords: case of pulmonary phthisis (tubercular).
73. Recent lymph deposited in case of pleurisy of six weeks' duration. This lymph was found occupying the lower part of left pleural cavity, along with two pints of sero purulent fluid. The parietal layer of pleura was covered by a layer of soft gelatinous lace-like lymph, on removing which the pleura was seen to be deeply injected. The pleurisy was the result of a stab in left shoulder, inflicted six weeks previously. See *Path. Rep.* No. 60 (1875-76) Mrs. Barr, April 11, 1876.
74. Tubercular ulceration and destruction of vocal cords. Epiglottis thickened. *Path. Rep.*, May 3, 1876.
75. Tubercular ulceration and erosion of the trachea.
76. Bronchiectasis and fibrous state of lung.
77. Diphtheritic coating on fauces and larynx and trachea. Case Nov. 21, 1876.
78. Larynx, trachea, and bronchi from case of suffocation by a horse bean. The bean is lying in the trachea, which it nearly fills. Case Jan. 31, 1877 (Dr. Cameron). *Path. Rep.*
79. Croupous coating on mucous membrane of air tubes in a case of pneumonia. The croupous exudation lay like a white loose layer on the lining of all the air tract from the larynx to the bronchioli. The pneumonia was of the croupous sort, so that it seemed as if the croupous exudation extended into the air cells. *Path. Rep.*, May 16, 1877.
80. Primary cancer of uterus, followed by cancerous deposits in both lungs. *Path. Rep.*, March 30, 1877.
81. Part of left lung (from same case as V., 168) with mass of lymph adherent to the compressed lung. There were two pints of purulent serum in the left pleura. The mass of lymph looks like a bunch of seaweed attached to a rock. *Path. Rep.*, June 1, 1877.
82. Primary cancer of lung. Case July 25, 1877. Dr. Wood Smith.
83. Primary cancer of the right lung. *Path. Rep.*, Jan. 15, 1878.

SERIES V.

ALIMENTARY CANAL, LIVER AND VASCULAR GLANDS.

1. Tongue and gullet of case of poisoning by nitric acid. The stomach is shown in prep. No. 103.
2. A portion of œsophagus laid open. A stricture exists at its centre, where the muscular fibres are seen very much contracted.
3. Ulceration and perforation of pyloric end of stomach. The patient had complained for several months of gastric disease, but there was no history of hematemesis. He became much pained just as a minister was about to unite him in the bands of wedlock. He had to retire to bed, but, believing that the attack would soon pass off, the ceremony was proceeded with. He died suddenly the same night.
4. Malignant disease of stomach, from a man aged 60. The patient died of hematemesis. No history of gastric disease till six months before death.
5. Ulceration of intestine in typhoid fever.
6. Peyer's patch with exudation in typhoid fever.
7. Smaller piece of intestine from a case of typhoid fever. One patch larger than a shilling, of a dark colour and elevated considerably, occupies the situation of the gland.
8. Portion of ileum with ileo-colic valve in a state of ulceration from a patient who died of fever on the 15th day.
9. Portion of small intestine, showing contraction and healing of a Peyer's patch after typhoid fever. The patient died of phthisis, aged 28, four years after recovering from the fever.
10. Contraction of intestine from healing of an ulcer. Patient had suffered from typhoid fever eight years prior to admission. Patient, a man about 36 years of age, died of typhus.
11. Ulceration of a portion of intestine.
12. Enlargement of solitary glands and Peyerian patches. It was associated with scrofulous disease (great enlargement and caseous degeneration) of the mesenteric and other lymphatic glands. The preparation was removed from the body of a girl aged 14 years, who had died from the

effects of a severe burn, within 36 hours of the occurrence of the accident. *Surgical Reports*, No. 35, Feb. 24, 1870.

13. Ulceration of Peyer's glands in a case of phthisis.
14. Upper portion of ileum with a perforation large enough to admit a probe readily. The tissues around are very much thickened apparently by fibrinous deposit—the calibre of the intestine would hardly admit the finger. The patient died of peritonitis from escape of intestinal contents.
15. Portion of ileum with tubercular ulceration.
16. Tubercular ulcer of ileum with the lymphatics leading from it injected by yellow matter. There were a number of ulcers in this ileum, and, from all of them the lymphatics clearly to be seen filled with this yellow stuff. At one place the nodules caused on the lymphatics by the distension at the valves were of the size of dried peas. *Path. Rep.*, June 26, 1875.
17. Reticulated false membrane (recent) of lymph, covering the liver but not firmly attached to it. There was cardiac disease: amyloid degeneration of liver, kidney, and spleen: and ascites, 200 oz. *Path. Rep.*, Aug. 10, 1875.
18. Cyst in liver: multilocular: jelly-like contents shown in lower half: on microscopic examination large granular corpuscles, small cells of various sizes, and debris: no hydatid traces: no reaction with acetic acid nor with nitric acid. See *Path. Rep.*, July 16, 1872.
19. Ulcerated intestine.
20. Ulcerations of the colon.
21. Ulceration with perforation of great intestine.
22. Thickening and deposit in the colon.
23. Cirrhosis of liver in rabbit. No history except that the animal was kept in a dark cellar for some months. The ears and eyes were covered with scaly matter. The microscope shows fatty infiltration of cells scattered through the lobules, as well as fibrous formations between the lobules.
24. Cirrhosis of liver. The specimen preserved is from a liver which presented in a marked manner the deformity which results from advanced cirrhosis, and which is thus described in the Report Book:—"The gall bladder is very much displaced, so as to project from the right margin of the liver. The left lobe is reduced to the size of a small appendage of the right, while the latter has assumed an irregularly rounded shape. Posteriorly the liver is considerably adherent to the diaphragm, and what appears to be the suspensory ligament passes down a well-marked

notch on the posterior surface. To the left of this notch are two roundish bulgings, which are considerably softer than the rest of the tissue. The under surface is smooth and uniform, not presenting the usual portal depression. Just at its most posterior portion pass in the portal vessels, at no great distance from the hepatic vein. The capsule throughout is somewhat thickened, and the surface granular."

In the preparation the thickening of the capsule and the nodulation of the surface are well marked. On careful inspection of the section it is seen that throughout, two tissues are visible, a grey firm tissue, surrounding islands of a softer brownish structure, the former being the increased connective tissue, and the latter the atrophied hepatic tissue. In addition, there was some old disease in the lungs. The stomach and the intestines contained the remains of effused blood. In the peritoneal cavity were about five pints of fluid. The history of the case bears that the patient had been insensible of any disease till about six weeks before death, the chief complaint throughout having been of pain in hepatic region, and sickness and vomiting. It is remarkable that the disease, which is obviously of very old standing, should only have produced distinct symptoms so shortly before death. *Rep.*, Dec. 28, 1870.

25. Fibrinous tumour in duodenum.
26. Portion of colon, showing ulceration and perforation of its coats.
27. Small tumour in coats of small intestines.
28. Intussusception of intestine occurring in a child shortly after taking some calomel. It was supposed that the child had been poisoned, but post mortem examination showed the true cause of death. This case occurred to Dr. A. M'Dowall, Helensburgh, and the preparation is presented by him.
29. Portion of colon with elevated patches of fibrinous deposit in the submucous layer.
30. Portion of ileum glued together by false membranes, from a boy who had been run over by a cart.
31. Diverticulum of ileum.
32. Portion of ileum with diverticulum from a patient who died from typhus fever.
33. Diverticulum in ileum, 2 feet from ileocæcal valve: no symptoms in life.
34. Portion of intestine with diverticulum.

35. Imperforate anus.
36. Femoral hernia, the protruded sac is laid open.
37. Sac of hernia.
38. Intussusception of considerable portion of large and small intestine into the transverse colon. The preparation shows the pyloric portion of stomach and duodenum passing across the upper end of the intussusception, being attached to the latter by the omentum, which has been drawn into intussusception along with a portion of the transverse colon. Beneath this is a portion of ileum emerging from the intussusception, and seen to be much narrowed towards the point of emergence. Most inferiorly is shown the intussusception itself. An incision is made about its middle to show the folds of intestine involved; and the great intestine at its inferior termination is open to show the terminal knuckle of the intussuscepted portion. The portion of the intestine involved is therefore the lower part of the ileum and first portion of colon, including ileo-cæcal valve.
39. Openings of a psoas abscess through the intestines and anterior abdominal wall.
40. Strangulated hernia.
41. Portion of intestine with deposit of miliary tubercles on the peritoneal surface near the ileo-cæcal valve.
42. Malignant disease of mesentery, connecting the folds of the intestines in a solid mass. History.—A young man, aged 19, who had suffered from a tumour in the abdomen for about twelve months. A private patient of Dr. Andrew Buchanan, who wrote a history of the case for the *Glasgow Medical Journal* for April, 1864. Two sections of the intestine are seen in this preparation.
43. Section of tumour and intestine from No. 42.
44. Section of liver with cysts communicating with each other, apparently an abscess with membranous septa.
45. Portion of liver with tubercular deposit, from a private case of Dr. Ritchie.
46. Portion of liver in a state of fatty degeneration.
47. Abscess of liver communicating with right lung. Same case as No. 40, Series IV. *Vide Path. Rep.*, 44, 1858.
48. Cirrhosis of liver.
49. Cysts in liver.
50. Section of liver showing a tumour encysted in its tissue. The patient died from injuries sustained from a fall from a height, and there was no history of hepatic disease. A mason, 48 years of age, apparently a healthy man. Microscopic examination of tumour showed it to be almost entirely composed of amorphous matter.

51. Cancer of liver.
52. Portion of liver with cancerous deposit.
53. Cancer of liver.
54. Portion of cancerous liver.
55. Cancerous liver.
56. Abscess of liver bursting into stomach.
57. Biliary abscess of liver.
58. Gall bladder and duct impacted with biliary calculi. The parts were removed from a female patient who from early life was much annoyed with what were considered symptoms of gastrodynia. Two or three years before death the symptoms were those of spinal neuralgia, characterised more particularly by great tenderness over one or two dorsal vertebræ, and at a spot below the angle of the right scapula, shooting round the same side of the chest and down the right arm. Before the fatal event she was subject to frequent and severe paroxysms of pain, commencing at the præcordium and extending backwards to the angle of the right scapula, and accompanied with retching, vomiting, hiccup, and the occasional sensation as of a bag falling from side to side. There was slight jaundice. No treatment was of the least avail, with the exception of heat, opium, and chloroform, the last of which, for several months antecedent to death, was used to the extent of seven or eight ounces every twenty-four hours. On inspection the only diseased conditions were those shown in the preparation.
59. Limited hypertrophy of capsule of spleen. Cause and history unknown.
60. Embolic affection of the spleen. A bristle marks the boundaries of the affected portion. It is situated in the upper border near the cardiac end of stomach. *Vide Path. Report*, No. 35. 1858.
61. Embolic affection of spleen. In one of the portions the external surface is shown, and the difference in colour of the pale embolic part from the normal red splenic tissue is visible. The embolic part is also sharply defined from the normal by a distinct furrow, resulting from the beginning of the process of contraction of the embolic infarct. In other parts the organ is seen in section, and there the difference in colour and the well-marked line of demarcation are still more obvious. The diseased part is seen to be of a dull white tint with spots of an orange-yellow here and there.

    On microscopic examination the diseased part is seen to be chiefly composed of round cells, and at first sight with a low

power seems to differ little from the normal, but on more careful examination the cells in the diseased part are seen to be very irregularly shaped, and with a generally shrunken appearance. But the difference comes very markedly out on tinting with carmine, the cells of the normal tissue then become well tinted, while those of the diseased part do not at all take on the colouring matter. In addition, though under the microscope, a similar contrast of colour between healthy and diseased parts exists to that noted above, there are scattered through the diseased parts aggregations of pigment. These are in the form of brown acicular crystals with somewhat of a stellate arrangement, but without any definite relation to cells. In this case there was old standing heart disease, both aortic and mitral valves were much diseased and with polypoid excrescences. See *Path. Report*, June 19, 1871.

62. Spleen from case Nos. 72 and 73, Series III. It weighed 49 ounces. Microscopic examination showed general hypertrophy of tissue. The surface of the organ was rough, and at parts presented some fibrinous deposits. A minute examination showed some calcareous deposit in the veins going to form the splenic trunk.
The man was a long time a soldier in tropical climes, and had frequent attacks of intermittent fever, for which he was treated by calomel and quinine ; was frequently salivated.
63. Cancerous deposit in pancreas. Same case as Series X. No. 41.
64. Scrofulous enlargement and degeneration of the axillary lymphatic glands.
65. Stricture of œsophagus.
66. Strangulated intestine.
67. Portion of liver with nodules of cancerous deposit.
68. Colloid cancer of stomach, involving gastric extremities of gullet and duodenum. *Path. Rep.*, August 18, 1876.
69. Rupture of spleen. Death by hemorrhage into peritoneal cavity. Patient was a spirit merchant of intemperate habits, who in a fit of drunkenness slipped off an arm chair. The arm of the chair seems to have compressed and so ruptured his spleen. There was nearly 5 pints of blood in the peritoneal cavity. Patient lived twelve hours after the rupture. The liver and spleen were highly fatty.
70. Cavernous tumour of liver. *Path. Rep.*, May 24, 1876.
71. Stricture in ascending colon: occluded by nutshells, eggshells, and debris (shown in test tube). *Path. Rep.*, Dec. 6, 1876. Examined under microscope, shows no sign of cancer ; the tumid membrane immediately lining the stricture being apparently composed of thickened tissue.

72. Enlarged mesenteric glands, in a case of typhoid fever.
73. Ulceration of Peyer's patches in typhoid fever, from the same case as the preceding, and as No. 21.
74. Enlargement of the cervical glands, from a female, aged 22, who died of typhus.
75. Kidney and suprarenal capsule attached. The capsule is much enlarged and diseased; the other capsule was in a similar condition. History —A female, aged 34, admitted suffering from typhoid fever. She died on the thirteenth day. Her skin was very dark—a well-marked case of Addison's disease.
76. Amyloid degeneration of the liver—waxy or lardaceous liver. The smooth glistening appearance of the section is here well exhibited. On microscopic examination, almost the entire hepatic cells were found to be amyloid. The specimen was taken from the same case as No. 43, Series VII., and therefore illustrated the fact of the frequent occurrence of waxy liver in cases of emaciating local disease of other parts.
77. Amyloid degeneration of spleen—sago spleen. In section shows innumerable transparent bodies scattered throughout. These, on microscopic examination, are seen to be Malpighian bodies in a state of amyloid degeneration.
78. Pyæmic abscess of liver. The case was one of amputation in the leg. Rigors occurred on January 5th, and afterwards at intervals up to death on January 12th.
The specimen shows an abscess in process of formation about the size of a small orange. In addition, there were in the liver extremely numerous abscesses, which varied from a very minute size up to that of the present specimen. In the lungs there were also numerous abscesses, and patches presenting the characters of pulmonary apoplexy. Further, evidences of recent pleurisy and pericarditis existed. *Path. Report*, Jan. 14, 1871.
79. Portion of ileum with croupous exudation and ulceration of Peyer's patches, from a man who died of phthisis. Some of the patches contained pus.
79½ Contracted stomach dried.
80. Portion of intestines dried and varnished to show the structure of the ileo-cœcal valve.
81. Dried preparation, showing enlargement and cretaceous deposit in mesenteric glands of a child.
82. Distended gall bladder. The distension was owing to biliary calculi, which are preserved in Series XIV., No. 97.
83. Large myomatous tumour of the œsophagus. This tumour as exhibited in the preparation is situated in the lower

part of the œsophagus, its inferior extremity just reaching the cardiac orifice of the stomach. The tumour measures $4\frac{3}{4}$ inches from above downwards, 1 to $1\frac{1}{4}$ inches from before backwards, and an average of about 2 inches laterally. It lies mostly free, but is attached to the posterior wall of the passage by a very thin fibrous band about $1\frac{3}{4}$ inches in length and with its upper edge about 2 inches beneath the superior margin of the tumour. The œsophagus at the part occupied by the tumour was much dilated, and its mucous membrane presented considerable ulceration. On microscopic examination the tissue was found to be composed of elongated spindle-shaped cells, presenting the character of the smooth muscular fibre-cell. The tumour was thus concluded to be a myoma or muscular tumour. With the exception of the œsophagus, all the organs of the body were normal. During life the patient, who was under Dr. Steven in Ward V., complained chiefly of difficulty and pain in swallowing, which as he stated were first experienced about two months before death. There was no actual vomiting, but when an attempt was made to swallow the food soon regurgitated. During his stay of two months in the hospital, examination with the bougie detected an obstruction in the œsophagus. The patient, who on admission had a good complexion and was not emaciated, began after a fortnight's residence to lose flesh rapidly, till at death he was extremely emaciated. See *Glas. Med. Journ.*, Feb., 1872, and *Path. Rep.*, Sept. 20, 1871.

84. Fibrous tubercles on the peritoneum. The preparation shows a considerable number of tumours on the serous coat of the intestine. The important facts of the case will best be given by quotation from the report made at the examination:—"The serous coat of the intestine and mesentery is dotted over with innumerable tumours which vary in size from very minute up to the size of a pea, and in some cases two of the latter dimensions have coalesced. One the size of a pea was found free in the abdomen, and the greater number of the larger ones are extremely loosely attached to the serous coat, so that by simply handling the gut one of them escapes. Another is found covered with a thin layer of peritoneum, and movable from place to place under it. Others, and especially the smaller ones, are more firmly attached. The tumours are of a glistening white colour, smooth on the surface, of a consistence equal to that of firm cartilage, and they all more or less approach to the globular shape.

On section, one of the larger ones presents a transparent cartilaginous appearance throughout, but is distinctly softer in the centre than at the circumference. Others, however, and this includes most of the larger ones, are opaque and brittle in the centre, this degenerated appearance extending in some cases a considerable distance towards the circumference, so as to leave only a firm external rind. These bodies are distributed throughout the abdomen, existing on the surface of the large as well as the small intestine, and on the meso-colon as well as on the mesentery. The peritoneum is in general somewhat thickened with shreds of false membrane, and especially is this the case on the surface of the liver, but there is no recent lymph in any part." Miliary tubercles of the more usual form were found in great abundance on the lungs, liver, and kidneys. It should also be remarked that on microscopic examination of the peritoneal tubercles they were found to present a markedly fibrous structure, the fibres having a concentric arrangement. In addition to those visible to the naked eye, the microscope detected innumerable smaller ones; but none of them, not even the smallest, presented the usual extremely cellular character of tubercles, but rather the appearance of connective tissue, the elongated connective tissue corpuscles always presenting a distinctly concentric arrangement. The case was under Dr. Scott Orr in Ward XII. See *Path. Rep.*, Nov. 30, 1871.

85. Strangulated femoral hernia: rupture of the intestine. The portion of intestine preserved is from about the middle of the small intestine. A knuckle of gut about three inches in length was found to be perfectly black and in a gangrenous condition, while at the upper extremity of the gangrenous portion partial separation of the slough has taken place, a perforation having occurred at the line of demarcation. This rupture is shown in the preparation by a rod passed through the intestine. The abdominal cavity contained a quantity of fluid fæces, and the peritoneum was generally hyperæmic, but without exudation. The hernial sac was empty, and communicated with the abdomen by a free aperture.

The case, which was under Dr. Watson, Ward XXVI., was one of strangulation of a week's duration, for which the usual operation was performed at the end of that time. The patient died five hours after the operation, the bowels having been moved in the interval. The stricture was a very tight one. *Path. Rep.*, Sept. 5, 1872.

86. Concretion in and inflammation of vermiform appendage: peritonitis. The preparation shows the last part of the ileum, first part of colon, and vermiform appendage; the last considerably dilated, and more so at one part than the rest, at this part a distinct cavity being visible. From this cavity a concretion about the size and shape of a cherry stone and composed of inspissated fæces, was removed by the incision which is visible in the preparation. Around the vermiform appendage there was acute inflammation of the peritoneum with partial formation of pus, and, in addition, a certain amount of general peritonitis. In this case there were during life symptoms suggestive of intestinal obstruction, vomiting, collapse, &c.; the moving of the bowels failed to remove these symptoms.

87, 88. These two preparations show certain of the parts from a case of twisting of the mesentery, and adhesion of the intestine to the abdominal wall. On opening the abdominal cavity the small intestine at once projected forward, in black and distended loops, the appearance being very similar to that of the gut in a strangulated hernia, but in this case almost the entire small intestine was in a similar state. It was found somewhat difficult to disentangle the engorged and loaded intestine, and in doing so, it was found necessary to untwist the mesentery, which was turned on itself at various parts. The distended and engorged portion of intestine was found to be somewhat distinctly demarcated, above and at its lower termination, the latter being about a yard above the ileo-cæcal valve, and the former a similar distance beneath the duodenum. There is, however, either at upper or lower termination, no distinct constriction of the bowel, and not even a sudden contraction, but rather a gradual merging of the distended and engorged into the normal parts. (No. 129 shows upper and lower terminations.) The ileum beneath the termination of the strangulated part presents a series of adhesions to the abdominal wall (as shown in No. 130). The highest of these is 6 inches beneath the said part, and there are three others at intervals. The successive loops of intestine return to the abdominal wall, where they are adherent to a point just above the caput cæcum coli, the adhesion being formed by firm connective tissue. There is, however, no constriction of the intestine here; water could be quite readily passed through. A single adhesion of similar character exists just above the strangulated part, the jejunum being attached to the right side of the abdomen, but here again without constriction.

The history of the case shows that the patient had been ill 7 days: there was complete constipation and obstinate vomiting; also distension of the abdomen and pain on pressure.

Note here the probable influence of adhesions at two distant parts in producing twisting between these adhesions. *Path. Rep.*, Dec. 20, 1873.

89. Epithelial cancer of stomach, involving the pyloric region. The tumour surrounds the pylorus and extends inwards almost equally in all directions, but rather more along lesser curvature than in any other direction. As seen from within the stomach it forms a nearly circular flat prominence measuring from 3 to 3½ inches in diameter. Its margins are abruptly defined, and even in some places overhanging. In the centre and towards the pylorus there is a somewhat deep ulceration. The tumour does not involve the mucous membrane of the duodenum to any perceptible extent, but two prominent soft masses project through the pylorus into the calibre of the duodenum. These are exhibited in the preparation. In the area occupied by the tumour, the stomach is much contracted, and the pyloric orifice especially considerably narrowed: the tissues around the stomach and in the neighbourhood of the tumour are also condensed, and there is one much enlarged gland. Microscopic examination of the tumour showed it to be a cylinder-celled epithelioma.

The remaining organs of the body were practically normal, except that there was extreme emaciation. The liver was small, weighing only 2lbs.

The patient was a man, aged 38, a coachman. The first symptoms appear to have begun about 10 months before death, and the chief complaint was a sensation of weight at the epigastrium. A tumour in the neighbourhood of the spleen was detected. *Path. Rep.*, Feb. 20, 1874.

90. Diverticulum of intestine, with perforation at its extremity. The case was one of typhoid fever, and an ulcer is seen in the preparation in the portion of bowel, from which the diverticulum passes off. There is also an ulcer at the extremity of the diverticulum, which has perforated its coats, an aperture large enough to admit a pea existing: it is to be noted, however, that adhesion had taken place before perforation, and there was consequently no escape of intestinal contents. *Path. Rep.*, Oct. 31, 1873.

91. Cirrhosis of liver in the cat. This preparation contains the liver of a cat, which shows characteristically the appearances of cirrhosis. Its surface is finely granular in many

parts, especially where two surfaces are in contact; and in other parts there is more an irregularity of surface than distinct granulation. On section the liver-tissue is tough and grey, and presents under the microscope the usual appearances of advanced cirrhosis. There are islands of liver tissue in a basis of dense fibrous tissue, and this is present in all parts of the liver. The organ weighed 8 oz. 1 dr.

The animal was a male cat about 6 years of age, and had from its birth inhabited a butcher's shop. It was exceedingly emaciated, the spines of the vertebræ being very prominent. Its abdomen was distended by a large accumulation of fluid; this fluid was contained within the peritoneal cavity, and amounted to two pints and a half, its specific gravity was 1015. On being drawn off from the newly killed animal, it was slightly turbid, and next day was found to have formed a loose coagulum, which contained abundant inflammatory corpuscles. The other organs of the body were normal. See *Path. Rep.*, Dec. 16, 1873.

92. Enlargement of the thyroid gland. The increase in size affects the two lobes of the gland almost equally, hence the prominence is rather lateral than antero-posterior. The preparation was met with in the body of a man, aged 35, who died from embolism of the middle cerebral artery. There was dilatation and hypertrophyof the heart, with globular fibrinous vegetations at the apices of both ventricles, those at the apex of the left being probably the source of the embolism. There were also evidences of old and recent pericarditis. No notice of the enlargement of the thyroid was made during life. Microscopic examination of sections from the gland seem to show that there is a general enlargement of the follicles, which are distended with cells. There is here and there just a trace of colloid vegetation. *Path. Rep.*, June 26, 1874.

93. Perforation of small intestine, with glandular enlargement.

94. Obstruction of the pharynx by foreign body. Perforation of its wall. The person from whom this preparation was removed had been swallowing mutton-chops, bones and all. Two of these stuck in the pharynx, and are shown in the preparation to transfix it, just at the origin of the œsophagus. The end of one of the bones has pierced the pharynx on the right side.

95. Melanotic cancer of mesentery, &c. In this preparation two loops of small intestine with the mesentery are preserved, from a case in which there were very numerous melanotic

tumours in the abdomen and chest. The great omentum was the seat of an enormous number of pigmented growths, generally of the size of a pea or bean, but so abundant as to convert the omentum into a bulky mass. There were growths of a similar nature on the lesser omentum, and, as shown in preparation, they were also present on the mesentery, concentrating along its attachment to the intestine. The liver was the seat of numerous black masses, and the organ was about 8 lbs. in weight. Along with the black tumours there were one or two pale ones in the liver. In the ligaments of the uterus there were black soft masses, one of which seemed to occupy the place of the right ovary. In the well of the uterus a fatty tumour was found. The lungs and pleuræ were the seat of a few pigmented but small growths.

During life there was considerable ascites, but the actual nature of the disease was not made out. The patient was under the care of Dr. Gairdner at the Western Infirmary, and the greater part of the organs are preserved in the Hunterian Museum.

96. Amyloid degeneration of the liver. Biliary infiltration of a small portion. The liver as a whole was, in this case, in the most advanced stage of amyloid degeneration, a microscopic section exhibiting nothing but lobules, of which the cells were completely amyloid. This was the case except at a small part, a portion of which is preserved, and visible at the lower part of the preparation. Here there was biliary infiltration presumably from obstruction of bile ducts; and in this region the amyloid degeneration is much less general.

97. Cancer of caput coecum coli, and of transverse colon. In the preparation the tumour in the caput cœcum is preserved, and there is seen a very irregular ulcer of about 3 to 4 inches in diameter with bulky prominent margins and base. To the naked eye some parts of the wall present the gelatinous appearance of colloid cancer, but the rest has the general characters, both to the naked eye and under the microscope, of epithelioma. The tumour stops short at the ileo-cœcal valve. The other tumour was of nearly the same size, and presented similar characters. It was situated on the transverse colon, just to the left of the middle line. In both places the intestine was adherent to the neighbouring parts: to the stomach and abdominal wall in the one situation; to a group of enlarged glands and neighbouring portion of ascending colon in the other. The intestine elsewhere was normal.

The patient is stated to have suffered from dysentery. There was a tumour detected in left hypochondrium. *Path. Rep.*, Nov. 23, 1874.

98. Inguinal hernia. Sac projected into the tunica vaginalis. The preparation shows the sac of the hernia inside the tunica vaginalis, which latter has been opened. It is obvious that in operating here the tunica vaginalis would have been first opened into, the hernial sac being separate. The testis lies at the bottom of the tunica and appears compressed. The hernial sac contained a piece of omentum weighing $2\frac{1}{4}$ oz. The neck is wide. This is probably a case in which there has been only partial obliteration of the canal of communication between the tunica vaginalis and the peritoneal cavity. The hernial sac is apparently formed of the upper part of this canal, which in distending pushes a layer of tunica vaginalis before it. The wall of the sac consists of two distinct serous membranes, which however are adherent. *Path. Rep.*, April 23, 1874.

99. Small abscesses in right anterior margin of liver. Perityphlitis: abscess opening internally: pericarditis acute, recent: hydrothorax, right side, and atelectasis of right lung. No hydatids. *Path. Rep.*, Nov. 20, 1875.

100. Numerous small dark red tumours, seemingly of lymphoid structure, in the liver of patient who died of abdominal tuberculosis. *Path. Rep.*, Feb. 7, 1876.

101. Ulcer of duodenum, rupture of artery. The ulcer in this case is situated just beyond the pyloric orifice; it is nearly circular in outline, and completely perforates the coats of the intestine. At its circumference the duodenum is firmly adherent to the pancreas, and the cicatricial tissue which forms the adhesion has caused some contraction of the calibre of the gut. The margins of the ulcer are very abrupt, and in part undermined; and the floor, which is about three-eighths of an inch beneath the general surface of the mucous membrane, is formed of pancreatic tissue with a coating of granulations. On examination the cavity of the ulcer was occupied by a brownish clot, which at one part was adherent. On removing the adherent portion the open mouth of a vessel (which was afterwards found to be one of the pancreatic branches of the hepatic artery) was discovered. [In the preparation the artery is shown by a piece of whalebone.] Both stomach and intestine were found distended with a brown grumous material with a considerable amount of brown clot. At the cardiac end of the stomach the mucous membrane was puckered and drawn in two places where there seemed to be old cicatrices.

The patient was a man aged 42, a labourer, under the care of Dr. Perry, Ward III. He first felt pain in the stomach two years before admission. For the last two months he is stated to have vomited all his food. The pain was always worst after taking food. He twice vomited a quantity of blood, and a third time a few hours before death put up a mouthful of bright red blood. *Path. Rep.*, Sept. 18, 1874.

102. Pyloric extremity of stomach with extensive carcinomatous affection.

103. Stomach of a case of poisoning by nitric acid. From the same case as No. 1.

104. Cancer of the pyloric end of stomach. The orifice is nearly occluded—it would hardly admit the passage of a small quill. *Vide Path. Rep.*, No. 135, 1858.

105. Cirrhosis of liver. The liver weighed 1 lb. 15 oz., and is highly cirrhotic: there was thrombosis of the portal and splenic veins: 440 oz. of clear serum in peritoneal cavity and in pelvis a recent attack of peritonitis due to tapping. Stomach surface ecchymotic: walls of intestines and mesentery œdematous: no œdema elsewhere. Spleen, 1 lb. 12 oz. The intestines contained clayey fœces but no ulceration. *Path. Rep.*, June 30, 1875.

106. Scirrhus nodules in liver. Weight of liver 8 lbs: right lobe specially enlarged, reaching down to crista illii. Whole surface closely covered by smooth larger and smaller nodules, of yellow colour: the largest as large as a plum, the smallest of pinhead size: the intervening liver tissue is dark red. The individual nodules sub-lobulated, the large shew a tendency to umbilication, with a white fibrous nucleus in the centre of a shallow depression. Other nodules seem inclined to coalesce. On section the interior is found occupied by similar nodules, all hard and gristly, some cupshaped after section. The medium sized nodules can be shelled out, leaving a dark red non-capsuled cavity, and shewing themselves a mulberry exterior. Scraping the cut surface gives a small amount of yellowish white fluid. A single cancer nodule in duodenum and some of the mesenteric glands indurated. *Path. Rep.*, Aug. 6, 1875.

107. Lobular abnormality of liver. May 1, 1876.

108. Hydatid cysts in liver. There are two large cysts, the contents of the one having been a greenish brown fluid with a torn dark membrane in it (151 B) but no hooklets or trace of hydatid heads: and the contents of the other puriform, with abundant looses colices floating (*i.e.* heads), and with

a gelatinous membranous bag (151 *c*), lying loose in the fluid. The latter cyst was the larger, being about the size of a child's head, the black cyst being somewhat smaller. The lining of the larger cyst was white, fibrous, flaky: the lining of the smaller one black caked amorphus pigment. *Path. Rep.* Oct. 29, 1875. (Published by Dr. Scott Orr, in *Glasg. Med. Journal*, January 1875.)

109. Cancer of stomach. *Path. Rep.*, No. 110. 1858.
110. Small spleen, weight 1½ oz. *Path. Rep.*, Oct. 1, 1876.
111. Miliary tuberculosis of spleen, in a case of pulmonary phthisis (tubercular). Case Dec. 1, 1876.
112. Cancer of stomach. Case *Path. Rep.*, 30th June, 1876.
113. Umbilical hernia: irreducible and not diagnosed during life. The great omentum is tucked into umbilical ring, like a table napkin through its ring, and there is an old fixed hernia, size of small apple.
114. Ulcers in stomach after heavy drinking. Private case. Dr. Gray.
115. Tubercular ulcers in colon.
116. Liver (from same case as 111): shewing congenital lobulation, part of the left lobe is almost quite detached. Dec. 1, 1876.
117. Rupture of cicatrix in duodenum, followed by peritonitis and death. Case June 13, 1877.
118. Large spleen in case of mitral stenosis, weight of spleen 30 oz: length 10 inches: breadth 8 inches. *Path. Rep.*, Feby. 19, 1877.
119. Rupture of liver. Case under Dr. Morton. There was no external mark. The abdomen was full of a dark brown green fluid, say 5½ pints: and a thick coating of soft grey lymph (like dirty spider's web) lay on the bowels and hung from one part of the gut to another in festoons. The fluid gave a marked biliary reaction with nitric acid. The liver is fractured from before backward through its whole thickness, along an antero posterior line, ½ inch to left of, and parallel to the falciform ligament: the lips of the fracture are joined by bands of lymph: the liver weighs 2 lbs. 14 oz.: the body otherwise healthy. Patient lived 9 days after receipt of the injury. *Path. Rep.*: David Stirling, Dec. 21, 1876.
120. Diverticulum in jejunum.
121. Œsophagus and trachea from Dr. Easton's case of poisoning by sulphuric acid. Same case as Prep. No. 123 of this Series.
122. Epithelioma of the stomach, extending along the small curvature from near the cardiac to near the pyloric orifice,

but involving neither. The orifices are seen in the preparation, the pyloric at right and cardiac at left side. The symptoms during life in this case were great pain in œsophagus and stomach and great difficulty in swallowing, the illness being dated back two years. There is also an apparent history of syphilis. The patient described his feelings as if there was an obstruction at the beginning and end of the œsophagus. There was no sickness, but occasional vomiting after coughing.

The body was extremely emaciated. The lungs showed old adhesions. The stomach presented the appearance described and shown in the preparation. The folds of intestine were glued together by adhesions, and the whole peritoneal surface was studded with nodules up to the size of a split pea. These were collected into larger groups on the intestine, these larger tumours corresponding with ulcers inside the intestine. The mesenteric glands were enlarged and cancerous. *Med. Rep.*, April 8, 1871.

123. Stomach from a person named Pennycuick, who swallowed four or five ounces of strong sulphuric acid. Same case as No. 120.
124. Ulceration of stomach.
125. Ulceration of stomach from a man aged 55. The organ is contracted round the ulcer from cicatrization. History.—The patient was admitted in a moribund condition, and died of weakness from loss of blood.
126. Dilated stomach from chronic catarrh of its lining.
127. Cancer of stomach. Case *Path. Rep.*, Sept. 1, 1875.
128. Congenital inguinal hernia.
129. Perityphlitic abscess communicating with colon. The abscess had opened externally in right groin, and on dissection was found to extend from two inches below this opening to the level of the upper edge of right kidney, in its course burrowing among the retroperitoneal structures. The preparation shows a small portion of the wall of the abscess removed, and spread out with whalebone. The abscess communicates with the colon by an aperture through which, in the preparation, a green rod has been passed. The aperture is situated just below the ileo-cœcal valve, and on the posterior wall of the intestine. Its edges are abrupt, and there is no surrounding ulceration. In other parts of the large intestine there was considerable ulceration, and one ulcer existed in the small intestine. The other organs were healthy. A careful examination was made to find if the abscess communicated with diseased bone, but no such disease was found; in particular the vertebræ were normal.

In this case the history only points to a date about two months before death as the origin of disease. At that time the patient had violent shivering and sweating. Five days before death a large quantity of pus was discharged per anum. *Path. Rep.*, Sept. 22, 1878.

130. Colloid cancer of stomach, involving the entire organ. From a private case of Dr. J. G. Fleming's, Sept. 10th, 1862. History.—A man, aged 60, began to lose flesh six months before death. Had no pain and no vomiting till a few days before his decease. Was generally healthy and up till the date when he began to lose flesh gradually, no organic disease was suspected. The transverse colon was adherent to the stomach. A portion of it is seen on the lower part of the preparation near the pylorus.

131. Colon distended from the caput cœcum to constriction near the centre of the transverse portion measuring 14½ inches in circumference. The patient was seven months advanced in pregnancy, and death resulted from peritonitis and abscess in the left iliac region.

132. Cirrhosis of liver. This specimen, which consists of the entire liver in a case of this disease, shows extremely well the deformity which results from an extreme degree of the affection. The liver is very much reduced in size, weighing in the fresh state 1 lb. 10 oz. but its general shape is retained. The surface is extremely irregular, presenting with great uniformity large "hobnail" projections. The section shows that the tissue is intersected with firm connective-tissue bands, between which are islands of hepatic tissue presenting (in the fresh state) a brownish mottled colour. In this case there was considerable effusion of blood into the cavity of the stomach and upper part of the intestines, and the mucous membrane of the stomach presented numerous superficial erosions.

The history of the case, which was under Dr. Perry, in Ward III., bears that the patient was a heavy drinker. Latterly the chief symptom was extreme ascites and œdema, paracentesis abdominis having been performed several times. *Path. Rep.*, March 18, 1872.

133. Chronic simple ulcer of the stomach. The ulcer which is rather larger than a shilling piece, presents the abrupt punched-out margins of the characteristic ulcer of the stomach. It occupies a position exactly midway between the cardiac and pyloric orifices, and on the lesser curvature. The base of the ulcer is dark in colour, and at some parts the wall is very thin. During life symptoms of disease of the stomach had existed for four or five

months. Death occurred during an attack of relapsing fever complicated with erysipelas. The case was under Dr. Maclaren, in Ward XVI. *Path. Rep.*, Oct. 24, 1871.

134. Epithelioma of œsophagus ulcerating into right pleura. The preparation shows the lower part of the œsophagus, the cardiac orifice of the stomach, and a portion of the liver. The lower part of the œsophagus is occupied by a tumour which involves the entire circumference of the tube, and presents an extremely irregular and somewhat warty surface. The tumour occupies about 3½ inches of the length of the œsophagus, its lower margin being about 2 inches above the cardiac orifice. But just beneath the lower termination of this main tumour there is an isolated globular mass (seen in section) which projects into the tube and is attached by a comparatively narrow base. Towards the right side the surface of the general tumour presents ulceration, and here a direct communication exists with the right pleura. In the specimen a portion of the pleura is preserved, and the aperture is shown, the pleura being held on the stretch by a piece of whalebone. On examining this pleura before any of the contents of the chest had been disturbed, it was found to contain a grumous fluid with the sour odour of the contents of the stomach, while the surface of the membrane was coated with soft lymph. The tumour in the œsophagus presents the structure of epithelioma, and the same form of disease was found in numerous lymphatic glands. The liver also and the kidney contained a few secondary formations. The history of the case, which was under Dr. Perry, shows that symptoms of difficulty of swallowing and pain began about five months before death. A violent pain attacked the right side of chest two days before death, and auscultation detected the usual signs of pleurisy. See *Glas. Med. Jour.*, Feb. 1872, p. 264, and *Path. Rep.*, Dec. 23, 1871.

135. Epithelioma of stomach, perforation of colon. The stomach as shown in the preparation is the seat of a large tumour, which occupies portions of the lesser curvature and anterior and posterior walls. It ends abruptly at the pylorus, and measures along the lesser curvature 3½ inches, and in a direction at right angles to this, 4 inches. The tumour is much ulcerated in its central parts, but its margins are exceedingly prominent and warty-looking, overhanging the base to some extent. The stomach is adherent to neighbouring parts, especially the transverse colon and liver. A somewhat tortuous communication

exists between the ulcerated surface of the tumour and the colon. Around the stomach there are a few enlarged glands. The liver is smaller than usual, and is the seat of a few white nodules, the size of pin's heads.

The patient, a man about 63, and a bill-poster, was 38 years in hospital. A bad smell was detected in left epigastric region. *Path. Rep.*, Feb. 2, 1875.

136. Cancerous degeneration and stricture of œsophagus and œsophageal lymphatic glands. From Dr. Cruickshank, Dalmellington.

137. Cancer of stomach. Vide *Path Rep.*, No. 92. 1858.

138. Ulceration of intestine.

139. A portion of the small intestine (ileum) of a young person showing scrofulous deposits. Presented by Dr. M'Kenzie.

140. Cæcum and portion of ileum, showing ulceration of ileum and enlargement of mesenteric glands.

141. Transformation of vermiform appendage into a bulky cyst. The appendage is converted into a cyst which measures $5\frac{1}{4}$ inches in long diameter, and $1\frac{1}{4}$ to 2 inches in its short diameter. The cyst is in the form of an elongated cylinder which lies nearly at right angles to the axis of the ascending colon, and parallel to the terminal part of the ileum. In situ it had dropped into the pelvis, but was readily withdrawn, there being no adhesions except the attachments to be presently described. The cyst was fluctuant throughout, and contained a thick mucous material. The wall is comparatively thick, and at one part has an opaque tendinous appearance. It is attached along its upper border to the caput coecum coli and the ileum by a short mesentery and by a portion of the cyst, which is nearly at right angles to the general body. There were no signs of the presence of this cyst observed during life, the lesion being only detected at post mortem. The patient died of renal disease and pericarditis. This case is published with others in the *British Med. Jour.* for Jan. 5, 1875. See *Path. Rep.*, Oct. 4, 1874.

142. Inflammation of lower part of ileum — perforation. The patient was a woman 46 years of age, a millworker. She was in good health till five weeks before death, when after drinking for a few days she felt severe pain in the epigastric region, with obstinate constipation and vomiting. On admission the abdomen was much distended, and yielded a dull tympanitic sound. On using castor oil and enemata the bowels were moved, the fœces being clay-coloured; but this did not relieve the symptoms, and she soon sank. On *sectio* the intestines and stomach were

found very much distended with gas, on the escape of which after puncture there was still found some light-coloured semifluid fœces in the bowel. The last fold of the ileum dipped into the pelvis, and its serous surface was of a dark blue colour, with a minute perforation in its middle. There were shreds of lymph on the surface of the intestine in various parts, but especially on this last loop of ileum. No obstruction was visible, and, as already noted, the intestine was uniformly tympanitic. The mucous membrane of the last fold of ileum is very much ulcerated, as the preparation shows. The ulcers are mostly transverse and generally from half-an-inch to an inch in long diameter, with undermined and shreddy margins. They are so closely set that, beside their margins, there is hardly any mucous membrane remaining. The ulcers are mostly superficial, only in rare cases exposing the muscular coat. A very few ulcers existed above this part, sometimes related to the peyerian patches. There were no ulcers in the large intestine.

143. Cæcum thickened and ulcerated; adjoining portion of ileum ulcerated.

144. Peyer's patch with exudation (typhoid).

145. Cancerous tumour surrounding ileo-colic valve. From a private case of Dr. Weir, and presented by him.

146. Portion of jejunum from a case of poisoning by sulphuric acid, showing the condition of the valvulæ conniventes.

147. Section through the abdominal viscera comprising the iliac region of the left side to show the effects of chronic peritonitis. The cavity of the peritoneum is obliterated by the exudation, and the opposed surfaces of the intestines are glued together so that the whole could only be removed in one mass.

148. Obstruction of common bile duct by a gall-stone. Enormous dilatation of gall-bladder and ducts. At the lower portion of the preparation the duodenal orifice of the ductus communis choledochus is seen to be completely obstructed by a gall-stone, which latter presents at the aperture and projects slightly into the duodenum. The aperture is much distended by the gall-stone, being about $\frac{3}{8}$ of an inch in width. Behind the gall-stone the common bile duct, the cystic duct, the hepatic duct, and the gall-bladder are seen in the preparation to be enormously distended. The gall-bladder contained a number of calculi. Throughout the liver there were numerous cavities containing a bile-coloured somewhat turbid fluid. Several of these cavities projected from the surface on the

convexity of the liver. They were of very various sizes, some as large as a walnut. In this case there were, in addition, several cysts in the kidneys, one containing blood. There was also hydrocele of both spermatic cords. (Series VIII., No 60).

This patient was admitted to the Infirmary on Nov. 7th, 1872, into Ward X., under Dr. Scott Orr, and died Nov. 20th. On the day following admission he complained of severe pain over the region of the liver, followed by a rigor and vomiting. Within a few hours he became jaundiced and the urine was almost of the colour of porter. On the 11th he had hemorrhage from the bowels which continued for two days. The rigors continued and were accompanied by sweating. The abdomen became enlarged and was very tender on palpation. The dull percussion of liver was much enlarged. *Path. Rep.*, Nov. 22, 1872.

149. Affection of closed follicles of intestine in acute phthisis pulmonalis. This preparation is from the same case as the larynx in Series IV., No. 62, and the case was under Dr. Perry in Ward IX. In the small intestine, a portion of which is here preserved, almost the entire solitary follicles and Peyer's patches were enlarged and prominent, with opaque cheesy metamorphosis. There was however comparatively little ulceration, and where it does exist it is in the form of small ulcers on the surface of the patches, or the summits of the solitary follicles. With the exception of the cheesy opacity the patches present very much the appearance of those in typhoid fever, being in many cases very markedly raised above the general level, and with well demarcated borders. They present also in some cases a similar grey medullary appearance. In the large intestine there was excessive ulceration with thickening and pigmentation of the mucous membrane, which in some parts, especially towards the lower portions, assumes an almost black colour. For history, see Series IV., No. 62. *Path. Rep*,, March 25, 1873.

150. Omental Hernia sinistra Ing. From patient who died after operation. The left side of the scrotum and hernial sac had inflamed and sloughed; there was extensive peritonitis and adhesion of the bowels to each other and to the abdominal wall. The omentum majus had become twisted into a thick round smooth rope with a lobulated pear-shaped extremity, and this had formed the contents of the hernial sac. The pear-shaped end was in places coated with lymph, and displayed patches of congestion, but the tissue was quite healthy when cut into. The

right kidney was shrunk to a small size, 2 inches long by 1 inch broad, and contained several cysts full of a white semifluid matter which also filled the ureter. The shrunk kidney was firmly imbedded in a mass of fat, from which it could not be separated. The left kidney was large and congested, and in places showed a commencing fatty degeneration. Liver highly fatty. *Path. Rep.*, May 19, 1875.

151. A portion of jejunum, showing a tumour in its coats.
152. Scrotal-hernia, from a patient in fever house.
153. Sac of a congenital inguinal hernia.
154. Congenital inguinal hernia, operated on by Dr. A. Buchanan. The opened sac shows a portion of omentum and intestine protruded.
155. Portion intestine from peculiar case of strangulated hernia.
156. Portion of gut from a strangulated femoral hernia.
157. Portion of small intestine, showing ulceration of Peyer's patches, occurring in a person who died of typhoid fever.
158. Infiltration of Peyer's patches in typhoid fever. The patient died on the ninth day of the fever. The portion of intestine preserved is the lower part of ileum.
159. Ulceration of Peyer's patches in typhoid fever.
160. Portion of mesentery and intestines, showing a perforation through the former, caused by a gun shot. Two individuals had been out shooting, the one was about 12 or 15 feet behind his companion, and carrying his loaded gun pointing forward, on a level with his haunch, his arm hanging downwards. Suddenly, by accident, the gun went off, lodging the shot in the loins of his companion; the shot passed through the bones, on leaving which, it took a direction upwards, perforated the mesentery, and lodged in the bowels. The man died in about 48 hours afterwards from peritonitis. Case of Dr. Lyon in Ward XII., 1857.
161. Malignant disease of stomach. The patient, a female, aged 49, admitted in a very weak state, died on third day after severe and repeated hematemesis. History of gastric disease for four months prior to admission.
162. A portion of ileum showing ulceration of Peyer's patches and perforation of the bowel. Patient died on tenth day of typhoid fever. A piece of coloured glass shows the perforation.
163. Intestines from a case of dysentery.
164. Stomach of a case of poisoning by sulphuric acid. From same case as No. 165. *Path. Rep.*, No. 64, 1858.

165. Gullet, &c., of a case of poisoning by sulphuric acid. The stomach is shown in Prep. No. 164.
166. Diphtheritic exudation on the mucous membrane of the colon.
167. Tuberculous ulceration of ileum, comparatively early stage.
168. Omental inguinal hernia on right side. Patient was on the medical side, and suddenly suffering from strangulation he was transferred to the surgical side where Dr. Morton operated and reduced the bowels. Peritonitis set in and patient died in two days. The matted omentum is seen to be adherent to the sac of the hernia, the scrotum is quite separate from the hernia. *Path. Rep.*, June 1, 1877.
169. Lower end of scrotum with hemorrhoids, from which fatal bleeding took place. Case Oct. 15th, 1877, Dr. R. Perry.
170. Case of rupture of the mesentery of old date, occurring in a soldier of the 26th Cameronian regiment. The ruptured mesentery had healed round the edges leaving part of the mesentery still attached to the bowel, about 4 inches of which has been isolated by the rupture and about 2 inches of which has no mesentery whatever attached to it, running like an isolated tube with a perfectly round smooth wall. The result of this had been that a large portion of bowel became strangulated in the aperture in the mesentery, and patient died from ileus. (Surgeon-Major Reid.)
171. Spleen from a case of splenic leucocythemia. The blood was examined before death and found to be full of leucocytes. The spleen was thickly dotted with white nodules and points, from the size of a split pea downwards. Weight of spleen 8 oz., its tissue was very soft and pulpy. These white points and nodules were composed of round and spindle-shaped cells. The lymph glands were everywhere normal. *Path. Rep.*, March 8, 1878.
172. Hobnail liver (nodular cirrhosis) in a woman who was of strictly temperate habits. *Path. Rep.*, Feb. 14, 1878.
173. Great distension of gall-bladder in a case of cancer of the liver. There is an ulcerating mass of cancer at the orifice of the common bile duct, and a loose gall-stone in the gall-bladder. *Path. Rep.*, April 15, 1878.
174. Intussusception of ileum into colon in a child 6 months old. After a free passage, the child, who had been quite well and robust up to that moment, complained of griping pain, rapidly became pallid and listless, and continued to suffer from pain and straining in the lower bowel, which was not relieved by the exit of a little reddish mucus. After two days illness, during which the inflation of the bowel

with air was tried without success, the child died. The lower end of the invaginated part of the bowel could be easily felt with the finger in the rectum as a nodule not unlike the os uteri. The specimen has been partly opened to show the inner mass. The lining of the colon is not altered, the solitary mucous glands, however, are a little enlarged, but the mass of gut inside is of a dark red colour and coated with a shaggy lymph. On cutting into it the layers of which it is composed are found matted together by exudation and rather œdematous. Case under Dr. Suttie's care, June 19, 1878.

SERIES VI.

NERVOUS SYSTEM.

1. The history of this specimen is entirely unknown. It is evidently a piece of cerebrum with an old clot. The brain-substance around the clot is softened.
2. Large clot of blood from middle cerebral fossa, from a case of fractured cranium. *Vide Path. Rep.*, No. 100, 1858.
3. Portion of cerebrum from a case of apoplexy with softening and destruction of a part of convolution from rupture of small superficial vessels.
4. Extravasation of blood on the base of the brain presenting the same appearance as when removed. The left ventricle was also filled with clotted blood
   History.—Mrs. Thomson, æt. 35, was sent into the house on 9th January, 1863, under suspicion of fever, but there was no eruption, and no history of contagion could be ascertained. The first symptom was pain in the head pretty nearly all over it, but on admission pain was concentrated about the right eye; pupils equal, but rather small; vision and hearing perfect. Pulse rather under than above 60. After 10 days' residence she expressed herself quite well and seemed so, and was very anxious to go home. She was found dead in bed next morning, having spoken to the nurse an hour previously and made no complaint.
5. Anterior lobe of right cerebrum. Ulceration of the dura mater and brain in a case of compression.
6. Portion of dura mater perforated by a bullet on left side of frontal bone. *Vide Path. Rep.*, No. 5, 1858.
7. Laceration of dura mater.
8. Portion of anterior lobe of left hemisphere of the cerebrum, containing a mass of cheesy-like material, the result of an abscess having its origin in syphilitic disease of the skull. The brow presented two depressed cicatrices from syphilitic ulceration of the bone. Patient died suddenly with symptoms of compression. History.—James Mooney, aged 26, admitted 20th February, 1864, suffering from syphilitic disease of frontal bone. Complained of violent headache, but took a good supper and went to bed apparently in

pretty good health. Was discovered to be insensible in the morning, and died about 10 o'clock with symptoms of compression.

9. Abscess of brain caused by inflammation passing from the ear through the petrous bone. A communication between the abscess and the ear had almost been effected during life. History.—Chronic suppuration of ear in a scrofulous young man aged 22. The bone is preserved in Series I., No. 39.
10. Dura mater from a case of intracranial suppuration in an epileptic. The calvarium is preserved in Series I., No. 33.
11. Portion of cerebrum with thickening of membranes and purulent deposit. *Vide Path. Rep.*, No. 29, 1858.
12. Pons varolii, portion of medulla oblongata and of cerebellum. A cyst about the size of a hazel nut exists in the cerebellum.
13. Portion of cerebrum with cancerous infiltration.
14. Tubercular deposit in the cerebellum. The preparation shows a large tubercular mass situated in the right half of the cerebellum. The mass was slightly adherent to the dura mater posteriorly but was otherwise completely imbedded in the cerebellum. A distinct difference in appearance is visible between the general mass of the tumour and the marginal portions, the latter forming a more transparent zone round the opaque yellow central mass. This appearance was more marked in the fresh state. Microscopic examination shows the external zone to be composed of well-formed growing cells, while the central mass is formed of shrunken cells and debris.

    The preparation was removed from a man aged 30, and his wife stated that the patient began to complain of headache twelve months before admission. The headache persisted with great severity for three months, but then abated, and the patient returned to his work, at which he continued three months. At the end of this period the headache returned and persisted till death. Deafness supervened five weeks before admission, and at admission was complete, and for some days before death he was also blind.

    In addition to the tubercular mass in the cerebellum there were also numerous miliary tubercles at the base of the brain, and here also lymph was effused. There was no tubercular deposit in any other organ. See *Med. Rep.*, April 4, 1870.
15. Tubercular meningitis. The specimen shows thickly set miliary nodules occupying the pia mater of the base of the brain.

16. Cerebellum from a lad 13 years of age. In the base of the left lobe is a tubercular deposit about the size of a walnut, imbedded and displacing the substance of the cerebellnm. There is a distinct furrow of separation for more than two thirds of its circumference. In other parts of the brain were tumours of a similar kind from the size of a bean to the above, which was the largest, in all, about twelve in number. During life he was stupid, and had inability to retain his urine.
17. Cauda equina with deposit on its sheath.
18. Portion of a spinal cord near cauda equina, with a vascular tumour within the theca. Two of the nerves pass through the substance of the tumour. The tumour pressed on the sacral nerves causing great pain and partial paralysis of the lower extremities for upwards of two years. *Presented by Dr. Lyon.*
19. Apparently a nerve from end of stump.
20. Mucous cyst of the fornix. The tumour shown in the specimen is about the size of a small walnut, globular in shape, and situated in the substance of the fornix in a region corresponding with the most anterior portion of the optic thalamus. The tumour bulges into both lateral ventricles. The surface of the tumour is covered with a very thin layer of white brain substance, on cutting through which, the perfectly smooth and translucent surface of the tumour appears. An incision into the tumour showed that it had the form of a cyst with a very thin capsule, and contents of a tough mucous consistence. Under the microscope the fluid from the cyst presented abundant granular cells of very various sizes, along with a granular intercellular substance containing a few crystals of cholestearine. The contents which thus resemble those of the colloid cyst of the ovary, presented the chemical reaction of a solution of mucin. The addition of acetic acid produced an abundant precipitation. Hydrochloric acid also secured a precipitation which dissolved in excess. Alcohol likewise produced a precipitate. The lateral ventricles presented very extreme distension with a clear fluid, and the surface of the pia mater was dry and glistening. A scalp wound of small dimensions existed on the posterior aspect of the head, but there was no injury to the bones.

    All that could be gained of the history of this case, which was under Dr. Geo. Buchanan, was that the man who was a baker, had been previously quite healthy, but suddenly, while standing at work, fell backwards and hit

his head against some bricks. He was taken to the hospital but never recovered consciousness and died in an hour. *Path. Rep.*, Aug. 24, 1872.

21. Meningitis of the cord. The specimen shows a collection of lymph beneath the arachnoid of the cord, and present on both surfaces, but more continuously on the posterior. There was a similar exudation of lymph at the base of the brain, extending into the fissures, and to a certain extent on to the convexity. There was no trace anywhere of tubercular nodules. Two sections were made of the left temporal bone, but nothing abnormal was discovered. The patient, a man aged 28, was admitted into the hospital 2 days before death. He was unconscious on admission. It appears that he began to suffer from headache, &c., after a blow behind the left ear from a boxing glove. About a week previous to admission matter was observed by his friends to escape from the left ear pretty freely, and he complained chiefly of headache. Unconsciousness supervened. On admission the pupils were dilated and the limbs were tossed about. A small quantity of thin pus escaped from the left ear. After bleeding and purging there was partial recovery of consciousness, but soon there was a relapse followed by death. On afternoon before death the pulse was 140, temperature 107°. *Path. Rep.*, Sept. 16, 1873.

22. Embolism of left internal carotid, aortic valvular disease. At the lower part of the preparation the internal carotid is preserved, and it is seen to be distended and completely plugged by an embolus, which was found to be hard to the touch. The embolus is situated just at the bifurcation and plugs both the main artery and its two large branches, the anterior and middle cerebrals. (The extent of the embolus is indicated in the preparation by threads passed across the vessels). The left cerebral hemisphere in this case was found to be of distinctly less consistence than the right. The grey matter of the left cerebrum was also markedly paler, and had a peculiar washed-out appearance. These differences of colour and consistence did not exist in the cerebellum. No alterations in the microscopic characters of the tissue of the cerebrum were discovered. The aortic valve, as can be seen in the preparation, is highly deformed. The three semilunar folds are fused into one, their existence being only indicated on the wall of the aorta by three bands. The altered valve forms a thick rigid septum, in great part calcareous, with a slit-like aperture of small size. About the middle of the valve

there is a rough surface of a circular outline, and a rugged appearance with calcareous spicula projecting like small teeth. This, which is evidently a recent tear, is the source of the embolism. Besides the calcareous plates in the altered valve, several others project from it, some on to the wall of the ventricle and one on to the adjacent curtain of the mitral valve. The heart was much enlarged, chiefly the left ventricles.

The patient from whom this preparation was taken was a man aged 30, who was admitted under Dr. Perry on Nov. 1, 1873, in a semi-comatose condition with hemiplegia of the right side. He had been in comparatively good health till Oct. 30, when he suddenly fell down, and remained in the same condition till admission, and after admission till death, which took place on 2nd November (3 days). It is noted that on admission the right pupil was at first contracted and then dilated, the left was widely dilated throughout. *Path. Rep.*, Nov. 4, 1874.

23. Abscess of brain, acute meningitis, caries of temporal bone. The lesions in this case are chiefly at the base, the convexity of the brain only presented dryness of the surface. There was a large collection of pus involved in the membranes on the left side, the abscess centreing at the fissure of Sylvius. It was confined by a very thin membrane, and partly opened up the fissure, pushing the anterior and middle lobes asunder. In the preparation the collapsed membrane appears. The abscess was nearly globular, and measured about $3\frac{1}{4}$ inches from behind forwards, as well as from side to side. In addition, there was a considerable exudation of soft lymph beneath the arachnoid at various parts of the base, but especially on the under surface of the cerebellum, and here mostly in the middle line. There was scarcely any lymph on the *right* hemisphere, but on cutting into the temporal lobe, an abscess is discovered in its posterior part. The abscess is in the white substance, a slight irregularity on the surface of the convolutions at one point being the only external indication of its presence. It is lined by a perfectly defined membrane, and contained a greenish flocculent pus. It is about the size of a walnut. Pus was found in the *right* middle ear and in some cavities in the petrous portion of the temporal bone, but there was no communication with the interior of the skull. The dura mater was adherent to the petrous portion at one point.

The patient was a boy of 14 from the "Cumberland" training ship, admitted, Sept. 24, 1874. He could hardly

tell his name, and could give no information as to where he came from, or his illness. He said he had forgotten everything, and seemed disinclined to answer questions. He complained of excruciating pain in forehead, and afterwards in neck. Hardly ever slept, but kept moaning and sometimes screaming. For last few days passed everything in bed. Pulse 60-120 intermittent. Took very little food, vomited only once. Both pupils dilated from the first. For three days before death was exceedingly restless, and annoyed the whole ward roaring, screaming, shouting, and using the most filthy and obscene language a human being could utter. *Path. Rep.*, Oct. 9, 1874.

24. Abscess of brain following injury to head. The abscess is in this preparation laid open, and was large enough to contain 2 or 3 ounces of a thick creamy pus. It is lined by a vascular layer 2 lines thick, and is situated in the right cerebral hemisphere just outside the lateral ventricle, and altogether in the white substance. The abscess caused bulging of the right hemisphere beyond the middle line, and although it did not communicate with the lateral ventricle, yet its surface was hyperæmic, the fornix was adherent to the optic thalamus, and the corpus striatum was to some extent softened. Certain of the convolutions of the surface were undermined and anæmic, namely, the ascending frontal, and the posterior extremity of the upper frontal; perhaps slightly the ascending parietal. The frontal bone, just to the right of the middle line, was the seat of a small sequestrum, which is about half-an-inch in diameter externally, but is only visible internally. There is a cicatrix of skin but no wound or pus. The dura mater was hyperæmic, and slightly adherent to the surface of arachnoid, which latter was dry and sticky.

The patient, a woman 23 years of age, received a blow from a flat iron, which fell from a height of 3 feet. The point struck the head in the right frontal or parietal region. The blow was received on the 3rd August, and 2 weeks after she began to lose the power of left arm, and about a week after this of left leg. There was great pain in the head. Before death, which occurred on the 12th Dec., there were severe convulsions repeated for several days. *Path. Rep.*, Dec. 14, 1874.

25. Piece of dura mater, with a small osseous growth on its internal surface. The bony deposit is firmly adherent to the membrane, and is rough on its surface, size about a three-penny piece or less. No covering over its free

surface: no symptoms during life: seat on right side of middle line, just in front of vertex.

26. Bulbous nerve ends in stump of thigh, the nerve ends are imbedded in fibrous tissue.
27. Injected dura mater, to show extent of its vascularity.
28. Brain, with large blood clot in left hemisphere. (Case April 4, 1876).
29. Preparation showing division of right hypoglossal nerve just internal to bifurcation of the carotid. The carotid was uninjured. Wound was inflicted six weeks before death, and the cut ends of nerve are seen to be bulbous and slightly retracted, the proximal end especially shows this. On microscopic examination of distal end of cut nerve it is found to be in a state of advanced fatty degeneration, and the muscles of half of tongue supplied by cut nerve are in a similar state of fatty degeneration. (Case of Mrs. Barr). *Path. Rep.*, No. 60 (1875-76), April 11th, 1876. See also Series IV., 73.
30. Punctiform hemorrhage in corpus callosum, the result of external injury. *Path. Rep.*, June 2nd, 1876.
31. Aneurism in right lateral ventricle of brain. See *Edin. Med. Jour.*, April, 1877.
32. Leptomeningitis, affecting anterior two-thirds of both hemispheres as well as patches on the cerebellum and temporosphenoidal lobes, resulting from fracture of the ethmoid bone. Under care of Dr. Macewen, June 25th 1877.

SERIES VII.

URINARY SYSTEM.

1. Kidney injected from ureter.
2. Injected kidney—second stage of Bright's disease.
3. Horse-shoe kidney, from the body of a man who died of pneumonia.
3. Rupture of kidney, caused by a fall from a height. There was no other injury, and no mark externally. History.—A sailor who fell from the deck into the hold of his ship; only lived a few hours after admission.
5. Bright's disease of kidney, injected. On microscopic examination shows interstitial infiltration apparently pretty recent, also considerable "cloudy swelling" of epithelium.
6. Enlarged kidney. Microscopic examination, made after long submersion in spirits, shows the remains of extreme fatty degeneration.
7. Degeneration of kidney in first (?) stage of Bright's disease (marked fatty degeneration of renal epithelium).
8. Half of a kidney—chronic interstitial nephritis. The surface is irregular from contraction and atrophy of the renal substance at some points. Microscopically, there is seen to be considerable infiltration of young cells and contraction of Malpighian bodies, but very few tube casts are present.
9. Section of a kidney. Chronic interstitial nephritis, with amyloid degeneration.
10. Granular contracted kidney.
11. Parenchymatous nephritis, contracted kidney. The kidneys are both very much reduced in size, the left weighed $4\frac{1}{2}$ ounces, and the right $2\frac{3}{4}$. The capsule was very slightly adherent. The surface of the kidneys is seen to be somewhat, but not very markedly, granular. On section, the cortical substance is observed to be considerably reduced in thickness, and to be irregularly defined from the pyramidal portion. A considerable number of cysts are also present. Microscopic examination shows the case to be one of parenchymatous nephritis, the renal tubules being the parts chiefly affected. In many parts the epithelium of the tubules is markedly fatty; in some the diameter is reduced, in others markedly increased, so as to approach

to the appearance of distinct cysts. On the other hand, the interstitial tissue is not infiltrated with inflammatory cells, though it is dotted throughout with minute oil globules. The Malpighian bodies are less distinct than usual, but do not present any appearance of thickening of their capsule or contraction.

12. Injected kidney. Bright's disease.
13. Atrophied kidney.
14. Atrophied kidney.
15. Embolic affection of kidney. The case was one of bronchitis and emphysema, with a dilated heart.
    On the external surface of the kidney there are very well-defined irregularly-shaped yellow patches, and on section these are seen to extend so as to involve the entire cortical substance in the region affected. The kidney of the other side was in an exactly similar condition. See *Path. Rep.*, Nov. 12, 1870.
16. One-half of a kidney with embolic affection. The part affected is paler than the remaining tissue, and depressed beneath the surface.
17. Metastatic abscesses in kidney. On the surface are seen numerous small elevations depending on hemorrhagic spots intermingled with minute abscesses. On section these are seen to exist in every part of the renal tissue, but especially in the cortical region. These deposits were present in great abundance in both kidneys, their size averaging that of a pin head. Similar deposits were found in almost every part of the body. On the skin there were hemorrhagic spots, and the remains of what had been observed during life as an extensive crop of pustules; on the surface of the pia mater hemorrhagic and purulent spots; in the heart there was a softened patch about an inch in length and three-eighths in breadth; in both lungs numerous metastatic deposits, some hemorrhagic and some purulent; in the pleuræ, soft lymph; in the spleen also metastatic deposits; and in the intestines similar deposits in remarkable abundance appearing like berries in some of the blood-vessels. In the right knee there was some brownish fluid, and a few minute abscesses in the muscles of the thigh, but no pus in the femoral vein.
    There was in this case no external wound detected either before or after death, and the chief complaint during life was of the right knee.
    The case is reported in *Glasgow Medical Journal*, Nov., 1870. See also *Path. Rep.*, Oct. 5, 1870.
18. Abscess of kidney. The case simulated one of lumbar abscess.

19. Tubercular disease of kidney. The ureter has been cut short just at the pelvis of the kidney; the latter is laid open, and its internal surface is seen to be studded in some parts with miliary nodules, while a process proceeds from it up into a cavity in the midst of the kidney. This cavity is about the size of a large walnut, and its walls are irregularly tuberculated. On microscopic examination of the wall of the cavity abundant miliary nodules are found, intermingled with renal tissue, and even in other parts of the kidney where there is nothing abnormal visible to the naked eye, pretty abundant miliary nodules are found.
20. Kidney, with adhesions and exudation.
21. Extensive formation of cysts in kidney—result of Bright's disease. In the section abundant cysts of various sizes are seen to be scattered through the renal tissue, chiefly in the cortical portion. The surface presents marked irregularity. The capsule was very adherent, and shreds of it remain attached to the surface.
    The lungs were very emphysematous, and in the bronchial tubes the marks of old bronchitis. The heart was considerably hypertrophied, especially the right ventricle. The patient presented during life pretty marked dyspnœa and cough, with latterly œdema of lower limbs. *Path. Rep.*, Dec. 9, 1870.
22. Bladder and kidneys of a child four months old. *Presented by Dr. Morton.*
23. Kidney from the same case as specimen No. 54 of this series. There is dilatation of the ureter and great destruction of the renal tissue. The kidney is in the condition of hydronephrosis, being converted into a cyst with various partitions. The affection was caused by the mechanical obstruction to the passage of urine in the urethra. See No. 54.
24. Atrophied kidney with many cysts. The upper part of ureter is greatly distended, the lower part almost obliterated by a tumour enveloping it. The tumour (which sprang from the iliac region) enveloping the ureter seems to have been the cause of the disorganisation of the kidney, as the other kidney was healthy in texture, though hypertrophied. Patient died from fever. Tumour was not diagnosed during life.
25. Kidney with cysts, one of which contains a calculus.
26. Kidney in state of hydronephrosis.
27. Kidney with cysts.
28. Kidney with cysts which have destroyed the natural structure. The pelvis is greatly distended, and the portion of ureter attached is atrophied.

29. Atrophied kidney with enlarged ureter.
30. Hydronephrosis. The whole renal tissue is replaced by a series of communicating cavities. The ureter is cut short near to pelvis of kidney, but seen to be dilated. This seems to indicate that original disease was further down.
31. Kidney in a case of pyelitis. The substance of the kidney was in great part absorbed, and the organ converted into a series of cysts filled with purulent matter. The patient had suffered from very tight stricture of the urethra about 1 inch from the glans. He had a violent rigor 17 days before death, and from that time violent fever up till death. Jaundice existed during the last 45 days of life. *Vide Path. Rep.*, No. 43, 1858.
32. Kidney with extreme atrophy of renal tissue. The longitudinal section shows a number of cavities without contents, but a transverse section shows similar cavities filled with pultaceous matter. Microscopic section of the walls of these cavities shows extreme atrophy of the proper tissue; most internal there is a layer of apparently pus-corpuscles, then a layer of well-developed connective tissue, and lastly the remains of the renal tissue, all the tubuli uriniferi being filled with a transparent substance, at some places granular.
33. Pyonephrosis. The kidney is divided into a series of cavities varying in size from a hazel nut to a small orange, but all with pretty thin walls. The septa between these cavities are greatly thicker than the external walls. On microscopic examination, these walls present simple atrophy of renal tissue, with interstitial infiltration of young cells. The cavities are filled with a soft putty-like substance, which, on microscopic examination, shows abundant degenerate pus cells, with crystals of cholestearine.
34. A very large thin-walled cyst projects from convex border of the kidney about its middle. The cyst has destroyed the renal tissue in this part to a great extent, the cortical substance entirely, and in great part also the pyramidal, so that the cyst almost extends to the pelvis, yet does not open into the latter; a thin wall of pyramidal substance divides them. On microscopic examination, the rest of the kidney is found healthy.
35. Pyelitis, with extreme amyloid degeneration of the kidney. The preparation shows several cavities of the kidney, and the waxy transparent appearance of the amyloid change is visible to the naked eye. The patient had been in the house previously for strumous disease of the lower limb.

36. Cystic degeneration of kidney. The preparation was removed from a female who was admitted to the fever house suffering from typhoid fever, of which she died on eleventh day. No history of renal disease.

37 and 38. Cystic degeneration of kidney. No. 37 weighed, when removed from the body, 84 ounces. No. 38 was removed from the same body. The cysts vary in size from a line to 1½ inches in diameter. The contents of the cysts are very varied; some contain clot with calcareous matter mingled.

History.—Removed from the body of a man aged about 60. A private case. The cause of death was unknown, and no renal disease was suspected.

39. Cystic degeneration of kidney.

History.—A man, aged 58, admitted with compound fracture of the right leg, of which he died. No history of renal disease.

40. Tubercular disease of kidney—renal phthisis.

41. Scrofulous degeneration of kidney. When removed, the cavities contained a large quantity of unhealthy pus and granular matter.

History.—Jane H——, æt. 28, admitted with strumous disease of right elbow joint, for which it was excised by Dr. Morton. The patient made a bad recovery, and was dismissed. Four months afterwards she returned, and had the right arm amputated. A large fluctuating tumour was detected in the right side, with pus in the urine. Patient sank rapidly, the stump never taking on proper healing action. The other kidney was almost normal in texture and size.

42. Kidney showing advanced state of tubercular disease.

43. Tubercular disease of the kidney—renal phthisis. The kidney is seen to present irregular cavities, which have destroyed the greater portion of the renal tissue; the internal wall of these cavities is extremely irregular, presenting everywhere innumerable minute nodular projections. On microscopic examination, the walls of these cavities showed superficially tubercular nodules undergoing softening in their centres, while more deeply there was an infiltration of fresh tubercles, this infiltration, however, only extending to a limited depth. The other kidney was sound. The liver was in an extreme state of amyloid degeneration. A portion of it is preserved in Series V., No. 76.

44. Kidney containing calculi and cysts.

45. Kidney with large calculus imbedded in it. Patient, a female, aged 45, died of typhoid fever with perforation of the intestine on the 17th day.

46. Secondary cancer of kidney, from a case of cancer of stomach.
47. Hypertrophy of urinary bladder—ulceration through membranous portion of the urethra.
48. Enlarged prostate gland from an old man who had great difficulty of micturition. The ureters were greatly distended and thickened, the kidneys a mass of cysts.
49. Thickened bladder with enlarged prostate, and twisted urethra with false passages, &c., &c. *From Dr. E. Watson*, April, 1858.
50. Enlarged prostate.
51. Greatly enlarged prostate gland, with phleboliths in the veins of the prostatic plexus, and numerous false passages into the bladder. *From Dr. J. G. Fleming.*
52. Diseased bladder. Two pieces of glass rod have been introduced into the ureters. The prostate gland is very much diseased, and presses upon the ureters at their entrance into the bladder. The ureters are very much dilated, and the kidneys encysted, their pyramidal substance being nearly absorbed.
53. Hypertrophy of urinary bladder, the result of stricture of the urethra. A glass rod is passed through the urethra.
54. Hypertrophied bladder, with penis attached, from a case of chronic stricture of the urethra. A bristle marks the seat of stricture, and two pieces of glass rod show where false passages had been made by catheters or bougies. Perineal section had been performed a week before death, with no good result. There was much sloughing of the perineal cellular tissue from extravasation of urine.
55. Bladder and urethra, with section of pubic bone. A sinus is seen (communicating) leading from the perineum to the membranous portion of urethra, where there is an ulcerated opening nearly as large as a shilling piece. The bladder is marked by prominent rugæ.
56. Ulceration of bladder—substance of prostate gland destroyed by calculi.
57. Portion of urethra and bladder with diseased prostate. Bristles have been introduced into an abscess, which passed upwards and backwards for about an inch and a half. The urethra is somewhat twisted. A piece of whalebone passes through where perineal section had been made. The posterior part of bladder, in line with ureters, is thickened.
58. Ulcerated openings through urinary bladder into the cavity of the peritoneum. Opening from membranous part of urethra into a cavity in the prostate.

59. Hypertrophy of urinary bladder. Abscess in ischio-rectal space opening by two orifices into urethra.
60. Bladder with a sacculated pouch and abscess in prostate. *Presented by Dr. Decimus Hodson.*
61. Cancer of urinary bladder, the tumour being situated at the neck. There is hypertrophy of coats of bladder, and enlargement of prostate. A very much enlarged and cancerous lymphatic gland is hung along with preparation. *Med. Rep.*, No. 183, March 3, 1870.
62. Tumour from the mucous surface of the urinary bladder. *From Dr. J. G. Fleming.*
63. Malignant tumour of bladder. The patient, a man of about 45, was admitted in a very weak state from loss of blood. The hemorrhage from the bladder could not be restrained, and he died four days after admission.
64. Stone in bladder. Its presence was not ascertained till after death on account of spasms occurring when the catheter was introduced.
65. Hydrocele with tunica vaginalis opened in front showing the testicle posteriorly.
66. Portion of diabetic sugar obtained from 8 ounces of urine. Its weight is 132 grains. The specific gravity of the urine was 1045.
67. Cake of sugar obtained by evaporation of urine passed in a period of 24 hours by a girl labouring under diabetes, a patient of Dr. Robertson.
68. Cake of diabetic sugar. *Presented by Dr. Tannahill.*
69. Diseased bladder with enlarged ureters and enlarged prostate, with a false passage through the middle lobe. *Presented by Dr. Decimus Hodson.*
70. Hypertrophy of urinary bladder and enlargement of prostate.
71. 72. Tubercular ulceration of bladder, obstruction of right ureter at its opening into the bladder, hydronephrosis. These two preparations illustrate a case of great interest. The patient was a boy aged 7 years, who was admitted with uræmic symptoms such as unconsciousness, inarticulate cries, laboured respiration, jactitation, dilated but sensitive pupils, tremors. Lately there were convulsions, with paralysis of left arm and leg, unconscious defœcation, &c. The patient died the day after admission and there was no distinct history obtainable, but he seems to have been ill for about 6 weeks.

    The preparation of the bladder (No. 71) shows that its mucous membrane is occupied by several ulcers. The largest of these is at the orifice of the left ureter, and measures about 2 inches in diameter. There is a smaller one at the orifice of right ureter, and two others higher up than these. All

the ulcers are flat and superficial, and their floor is occupied by minute white tubercles. In addition it was found that the left kidney and ureter (which are not preserved) presented disease of a similar nature. The kidney was enlarged and converted into a series of cavities, containing a pultaceous material. The walls of these cavities as well as the pelvis and ureter were thickened and their surface irregular. The ureter, a portion of which is preserved attached to the bladder, was much thickened, but its cavity was very small, being almost obstructed by pultaceous material.

The right kidney as seen in the preparation (No. 72) presented a pretty advanced state of hydronephrosis. The ureter was also much distended, and as shown remarkably bent on itself, while the distension occupied its entire length down to the bladder, just at the bladder it is narrowed, and it was found that "though elsewhere it contains clear fluid and its walls are normal in structure, yet here the calibre is obstructed with pultaceous material, and the mucous membrane of the tube presents the same appearances of tubercular ulceration as the mucous membrane of the bladder. The pultaceous matter has produced complete obstruction, so that before opening the ureter it was found impossible to press its contents into the bladder." In the preparation (No. 71) a piece of whalebone has been forced through the obstructed orifice of the ureter.

The probable course of the disease in this case seems to have been, first local tuberculosis of the left kidney, extending down the ureter to the bladder; then ulceration of the bladder, beginning to spread into the right ureter. The secretion of the ulcer has obstructed this ureter, and led to its distension and the consequent hydronephrosis. The case was under Dr. Steven in Ward V. See *Path. Rep.*, Nov. 16, 1871.

73. Rupture of the urinary bladder by catheter. This patient was admitted with retention of urine due to enlarged prostrate. The retention was relieved, as usual, by catheterization. Subsequently the patient thought to perform this operation himself, and he was found in the water-closet in a fainting condition, with a catheter in his hand. He died in about twelve hours. The case was under Dr. M'Leod in Ward IX. Upon opening the abdomen the intestines were seen to be glued together with soft lymph, which was most abundant towards the pelvis, several folds being attached to the wall of the bladder. On removing these, a ragged aperture of an oval shape was found to exist through the posterior wall

of the bladder. The prostate was found enlarged, bladder dilated, and its wall thinned in the neighbourhood of the rupture. *Path. Rep.*, Nov. 15, 1872.

74. Tubercular ulceration of urinary bladder, ureters, and kidneys. The preparation shows the condition of the bladder, ureters, and right kidney in this case. In the bladder there is very abundant ulceration, hardly a trace of mucous membrane remaining. The ulcers are usually about ¼-inch in diameter, closely set and circular, and in the fresh state there was on the surface a yellow material, frequently coated with a gritty deposit. In the left ureter (which is cut at its middle and suspended in the preparation) there are very numerous ulcers, covered with a firm gritty deposit. The right ureter is less ulcerated than the left. The right kidney, which is preserved in the preparation, has the usual characters of tubercular disease. There are several large irregular cavities, whose walls are formed of a rough breaking down tissue. The cavities communicate with one another and with the pelvis, and contain a soft yellow debris. The left kidney presented similar characters, but in an even more advanced stage. It is also worthy of note that the same form of ulceration has spread from the bladder into both vasa deferentia for a distance of about two inches. The lungs presented the usual appearances of somewhat advanced phthisis with cavities.

The patient was a man aged 29. The history chiefly related to the chest affection, but it is noted that towards the end of micturition there was often a sudden stoppage of the stream with a kind of burning pain at the glans penis. He sometimes had pain over bladder. He is said to have been in good health till 18 months before death. See *Path. Rep.*, July 4, 1874.

75. Thrombosis ot renal vein. The case from which this preparation was taken was one of phthisis pulmonalis with renal complication. The disease is said to have existed four months.

Both kidneys were enlarged, the right weighing 8½, and the left 10 ounces. It is the left which is here preserved, and it as well as the right presented the usual appearances of the large white kidney, with advanced fatty degeneration of the renal epithelium. In addition to this, the left renal vein is filled with a firm adherent clot which presents softening in its centre. The adherent clot can be traced into the branches in the kidney, where, however, it is softer and apparently more recent. It is traced in the other direction through the entire course of the renal vein

into the inferior vena cava, where it ends in a pale non-adherent tapering clot. *Path. Rep.*, Dec. 11, 1871.

76. Cancer of kidney. In the preparation the kidney is divided longitudinally, and the halves hung separately. The kidney is connected with and partly occupied by a tumour larger in size than an orange. The tumour projects from the convex margin of the right kidney, and on section is seen to be composed of a soft almost disintegrating tissue, which towards the hilus merges into the normal renal tissue. Under the microscope the tissue of the tumour is that of soft cancer, with very advanced fatty degeneration. The left kidney was normal.

There was a history of winter cough for years, but the patient (a woman of 45) began to complain of the symptoms for which she was admitted to the Infirmary only six weeks before death. These symptoms were, diarrhœa, which subsided; then six days before death, shivering and pain in regions of kidneys. The urine contained albumen and tube casts, and was scanty. For twenty-four hours before death there was severe vomiting. She died comatose. The case was under Dr. Perry. *Path. Rep.*, Nov. 16, 1870.

77. Cancer of urinary bladder, secondary tumours in kidneys, lungs, pleuræ, &c. The urinary bladder is the seat of a large fungating growth, which occupies almost the entire posterior wall and projects forwards in the form of a very irregular hemisphere. The surface is exceedingly shreddy and ulcerating. The growth did not extend to the rectum. The right kidney was the seat of a soft tumour of about the size of a small walnut, and this is preserved along with the bladder in the preparation. It is of a rounded shape, and its section presents an admixture of a red and white colour as if a greyish tissue were mingled with blood clot. The left kidney contained several smaller growths, several of them very red on section, almost like soft clots. In the lungs there were numerous round growths of similar soft consistence and hemorrhagic character. In one or two places there were prominent growths beneath the pleura some of them as if passing out from the vertebrae, but others in other parts.

The patient was a man aged 62, a labourer, and was under the care of Dr. A. Wood Smith. He suffered for some time from hematuria. There was also uneasiness over the kidneys, and a slight swelling in left lateral region. He had a very cachectic appearance. *Path. Rep.*, Jan. 28, 1875.

78. Misplacement of right kidney; situation at brim of pelvis. In the preparation, both kidneys are preserved with their

arteries, a portion of aorta, the ureters and a portion of the bladder. The right kidney was situated at the brim of the pelvis, half in the cavity and half out. It forms a flattened oval body, of about the usual size of the kidney, and is supplied by two arteries, which pass off from the aorta in the middle line in front, just at the bifurcation. These vessels pass slightly to the right, but nearly directly downwards, and enter the kidney on its anterior aspect about a third down from the upper border. The arteries lie each in a separate grove as they pass along the upper third of kidney, and the grooves demarcate a triangular piece of kidney. The right renal vein passes off from the vena cava, about an inch above the level of the bifurcation of the aorta, and passes directly downwards to enter the kidney along with the arteries. The ureter also arises from the anterior aspect, and passing down in front has a somewhat tortuous course to the bladder, as if it was too long for the distance to be travelled. The right supra-renal capsule is in its normal position close under the liver. The right kidney was firmly fixed in its abnormal position. One other irregularity was discovered in the vessels; the inferior mesenteric artery came off just above the bifurcation of the aorta.

The left kidney was normal in all its relations.

The preparation was taken from a man aged 61, a grave-digger, who died of erysipelas.

79. Amyloid kidney. *Path. Rep.*, August 10, 1875.

80. Scar and urinary fistula, resulting from lateral operation for stone by Dr. A. Buchanan through left labium majus twenty years ago. The sphincter seems to have acted well after the wound healed, the urine being retained at will. The fistula and neck of bladder both admit the little finger; the urethra is patent; and the fistula opens into it just in front of the sphincter. There is no opening into the vagina. *Path. Rep.*, Oct. 22, 1875.

81. Contracted kidneys from same case as last: weight of both together, $3\frac{1}{2}$ oz.: heart left ventricle much thickened: weight of heart, 16 oz.: great dropsy. *Path. Rep.*, Oct. 22, 1875.

82. Cancer of bladder occupying whole extent of the surface, but not extending beyond any of the orifices of the bladder, and not affecting the prostate. Walls hard and firm: interior sloughing. *Path. Rep.*, Nov. 6, 1875.

83. Retention cyst of kidney: granular kidneys: right kidney, $2\frac{1}{2}$ oz. weight. *Path. Rep.*, Nov. 11, 1875.

84. Renal calculus—saddle-shaped, and causing dilatation of pelvis and ureter. *Path. Rep.*, April 29, 1876.

85. "Horseshoe" kidney split open to show the connecting band. *Path. Rep.*, April 4, 1876.
86. Case of large kidneys with innumerable small watery cysts in cortex. Kidneys together weighed 28 oz.: the fluid in the cysts was slightly albuminous, though no albumen was discovered in the urine during life. (Under Dr. Charteris.) *Path. Rep.*, Dec. 14, 1876.
87. Cystic disease of kidneys. Patient was a dwarf, æt. 19, always delicate: five years before admission he had scarlet fever and dropsy, which however passed off: the present illness began four weeks before admission, with swelling of the eyelids and progressive dropsy: the urine was passed frequently: pain in back and anæmia: the urine pale, sp. gr. 1012, neutral, 1½ pints in 24 hours: albumen slight in quantity: a few hyaline casts: cough and vomiting and diarrhœa preceded death. The kidneys are very large, and almost quite made up of cysts of all sizes up to crab-apple size: contents glairy and pale or dark coloured: the remnant of renal tissue is in a state of diffuse nephritis. Case under Dr. Scott Orr. See *Path. Rep.*, Dec. 15, 1877.
88. Stricture in bulbous part of urethra. The bladder is hypertrophied, its lining inflamed, and the prostatic and membranous parts of the urethra are dilated. The stricture is 1 inch long, and ends abruptly at the bulb, where there is a small depression in the floor of the urethra. See *Path. Rep.*, April 4, 1877.
89. Hypertrophy of wall of bladder, showing sacculation from prominence of muscular bands on interior of bladder.
90. Kidney of lamb with large cyst.
91. Displaced kidney. The right kidney of a patient whose body was examined on May 14, 1877, after death from pulmonary phthisis. The kidney lay on the brim of the pelvis, and received vessels both from aorta and vena cava, and from iliac vessels.
92. Dilated bladder; dilated ureter; large kidneys. Case of Dr. Morton, April 20, 1877.
93. Calculi forming in kidney. Case Dec. 20, 1877.
94. Stricture of urethra about ¼ inch in length, and situated one inch in front of the bulb. The tissues round the stricture are not particularly thickened: the urethra behind it is dilated: a probe (size of No. 1 catheter) passes easily through the stricture. A false passage extends along the side of the urethra. The bladder wall is thickened, and there was pus and urine in the bladder. The right ureter and pelvis of right kidney are dilated. Case April 3, 1878.
95. Secondary cancer of kidneys—no history.

SERIES VIII.

GENERATIVE ORGANS.

1. Fœtus with placenta attached, about third month of utero-gestation.
2. Malformation of left arm in a fœtus. *Presented by Dr. J. G. Wilson.*
3. Exomphalous fœtus. *Presented by Dr. J. G. Wilson.*
4. Fœtus with placenta attached, about 5th month of utero-gestation.
5. Umbilical cord with a knot or twist upon it.
6. Portion of the umbilical cord, with a knot on it as it occurred at birth.
7. Uterus partly contracted three or four weeks after delivery.
8. Uterus partly injected from a woman who aborted twins and died of fever.
9. Cicatrix after operation for vesico-vaginal fistula. Patient died fourteen months after operation, of puerperal fever. *Presented by Dr. E. Watson.*
10. Clot from uterus in a case of dysmenorrhœa.
11. Uterus.
12. Chronic inversion of uterus. A portion the size of a hen's egg is seen protruding into the cavity of the vagina. For history, &c., see *Crosse's Essay*, pl. 9 and 10.
13. Uterus.
14. Uterus with fibrous tumours attached and protruding from its external aspect, covered in by peritoneum of great density. No symptoms during life of uterine disease.
15. Uterine polypus. Removed by Dr. Morton from Mrs. M., æt. 32, admitted July 10th, 1858, Ward IX. The patient, who is married and had five children, had a tedious labour twelve months ago; has not been well since; complained of weakness, and had a muco-purulent discharge from vagina, and occasionally bloody discharge, which was unconnected with menstrual discharge. On examination, this tumour was found attached to inside of os uteri. Removed July 15th, 1858; dismissed well on July 20th, 1858.
16. Uterus.
17. Uterus with fibrous tumours. One projects into the vagina, apparently arising from the neck outside os uteri. One

occupies the fundus. One lies just outside the wall of the uterus, on the left side. Another lies about the position of the right ovary, but, as the parts have been removed, it is not apparent whether it is derived from the ovary.

18. Stated to be an atrophied uterus, with a tumour growing from the os. The last is opened from behind, and extended by a piece of whalebone, to show its internal structure. This, and the above specimen were presented by Dr. M'Kenzie.
19. Uterus with its cavity filled by a tumour.
20. Fibrous polypus, removed by Dr. Morton from the os uteri of a woman æt. 45, Dec. 12, 1862. Removed by the ècraseur.
21. Uterus laid open. Its cavity is seen to be contracted, and the walls formed of a mass of nodulated tumours, varying in size and of fibrous texture. At the extremity of each of the Fallopian tubes are sac-like tumours, the left collapsed as if a fluid had escaped.
22. Malignant tumour of uterus.
23. Fibrous tumours of uterus and Fallopian tubes.
24. Fibrous tumour filling and distending the cavity of uterus. The tumour is almost in a state of calcareous degeneration. Removed from the same case as No. 1, Series XI. Besides the cutaneous disease, this was the only other pathological condition observed.
25. Uterus with thickening of os, and a cancerous tumour posteriorly between rectum and uterus.
26. Cancerous polypus of uterus. The parts preserved were the only ones examined or removed, further post mortem being refused by friends.
27. Uterus with polypus in left side of cavity, and a large tumour in the fundus.
28. Fibrous tumour growing from the posterior wall of the uterus by a peduncle. The cervix uteri is elongated, but it and the other appendages of the organ are normal in texture. The tunic which enveloped the tumour is removed, with the exception of a small portion at its origin from the uterus, which is raised on pins. Numerous sulci, in which blood vessels ramified are seen on the surface of the tumour. One large vessel is laid open, and a piece of glass passed into it—the portion which is open is filled with clotted blood. No history could be obtained.
29. Uterus with cyst in broad ligament of right side.
30. Uterus and ovaries. One of the latter presents a cyst about the size of a small hen's egg.
31. Unilocular ovarian cyst, very firmly adherent to the posterior surface of the uterus, especially on the right side. The

right round ligament is seen to pass over the anterior surface of the tumour, being firmly attached to the latter. The bladder is also to some extent adherent to the cyst.
History.—The preparation was removed from the body of a woman aged 24, who died from an acute illness of only about a fortnight's duration. The tumour in the abdomen was not observed by the patient till about 8 days before the onset of the illness. During life there was considerable anteflexion of the uterus, causing frequent micturition and constipation of the bowels. The uterus was felt to be attached to the tumour, but both together were freely movable in abdomen. The tumour reached as high as the umbilicus, and was seated chiefly at the right side. *Surg. Rep.*, July 26, 1870.

32. Dropsy of left ovary.
33. Teeth and bone developed in an ovarian tumonr.
34. Uterus with ovarian tumour below it. The tumour is of a fibroid nature and was attached to the left ovary. The patient died of typhus.
35. Cancer of uterus. The disease involves the lower part of the body and neck of the uterus and a portion of the vagina. In the uterus the disease is in the form of an infiltration—the affected portion presenting the appearance as if the uterine tissue had been simply replaced by the cancerous; at the same time there is a well-marked line of demarcation between the cancerous and normal portion. The disease extends all round the cavity, but is much less advanced at the posterior aspect. On the anterior aspect there is very extensive ulceration. The urinary bladder is firmly united to the cancerous tumour, and on its posterior wall is visible a firm flat oval prominence about two inches in transverse diameter and one and a quarter from above downwards. It is more prominent at the margins than in the centre, so as to present somewhat the appearance of umbilication, but there is no ulceration. The rectum was free from disease. The left ovary is seen to be converted into a cyst about the size of a pigeon's egg. Both ureters were somewhat distended, and in the right kidney there was a cyst about the size of a hazel nut. The other organs were healthy. See *Path Rep.*, Feb. 21st, 1871.)
36. Extremely vascular polypus of uterus. The structure of the tumour is that of the fibro-myoma, smooth muscular fibre-cells being mixed with connective tissue. Throughout the tumour there are extremely wide, thin-walled blood vessels, and in many parts masses of ecchymosed blood.

During life very extensive hemorrhage occurred from the tumour, which was removed by simply twisting the pedicle. *Presented by Dr. Tannahill.* (See *Glasg. Med. Journ.*, Nov. 1870.

37. Ovarian cyst retained in the cavity of the pelvis. This preparation is intended to exhibit the relations of an ovarian tumour, which although it has reached considerable dimensions, had not passed out of the pelvis. The cyst is multilocular, but, there are two much larger than the rest, one being about the size of the closed fist and the other slightly smaller. The tumour was situated in Douglas's space, just filling the cavity of the pelvis and not projecting beyond it. As will be seen from the preparation the body of the uterus corresponds with the groove between the two larger cysts, so that looking down on the pelvis before the parts were disturbed, the order from before backwards was, urinary bladder, fundus of uterus, ovarian tumour and rectum. There is in addition a myoma about the size of a large hazel nut attached to the anterior aspect of the uterus.
The ovarian tumour was not known to exist during life, being only discovered at the sectio. The case was under Dr. Gairdner, Ward VIII. *Path. Rep.*, June 11, 1872.

38. Bilateral encysted Hydrocele. A mass of cysts adheres to caput epididymis and tubes in right side, forming a pear shaped mass, 5 inches long and 4 inches broad. The left side shows a minor degree of the same thing. *Path. Rep.*, Nov. 22, 1872.

39. Retrouterine abscess—ulcer and perforation of the rectum. In the abdominal cavity in this case there were patches of peritoneum, on which soft lymph had been deposited, and in the pelvic cavity there were a few ounces of muddy fluid. In addition a large abscess (whose cavity is exposed by a piece of whalebone in the preparation) was found between the rectum and uterus. A portion of this abscess seems to have projected at one time into the abdomen, as a large collapsed cavity large enough to hold the closed fist, and communicating with the abscess by an aperture large enough to admit the first joint of the finger. The wall of this cavity was formed by a thin vascular membrane and it is preserved in the preparation. This cavity also communicated by a rent in its wall with the general cavity of the abdomen. On the anterior wall of the rectum, the mucous membrane was found softened at a point 4 or 5 inches above the anus. In the centre of this softened patch an aperture existed (and is shown in

the preparation by a piece of whalebone) which was found to form a communication between the rectum and the abscess.

The case was primarily one of typhoid fever, under Dr. M'Laren, the Peyer's patches and solitary follicles being nearly all in a state of ulceration. *N.B.*—The situation of the preparation in the rectum, suggests the question whether it may have been caused by the nozzle of an injection syringe. *Path. Rep.*, Oct. 25, 1870.

40. Encephaloid of testicle, removed by Dr. Geo. Buchanan on March 5th, 1873. In the preparation the half of the tumour is preserved. In shape this portion resembles the half of a very large pear, the long diameter being 3½ and the short 2½ inches. The section presents considerable variety to the naked eye, the marginal parts being generally grey and soft, the more internal portions varying from grey to an opaque yellow and firmer. The central parts are very distinctly firm, and there is even a certain amount of dragging in towards the centre firmer bands radiating out from the denser central part. On microscopic examination the tumour is seen to be composed of groups of cells which resemble granular epithelium in a stroma. The cells are nearly all (as examined in the fresh state) more or less fatty, many reaching the condition of the compound granular corpuscle. The stroma is in the form of a fine reticulated network in the meshes of which are groups of cells.

The patient from whom the tumour was removed was 39 years of age. He had been suffering from a tumour of the testicle for two years, but it had become rapidly large within the last six months, the growth in this period being represented by the difference between a hen's egg and a large orange. During this period also it became painful. There was the well-marked malignant cachexia in his appearance, and he said that he had lost flesh very quickly of late. The operation was performed on March 5, and he was dismissed on April 2nd, improved. *Path. Rep.*, March 5, 1873.

41. Dermoid cyst of ovary containing bone and teeth: perforation into colon: inflammation of sac: general peritonitis. The preparation shows a portion of the wall of an ovarian tumour which was as large as an adult head. The tumour was situated behind the uterus, whose posterior wall was slightly adherent to its anterior aspect. The tumour was nearly globular, and consisted of one cavity. Its walls were for the most part thin, not generally exceeding a line in thickness. Externally it was smooth and glistening.

Internally the surface generally presented interlacing trabeculæ very much resembling the muscular trabeculæ of the urinary bladder after the mucous coat has been removed, and found under the microscope to present the same structure. While this is the general character of the wall, there was one part presenting a very marked peculiarity, and this is preserved in the preparation. It is situated on the posterior wall of the cyst, in the middle line, and at its upper part. Here there projects from the wall of the cyst a solid mass which is elongated from side to side and attached to the wall of the cyst at its two extremities, but unattached at its middle. While it has this broad base at the circumference of the cyst, it comes to a comparatively narrow point internally, the whole mass having thus the general shape of a wedge, but a very irregular short wedge. On this mass there grow abundant hairs, and, in addition, there are all the other constituents of the skin in varying proportion—epidermis, sweat glands, sebaceous glands, and even sub-cutaneous adipose tissue. At one part the sebaceous glands very much preponderate, there being here simply a congeries of such glands with wide open mouths. The hairs possess follicles, and end in papillæ, just as do normal hairs. In addition to these constituents, there is in this mass a portion of bone with three or four teeth, only two of which project beyond the surface. In the cavity of the tumour there was pus and large greasy masses looking like rancid butter, and containing abundant hairs of a brownish colour, many of them two to three inches long. The cavity of the tumour communicates with the rectum by a somewhat tortuous and narrow passage. There was a considerable quantity of brownish pus in the peritoneal cavity, and the intestines were united among themselves and to the tumour by soft lymph. The right fallopian tube was firmly adherent to the tumour; the left was also adherent, but dilated; it is preserved in the preparation VIII. 67. The patient was a woman aged 20, unmarried. *Path. Rep.*, April 23, 1873.

42. Intracystic growth in ovarian cyst. The case was one of a large ovarian tumour removed by operation, and which consisted chiefly of one large cavity and several small; from the internal wall of the former projected several larger and smaller masses, two of which are preserved. The general wall of the cyst, as seen in preparation, is somewhat fibrous and comparatively thin; from its internal surface there project distinctly defined tumours,

which are soft, and on section present various gradations towards cystic formation.

43. Cancer of Mamma, with cyst. As shown in the preparation the tumour consists of a cyst with thick walls, the external wall of the cyst being firmly adherent to the skin over it. The cyst is large enough to contain a small hen's egg, and is partially divided by septa. Its wall is generally about three eighths of an inch in thickness and presents under the microscope a distinctly cancerous structure. The tumour was situated immediately under the nipple, but in the preparation a portion of the skin and wall of the tumour is awanting.

44. Dermoid cyst of ovary. In this case there was a vesico-vaginal fistula large enough to admit the tip of the finger, and situated just at the neck of the bladder. In the situation of the right ovary there were two cysts, which are preserved in the preparation, the one as large as a hen's egg, the other about the size of a walnut. Before opening, these cysts had a doughy feel, and on being opened were found to contain innumerable hairs mixed with a buttery-looking substance. From the internal wall of the cyst grow numerous longer and shorter hairs. *Path. Rep.*, Dec. 16, 1873.

45, 46. These two preparations show cancerous tumours of both mammæ, extending on the right side inwards to the pleura. The following is an epitome of the appearances found after death. On the right side the tumour is flat but very extensive, involving the skin on its surface, on which there are crusts and an ulcerated surface. There are nodules in the skin outside the tumour, as far off as the anterior aspect of the shoulder to within half an inch of the tip of acromion. Nodules also extend inwards beyond the middle, downwards to about two inches below the margins of the ribs, and outwards almost to the anterior border of the scapula. The right pleura, as seen on section, is much thickened, and its surface shows still some shreds of shaggy lymph, which was abundant in the fresh state. The pleural cavity contained fluid and the lung was compressed. The other preparation shows the left mamma, which is more prominent but the disease less extensive, only a few nodules existing outside the gland. The left pleura is almost normal, a group of firm nodules existing at the extreme lower part anteriorly. The liver was the seat of a few nodules, usually about the size of a pea or bean. There were also a number of nodules on the under surface of the diaphragm on the right side, and

on the neighbouring peritoneum. The growths in every part are remarkably firm, and those in mammæ had all the characters of scirrhus.

The patient was a housemaid, aged 30, admitted into Ward XXVI., under Dr. Watson, on Jan. 6th, 1873. She died Sept. 22, 1873. On admission she stated that the disease began about eight months before, and she ascribed it to wearing stays whose whalebone hurt her much. The right breast was the only one affected, and there appeared to be a general enlargement of the whole breast. On the 9th of February a chest affection of right side ensued, which had all the characters of acute pleurisy, and which was partly recovered from. On March 16th a tumour was detected in the left breast, which seemed to have formed during her stay in hospital. Considerable pain was felt in both breasts. In August the right breast was suppurating. There was progressive emaciation on till death. *Path. Rep.*, Sept. 24, 1873.

47. Fibrous tumour from wall of vagina. The growth is about the size of a chestnut, and covered by mucous membrane. It was pedunculated and removed by ecraseur without serious difficulty. The patient, a woman 36 years of age, stated that the tumour had been present about four years, during the last two of which it had been stationary. She felt much inconvenience from it while sitting. There was slight pain in back, and sometimes in groin. She stated that a tumour was removed from the vagina many years ago.

48. Mucous polypus of os uteri, removed by Dr. Perry. Structure firm, but on section seen to be made up of round and oval cells: the surface coated with cylindrical epithelium, and very much wrinkled: papillæ of considerable size, with deep sulci between.

49. Sloughing cellulitis following delivery, round front and side of cervix uteri: perforation of wall of cervix: discharge of fluid contents per vaginam: death one week after delivery. Peritonitis. *Path. Rep.*, June 7, 1875.

50. Diseased testicle. Removed by Dr. Robert Watson, June 9, 1875. The disease is malignant, and presents at one end of the growth a nodular cartilaginous structure, in which the cells (under microscope) are irregularly thrown together, and are of many shapes and sizes. The greater part of the tumour, however, is a brown spongy mass with dark brown fluid in the spaces and interstices. The fluid under microscope is seen to be made up of irregularly shaped firm elements, of size of renal epithelium and a

little larger and debris. At one place a small cyst contained a little brown fluid. The coverings (now removed) were in places matted together, in places free.

51. Dermoid cyst of ovary (with tooth, hair, calcareous deposit and soft waxy contents).
The uterus which is attached, contains 5 or 6 marble shaped myomata. *Path. Rep.*, June 25, 1875.

52. Ovarian cyst with enlarged and elongated fallopian tube over it. The remains of the ovary are seen at the back of the cyst in the form of a number of small dotted cysts. *Path. Rep.*, Feb. 19, 1876.

53. Colloid cancer of mamma size of a hazelnut. (From Dr. Geo. Buchanan.)

54. Hydrocele of right side, removed with the cord: the testicle is behind, with the vas deferens running down to it: the cremaster muscle fibres are seen spreading like a fan over the sac. *Path. Rep.*, March, 1876.

55. Colloid multilocular cyst of ovary: removed by Dr. Dunlop. 1876.

56. Degeneration of testicle—probably syphilitic.

57. Hydrocele of tunica vaginalis.

58. Solid colloid tumour of left ovary. In the pelvic cavity a large pale fawn-coloured lobulated tumour as large as a child's head, adherent all round to the peritoneum and to the thickened fibrous tissues of the pelvis: many delicate fibre-like adhesions of old date between tumour and abdominal wall: behind the tumour and in the mass of adhesions is a stinking abscess. The upper limit of the tumour lies near the umbilicus and it occupies the middle line filling up the pelvic cavity: the centre and upper part of the tumour are sloughing, but there is a thick rind left, the structure of which is sago-like and evidently colloid: the whole is surrounded by a strong fibrous capsule which is sloughing at the upper part. The pelvic glands are enlarged but not colloid: a loose thrombus exists in the right iliac vein: no colloid disease elsewhere in body. The uterus adherent to the tumour: the os rather low down: rectum also adherent and twisted, but not involved in the colloid disease. The left fallopian tube is elongated and twisted on itself once and leads directly into the tumour: the right fallopian tube is lost in the thick fibrous tissues. *Path. Rep.*, Nov. 23, 1877. Dr. Charteris.

59. Hydrocele of the tunica vaginalis: the other testicle is kept to show a small cyst at the caput epididymis.

60. Cyst of the external tubule of the parovarium.

61. Uterus and pedicle after excision of ovarian cyst. (Dr. MacEwen). The pedicle is tied with catgut. (1876).

62. Encysted Hydrocele: on both sides, the left being the larger: the larger hydrocele is seen to be made up of two smaller and separate cysts: and on examining the right testicle the cause of this is seen in the fact that there is a cyst springing from the caput epididymis while the tunica vaginalis, which was only slightly distended with fluid, is quite separate from the cyst. *Path. Rep.* April 30, 1877.

63. Fibroid tumour of uterus; the uterus laid open and the tumour bisected: the ovaries and broad ligaments thickened: several small cysts in ovaries. There was peritonitis. *Path Rep.*, May 21, 1877.

64. A fœtus of about the fifth month, with the uterus and its appendages. The position of the fœtus is retained in the preparation.

65. Inverted uterus. The patient was sent to the fever house, as under typhus, after a lengthened and utterly neglected illness, characterised by severe and protracted uterine hæmorrhage, by which she had been reduced to the last point of debility and exhaustion, the hæmorrhage having ceased, however, before admission. On examination per vaginam, the bulbous protrusion of the inverted womb was distinctly felt, but in the absence of a clear history, and in the half-insensible state of the patient, no information could be obtained as to the time or mode of occurrence, nor was the diagnosis as to the character of the tumour considered quite established. A consultation was held, but the surgeons present decided against interference, on the ground that the patient was plainly moribund and not in a state for operation.

The state of uterus here shown was found; all other organs perfectly normal.

Patient's husband, seen afterwards, showed great insensibility and carelessness as to the result, and could not, or would not, give the slightest information as to his wife's illness. W. T. Gairdner.

66. Uterus, bladder, and a portion of the rectum, illustrating vesico-vaginal fistula. A piece of whalebone is passed through the opening between bladder and vagina.

67. Dilated left fallopian tube with uterus from VIII. 41. The tube was distended with a thick tenacious green pus, and was firmly adherent to the tumour, but without any communication. It will be seen that the distention does not exist at the first part, but that near its extremity a cavity nearly as large as the closed fist is formed.

68. Anencephalic fœtus. The spinal cord is exposed from behind, and pieces of whalebone mark the brachial and lumbar enlargements. The termination of the cord at the occipital region is well seen. The thoracic and abdominal viscera are likewise exposed and appear normal.

69. Section of parts from a case of extra uterine pregnancy. The front view of the preparation shows a section of the urinary bladder to the left, and a section of the cyst which contained the fœtus to the right. The preparation is suspended by the ureters. On the posterior aspect what represents the body of the uterus is laid open, and the cut surfaces held apart by a glass rod. The cavity of the organ is obliterated, and the cervix mostly absorbed. To the right is seen the right ovary marked by a glass rod. The only representative of the left ovary and fallopian tube is the cyst seen from the front view. History.—Ten years prior to death Dr. Morton removed from patient's bladder, by lateral operation, several bones of a fœtus imbedded in phosphatic concretions. This patient had at different periods passed portions of bone from her bladder.

70. Cancer of scrotum. This is a very large tumour nearly the size of a child's head. It involved the left half of the scrotum of a man 42 years of age. It is ulcerated at various points on the surface and the tissue of the tumour presents itself at these ulcerated points. The microscopic characters are these of cancer, collections of epithelial cells in the form of almost glandular aggregates, contained in stroma.

The tumour was first noticed about 8 years before admission, and the inguinal glands were observed to be enlarged 6 years after. The tumour ulcerated 5 years after its first appearance. The patient was admitted on Sept. 7, 1874, under Dr. Geo. Buchanan, who removed the tumour.

71. Ovarian cyst and myoma of uterus. In the preparation, a portion of the ovarian tumour and the uterus, are preserved. The cyst was tapped during life, and fatal peritonitis ensued. The ovarian tumour consisted mainly of two large cysts with numerous smaller ones developing in their walls. In the preparation, portions of these two large cysts, are shown as well as intracystic growths in their walls. The tumour as a whole nearly filled the abdomen, extending upwards to the lower borders of the ribs. It was attached to the abdominal wall and neighbouring organs by soft recent adhesions, on the separation of which it was found to have a pedicle (shown in preparation) formed of the left ligaments of the uterus.

The abdominal cavity contained some turbid fluid, and the intestines and other organs were glued together by soft fibrine. The uterus as shown in the preparation is considerably enlarged, and its cavity is occupied by an oval tumour of about the size of a hen's egg, attached by a pretty wide base to the left side of the fundus, and hanging down to the internal os uteri. The cervix has a ragged ulcerated appearance, and the lips of the uterus are hypertrophied and œdematous. There are several ulcers in the vagina. *Path. Rep.*, May 13, 1871.

72. Part of a very large ovarian tumour, attached along the entire left lateral border of the uterus. The tumour was of enormous dimensions, and was composed in part of cysts, varying in size from very minute up to one as large as an adult head, and in part of more solid tissue which existed between the cysts as well as to a certain extent above, though even in the latter case there are traces of developing cysts. The cysts, and especially the smaller ones contained a yellow glairy fluid, but in some there are old blood-clots, and in some a turbid yellow fluid. The tumour as will be seen in the specimen is attached along the entire left border of the uterus, whose cavity and especially the neck is very much elongated. The uterus presents in addition several myomata, or fibro-muscular tumours. Just above the fundus and in the substance of the uterine wall, there is one large myoma about the size of a chestnut, and which is exhibited in the preparation divided in two, and its halves kept apart by a rod. In the cavity of the uterus are 4 small tumours, one of which has become pendulous, while two polypoid subserous myomata about the size of horse-beans hang from the anterior wall at about its middle, into the peritoneal cavity. In addition there is in the cervix uteri a small mucous polypus.

The woman from whom this preparation was removed, was 40 years of age and married. The tumour had been noticed for the first time about 8 months before death. During her residence in Greenock Infirmary, where she was under the care of Dr. Macdougall, the tumour was tapped twice. About a week after the last tapping she was seized with rigors and diarrhœa and died in a few days. The tumour was found adherent to the right abdominal wall, while in front there were also old adhesions and some recent lymph. See *Glasg. Medl. Journ.*, Nov. 1872.

73. Polypus of uterus—removal by ecraseur—death from peritonitis. The preparation shows the condition of the uterus

as found after death. It is much enlarged, reaching the size of the two closed fists; its wall is much thickened. A portion of the tumour remains adherent to the uterine wall by a pretty extensive base, at the left side of the fundus and body. The surface of this portion of tumour is prominent and ulcerating, and its centre is excavated, the excavation leading to a cavity situated behind the tumour, and between it and the uterine wall. That is to say the tumour is at present attached at its periphery to the uterus in the form of a ring, but inside this ring there is a cavity bounded externally by the uterine wall, which is here somewhat bulged outwards. This cavity contained a brown grumous decomposing fluid. In addition there was general peritonitis, with exudation of lymph and matting of small intestine. The lymph concentrated towards the left ovary, which was adherent to the sigmoid flexure and fallopian tube.

74. Dropsy of both fallopian tubes. History.—J. T., æt. 49, was admitted labouring under ascites, from which she never fully recovered, and died 14 weeks after admission. The affection of the ovaries was not detected during life, being masked by the ascites. The liver was diseased—other organs comparatively healthy.
75. An anencephalous fœtus, born at the full time.
76. Uterus from a woman who aborted between the sixth and seventh months of pregnancy, and afterwards died of phthisis.
77. Fœtus with the membranes; the cord is round the neck.
78. Anencephalous monster.
79. A child of about the seventh month, apparently developed quite normally. Along with it was born the blighted fœtus and placenta preserved in the next preparation.
80. Blighted fœtus with umbilical cord and placenta born along with the well-developed child preserved in the preceding preparation.
81. Placenta, with a blighted fœtus. The umbilical cord of the child which survived has been injected; its vessels are seen ramifying on the surface of the placenta, and occupying about four-fifths of it. The remaining one-fifth, marked off by a piece of whalebone, is in a state of fatty degeneration, and to it is seen attached the cord belonging to a fœtus in a blighted condition, which at some parts presents a shaggy flocculent appearance. Presented by Dr. Drummond, being a case which came under his own observation.

82. Large tumour of right ovary. The tumour discharged itself into the abdomen, causing death. In the tumour was found a mass of hair, with some decomposed bones. The cavity of uterus was filled with a fibrous polypus, adherent to the left side near the entrance of the fallopian tube. *Presented by Dr. A. Buchanan.*

83. Ovarian cyst, rupturing into peritoneum. Peculiar soft bodies in abdomen and cyst. The preparation consists of a large ovarian tumour, which occupied the lower part of the abdomen. The tumour measured 8 inches from side to side, and 4 or 5 from before backwards. It occupied nearly the middle line, but was rather more to the left than the right. The uterus as seen in the preparation, is firmly adherent to the anterior surface of the tumour, and is pushed very much to the right, so as almost to form the right border of the mass. The left fallopian tube is very much elongated, and adherent to the surface of the tumour along whose anterior aspect it passes from right to left (The preparation is supported by two threads one of which is attached to this fallopian tube). The tumour itself consists of a solid mass in front, and a large single cyst behind, the latter being found collapsed and nearly empty. At the extreme left border of the cyst there is a rent $4\frac{1}{2}$ inches in length. The edges of this rent are irregular and the cyst-wall is at this part only about half a line in thickness. The rent as shown in the preparation is exactly as it was found on inspection. The cyst contained a quantity of light flocculent material of a dead white colour, and in part in the form of more or less rounded bodies: bodies of a similar character and in size varying from that of a pea to a walnut, were found floating in the abdominal cavity, to the number of over a hundred; some of them are preserved at the bottom of the jar. The peritoneal cavity contained several pints of a straw coloured fluid, in which floated the bodies above mentioned along with numerous glistening scales of cholestearine. Some of the white soft bodies adhered to the exposed surfaces of the abdominal organs, and many of them were collected in the various recesses of the cavity. On microscopic examination these bodies as well as the material in the cyst, were found to be composed almost entirely of compound granular corpusles, with crystals of cholestearine entangled among them. In addition to these lesions in the abdomen, there were evidences of recent pleurisy on the right side, thrombosis of the pulmonary artery, and pulmonary apoplexy.

The patient was a dress-maker aged 53. The disease was stated to be of 2 years duration. On admission the chief symptoms were dyspnœa, cough and cyanosis. The legs and abdomen were swollen. See *Path. Rep.*, June 3, 1874.

84. Large myoma of the ovary removed by operation. Tumour is oval in shape, but somewhat flattened. It measures 5½ inches in length, 4½ in greatest breadth and about 3½ in thickness. It presents at one part the remains of a pretty firm attachment containing pretty large vessels. On section its structure is of a reddish grey colour and is composed of bands running in various directions and to some extent interlacing. The tumour weighs 1 lb. 11½ oz. The tissue is pretty firm in consistence, but not extremely hard. The appearance of the section is strongly suggestive of that of the pregnant uterus and on microscopic examination the tissue is seen to be exactly similar to that of the uterus.

The patient was a woman 40 years of age. She had a child 20 years ago and still menstruates. She was admitted to the hospital on June 12, 1872, and a solid tumour was detected in right side of abdomen beneath the umbilicus. The tumour was removed on July 2, by an incision from umbilicus down to pubes afterwards extended about an inch and a half further up. The tumour was free in the abdomen except where attached deeply by a pedicle. The pedicle was first secured by a clamp and then by a ligature, the clamp being afterwards removed. The wound was then stitched in the usual manner.

[*The following dry preparations are placed in Case H.*]

85. Ovarian cyst, dried and varnished.

86. Ditto.

87. Ovarian cyst. Tumour removed by Dr. Lyon, January 30th, 1863. The cord by which it is suspended marks the extent of attachment. One portion of tumour below and in front was multilocular, and felt like the uterus during life.

History.—Ann Miller, æt. 40, unmarried, and a virgin, admitted to Medical Ward VIII. on 25th December, 1862; removed to Surgical Ward XXVI. on 30th January, 1863. Abdominal tumour of a year's growth, diagnosed to originate from right ovary and to have no adhesions. Removed by Dr. Lyon on 30th January, through a 4-inch median incision.—Patient did well for the first twenty-four hours, when symptoms of peritonitis set in, which carried her off on the 2nd February—three days after operation.

88. Ovarian cyst obtained at the autopsy of Mrs. G——, æt. 58. There was no ascites, and the other organs were comparatively healthy. Tumour, on removal, weighed 38½ lbs.
89. Very large ovarian cyst; dried and varnished.
90. Cyst of the left ovary with the uterus firmly adherent. The cyst was divided by partitions, and one portion below the os uteri felt like a solid tumour from its multilocular character and the thickness of the contained fluid. The right ovary was also slightly enlarged, and was in an incipient state of dropsy. Ovariotomy was thought of, but, on careful examination, the majority of the physicians and surgeons thought the uterus was attached to the tumour, which view was adopted, and no operation performed. There was no ascites. The tumour, when removed, weighed 23 lbs. 7 ozs.
91. Ovarian cyst with fallopian tube stretched over it.
92. Uterus and ovaries from a patient who died of parametritis 10 days after delivery. The uterus is very large, 7 inches long, 4 inches broad. The wall of the uterus is 1½ inches thick at the fundus. At the upper anterior and right part of the cavity is a rough patch, 2 inches in diameter, marking the site of the placenta. For further particulars, see *Path. Rep.*, September 27, 1877.
93. The placenta discharged from a patient at the 7th month after conception with a quantity of blood, but without any trace of a fœtus, except shreds of the membranes adhering to the placenta, under the care of Dr. Perry, October, 1877. The placenta is about 4½ inches long and about 3 inches broad. The free surface is mamellonated to an extraordinary extent with smooth rounded nodules, which on section have a dark blood-red colour. On microscopical examination of the tissue a stroma is found without much trace of cellular matter, the blood being disposed in the meshes along with a clear transparent matter.
It appears to be in fact a mucoid degeneration of the free surface of the placenta. The adherent surface of the placenta appears to be normal.
94. Multilocular ovarian cyst. Excised by Dr. Watson, June 4, 1877.
95. Colloid multilocular ovarian cyst. Excised by Dr. Macewen. 1877.
96. Ovum at the third week, from the practice of Dr. Dunlop.
97. Parts from a case of malformation of the rectovaginal region. The rectum opens into the lower end of the vagina. The os uteri opens into a sac at the right side of the vagina. The retained menses had apparently made their way into the

peritoneum, setting up acute peritonitis in repeated attacks. Patient was aged 24 years. *Path. Rep.*, April 17, 1878.

98. Extrauterine (tubal) pregnancy. Patient was a married woman æt 26: she had borne 3 children, two of them still born and the third only surviving 6 months. Death occurred from hemorrhage into the peritoneal cavity, in which 10 pints of blood were found. In the right fallopian tube near its fimbriated extremity was a mass of blood clot, which on being opened proved to be due to an extrauterine pregnancy. The mass contained a fœtus about 2 months old: the chorion placenta and amnion are complete: the lining of the uterus was soft like decidua; the os was plugged by a thickened mass of mucus. *Path. Rep.*, Feb. 14, 1878.

99. Abscess in ovary in a case of pulmonary phthisis. Feb. 22, 1878.

100 Multilocular colloid cystic disease of the ovary. No adhesions. (Dr. MacEwen.)

101. Multilocular colloid cystic disease of the ovary. Many adhesions. (Dr. MacEwen.)

102. Umbilical cord on which a knot has been tied in utero. No further history.

103. Vesicular mole, at 4½ month of pregnancy. The placenta is seen in the specimen, very soft and pale in tint, and covered on one side by the vesicles. Besides these there are many strings of vesicles of various sizes. There were no traces of a fœtus to be seen. The specimen shows about half of the mass expelled. (From Dr. Suttie.)

104. Partially patent inguinal canal in a male child aged 3 yrs. The canal is open from the peritoneum for 2 inches. The testicle, which was not quite descended into the scrotum, is shewn. There was no hernia: the boy died of a burn of the skin. *Path. Rep.*, June 25, 1878.

SERIES IX.

SKIN AND APPENDAGES.

1. Purpura hypertrophica. Section of skin and subcutaneous tissue from the anterior and upper part of the right thigh of an old woman, a private patient of Dr. M'Call Anderson.
2. Jar filled with cuticle from a case of pityriasis rubra acuta.
3. Slice of skin fat and muscular structure. From a case of diffuse cellular inflammation of arm. At the depending part of the preparation are seen black or dark-red patches of blood coagulated and deposited in the interstices of the fatty tissue.
4. Portion of integument removed from left side of chest, with the letter "D," from a person who had deserted from the army, March 31st, 1858.
5. Hypertrophy of nail of foot, from an old woman of weak mind, who allowed the nails of her feet to grow without being cut for some years. Case occurred under the care of Mr. Lyon.
6. Condition of the cicatrix after the bite in a case of hydrophobia. From Dr. Laurie.
7. Horny excrescence removed from the hand of a patient in the Ninth Ward of the G. R. I. in June or July, 1833, by Dr. Weir.
8. Supernumerary finger removed by Dr. Geo. Buchanan.
9. Two hypertrophied fingers.
10. Thumb, with flexor tendon attached, which was drawn off by machinery. The other parts of the hand and arm were uninjured. There was slight inflammation, but the parts healed kindly. Compare II. 173.
11. Disease of great toe. The toe is greatly enlarged; two pieces of whalebone show the state of the nerves.
12. Toe affected similarly to the preceding.
13. Portion of abnormal fat from the abdomen, from Dr. Andrew Buchanan's case of umbilical hernia. *Vide Path. Rep.*, No. 9, 1858. The patient was extremely obese, fat being very abundant both subcutaneously and around the internal organs. The preparation shows a section of the skin and adipose tissue of abdominal wall. The fat is $1\frac{1}{2}$ inches thick.

14 Aperture of entrance of a gunshot wound. From the same case as No. 42, Series III., and No. 71, Series II., at which latter place the case is more fully described.

15. Wound in abdominal wall made in ovariotomy: including the peritoneal surface: and showing how such wounds unite by lymph: treated antiseptically: p.m. on 18th December, 1876; death occurred two days after operation.

16. Axillary glands pigmented, in a case of tattooing of skin of forearm.

17. Slough of skin and subcutaneous tissue from dorsum of foot, antiseptically dressed, six weeks after injury. (Dr. Cameron. April, 1877.)

18. Ulcer on hoof of horse. The section also shews the structure of the foot of the horse (From Dr. Henderson.)

SERIES X.

TUMOURS.

1. Horny projections of the lower lip.
2. Fatty tumour.
3. Fatty tumour (lipoma). *Presented by Dr. Cowan*, and removed by him from a private patient.
   The capsule of fibrous texture has been removed chiefly from the one side, and shows the nodulated or knobby character of the growth. The opposite side exhibits the capsule firmly adherent to the tumour. Another view shows the tumour cut into: the centre is seen to be composed of the same yellow fatty material.
4. Small fatty tumour, removed from the scalp of a man in the Dispensary, by Dr. A. Buchanan.
5. Fatty tumour, removed from the margin of the anus of a female. It is laid open through the peduncle, by which it was attached.
6. Fatty tumour, removed from the groin by Dr. A. Buchanan.
7. Fatty tumour (lipoma), removed from the shoulder of a woman by Dr. G. Buchanan.
8. Small encysted tumour of the scalp.
9. Encysted tumour of scalp, containing epithelial scales, cholestearine, and triple phosphates.
10. Aural polypi, removed by Dr. Anderson at the Skin Dispensary, John Street.
11. Enchondroma of finger. *Presented by Dr. Lyon.*
12. Portion of diaphragm. In its centre is a large mass of cartilaginous-like deposit, flattened in shape, the upper portion somewhat nodulated; it exists chiefly in the tendinous part; the lower border, however, merges into the muscular structure. Behind is seen the glistening tendon, showing it to be deposited only on the one side, which was that towards the abdomen.
13. Another piece of the same diaphragm, and containing a similar deposit, but of greater thickness; it also felt much harder, as if partially ossified. The tissues around are slightly puckered. At the lower or depending part is seen the œsophageal opening.
    The above specimens were presented by Dr. George

Buchanan, and taken from a man in the Dissecting Room, Andersonian University, 1857. There was no history of the case. Besides the deposit on the diaphragm, was a similar growth on the upper surface of the liver, but much less in size. The lungs were observed to be highly emphysematous.

14. Varicose tumour, removed from the nates. *Presented by Dr. Morton.*
15. Integumentary tumour, removed by Dr. E. Watson from the shoulder of a girl. Same as wax cast No. 43, Series XIII.
16. Fibro-cystic tumour.
17. Fibro-cystic tumour filled with fluid. Removed by Dr. Laurie from the thigh of a private patient.
18. Fatty tumour with a calcareous deposit. A piece of wire marks the calcareous mass. The tumour was situated over the sacrum of a woman, who died of cancer of the uterus, and was removed at the autopsy.
19. A spongy exostosis removed from the lower extremity of the fibula. In the centre is a mass of dark-coloured soft medullary structure, which becomes superficial for about the extent of a shilling piece on the convex and outer side of the bone, where there is a small opening which, during life, discharged an ichorous matter. The patient had received a blow on the shin twenty-two years before, when it commenced to grow as a hard bony tumour. Ten years after that he received a kick from a horse, when it increased in size,—and for the last twelve years, has been intensely painful. He desired its removal, which was successfully performed by Dr. Corbett.
20. Fibro-cellular tumour removed from the mamma by Dr. Lyon.
21. Epithelioma of upper eyebrow, removed by Dr. Corbett from a man.
22. Portion of scrotum removed by Mr. Watt from P. McG——, a slater, aged 46. Epithelial cancer of 4 months' standing.
23. Epithelioma of lip.
24. Cancer of the penis, cut open and retracted to show internal appearance. Removed by Dr. Lyon.
25. Cancer of penis.
26. Portion of fungoid testicle, removed by Mr. Watt.
27. Cancer of penis, removed by Dr. A. Buchanan.
28. Section of cancerous tumour, removed from the left labium vaginæ of an elderly woman by Dr. George Buchanan, April, 1864. Microscopic examination showed colloid degeneration in some parts of the tumour.
29. Epithelioma of lower lip.

30. Cancer of lower lip, extending to each angle and downwards to the promontory of the chin. It has an uneven cauliflower-like appearance; at the centre a U-shaped portion has been eaten away. It is said to have arisen through smoking a short cutty pipe. See Series XII., Nos. 154 and 155.
31. Tongue and larynx exhibiting firm cancerous disease, being from a case of Dr. Laurie's.
32. A case of epithelioma of eyebrow occurring in a man. The centre was softened, and is seen to be hollowed out—the margin on the contrary, is much raised, and with indented edges. It was removed by Dr. Lyon, but in a few months re-appeared on the opposite eyebrow.
33. Epithelial cancer of labium pudendi. The roughened warty or granulated appearance, so characteristic of this kind of cancer, is very distinct at the upper portion. Removed by Dr. Corbett.
34. Cancerous tumour removed from the forehead by Dr. A. Buchanan.
35. Epithelioma of chin.
36. Tumour removed from over the knee joint by Dr. A. Buchanan. A model of the leg before removal of tumour will be found in Series XIII., No. 18.
37. Adenoid tumour removed from the right side of the neck of a man, æt. 50, by Dr. Morton.
    History.—I. B. æt. 50, city porter, admitted 3rd December, 1862. Had a tumour of 17 years' growth at the angle and along the right ramus of lower jaw. At first its growth was slow, but for the last few years it has been rapid, and two months ago it began to suppurate. The attachments of the tumour were very deep—extending below the jaw on the neck. On the 19th there was violent hemorrhage, which was restrained by a pad till next day, when the common carotid was tied by Dr. M. In the afternoon of the same day there was copious hemorrhage from the external carotid which was secured by Dr. Russell. Left well on 23rd January, 1863.
38. Recurrent fibrous tumour, from the right gluteal region of a woman æt. 21, removed by Dr. George Buchanan. The wound healed kindly.
    History.—Three months prior to admission patient was subjected to an operation for the removal of a tumour from the same situation, which she states was about the size of an orange, was four years in attaining that size, and was never the seat of much pain. The wound healed, and she returned to work in a fortnight. Two months ago (*i.e.*,

one month after the operation) the tumour began to re-appear in its former situation, and increased in size rapidly. On examination, a tumour about the size of a child's head was found to be situated on the right hip. On its surface the cicatrix of the former operation is seen. The skin over it is discoloured. There was slight pain, chiefly nocturnal. The tumour was freely movable. One gland in right groin was enlarged.

39. Fibrous tumour beneath the tongue, attached to the left side of the lower jaw. The tumour had existed for 30 years, but had latterly been growing more rapidly. Death was produced by the pressure of the growth on the fauces and the great vessels of the neck. *Path. Register*, vol. I., p. 330.
40. Transverse section of cancer in humerus in case of cancer of the femur. The tumour in the femur is shown in Series II., No. 100.
41. Cancerous deposit on a portion of the diaphragm, occurring within the pericardium, from the same case as Series V., No. 63.
42. Spindle-cell sarcoma containing cysts. (Recurrent fibroid.) Situation, history, &c., unknown.
43. Apparently cancerous infiltration of the skin, with ulceration. At the inferior part the infiltration of the cancer into voluntary muscle is well seen on microscopic examination. History, &c., of case, unknown.
44. Three portions of osteo-sarcoma from a patient who was in the house and was dismissed incurable. He died in Pollokshaws, and the body was examined 24 hours after death. A sloughing surface exists under knee of the affected limb. The growth extends up to the neck of the femur, and is about 3 ft. in circumference. Tubercles were found in the lungs; the heart was normal, and other organs healthy. There was a large tumour filling the whole of the left iliac fossa projecting very much in front, attached to the pelvis behind, and overlaid by the iliacus internus and psoas magnus muscles. The lowest of the specimens is from the thigh, the middle one from the abdomen, and the other one from the scalp. Cancerous cells were found abundantly in all the three, and spicula of bony matter.
45. Cancerous deposit in the foot. It has a round, bulging form on the dorsum, pressing aside the tendons; it has extended between the metacarpal bones downwards, but is bound down by the plantar fascia. It has a soft, brain-like character, and was removed by Mr. Lyon. Shortly afterwards the woman died, and similar deposits were found in the lungs and liver. The stump had healed well previous to this.

46. Malignant tumour of finger. Same as wax models Nos. 49 and 50, Series XIII.
47. Cancerous ulceration of the hand, with vessels injected.
48. Hard cancer of mamma. The nipple is seen retracted. The sectional view shows the conical form of the fibrous and glistening part, and illustrates the cause of retraction of nipple.
49. Mamma removed by Dr. Lyon. Cancer.
50. Mamma removed from the same person by Dr. Lyon. Cancer.
51. Lobulated mammary tumour removed from a private patient of Dr. Lyon.
52. Cancer of male mamma. See Series XIII., No. 146.
53. Scirrhus of the female mamma.
54. Scirrhus of mamma.
55. Diseased mamma removed by Dr. E. Watson.
56. Cancer of mamma.
57. Cancerous mamma.
58. Cancerous mamma removed by Dr. E. Watson.
59. Melanotic tumour removed from second phalanx of great toe by Dr. A. Buchanan.
60. Fibro-cellular tumour of labia pudendi. This specimen consists of about half of the tumour which was removed during life, while the cast No. 112, Series XIII., shows the position and relation to the parts before removal. The mass is seen to consist of a distinctly encapsuled tumour quite separable from the skin, while the latter presents, especially at the lower part, an extremely marked elephantoid character. The tissue of the tumour is that described by Paget as fibro-cellular. This tissue is considerably œdematous, and the fluid, which exuded on section, was found to coagulate spontaneously. The skin over the tumour increases markedly in thickness towards the lower part, and at the convex inferior surface it reaches the thickness of one inch. The tumour weighed, after removal. 15 lbs; its shape was irregularly oval, and it measured, in its largest diameter, 13 inches, and in its shortest, 7½. Somewhat to its right side, anteriorly, there is a deep indentation, at the bottom of which there exists an ulcer about the size of a penny piece.
    The patient made a good recovery after removal of the tumour. A detailed description of the case will be found in *Glasgow Medical Journal*, February 1871, *Path. Reports*, August 15, 1870.
61. Myoma removed from the popliteal space of a female. The tumour is seen to be situated in the subcutaneous fat; it is distinctly encapsuled, and about the size of a small hen's egg.

On section it presents a transparent glistening appearance, intersected with more opaque bands. On microscopic examination it was seen to present well-marked characters of the myxoma or mucous tissue tumour, namely, cells of various shapes, with a large amount of perfectly transparent intercellular substance sparsely intersected with fibres. The intercellular substance presents the reaction of a solution of mucin, being precipitated by acetic acid and by alcohol—the precipitation completely obscuring the structure of the microscopic section, making it extremely opaque. On account of the fact that alcohol destroys the transparency of the tissue, the specimen has been mounted in glycerine and water.

62. Onychia of great toe.

63. Medullary cancer with a portion of skin from the part from which it has been removed. The tumour is distinctly lobulated and has a capsule of connective tissue. The half of the tumour furthest removed from the skin is firmer than the other, and presents a somewhat contracted cicatricial appearance; and the microscope shows that fibrous tissue here to some extent takes the place of the cancerous tissue. This portion is evidently older than the other. Of the rest the central portions are softer than the marginal, but not markedly so. The skin adheres to the tumour to some extent, but is not involved in the cancerous disease.

64. Melanotic tumour from the plantar aspect of the foot—lying between the plantar fascia and the skin. The skin became inflamed over the tumour from the constant pressure in walking, the ulceration having ensued, the tumour was exposed. The wound, after removal, cicatrised in about three weeks, and there has been no return of the disease in any part—now about two years since the operation.

65. Cavernous angioma of liver. The tumour is flattened in form, and about the size of a large chestnut. It is seen to project beyond the anterior margin of the right lobe of the liver, about the middle of which it was situated. The preparation shows the growth divided, and the section exhibits the loose cavernous structure of its tissue. It is surrounded and demarcated from the hepatic structure by a firm capsule, and in its central part a firm knot of about the diameter of a pea, formed of fibrous tissue, exists. In the fresh state this knot, as well as the reticulations of the structure, was of a white fibrous appearance, and the meshes of the cavernous structure were filled with blood. Two smaller masses of a similar nature existed in other parts of the liver.

The case was one of Bright's disease, with extreme contraction and cystic formation in the kidneys. *Path Rep.*, Jan. 27, 1871.

66. Sarcoma of orbit. The tumour, as removed by operation and preserved, is about the size of both closed fists. Before removal the tumour projected far out over left cheek, and pushed the eyeball upwards in a remarkable manner. The surface of the tumour was also ulcerating, and emitted a most disagreeable odour. The history of the disease points only about ten months back as the date of its origin. In the operation the entire contents of the orbit, along with the lower eyelid and a part of the upper, were removed. At a date about three months after the operation the wound is reported as being nearly healed.
The structure of the tumour is that of the myxo-sarcoma, that is to say, the tissue is made up of large round cells with a transparent intercellular substance, the latter giving the reactions of a solution of mucin. The cells are in very large numbers as compared with the quantity of the intercellular substance. The preparation is mounted in glycerine and alcohol, alcohol with water being found to contract the tissue and render it opaque. The case was one of Dr. Dewar's.

67. Cancerous tumour of the lung, in the form of a polypus. The case was one of an extensive cancerous tumour at the base of the neck penetrating into the anterior mediastinum. The lungs were adherent to this tumour to a considerable extent, and presented numerous secondary cancerous growths. The one preserved is the largest of these, and is about the size of a flattened walnut. It is attached to the surface of the lung by a pretty narrow base, which does not pass deeply into the lung tissue, but seems almost confined in its connection to the pleura. Another flat tumour of a similar nature, but of much smaller size, is preserved in the preparation. *Path. Rep.*, May 14, 1871.

68. Recurrent tumour of anterior aspect of thigh of elderly man. This is the third recurrence in three years. The first excision was by Dr. Geo. Buchanan. The last by Dr. Morton, in April 1878.

69. Hard cancer of mamma in elderly female. (Dr. Cameron.)

70, 71, 72, 73. Preparations removed from the same case, and illustrative of secondary cancer of the stomach, intestine, gall-bladder and kidney.
The primary tumour in this case was situated in front of the vertebral column and about the level of the umbilicus. marked aphonia, and persistent vomiting. The vomiting

In this position existed a cavity large enough to hold the closed fist, and with thick irregular walls. The cavity communicated with the intestine, both at its upper and lower part, with the upper part of the jejunum in the former situation and with the extreme lower end of the ileum in the latter. To the walls of the cavity adhered the lower part of the greater omentum and a portion of the ascending colon. As seen in the first preparation the stomach presented numerous flat ulcers, whose walls are elevated and formed of pale nodules. The mucous membrane of the small intestine presented throughout numerous cancerous tumours, the characters of which are visible in the second preparation. They are flat and of pretty considerable diameter, but very rarely present any ulceration; certain of them at the lower part of the ileum reached a diameter of four inches. Although the tumours in the intestine generally project beneath the mucous membrane, yet there are also many situated beneath the serous coat. The mucous membrane of the gall-bladder presented numerous flat nodules, varying in size from a pin's head to half an inch in diameter. The kidneys, also, as seen in the preparation, contained very numerous nodules, the largest of which are about the size of horse-beans; they are all situated in the cortical substance. In addition there were numerous nodules not generally exceeding the size of a pea, in the muscular substance of the heart; as also several scattered throughout the lungs. The spleen, pancreas and suprarenal capsules were also the seats of numerous tumours. But the liver contained no pathological formation.

During life the patient, who was under Dr. Gairdner, Ward VII., complained chiefly of profuse diarrhœa, with pain over the upper part of the abdomen. A tumour was detected corresponding generally to the position of the omentum majus. See *Path. Rep.*, Feb. 7, 1872.

74. Portion of a tumour of the female mamma. The tumour of which the preparation exhibits only a portion, was in the greater part of its extent of firm consistence, in some parts even approaching to the toughness of fibro-cartilage. At the margin, however, a much softer part existed, this being visible in the preparation as a slightly prominent isolated part, and during life this part showed a fungating appearance, having perforated the skin and projecting externally. On microscopic examination the main mass of the tumour is found to be composed of fibro-cartilage, dense fibrous tissue generally preponderating, but cartilage cells appear-

ing in every part, and occurring in considerable abundance in many parts. The soft portion of the tumour presents a sarcomatous structure, but here also the cells are in part typically cartilaginous, and in part elongated spindles, so that the types of the two forms of tissue in the principal tumour are retained in the smaller which was also the more recent. (A reference to this tumour will be found in the *Glasg. Med. Journ.*, Nov. 1871, p. 45.)

75. Sarcoma of the abdominal parietes. This tumour which was removed by Dr. Geo. Buchanan, is about the size of both closed fists. It has the shape of a flattened globe, but anteriorly the surface is covered by skin and is markedly irregular. At one part the skin projects so as to form three distinctly polypoid masses, only attached to the general tumour by a comparatively narrow neck. The largest of these separate masses is about the size of a chestnut, and the other two are as large as marbles. They are all somewhat flattened. The main mass of the tumour is about the consistence of firm muscle, and its section is of a greyish colour; but the projecting tumours described are much firmer than the rest of the mass.

No juice is obtainable from the cut surface of the tumour. Microscopic examination shows the general mass of the tumour to be composed of oval cells with large oval nuclei. The cells are separated by a very small amount of intercellular substance, but there is no stroma. The firm projecting tumours present greater elongation of the cells, even an approach to the fibro-plastic cell. In the general mass of the tumour the intercellular substance presents the reaction of mucus.

The following is the history of the case. The patient a man æt. 21, was admitted with a tumour situated partly in the umbilical and partly in right lumbar region of the abdomen. It began 4 years ago and when first observed was about the size of a horse-bean. It grew very slowly at first and about $2\frac{1}{2}$ years ago was little larger than a walnut. Then it began to grow rapidly, but till within the last six months was never painful. The tumour moves freely over the deep parietes of the abdomen. On removal, the tumour, except at the projecting part, was seen to be covered by subcutaneous fat, and to be immediately over the external oblique muscle. (August 31, 1872.)

76. Two lipomata or fatty tumours, from the abdominal cavity. Both of these are of the tuberous form. The larger is situated in the midst of the great omentum, and the smaller on the wall of the jejunum just beneath the peritoneal coat.

77. Fibro sarcoma or recurrent fibroid removed from the left submaxillary space by Dr. Geo. Buchanan, on 18th Jan., 1873. Patient was admitted suffering from a large lobulated tumour occupying the left submaxillary space. It was firm to the touch, and slightly movable on the lower jaw. Patient stated that it began two years before like a small pea, and gradually increased to the size of a bean, at which size it remained stationary for some months. Six months ago it began to increase rapidly, and has latterly caused great inconvenience from its size, so that patient could scarcely open his mouth. He never suffered much pain from it. During the operation it was found that the tumour was distinctly encapsuled and easily enucleated, presenting very slight attachment to the periosteum of the lower jaw. The operation was performed on Jan. 18, and the patient was dismissed on Feb. 18, "well."

The tumour is of irregularly globular shape, about the size of a large orange. Attached to its external surface there are one or two enlarged lymphatic glands. Both the tumour and glands present the usual structure of the fibro sarcoma, viz., spindle-shaped cells closely packed and running in parallel bundles.

78. Cancer of pleura and ribs, secondary to cancer of uterus. Spontaneous fracture of the ribs. This case is remarkable in the wide diffusion of the secondary cancerous formations, the peritoneum, pleura, lungs, heart, lymphatic glands, and the medulla of bone being all affected. The preparation shows a portion of the chest wall on the left side. Here the pleura is remarkably roughened by a formation partly in the form of nodules, and partly of a more general coating. Some of the nodules are only slightly adherent, and after scraping them off with the finger nail, the pleura beneath is seen to present very much its normal appearance. These formations present the microscopic characters of soft cancer. The ribs were fractured on both sides, as follows: on the right side the 2nd, 3rd, 5th, and 6th close to the point of union of osseous and cartilaginous ribs; and again, in other parts, the 2nd, 3rd, 4th, 5th, 6th, 7th, and 8th. On the left side, the 2nd, 5th, 6th, 7th, 8th, and 9th. As seen in the preparation, the fractures are indicated by a well-marked thickening in their neighbourhood. On more careful examination of the fractures, with the aid of the microscope, it is found that in these regions the medulla of the ribs, is the seat of a cancerous formation, which replaces the normal medulla and causes atrophy

of the bony tissue. Many of these cancerous formations are to a considerable extent isolable. A similar cancerous new-formation is found in the medulla of the bodies of the vertebræ.

This case was under the care of Dr. Steven, in the Infirmary, from Nov. 14 to Dec. 31, 1871, at which latter date she died. She was a woman 48 years of age and a widow. Menstruation had ceased 5 years before. About 12 months before admission she first noticed a bloody discharge from the vagina, and this had dribbled away ever since. There was a constant, severe pain in lumbar and hypogastric regions, as well as the pain on pressure all over the abdomen. (For full report see *Path. Rep.*, Jan. 3, 1872, and Journal of Ward VI., Bella Frood, admitted Nov. 14, 1871.)

79. Malignant tumour of bronchial glands (lympho-sarcoma) extending into lung, pericardium, heart &c. This preparation shows a large mass of soft pale structure filling up the space between the two main bronchi, which latter along with the trachea, are laid open. A portion of the lung is preserved, and in the section of the tumour is seen to have extended into its substance. The pericardium is also laid open, and its posterior portion is seen to be completely involved in the tumour, the latter projecting into the pericardial cavity in the form of an apparently fungating mass. In the preparation which follows this the heart is also seen to be involved in the tumour, the wall of the auricles being the parts concerned. In addition the preparation partially shows very great enlargement of the glands of the neck, these enlarged glands being continuous with those at the root of the lungs. The pneumogastric and recurrent nerves are dissected on both sides, and it is seen that on the right side, the pneumogastric is involved in a portion of the tumour, for a distance of about 2 inches, the point of departure of the recurrent being included in this part. It was necessary to dissect through the mass of the tumour to follow the pneumogastric, and even then it could not be completely isolated. The recurrent could not be dissected on to its issue from the pneumogastric, both nerves at the point being too thoroughly involved in the tumour. On the left side the pneumogastric is free, but the recurrent after leaving it is firmly adherent to a portion of the tumour, though not involved in its substance. The larynx is preserved and described as Prep. No. 81.

During life, there was considerable swelling in the neck,

is stated to have been an early symptom. Examination of larynx showed considerable swelling of the false cords, &c.

80. Portion of heart from same case as preceding. Two considerable portions of tumour are seen to be adherent to the auricles, one portion to the left and the other to the right. The tumour not only adheres but involves the wall of the auricles, as is shown on section. It is impossible for the most part to distinguish the pericardium and myocardium, these being thoroughly involved in the substance of the tumour. The endocardium can be traced over the greater part of the surface, but there are several places where it also is undistinguishable and the substance of the tumour projects free into the auricular cavity.

81. Larynx from the above case. There is seen to be very considerable tumefaction of the aryteno-epiglottidean folds, these projecting towards the epiglottis, so as almost to present the appearance of rounded tumours. There is no evidence, however, that the proper growth has penetrated to the larynx. (For full report of the last three prep. see *Path. Rep.*, Oct. 28, 1873.)

82. Lympho-sarcoma of bronchial glands, extending into œsophagus, involving recurrent laryngeal nerve, &c. The tumour centres in the fork of the trachea, whence it extends as follows. It projects into the trachea at its bifurcation, and also into both main bronchi, which it narrows considerably, extending slightly into the lungs alongside the bronchi. The anterior wall is involved in the tumour for a distance from above downwards of three inches; the tube is narrowed, and the wall as seen from the inside is in a sloughy condition. The tumour fills up the concavity of the aortic arch to where it is adherent, without involving the wall. The recurrent nerve on the left side buries itself in the tumour just as it passes beneath the aorta, and it is hardly traceable through its substance. (The pneumogastric is attached to piece of whalebone.) The growth is further adherent to the upper surface of left auricle, bulging the wall inwards. On microscopic examination the tumour was found to contain innumerable small round cells the size of lymph-corpuscles, many of which are fatty. There is a basis of wavy connective tissue at parts.

The patient was a man aged 44, an engineer. The symptoms had lasted five months at death. At first there was vomiting, followed by difficulty of swallowing, which increased up till death. He vomited coagulated blood two

or three times. There was a peculiar hollow 'aneurismal-like' cough with difficulty of breathing, which are said to have come on in one day. Laryngoscopic examination showed on one or two occasions paralysis of left vocal cord, but on other occasions no paralysis. Dulness on percussion existed behind at lower angle of right scapula. *Path. Rep.*, July 9, 1874.

83. Adenoid sarcoma of submaxillary region. This is a tumour the shape of a flattened oval, measuring $2\frac{1}{4}$ inches in long diameter and $1\frac{1}{2}$ in short. In the fresh state it had a soft but tough consistence, and on section a grey or reddish colour and somewhat translucent appearance. It is completely encapsuled and smooth and regular on the surface. It was removed from the submaxillary region by Dr. George Buchanan, and was stated to have been growing for six years.

On microscopic examination there is seen to be a general basis of small round cells in a reticulated intercellular substance. But in the midst of these there are groups, generally circular or oval, of larger more epithelioid cells, these groups looking like the cut ends of tubes filled up with such cells. *Path. Rep.*, May 30, 1874.

84. Large pendulous lipoma containing a cyst. The tumour measures 11 inches in long diameter and about 7 inches in greatest width. It is irregularly oval in shape, the preparation only preserving about half the tumour. In the midst of it there is a large cyst nearly large enough to hold the closed fist. Under the microscope the tumour is found to be composed of fatty tissue. It was removed by Dr. Eben Watson.

85. Round celled sarcomata of ovaries: large white kidney. The kidneys weighed 13 oz. each: capsule non-adherent: surface smooth glistening of a yellow colour mottled with red streaks: on section the cortical substance relatively much increased and of a yellow colour mottled with red. Ovaries converted into solid tumours, oval and smooth, overlaid with a thin layer of lymph. Each ovary measures 6 inches long by 3 inches broad: colour of exterior pale salmon mingled with slate colour. On section the surface smooth and glistening mottled yellow and pale brown. Uterus small: not altered. Peritonitis, the traces of which are seen in the pouch of Douglas. *Path. Rep.* April 16, 1857.

86. Five tumours of uterus from size of a pea to that of a walnut. The spleen weighed 5 lbs. 15 oz.: the liver weighed 6 lbs. 2 oz.: heart distended: blood leukhæmic. *Path. Rep.*, November 8, 1870.

87. Tumour from axilla of child 2½ months old. Spindle-celled sarcoma. Case was under care of Dr. Lothian.
88. Wen, excised by Dr. Cameron.
89. Tumour of forearm: originating in sheath of median nerve. The tumour during life was soft and semifluctuant, and was incised in the expectation of finding pus. The result of the incision was the fungating surface shewn on outside of tumour; and amputation of the forearm was resorted to. On dissection the median nerve was seen to run into the upper part of the tumour like the stalk into a pear: the lower part of the tumour was rounded and contained several small cysts. The tissue was pale, soft, and under the microscope showed a highly cellular structure, in which in the upper part the meandering nerve fibres could be made out. The bones were not implicated, nor were the muscles, the tumour, which was seated deeply, merely pushing aside the soft parts. (Dr. Cameron.)
90. Tumour, cavernous, at lower end of femur, in upper part of popliteal space: bone eroded by the tumour, which seems to be a simple reticulum of fibrous bands enclosing blood in its meshes. The femoral artery and vein do not communicate directly with the tumour. Before the amputation of the leg the tumour was incised, but nothing except blood came: it did not pulsate. Microscopic examination does not show any indication of cancer.
91. Tumour of mamma, removed by Dr. H. Cameron: spindle-celled: recurrent. (1st.)
92. Tumour removed from site of above: the cells rather more bulky. Dr. Cameron. (2nd.)
93. Tumour removed from site of above: the cells tend in places to be round. Dr. Cameron. (3rd.)
94. Fatty tumour with ulcerated patch. Dr. H. Cameron.
95. Tumour from axilla. Dr. H. Cameron. Round celled sarcoma.
96. Cancer of upper end of tibia. Dr. Cameron. Small celled.
97. Tumour of buttock: fat, and thickened warty skin. Dr. H. Cameron.
98. Fibroid tumours of uterus. Dr. E. Watson.
99. Myxo-sarcoma from perineum. Dr. H. Cameron. The tumour is composed of fibrous tissue loosely set, with gelatinous interfibrillar substance and in places nests of clear glairy stuff. Under the microscope there is seen a loose network of fibres, with tailed, oval and round cells, some with more than one nucleus, and from some of which fibres can be seen to emerge. The glairy fluid from the tumour is coagulated into white cloud by acetic acid and redissolved by excess.

Patient, R. Matheson, æt 29, Ward XVI., seaman, first observed the tumour 18 months before excision as a small pea-sized body rotating under finger on outside of scrotum. It grew slowly, becoming occasionally painful in cold climates: the growth was most rapid in tropical climates. When patient was admitted the tumour was extended from left external abdominal ring backwards by the side of the scrotum almost to the anus: nodulated, hard: in places fluctuant and tender to pressure. It was found to pass into the external ring, and to be adherent to the pubes: but did not involve the spermatic cord.

100. Scirrhus of mamma (Dr. Cameron's case). "Arabella "M'Farlane, æt. 32, single, (private patient). Admitted "July 19, 1875, suffering from a tumour of left breast, "hard and nodulated, and just beginning to cause retrac- "tion of the nipple: no affection of the glands: diagnosed "to be scirrhus and removed July 21: dressed anti- "septically, and dismissed well August 9, 1875." There is a round nodular encapsuled pink-coloured tumour of size of a crab-apple just under the nipple. One half of it has been used for microscopic sections: the other half is left: the gland seems normal: the micro- scopic structure of the tumour resembles that of adenoma, but later on the tumour recurred and was plainly cancerous.

101. Colloid cancer of peritoneum, enveloping the descending colon: the same as in next case.

102. Colloid cancer of peritoneum, enveloping the small intestine, with part of the mesentery. The cancer presented innumerable small gelatinous nodules along the bowel, and these were aggregated into masses and layers coating the mesentery. The interior of the bowel in both cases was unaffected. Same as case 115.

103. Calcareous plates forming an incomplete capsule in a fatty tumour: the centre of the nodule, which seemed at first to be solid calcareous matter, was seen on section to be fat. (From Dr. Cameron.)

104. Subcutaneous fibroma on the shin of a mulatto (half). The microscopic structure is interlacing fibrous bundles. *Path. Rep.*, Jan. 5, 1876.

105. Wen with thick walls: split and torn out. (Dr. Cameron.)

106. Cyst with intracystic growths (recurred, see 132): excised, March 1875, from mamma. (Dr. Cameron.)

107. Fatty tumour from shoulder. (Dr. Cameron.)

108. Epithelioma of heel, in old cicatrix. Injected with carmine gelatin. (Case under Dr. Cameron's charge.)
(*N.B.*—A small part cut out of the edge of the cancer for

section has left a gap which is now filled up with simple ointment tinted with alkanet root.)

109. Tumour of heel: sarcoma. (From Dr. Dewar,)

110. Specimens of fibroma molluscum in a case of elephantiasis of leg. The specimens are from the back and shoulders. *Path. Rep.*, Dec. 31, 1875.

111. Syphilitic condylomata from vicinity of anus and vulva. (Presented by Dr. Foulis.) The condylomata are branching, with narrow pedicles. Microscopic examination shows that the surface, and indeed the whole mass, is profusely proliferating squamous epithelium, and in one or two places "laminated capsules" can be made out.

112. Scirrhus of skin and intermuscular fascia of upper arm. (Case under Dr. Lothian.) Injected with carmine gelatine.

113. Serous cyst of neck: deep seated: removed after death by Dr. Dunlop: no further history.

114. Adenoma mammæ, size of pigeon's egg, quite loosely encapsuled and not adherent to surrounding parts. The nipple is just over it and is quite free The section of the tumour (which is nodular and hard) is bulging, covered with glairy glistening fluid. Microscopic examination of fluid shews masses and cylinders of gland epithelial cells and granular corpuscles, blood corpuscles, and debris. The sections of tissue under microscope shew a connective tissue reticulum, in which are set numerous cross and oblique sections of wide gland ducts and spaces, lined by cylinder epithelium and full of similar cells. A typical specimen. (From Dr. Morton.)

115. Colloid cancer of stomach, and omentum: (same case as 101 and 102). See *Path. Rep.*, Dec. 2, 1875.

116. Fatty tumour with narrow pedicle. (Dr. Cameron.)

117. Spindle celled sarcoma of mamma. (Dr. Dunlop.)

118. Carcinoma of mamma. (Dr. Dunlop.)

119. Spindle celled sarcoma of thigh. (From Dr. Strethill Wright.)

120. Sarcoma mammæ (spindle celled).

121. Spindle celled sarcoma mammæ, removed by Dr. Eben. Watson. The tumour was firm and homogeneous, colour pale salmon, the section surface smooth and semiglistening, no juice could be scraped from it. The microscope shewed a pretty abundant network, made of bands of spindle cells, between which bands clusters and masses of round cells were lying—many of them apparently cross sections of the spindle cells.

122. Tumour in calf composed of small cells and fatty tissue. Case of elephantiasis arabum.

123. Enchondroma of upper end of humerus. Muscles not implicated, but simply pushed aside. A bony plug is seen in the bone cavity about three inches from its head.
124. Enchondroma of lower end of tibia removed post mortem.
125. Epithelioma of forehead.
126. Blood cyst from over right patella. Case.—Robert Pollock, æt. 29, miner, admitted 19th July, 1876, with a round circumscribed swelling the size of an orange over right patella. Working in places with low roof, patient has had to kneel much: and 2 years ago he noticed a swelling, size of a walnut, over right patella: this has steadily increased in size. At date size is that of an orange, round, movable and rather fluctuant. On removal it was found to be a thick walled cyst, containing clotted and fluid blood.
127. Osteo sarcoma of upper end of humerus. (Removed by Dr. Lothian, Aug. 1876.)
128. Sac of cyst from perineum. (D. E. Watson.) Case Feb. 19, 1876. Ward 26.
129. Scirrhus mammæ.
130. Myxo-adenoma mammæ. (Mr. H. Clark.)
131. Epithelioma of thumb.
132. Colloid cystic disease of mamma. Recurrence of tumour No. 106. Excised Jan. 27, 1877. (Dr. Cameron.)
133. Scirrhus of mamma. (Dr. Cameron). Jan. 1877.
134. Fatty tumour on posterior fold of axilla. Hardly any sheath. (Dr. Cameron, April 1877.
135. Recurrent fibroid (excised by Dr. Cameron, Feb. 14, 1877.)
136. Spindle celled sarcoma of internal ear. (From Dr. Cassells.)
137. Large round celled sarcoma. (From Mr. Fleming.)
138. Sarcoma of lower end of femur. (Dr. MacEwen.)
139. Sarcoma of lower end of femur. (Dr. Morton.)
140. Spindle celled sarcoma of brain. (Dr. Perry.)
141. Congenital cyst of brow. (Dr. Cameron.)
142. Goître, from female patient under Dr. Charteris, Ward 2.
143. Cysts with intracystic growths from vicinity of left mamma of elderly female. The mass before removal was as large as the largest size of goose egg, and very tense, not adherent to the skin except at the lower part. The contents proved to be a dark brown fluid in which only blood cells are seen: the cyst wall is thin and there are papillary growths in some abundance at one part. (Dr. Robt. Bell.)
144. Sarcoma just under skin: composed of round oval and spindle cells: Dr. Cameron.
145. Large fibroma growing in wall of abdomen of a middle aged woman. The tumour was freely movable and seemed not adherent to skin or peritoneum. During the operation

the peritoneum was wounded: and patient died in a couple of days after. (From Dr. Morton.)

146. Pendulous fibrocellular tumour of labium: injected by Dr. Coats. (From Dr. H. Cameron.)

147. Epulis from gum of upper jaw. (Dr. Eben. Watson.)

148. Enchondroma of terminal phalanx of great toe, expanding the bone, but not affecting the joint. (Mr. W. J. Fleming.)

149. Recurrent fibroid tumour of abdominal wall removed by Dr. H. Cameron, being the fifth or sixth recurrence, the previous tumours having been removed by Dr. Lyon.

150. Two epitheliomata. From the lips of separate patients, removed by Dr. Cameron.

151. Epulis removed from the jaw with part of the bone by Dr. Cameron.

152. Adenoma of skin of back.

153. Large fatty tumour removed by Dr. Foulis, from a patient in Lewis. Successful result. Case.—Mrs. Donald M'Lean, Voltos Loch Roag. August 1877.

154. Fungus hematodes of popliteal region, being a recurrence of a growth removed at the Western Infirmary by Dr. Christie. The present specimen was obtained from the leg after it had been amputated by Dr. Watson at the Royal Infirmary. It consists of partially encapsuled masses of soft small-celled tissue with hardly any stroma, into which profuse hemorrhage has in places occurred.

155. Hard cancer of breast removed by Dr. Geo. Macleod in the St. George's Road Training Home, Nov., 1877.

156. Epithelial cancer on shin, invading the surface of the tibia to a slight extent, for which the limb was amputated above the knee by Dr. Lothian.

157. Cysto sarcoma of the mamma, removed by Dr. Macleod from a female in St. George's Road Home, Nov., 1877. The mass was of enormous size, and consisted of spindle-celled tissue of a salmon coloured, firm, glistening aspect. In this mass there are a number of cysts, into the interior of which the solid growth fungated in papillary or berry-like masses. There is a considerable quantity of a glairy material in the cysts and adhering to the cut surfaces of the solid mass.

158*a*. Large spindle-celled sarcoma of the lower end of the femur forming a huge club-shaped tumour with a thin shell of bone around it. In the tumour are large cavities with a reticulated lining, partly filled with soft sarcomatous tissue, partly with blood and serum. Shreds of bone are here and there projecting from the lining of the cyst. The knee-joint appears to be unaffected. The medulla of the

femur seems to be involved nearly half way up the shaft. The glands of the groin are slightly enlarged on both sides. Dr. Cameron amputated at the hip in Sept., 1877.

158*b*. Part of the wall of the same tumour suspended to show the nature of the lining of the cyst.

159. Large fatty tumour removed by Dr. Morton from the outer side of the thigh. In the centre of the mass calcareous degeneration has occurred, and a peculiar creamy fluid was found in it.

160. Hard cancer of mamma shewing invasion of the skin and muscles by the cancer; from a woman aged 70 years. (Dr. Cameron.)

161. Tumour from periosteum over outer malleolus. Structure (small spindle celled with a good deal of fibrous tissue among it): not adherent to the bone: excised by Dr. Dunlop.

162. Sebaceous cyst of buttock. (Dr. MacEwen.)

163. Hard cancer of mamma, in detached masses and nodules. (Dr. Dunlop.)

164 Polyp from nose. (Dr. H. C. Cameron.)

165. Fibroid tumours of the uterus, one encapsuled and one pedunculated. *Path. Rep.*, March 1, 1878.

166. Tumour composed of small cells (round chiefly) in the eyeball. (Dr. H. C. Cameron.)

167. Round celled sarcoma of the soft palate. (Dr. Foulis.) See *British Med. Journal*, Oct. 12, 1878.

168. Round celled sarcoma of the mesentery of the horse. (Dr. Henderson.)

169. Fatty tumour with outgrowths. (Dr. MacEwen.)

170. Adenoma of the parotid. The structure is lobulated, the tissue when fresh was of a clear glancing greyish aspect, and there was a thin tense capsule over it. The microscopic structure is like that of the gland, with the addition of some small cellular growth. (Dr. Cameron, May, 1878.)

171. Hard cancer of mamma invading the skin which is almost entirely involved in the growth. (Dr. Geo. Buchanan.)

172. Myeloid sarcoma of radius: with great hemorrhage into it dilating it into a large cyst. The ulna is not invaded and there is a connective tissue capsule which separates the tumour from the other parts. The tissue of the tumour is soft and pale, and in it are small bony particles. The microscope shews it to be made up of a fibrous stroma in which are embedded numerous large flat cells of various sizes. (Dr. Cameron, May 1878.)

SERIES XI.

PARASITES.

1. Round worm.
2. Portion of a tape worm (tænia solium), 52 inches in length.
3. Guinea worm, 18½ inches in length.

   History of case.—Peter M'Donald, admitted 22nd March, 1862, left India in April of last year. He is a soldier in the 91st Regiment, and was three years in the Presidency of Madras, during which time he had frequently to march over wet marshes. Six weeks ago he began to suffer pain, increased on pressure, in the upper part of the calf of the leg; pain and inflammation travelled downwards towards the ankle, and eight days since a small pustule formed below the internal malleolus. This was poulticed, and in a few days a small white cord appeared protruding through the centre of the sore; this turned out to be the end of a guinea worm. Dr. Dominichette, the military surgeon at present in charge of the Regiment here, directed the patient to roll up the worm cautiously on a quill, so as to draw it out gently, as it is very easily broken, and at the same time to prevent it from retracting itself. Patient was then sent into this Hospital, the same method was followed till the 15th April, when the worm was entirely removed. Before its final exit pretty acute inflammation occurred in the surrounding tissues.

   Microscopic appearance.—It consists of a fine, translucent annulated tube, somewhat resembling a striated muscular fibre with granular contents.
4. A lumbricus about 14 inches in length.
5. Tænia mediocanellata—head and 3 feet 5 inches of the worm No. 3, Series XIII., is a sketch of the head and a small portion of the worm magnified 12½ diameters, and drawn under the camera lucida. No. 7 of this series is a portion of the same worm passed 8 months before decease, and No. 6 is another portion passed a few weeks before death.

   History.—M. G., admitted April, 1862, under Dr. Bell; suffering from tape worm; was treated by Ext. Fil. Mas.,

and passed preparation No. 7. Dismissed and returned again in 8 months, when he was treated by Dr. Orr with several remedies, and preparation No. 6 was passed, but the head and small portion of the worm could not be obtained. The head and 3 feet 5 inches attached was found in the duodenum about 2 feet from the pylorus, at the autopsy, the patient having died of enteritis complicated with cardiac disease.

6. Tænia mediocanellata from the same case as the preceding. See XIII. 3.
7. Tænia mediocanellata obtained from a man æt. 27, under Dr. Bell's treatment. Treated with oil of male fern. The worm is incomplete, the head and small part being absent. From the same case as the two preceding preparations.
8. Tænia solium.
9. Tænia mediocanellata, with the head. (From Dr. Muir.)
10. Dissection of female round worm showing bicornute uterus and convoluted ovaries.

SERIES XII.

WAX-CASTS ILLUSTRATIVE OF SKIN DISEASES.

[*In Case G.*]

1. Erythema nodosum.
2. Roseola.
3. Lichen urticatus.
4. Prurigo mitis.
5. Eczema impetiginodes of cheeks and brow.
6. Lichen simplex.
7. Herpes labialis.
8. Herpes zoster.
9. Chronic eczema.
10. Ditto.
11. Ditto.
12. Eczema impetiginodes.
13. Chronic eczema impetiginodes.
14. Eczema larvalis.
15. Eczema rimosum.
16. Eczema impetiginodes menti.
17. Ecthyma.
18. Rupia.
19. Ditto.
20. Ditto.
21. Ditto.
22. Lupus non-exedens.
23. Ditto.
24. Lupus of nose.
25. Lupus exedens affecting the nose.
26. Variola. The eruption on the face on the 6th day } During
27. Ditto. Ditto ditto 9th day } life.
28. Ditto. Ditto ditto 12th day }
29. Ditto. Ditto ditto 16th day } After death.
30. Variola, modified by vaccination.
31. Psoriasis confluens.
32. Lepra vulgaris.
33. Psoriasis gyrata.
34. Psoriasis inveterata.
35. Scabies purulenta.

SERIES XIII.

MISCELLANEOUS MODELS, CASTS, ETC.

[In Cases C and E]

1. Scrofulous ulcer.
2. Phagedenic ulcer.
3. Cancrum oris.
4. Cicatrix after the healing of cancrum oris, and previous to operation.
5. Stump after amputation in the thigh, probably by the circular operation.
6. Phagedenic ulcers of groin. It first attacked the scrotum, which healed, and a cicatrix formed; the groins were afterwards affected. The ulcers in the groins, as shown in the model, present the appearance of phagedenic ulceration.
7. Cicatrix of neck after a burn, the chin and mouth drawn down.
8. The same case after a plastic operation by Dr. Moses Buchanan.
9. Hypertrophy of mamma.
10. Dislocation of the fourth and fifth metacarpal bones on to the dorsal aspect of the carpus.
11. Strumous enlargement of nose.
12. Condylomata in region of female generative organs.
13. Large flat condyloma at margin of anus.
14. Cast of leuchæmic spleen, presented by Dr. Robert Perry. The organ has nearly the normal shape of the spleen, but in very much exaggerated proportions, measuring 12 inches longitudinally, 8½ inches in greatest transverse diameter, and 4½ inches in thickness.

    The patient was in the Royal Infirmary in February and March, 1846, under the care of Dr. Weir; at that time he was 25 years of age and married. He had been in the Hospital in previous September, and had a large hard swelling on left side of abdomen, and was jaundiced. He had also a systolic cardiac bruit. When under Dr. Weir he had pain in knee and ankle joints, feverishness and thirst, with well-marked jaundice. There was then also a systolic bruit, and at first pain in precordial region, which disappeared in a few days. In the abdomen the same hard tumour was felt extending from right hypochondriac region to the iliac fossa, and to the mesial line

34. Ulceration of the intestine.
35. Ditto ditto.
36. Ulceration of the ileum.
37. Ditto ditto.
38. Ulceration of ileum, the Peyer's patches being in great part destroyed, especially in the neighbourhood of the ileo-cœcal valve.
39. Ulceration of the intestine.
40. Cancer of stomach, extreme degree of ulceration.
41. Fistulous communication between the stomach and transverse colon. A large cavity exists between the two organs, formed by a distension of the communication. There are marks of ulceration in the colon.

[*In Case T, in centre of floor.*]

42. Pendulous lipoma, attached to the margin of the anus. It was removed by means of the écraseur, and the patient was dismissed well in about a fortnight. The duration of the disease was nine years, but during the last three years the growth was more rapid.
43. Cutaneous tumour of the neck removed, by Dr. E. Watson. The tumour has been preserved as prep. No. 15, Series X.
44. Condylomata around the anus.
45. Keloid tumour on the breast of a man, removed by Dr. Fleming.
46. Malignant disease of lower jaw (?).
47. A small tumour cut from the forehead of a man by Dr. Lyon. It has the appearance of a gouty concretion, although the patient was not affected by that disease.
48. Congenital neuroma (N. cirsoideum). The tumour hangs from the left frontal region. After death the tumour was found to be connected with the supraorbital nerves; and it consisted of nerve fibres as thick as a quill, twisted and contorted on each other.
49. Malignant disease of the index finger, laid open.
50. The same before being laid open.
51. Fungus hæmatodes of right orbit.
52. Model of an enormous cancerous tumour of the shoulder. A portion of the humerus is preserved as prep. No. 108, Series II. Secondary deposits existed in the lungs, and these are shown in Nos. 47 and 51, Series IV.
53. Fibrous tumours of uterus and appendages. The parts of which this is a model are preserved as prep. No. 23, Series VIII.
54. Malignant disease of lung.
55. Cancer of glottis and posterior fauces. Death was produced by dysphagia.

56. Tumour filling the cavity of the larynx, and originating from the base of the epiglottis on the right side.
57. Encephaloid of foot, laid open.
58. Malformation of hand.
59. Malformation of left arm, from a fœtus. (Presented by Dr. J. G. Wilson.)
60. Congenital malformation of left hand.
61. Anencephalous fœtus.
62. Rupia syphilitica attacking the labia and groins of a female.
63. Cancer of testicle.
64. Paraphymosis.
65. Ulceration of the scrotum and protrusion of the testicle, the latter being also enlarged.
66. Phagedenic chancre of penis.
67. Onychia of the great toe.
68. Phagedenic chancre of penis.
69. Ulceration of the scrotum, exposing the tunica vaginalis of both testicles.
70. Warty excrescences and ulceration of the pharynx, the epiglottis being completely destroyed. The result of syphilis.
71. Ditto.
72. Ulceration round the lachrymal duct of the left eye.
73. Two models illustrative of the rhino-plastic operation for the repair of the nose. The one model is of the face before operation, and the other after its successful accomplishment. From a case by Dr. G. Buchanan.
74. Cast of hypertrophied heart.
75. Ditto ditto.
75½. Ditto: dilatation of right side of heart.
76. Protrusion of the femur at its lower end. The necrosed end of the bone has been placed in situ in the wax model.
77. Ulceration of cartilage of the ankle-joint. Vascularity of the bones.
78. Miliary tubercles in the kidney. They are seen on the surface as white deposits the size of millet seeds. The capsule is supposed to have been stripped.
79. Pyonephrosis. The model illustrates the filling of the cavities in the kidney with putty-like material.
80. Kidney with rounded projections on its surface. Probably from a case of cancer.
81. Fatty degeneration of the kidney.
82. Inflammation of the bladder and ureters, from a case of typhus fever.
83. Bladder collapsed and dotted with congested and ecchymosed spots, from a case of typhus fever.
84. Inversion of the uterus. A cast of the organ taken one

month after delivery, and immediately before its removal by ligature. The uterus is pressed down so as to show the thickening answering to the cervix. The case occurred in the practice of J. G. Crone, Norwich, and the cast was presented by Dr. Mackenzie, Glasgow.

85. Foot in dry gangrene: foot allowed to drop off. (Presented by Dr. Dewar.)
86. Exudation in the larynx and trachea in croup, from a child.
87. Ulceration of larynx and trachea. In the latter there are small ulcers involving the mucous membrane, while in the former the ulcers are larger and involve the vocal cords on both sides.
88. Miliary tuberculosis of the lungs.
89. Ditto ditto.
90. Ditto ditto.
91. Condensed lung in a case of phthisis.
92. Exudation of a pretty thick layer of recent lymph on the surface of the lung.
93. Exudation into the bronchi of the lungs.
94. Chronic thickening of the pleura.
95. Hæmorrhagic condensation of the lung. Pulmonary apoplexy.
96. Pleuritic exudation of soft lymph on the surface of the lung.
97. Cavities in the apex of the lung.
98. Arteritis, with formation of thrombus within the inflamed vessel.
99. Exudation on the surface of the spleen or thickening of its capsule.
100. Abscess in the liver.
101. Red softening of the brain.
102. Limited softening of the cerebral substance.
103. Red softening of the brain.
104. Photograph of a patient with syphilis, under care of Dr. Wright, Barnhill Asylum. (Dec. 1875.)
105. Portions of foreign matter removed from a gun-shot wound.
106. Bullet extracted from a man by Dr. E. Watson.
107. Portion of the shaft of a tobacco pipe which had been thrust into the left side of the tongue of a man by a blow received while smoking.
108. A piece of iron extracted from a patient by perineal section.
109. Wax model of two molar teeth which have grown together.
110. Portion of necrosed bone removed from the end of a stump in which it had been keeping up a discharge for a long period after amputation. The original saw-cut is seen to be unchanged.
111. Head of the Tænia mediocanellata, magnified 12½ diameters, and drawn under the camera lucida. Two suckers are

seen in this view The head is preserved in preparation No. 6, Series XI.

[*Plaster of Paris Casts.*]

112. A cast of a fibro-cellular tumour of the labia pudendi taken before its removal. A portion of the tumour is preserved in Series X., No. 60.
113. Cast of a right hand with a supernumerary finger, taken from Charles Hornby, aged 20, a seaman. Both hands and feet were malformed; he stated that neither his parents nor any of his relations were similarly affected.
114. Malformation of the right foot in the same case as the previous cast. There are six toes on this foot.
115. Left foot from the same case, also with six toes.
116. Congenital malformation of hand.
117. Cast of a malformation of the right hand in a boy six years of age. The three middle fingers are coalesced.
118. Malformation of the left hand in the above case. The thumb is present, but there is only one other finger in the position of the little finger.
119. The right foot from the same case. The lesser toes have apparently coalesced into one; the great toe is distinct.
120. The left foot from the same case. The great toe alone is present, and a small dot like a rudimentary nail is all that appears of the others.
121. Malformation of the hand. In place of the thumb there are what appear to be two fingers.
122. Malformation of the foot occurring in the same case as the above. There are two additional toes, and the breadth of the foot is much increased.
123. Talipes varus.
124. Ditto.
125. Ditto.
126. Ditto.
127. Ditto.
128. Cast showing a congenital malformation of the right leg and foot in a child, which lived till two months old. It had a double hare-lip.
129. Congenital malformation of the right foot in a girl 10 years of age. On each foot there were six toes.
130. The left foot from the same case. The great toe, which was removed by Dr. Lyon, stood out nearly at right angles, and presented the appearance of an opposable thumb.
131. Gigantic hypertrophy of the index finger, and to a less degree of the middle finger.
132. Elephantiasis of the hand.

133. Cast of hand after amputation of all the fingers.
134. Cast of arm after amputation at wrist.
135. Stump of the leg of a boy. Syme's amputation had been performed 10 years previously.
136. Cast of stump after Pirogoff's operation.
137. Cast of stump.
138. Cast of stump after Syme's amputation.
139. Cast of stump.
140. Cast of stump after Chopart's operation.
141. Cast of stump after Syme's operation.
142. Cast of a stump after Pirogoff's operation, performed by Dr. G. Buchanan. The patient, a male, aged 18, was dismissed well in six weeks after the operation.
143. Large tumour of the thigh.
144. Cast of the face of a man taken after death, showing the remains of a large tumour which had existed over the malar and superior maxillary bones. The tumour was removed during life by the écraseur, and the man died of phlegmonous erysipelas. The bones were found to be implicated.
145. Cast of a cicatrix on the left cheek of a boy.
146. Cancer of male mamma. James Small, aged 61, a beadle, was admitted to Ward V. on 7th October, 1856. Three months before, the patient first noticed a small tumour on the right mamma immediately adjoining the nipple, and then about the size of a fourpenny piece. It gradually increased in size without causing much annoyance. On admission, it was about the size of a penny piece, slightly elevated, and of a red purplish colour, with a number of veins running through it, and apparently not adherent to the tissues beneath. He attributes its growth to carrying a heavy weight with the right arm. The patient's health was not affected. On consultation, it was resolved to excise it, and Dr. J. G. Fleming performed the operation. On section it exhibited the dense fibrous structure of scirrhus, and on examination by the microscope, the juice was seen to contain innumerable cancer-cells; a thin section also showed cancer-cells, intermixed with fibrous tissue. The tumour itself is preserved in Series X., No. 52.
147. Elephantiasis of the labia pudendi.
The woman from whom this cast is taken, was a mill-girl, aged 33—a patient in the Lock Hospital. She had not been married, and had no children. About nine years previously she had been under treatment for a swelling of the left labium, and other sores, and she was dismissed considerably improved. But ever since this period there have been periodic swellings of the left labium, the swel-

ling often reaching, according to her own statement, the size of her head. At each period of swelling it suppurated and burst of itself, but it never became smaller than its present size. At the period when the cast was taken the condition is thus described:—"There exists a tumour-like swelling, pyriform and pendulous from the left labium, of which it seems an enlargement. It is hard and fleshy to the feel, rough and puckered externally. On its inner aspect is an opening half an inch in transverse diameter, leading into a sinus about an inch and a half in depth,—and from this exudes a dark-coloured fluid. Above this last opening is a cicatrix where it had formerly burst. The right labium is swollen and indurated: and what seems to be the clitoris presents a similar appearance, being about the size of a walnut. On the mucous membranes are numerous mucous tubercles, and the surfaces are raw and inflamed. The general health is feeble."

148. Cast of the bust of a patient showing a large ulcerating tumour proceeding from the right side of the neck.
149. Cast of the tumour of the uterus preserved in Series X., No. 69.
150. Cast of a case of "fungus hæmatodes" attacking the face. There is such extreme disfigurement that the parts can hardly be recognised. The right eyeball is protruded, and the upper lip drawn upwards and outwards, exposing the teeth and gums.
151. Cast of a case of malformation of the sternum.
152. Model of an enormous tumour of the neck.
153. Model of a tumour in the neck of a boy.

[*Photographs, &c.*]

154. Photograph of a man with cancer of the lower lip. The tumour with the lip was removed successfully by Dr. Lyon, and is preserved in Series X., No. 30.
155. A photograph of the same man after healing of the wound produced by the operation.
156. Painting of a keloid tumour on the back.
157. Painting of a large fungating tumour on the right side of the neck.
158. A drawing of a case of lepra rupioides to which the natural scales have been attached. The case was under the care of Dr. Tannahill, Ward 13. The drawing is by Dr. M'Call Anderson, who presented it to the Museum.
159. Cast of hand: amputation of the second and third phalanges of the ring and little fingers: motion of the remaining 1st phalanx in each very free. Shows the result of leaving merely the 1st phalanx in cases of injury. (By Dr. Foulis.)

160. Cast of case of hernia cerebri in a boy, the result of a kick from a horse. The cast was taken six weeks after receipt of the injury, and represents the form of the hernia, which was seated at the upper part of forehead, just to right of mid line. The colour of the mass was bright red with yellow and brown scabs on it. (Under Dr. Cameron's care, Oct. 27, 1875.)

161. Fragments of paper wadding and small shot from the head of a man who shot himself: the shot are misshapen. The direction of the track of the shot was from below the chin up through the right half of ethmoid bone and just grazing inner part of right eye, up through right anterior lobe against the calvarium from which they were partly deflected over the hemisphere. Meningitis and death in 4 days. (See *Path. Rep.*, Dec. 23, 1875.)

162. } Cast of female bust with left mamma developed and right
163. } almost or entirely absent.
164. } Bequeathed by Dr. Donald Dewar, without any definite or
165. } detailed history. Probably taken at different ages in the
166. } same person, who was a servant in Dr. Dewar's house-
167. } hold for 14 years.

168. Cast of heart. (Dr. Dewar.)

169. Cast of hand with enlarged fore and middle fingers. (Dr. Dewar.)

170. Cast of Pott's fracture. (Dr. Cameron.)

171. Cast of Colles's fracture. (Dr. Cameron.)

172. Cast of tumour of heel.

173. Cast of scrotal hernia.

174. Cast of tumour. (History unknown.)

175. Cast of tumour of thigh.

176. Cast of stump after amputation of leg below knee.

177. Cast of tumour on buttock of child.

178. Cast of tumour of thigh. (No history).

179. Cast from a case of hereditary syphilis shewing the malformation of the central incisors which are notched and also placed at an angle. (In Dr. Cameron's wards.)

180. Three photographs of a case of genu valgum, operated on by Dr. Macewen. The right leg has been operated on, the femur having been divided, with antiseptic precautions, just above the condyles. The left leg is seen as before operation. It was afterwards similarly operated on, with an equally successful result. (April, 1878.)

181. Photographs from a case of tricœlian heart, presented by Dr. Robert Elliott, of Carlisle. The chief peculiarity of the heart consists in the total absence of the natural septum ventriculorum: another peculiarity is the transposition of

the aorta and the pulmonary artery. The aorta measured only ½ inch diameter, at the p.m. inspection, while the pulmonary artery measured thrice that, or 1½ inch in diameter. From the arch of the aorta arose the usual three branches, all correspondingly dwarfed. The ductus arteriosus was quite imperforate. In the right auricle was a trace of the Eustachian valve, and the valve of the coronary vein showed a perforation. An oblique opening, admitting only an ordinary goose quill, existed in the upper and back part of fossa ovalis. Cyanosis began at the age of 3 months and gradually increased until death, at the unusual age of 19 years and 8 months, from exhaustion of two weeks duration.

SERIES XIV.

CALCULI AND CONCRETIONS.

A.—URINARY CALCULI COMPOSED ENTIRELY OF OXALATE OF LIME.

1. Hempseed calculus. (Dr. Eben. Watson.)
2. Urethral calculus. Dan M'Phail, æt. 56. Patient had previously passed two stones per urethram: the present stone was impacted at the beginning of the pendulous part of the urethra for five days. On September 13, 1866, the stone was drawn along the urethra with dressing forceps, the meatus being snipped at each side to allow it to pass. Catheter left in for a few hours: prepuce sloughed: abscess at site of stone: perineal abscess: pyæmia: death on Oct. 7, 1866.
3. Oxalate of lime calculus found in pelvis of kidney.
4. Twenty-four grains weight of oxalate of lime, removed by lithotrity. (Dr. Eben. Watson.)
5. Hempseed calculus from pelvis of kidney.

B.—CALCULI OF URIC ACID.

6. Uric acid calculus from boy. (Dr. Hector Cameron.)
7. Large uric acid calculus: double nucleus.
8. Uric acid double nucleus: coating of phosphates. (Dr. Wm. Macewen.)
9. Pale oval uric acid calculus, probably mixed with layers of urate of ammonia.
10. Uric acid calculus.
11. Uric acid calculus with delicate coating of phosphates.
12. Uric acid calculus.
13. Calculus from boy 4 years of age: he made a good recovery.
14. Uric acid calculus.
15. Uric acid calculus.
16. Calculus composed of uric acid and urates: weight 4 oz. 6 dr. History.—J. W., æt. 55, admitted 29th March 1862; symptoms of stone for six years. Urine acid, and abounded in uric acid. Lateral operation: some laceration of parts at the operation. A fistula which formed between rectum and wound was laid open on 18th April. Dismissed on 18th May, doing well.

17. Uric acid calculus size of hazel-nut from urethra of female
18. Uric acid calculi, 57 in number, removed from the bladder of a man. They are in general of a size slightly less than a hazel-nut, and present well-marked flattened sides, some of them approaching nearly to the form of a cube. In shape and size they present considerable resemblance to gall stones.
19. Uric acid intermixed with phosphates.
20. Uric acid intermixed with phosphates, from a child 4 years of age.
21. Uric acid calculus: from a boy aged 8 years. He made a good recovery.
22. Uric acid calculus: a thin layer or two of oxalate. No history.
23. Uric acid calculus with traces of phosphate, from boy aged 4 years. (Dr. Eben. Watson, April 4, 1877.)
24. Two uric acid calculi. The larger of these was removed from the bladder by lithotomy: the smaller one cut out of the urethra: another one not in the collection was extracted from the urethra by forceps.
25. Uric acid calculus found in the pelvis of the kidney, in a case of acute Bright's disease of 3 months' duration. The dark layer round the nucleus is probably oxalate. (See *Path. Rep.*, Nov. 6, 1858.)
26. Uric acid calculus weighing 6 grains: of the size and appearance of a coffee bean. Patient made a good recovory.

C.—PHOSPHATIC CALCULI.

27. Phosphatic calculi taken from the bladder of a man after death. Civiale's instrument for crushing the stone was tried on this man, being the first time of its use in Glasgow. A hollow in one of the calculi shews that it had been caught by the instrument and in part perforated. The stones weigh respectively 137 grs. 153 grs. 87 grs. 68 grs. and 30 grs. See *Glasg. Med. Journ.* Feby. 3, 1830.
28. Phosphatic calculus.
29. Phosphatic calculus: nucleus of slate pencil.
30. Phosphatic calculus having for its nucleus a piece of wood bine, which the patient had been in the habit of using as a bougie. The calculus was removed by lateral operation. Its weight is 378 grs.
31. Phosphatic calculus.
32. Do.
33. Do. weight 900 grs.
34. Phosphatic calculus with some uric acid near centre from a boy 8 years old.
35. Phosphatic calculi from Dr. Eben. Watson.

Mrs. M'Laren, æt. 38. Symptoms of two years' duration, dating from convalescence from typhus. The symptoms were: pain in the right side of the back extending downwards: pain in the pubic region. After 5 months of the symptoms patient expelled with much difficulty a grey rough stone: after this event she was free from pain for 2 weeks, when the symptoms recurred. On the 5th Sept. 1866, Dr. Watson operated, using the rectangular staff: he stitched up the wound. Patient made a good recovery.

36. Two phosphatic calculi removed at the same operation. The operation was preceded by one 18 months previously, in which two calculi were also removed.
37. Phosphatic calculus weighing 276 grains.
38. Phosphatic calculus weighing 120 grs. Patient made a good recovery.
39. Phosphatic calculi.
40. Phosphatic calculus broken in process of removal: its weight is 245 grs.
41. Phosphatic calculus.
42. Do. weight 83 grains.
43. Calculus removed from a child of 2 years. He died 30 hours after the operation.
44. Phosphatic calculus from urethra.
45. Phosphatic calculus broken up.

D.—CALCULI IN WHICH OXALATE OF LIME IS A PROMINENT INGREDIENT.

46. Urethral calculus from a boy: nucleus separated from rind by organic layer. From Dr. Eben. Watson. (Date, 28th April, 1874.)
47. Calculus weighing eleven drams, removed from female bladder by Dr. Hector Cameron. The calculus has a small nucleus of uric acid, over which is a thick layer of warty oxalate of lime. The outer coating is of friable phosphates.
48. Oxalate of lime calculus of size of a coffee bean, weight 4 grains.
49. Calculus of uric acid coated with oxalate of lime, from Dr. Eben. Watson. Patient was a boy named Hugh Hart, aged 6 years. Symptoms very severe and of three years' duration. The small size of the stone rendered detection difficult.
50. Nucleus uric acid, layer of oxalates: outer coating phosphates.
51. Nucleus uric acid, exterior oxalate. (Dr. Henderson's case. 22nd Feby, 1873.) From Dr. Eben Watson.
52. Oxalate of lime calculus coated with phosphates.
53. Calculus from a boy: removed by Dr. Cameron.

Centre uric acid: over it layers of oxalate and a trace of phosphate.

54. Uric acid with coating of oxalate and phosphate. Dr. Dewar, 1871.
55. Uric acid nucleus with coating of oxalate and phosphate. Patient was a boy aged 6 years: the rectangular staff was used: some hemorrhage after the operation was checked by plugging. 9th September, 1873. Weight of stone 63 grains. (Dr. Donald Dewar.)
56. Oxalate coated by thin layer of phosphate: weight, 84 grains.
57. Uric acid nucleus: mass of warty oxalate.
58. Uric acid nucleus: alternate layers of uric acid and oxalate. (Dr. H. C. Cameron.)
59. Uric acid: layer of oxalate. (Dr. Eben. Watson.)
60. Uric acid with thin coating of oxalate: weight, 10 grains: shape, like a date stone.
61. Uric acid nucleus: warty oxalate coating. (Dr. Eben. Watson.)
62. Uric acid nucleus covered by oxalate, over which is a layer of phosphate.
63. Uric acid coated with oxalate.
64. Uric acid nucleus: layers of oxalate and phosphate. (Dr. Eben. Watson.)
65. Uric acid and oxalate and phosphate: weight, 63 grains.
66. Oxalate of lime calculus: two minute nuclei of uric acid close together in the centre.
67. Renal calculi: one large one moulded into shape of pelvis of kidney. Case: Pat Donolly, æt. 37, labourer; admitted 24th February, died 4th March, 1872. Suffered from pains in the lower part of the body on the right side: was much emaciated. At the post mortem examination the left lung was found condensed throughout: the right lung ditto at apex. The pelvis of the right kidney occupied by four calculi, one of them of the shape of the pelvis and weighing 250 grains: the others weighed together 16 grains. Kidney otherwise normal in size: no hydronephrosis: the pyramidal part rather atrophied: left kidney large and congested: mesenteric glands enlarged.
68. Uric acid nucleus covered by smooth hard nodular oxalate. The lithotrite was used here, and it broke at the bend of one of the blades; then lithotomy was resorted to and the calculus extracted along with the fragment of the broken blade. Weight of stone, 7½ drachms. (Dr. Eben. Watson, Feb. 18, 1869.)
69. Uric acid nucleus covered by oxalate: weight, 74 grains.
70. Uric acid nucleus: layer of oxalate: coating of phosphate.
71. Layers of oxalate amid phosphate and uric acid.

72. Uric acid nucleus: smooth oxalate externally.
73. Fragments of a calculus discharged by the urethra after lithotrity. The patient recovered without a bad symptom. The fragments are composed of oxalate and phosphate.
74. Calculus weighing 228 grains: uric acid centre enclosed in a thin layer of oxalate: over that phosphate: the whole contained in a casing of oxalate.
75. Uric acid nucleus: oxalate layer: coated by phosphate. (Dr. Dunlop, Aug. 26, 1875.)
76. Uric acid nucleus: layer of oxalate: outer coating of phosphate. (Dr. Dewar, Ward XXI., 1874.)
77. Uric acid nucleus: layer of oxalate and outer coating of phosphate.
78. Uric acid, coated with oxalate and phosphate.
79. Uric acid nucleus: layer of oxalate: mixed layer of uric acid and phosphate. Case.—Jas. Core, æt. 6. Operation 26th Jany., 1867, symptoms of 2 years duration: pain frequent but not excessive: rectangular staff used. (Dr. Eben. Watson.)
80. Nucleus of oxalate: mass of calculus phosphate.
81. Urinary calculus composed of a central mass of oxalate of lime, coated with a soft layer of phosphates and blood. The stone is sawn through the middle, and from one half the soft phosphates have been removed. It is seen that there remains a characteristic mulberry calculus with the usual surface projections, of about the size of a large horse-bean. The external layers are of a black or brown colour and exceedingly soft, and they make up the size of the calculus to that of a small walnut. (The half of oxalate part weighs 8½ grs., half of entire calculus about 36 grs., say whole calculus 72 grs., oxalate part 17 grs.) The urinary bladder was much contracted, the mucous membrane thickened, dark in colour and with ecchymoses: around the urinary bladder were abscesses—one in front communicating with it—one behind opening in perineum. The left ureter was much dilated, so was the pelvis of left kidney. This kidney contained numerous abscesses, filled with yellow pus, situated mostly in the cortical substance, and of a somewhat elongated form, the long axis being perpendicular to the surface. This kidney as a whole was much enlarged. Around it were several abscesses, some of comparatively large size—one in particular between kidney and pancreas. These also contained creamy pus. The right kidney was slightly enlarged, its pelvis dilated, but it contained no abscesses. There were a few abscesses in some of the muscles of the body, especially the left

pectoralis, but none in any other part. The lungs were deeply pigmented.

The patient was a collier, aged 24. It was stated that he was never quite right in his mind, and always passed his water in bed, the result being serious bedsores. Rigors occurred on the 5th of April and he died on the 20th. (*Path. Rep.*, April 22, 1874.)

E.—CALCULI CHIEFLY COMPOSED OF URIC ACID AND PHOSPHATE.

82. Uric acid centre: phosphate coating. Weight 210 grs.
83. Finely laminated centre of uric acid: externally phosphates, weight 300 grs. Removed from a man aged 60.
84. Centre oval fawn-coloured uric acid: over that a kidney shaped coating of pinkish phosphates.
85. Centre uric acid: laminated coating of uric acid and phosphates.
86. Conical calculus of phosphates, with traces of uric acid in centre. (Dr. Eben. Watson.)
87. Phosphatic calculus: with excentric nucleus which is partly composed of uric acid. From a boy 3 years of age.
88. Phosphatic calculi: with uric acid nucleus and peculiar deposit of oxalate (?) at the end of the nucleus of one of them: the other calculus appears to have had a bit of mucus for its nucleus, as it shews a central wrinkled cavity such as would result from the drying in of such a nucleus.
89. Phosphatic calculus with uric acid centre and ring of oxalate.
90. Mixed uric acid and phosphate: weight 690 grs.
91. Fragments of uric acid calculus: coated with phosphate. The stone broke in extraction. The whole weight was 2 oz. Patient recovered without a bad symptom.
92. Three calculi, facetted, from the bladder. The nucleus is uric acid: exterior phosphate.
93. Uric acid calculus coated with phosphate.
94. Calculus found in the pelvis of the kidney, centre uric acid, exterior phosphate.
95. Facetted calculi from bladder: centre uric acid: exterior phosphate.
96. Centre uric acid: exterior phosphate.
97. Uric acid nucleus: phosphate exterior.

Margaret Howie, æt. 10 years. Operation 31st Oct., 1866. The opening into bladder made between external and internal labia. In removing the stone the urethra was torn and a vesico vaginal fistula left: an attempt made to close this 6 weeks after the operation failed: patient otherwise well. Dr. Eben. Watson.

98. Uric acid with traces of phosphate.
99. Uric acid nucleus: phosphatic exterior.
100. Uric acid, with phosphate mixed.
101. Uric acid centre: coating of phosphate. Weight 144 grains.
102. Uric acid centre? Phosphate externally. Weight 144 grains.
103. Uric acid centre, exterior phosphate.
104. Uric acid nucleus: thin layer of oxalate. coating of phosphate.
George Borland, æt. 5 years. Symptoms of 18 months duration: pain not a prominent symptom: rectangular staff used in the operation, which took place on Dec. 5, 1866. Patient died on Dec. 8, 1866. On post mortem examination the wound of the prostate and other perineal structures was quite as it should be: no inflammatory disturbance near wound or in peritoneum. A small abscess under peritoneum on front of fundus of bladder, and over this area the peritoneum was of a venous hue, not red. Coats of bladder not thickened: no extravasation of urine. (Dr. Eben. Watson.)
105. Uric acid centre: exterior phosphate.
106. Half of a calculus found in the bladder after death. Nucleus uric acid: exterior phosphate. Weight 11½ oz.
107. Calculi from the kidney and urethra of a child 8 years of age. Uric acid centre: exterior of crystalline phosphate.
108. Part of a calculus, weighing 310 grs: uric acid centre enclosed in a capsule of oxalate: exterior phosphate.
109. Two calculi from bladder. Nucleus of layers of uric acid with thin layers of phosphate: exterior phosphate. The uncut stone indicates by its shape that it may have been impacted at one time in the urethra. (Dr. Wm. Macewen Nov. 1876.)
110. Nine facetted calculi from the bladder. Centre uric acid: thin layer of oxalate: externally layers of phosphate and oxalate. (Dr. Dunlop, 15th Jan., 1876.)
111. Uric acid nucleus: coating of phosphate. Boy aged 3 years. (Dr. H. Cameron, April 6, 1877.)
112. Nucleus uric acid: coating of phosphate.
113. Twenty three calculi from bladder of a man: facetted like gall stones: external colour brown: on section the centre is seen to be uric acid, the exterior oxalate layers in phosphate.
114. Uric acid nucleus: layer of oxalate: exterior phosphate weight 36½ grains: patient was 18 years old.
115. Uric acid centre: exterior phosphate. (Dr. Eben. Watson.)
116. Nucleus uric acid: exterior phosphate.

117. Uric acid nucleus: coated with phosphate.
118. Uric acid nucleus: coating of phosphate.
119. Uric acid nucleus: coating of phosphate.
120. Uric acid nucleus: layer of oxalate: layer of urate; outer coating of urate and phosphate.
121. Uric acid centre: layers of uric acid and phosphate.
122. Uric acid nucleus, layers of oxalate and phosphate and uric acid.
123. Uric acid centre: coating of oxalate: from boy 3 years of age. (Dr. Eben. Watson, 28th April, 1874.)
124. Uric acid nucleus: coating of urate and phosphate.
125. Uric acid nucleus: oxalate and phosphate envelope.
126. Prostatic calculi: passed per urethram. Phosphate with traces of oxalate. (Dr. H. Cameron.)
127. Calculus which blocked up the right ureter of an adult woman, for upwards of six weeks, causing a large hydronephrosis. The calculus and hydronephrosis were discharged together. Phosphate with uric acid centre. (Dr. H. Cameron.)
128. Calculus which obstructed the urethra of a boy at about the middle of the spongy portion, causing retention of urine. Oxalate of lime. (Dr. H. Cameron.)
129. Calculus from a patient 15 years old. He made a good recovery. Layers of uric acid and oxalate.
130. Fragments of a phosphatic calculus from the urethra of a boy.
131. Calculus made of layers of phosphate and oxalate. No history.
132. Calculus from membranous urethra of a lad, æt. 21, in Ward XV. Removed by Dr. Dunlop. The symptoms of stone had existed for 6 years.
133. Calculus found choking up the left ureter of a female. The centre is pale fawn coloured, possibly uric acid or urates, then come layers of oxalate, and outside a pale layer of phosphate. The left kidney and ureter were much distended with urine, and at the seat of the calculus the mucous membrane was thickened and red and eroded. (*Path. Rep.*, April 24, 1878.)

1. Intestinal concretion 2½ by 2 inches in size, consisting of the beard of oats, extracted from a female aged 18, by her father, with the aid of two shoemakers' awls. It consists of two different formations, one darker than the other, and is laminated like an urinary calculus—the white layers being phosphatic.
2. Part of an intestinal concretion: phosphatic layer near surface.
3. Half of intestinal concretion from horse. It measures 6 inches by 4 inches, and is composed of the beard of oats and the skin of the bean, along with traces of phosphate.
4. Enormous intestinal concretion from horse. The mass as it now exists is only ¾ of its original bulk, yet it weighs 5lbs., so that it may have weighed when entire nearly 7lbs. It is of a flattened spheroidal shape, and its surface is coarsely nodular. The structure is that of layers and masses of spongy vegetable fibre with layers of phosphate. The mass is rather dusty from long exposure.
5. Thin slice from the concretion No. 4, to shew the structure.
6. Calcified mesenteric glands. *Path. Rep.*, Feb. 13, 1876.
7. Seed passed per urethram, in a case of fistula between bladder and bowel of a man. (Dr. H. Cameron.)

1. Cholestearine biliary calculus: weight, 72 grains.
2. A large gall stone composed of cholestearine and pigment: its greatest circumference is $4\frac{1}{8}$ inches, and its least $3\frac{1}{2}$ inches.
3. Cholestearine gall stone from gall bladder, cut to show striation and pigmented centre. *Path. Rep.*, June 9, 1875.
4. A large cholestearine and eight minute earthy gall stones from gall bladder. The minute stones are of yellow colour externally, mulberry surface: and in the centre there is amorphous pigment. *Path. Rep.*, Dec. 30, 1875.
5. Cholestearine gall stone from gall bladder: no symptoms during life.
6. Multitude of facetted calculi from gall bladder. The bile ducts were all freely open. The stones are mostly cholestearine, but some small grains consist of pigment. *Path. Rep.*, May 2, 1877.
7. Cholestearine calculus from gall bladder. The cystic duct was occluded by it: the gall bladder was shrunken.
8. Cholestearine calculus coated with calcareous matter, from gall bladder.
9. Eleven small mulberry pigment calculi from gall bladder which was nearly empty of bile. *Path. Rep.*, Dec. 10, 1875.
10. Pigment calculi from gall bladder. (Case Nov. 20, 1876.)
11. Pigment calculi forming in gall bladder.
12. Mass of inspissated bile found in gall bladder in case of obstruction of gall duct by cancer of liver. (Case June 25, 1876.)
13. Two mulberry pigment calculi of black colour, with shade of brown between the projections. The gall ducts were quite pervious. *Path. Rep.*, June 11, 1875.
14. Gall stones from case of Mrs. Kyle. Pigment chalk. *Path. Rep.*, April 29, 1876.
15. Two large gall stones and a quantity of smaller ones like sand ("gall sand") found in the gall bladder in a case of cardiac dropsy. The liver tissue presented a "nutmeg" appearance. *Path. Rep.*, March 2, 1876.
16. Facetted gall stones from gall bladder in a case of phthisis.
17. Gall stones from a case of rupture of the gall bladder: many of the smaller stones were lying on the peritoneum embedded in lymph. The gall bladder was packed full of the stones: there was extensive peritonitis, but no jaundice. (*Path. Rep.*, Feb. 24, 1876.)
18. Gall stones removed from gall bladder: the largest one choking the cystic duct: the smaller ones lying in the purulent contents of the gall bladder. Liver cancerous. (*Path. Rep.*, 19th Nov. 1875.)
19. Facetted gall stones (from case May 10, 1876.)

20. Earthy gall stones. (Of old date.)
21. Earthy facetted gall stones. (Of old date.)
22. Facetted earthy biliary calculi. (Of old date.)
23. Two gall stones from the same gall bladder: one of them has been fractured and shews the radiating structure.
24. Facetted gall stones. (Of old date.)
25. Facetted earthy gall stones. (Of old date.)
26. Facetted earthy gall stones from the gall bladder of a woman who died of malignant disease of the liver. The existence of gall stones was suspected during life.
27. Gall stone (pigment chalk) found impacted in the common bile duct in a case of hepatic and perityphlitic abscess. *Path. Rep.*, Nov. 20, 1875.